August 8, 2013
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Acronyms and Abbreviations

Bay  Chesapeake Bay  MCM  Minimum Control Measure
BMP  Best Management Practice  MS  Minimum Standard
CWA  Clean Water Act  MS4  Municipal Separate Storm Sewer System
CSS  Combined Sewer System  NPDES  National Pollution Discharge Elimination System
DCR  Department of Conservation and Recreation  NOI  Notice of Intent
EPA  Environmental Protection Agency  NOV  Notice of Violation
ERP  Enforcement Response Plan  POC  Pollutants of Concern
ESC  Erosion & Sediment Control  SOP  Standard Operating Procedures
FM  Facilities Management  TMDL  Total Maximum Daily Load
GIS  Geographic Information Systems  UA  Urbanized Area
GPS  Global Positioning System  VPDES  Virginia Pollution Discharge Elimination System
HUC  Hydrologic Unit Code  VSMP  Virginia Stormwater Management Program
IDDE  Illicit Discharge Detection & Elimination  WLA  Waste Load Allocation
JMU  James Madison University
MEP  Maximum Extent Practicable

Introduction

This document represents James Madison University’s plan to meet the requirements of 4VAC50-60 General Virginia Stormwater Management Program (VSMP) Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems.
SECTION 1: MS4 OVERVIEW

1.1 Organizational Structure

The Department of Engineering & Sustainability of Facilities Management is responsible for coordinating James Madison University's VSMP Phase II permit and for implementing a majority of the permit requirements. Additional information is gathered from several other departments including: Landscaping, Power Plant, Recycling, Transportation, Risk Management, Integrated Science & Engineering and the Office of Environmental Stewardship & Sustainability.

![Organizational Structure Diagram]

Figure 1. James Madison University Stormwater Management Organizational Structure

1.2 Contact Information

<table>
<thead>
<tr>
<th>Principle Executive Officer</th>
<th>Duly Authorized Representative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title: Senior Vice President</td>
<td>Title: Stormwater Coordinator</td>
</tr>
<tr>
<td>Name: Charles W. King, Jr.</td>
<td>Name: Dale Chestnut</td>
</tr>
<tr>
<td>Address: 91 Alumnae Drive, MSC 7606 Harrisonburg, VA 22807</td>
<td>Address: 181 Patterson St., MSC 7004 Harrisonburg, VA 22807</td>
</tr>
<tr>
<td>Phone: (540) 568-3400</td>
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</tr>
<tr>
<td>Email: <a href="mailto:kingcw@jmu.edu">kingcw@jmu.edu</a></td>
<td>Email: <a href="mailto:chestndl@jmu.edu">chestndl@jmu.edu</a></td>
</tr>
</tbody>
</table>
### Administration and Finance:

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Address</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Vice President</td>
<td>Charles W. King, Jr.</td>
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<td>(540) 568-3400</td>
<td><a href="mailto:kingcw@jmu.edu">kingcw@jmu.edu</a></td>
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### FM – Engineering & Sustainability

<table>
<thead>
<tr>
<th>Title</th>
<th>Name</th>
<th>Address</th>
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<tbody>
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### Office of Environmental Stewardship & Sustainability:

<table>
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<tbody>
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### FM – Grounds/Landscaping:

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<td><a href="mailto:lucasfcf@jmu.edu">lucasfcf@jmu.edu</a></td>
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</tbody>
</table>

### Risk Management:

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<tbody>
<tr>
<td>Environmental Health Coordinator</td>
<td>Marcella Mullenax</td>
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<td>(540) 568-4959</td>
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### FM – Operations:

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<tbody>
<tr>
<td>Administrative Analyst</td>
<td>Carlene Heatwole</td>
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<td></td>
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### Integrated Science & Technology:

<table>
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<th>Name</th>
<th>Address</th>
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<th>Email</th>
</tr>
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<tbody>
<tr>
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<td>Thomas Benzing</td>
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<td><a href="mailto:benzintr@jmu.edu">benzintr@jmu.edu</a></td>
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<tbody>
<tr>
<td>Manager</td>
<td>Dennis Hart</td>
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### FM – Recycling/Waste Management:

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<th>Name</th>
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### FM – Transportation:

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<th>Name</th>
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<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
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<td>Terry Hemp</td>
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<td>(540) 568-6364</td>
<td></td>
</tr>
</tbody>
</table>

### 1.3 Description of Drainage Areas

James Madison University is located within the City of Harrisonburg and has approximately 20,000 students and 3,000 faculty and staff. The campus consists of nearly 686 acres of developed and undeveloped land comprising of academic buildings, student housing, recreation buildings, conference halls, parking areas, maintenance yards, athletic fields, a power plant and an arboretum.
Approximately 117 acres of the campus drain directly to Blacks Run while an additional 539 acres drain to either Sibert Creek or Newman Lake. Sibert Creek then flows into Blacks Run directly adjacent to the campus. The hydrologic unit code (HUC) from Virginia’s 6th Order National Watershed Boundary Dataset (NWBD) for this drainage area is PS-22. Blacks Run is included on the state’s Draft 2012 305(b)/303(d) Integrated Report as a Category 4A water body. Category 4A waters are those that are impaired and have been assigned a TMDL to address the impairments. Blacks Run has been deemed to be impaired due to elevated levels of fecal coliform and escherichia coli, as well as benthic-macroinvertebrate bioassessments.

The University also owns a 30 acre tract of land located outside of the urbanized area, approximately 9 miles southeast of the main campus. This property consists primarily of wooded land and does not contain a storm sewer system.

SECTION 2: PROGRAM OVERVIEW

2.1 Program History

The 1972 amendments to the Federal Water Pollution Control Act, also known as the Clean Water Act or CWA; provide the statutory basis for the National Pollution Discharge Elimination System (NPDES) permit program and the basic structure for regulating the discharge of pollutants from point sources to waters of the United States. Under Section 402 of the CWA the Environmental Protection Agency is the authorized agency to develop and implement the NPDES program. Therefore, Congress amended the Federal Water Pollution Control Act (CWA) to prohibit the discharge of any pollutant to waters of the United States from a point source unless the discharge is
authorized by an NPDES permit. The NPDES program is designed to track point sources and require the
implementation of the best management practices or controls necessary to minimize the discharge of pollutants.
Initial efforts to improve water quality under the NPDES program primarily focused on reducing pollutants in
industrial process wastewater and municipal sewage. These discharge sources were easily identified as
responsible for poor water quality.

As pollution control measures for industrial process wastewater and municipal sewage were implemented and
refined, it became increasingly evident that stormwater runoff was found to be a major cause of water quality
impairment. In response to the 1987 Amendments to the Clean Water Act (CWA), the U.S. Environmental
Protection Agency (EPA) developed Phase I of the NPDES Stormwater Program in 1990. The Phase I program
addressed sources of stormwater runoff that had the greatest potential to impact water quality. Under Phase I,
EPA required NPDES permit coverage for stormwater discharges from Medium and Large Municipal Separate
Storm Sewer Systems with populations of 100,000 or more people, industrial activities, and construction activities
that disturbed 5 or more acres.

In 1999, the EPA developed the Stormwater Phase II Final Rule which tightened the regulations that requires
operators of regulated small municipal separate storm sewer systems (MS4s) to obtain a NPDES permit and
develop a stormwater management program designed to prevent pollutants from being washed into the MS4
system during a storm event (or from being discharged directly into the MS4) and then discharged from the MS4
into local waterbodies. James Madison University falls under the Phase II regulations as a small municipal storm sewer system operator.
Based on 40 CFR 122.26(b)(8), the definition of a “municipal separate storm sewer” means a conveyance or
system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters,
ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body
(created by or pursuant to State law)...including special districts under State law such as a sewer district, flood
control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization,
or a designated and approved management agency under section 208 of the Clean Water Act that discharges into
waters of the United States. (ii) Designed or used for collecting or conveying stormwater; (iii) Which is not a
combined sewer; and (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR
122.2.”

Also what defines James Madison University under the MS4 program is that the university is considered to be
within an urbanized area. By definition, an urbanized area (UA) is a land area comprising one or more places -
central place(s) - and the adjacent densely settled surrounding area - urban fringe - that together have a
residential population of at least 50,000 and an overall population density of at least 1,000 people per square
mile. It is a calculation used by the Bureau of the Census to determine the geographic boundaries of the most
heavily developed and dense urban areas.

### 2.2 Program Purpose

The 2004 Virginia legislature unanimously passed House Bill 1177 transferring regulatory authority of the National
Pollutant Discharge Elimination System (NPDES) programs related to municipal separate storm sewer systems
(MS4s) and construction activities from the State Water Control Board to the Soil and Water Conservation Board
and transferred oversight of these programs from the Department of Environmental Quality to the Department of
Conservation and Recreation. This transfer became effective January 29, 2005. As a result, DCR is responsible for
the issuance, denial, revocation, termination and enforcement of NPDES permits for the control of stormwater
discharges from MS4s and land disturbing activities under the Virginia Stormwater Management Program. The
Department of Environmental Quality continues to manage the remaining NPDES program.

Under the state governing agency, the Department of Conservation and Recreation (DCR), has developed and
coordinated the MS4 program as regulated under sections 4VAC50-60-380 and 390. As a condition of the permit
program, it is required that the permitted facility develops and implements their own stormwater management
program. Therefore, the intent of this document is to support the stormwater management program to ensure
compliance under the EPA’s Phase II regulations.
2.3 **Program Evaluation and Assessments**

In accordance with the provisions of 4VAC50-60-1240 Section II.E, James Madison University annually evaluates program compliance, the appropriateness of identified BMPs, progress towards achieving measurable goals and evaluates the program using the “Municipal Stormwater Program Evaluation Guidance” manual once during the permit cycle. James Madison University shall keep records required by the NPDES permit for at least three years, and submit annual reports with required information to DCR as specified.

**SECTION 3: MINIMUM CONTROL MEASURES**

The Phase II Rule defines a storm water management program for a small MS4 as a program composed of six elements that, when implemented together, are expected to reduce pollutants discharged into receiving water bodies to the maximum extent practicable (MEP). These six program elements or minimum control measures are:

1. **Public Education and Outreach on Stormwater Impacts**
2. **Public Involvement/Participation**
3. **Illicit Discharge Detection and Elimination**
4. **Construction Site Runoff Control**
5. **Post-Construction Stormwater Management in New Development and Redevelopment**
6. **Pollution Prevention/Good Housekeeping for Municipal Operations**

The following are James Madison University’s best management practices (BMPs) that have been developed in order to meet the minimum control measures.

**3.1 MCM 1: Public Education and Outreach on Stormwater Impacts**

_Permit Language:_ The operator shall identify, schedule, implement, evaluate and modify, as necessary, best management practices (BMPs) to meet the following public education and outreach measurable goals:

- a. Increased individual and household knowledge about the steps that they can take to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water pollution concerns.
- b. Increased public employee, business, and general public knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications.
- c. Increased individual and group involvement in local water quality improvement initiatives including the promotion of local restoration and clean-up projects, programs, groups, meetings and other opportunities for public involvement.
- d. Diverse strategies to target audiences specific to the area serviced by the regulated small MS4.
- e. Improved outreach program to address viewpoints and concerns of target audiences, with a recommended focus on minorities, disadvantaged audiences and minors.
- f. Targeted strategies towards local groups of commercial, industrial, and institutional entities likely to have significant stormwater impacts.

**3.1.1 BMP: Stormwater Management Website**

_Program Description:_ Provide information on the JMU website regarding the impacts of stormwater runoff and steps people can take to reduce stormwater pollution.

_Measurable Goals / Expected Results:_ Record the number of visits to the Stormwater Management Website. Increase the overall awareness of the impacts of stormwater and the measures that the University is undertaking to improve stormwater quality.

_Achievements for this permit year:_ The JMU Stormwater Management website (www.jmu.edu/stormwater) is reviewed/updated on a regular basis to ensure accurate and up-to-date information and is available to the public. There were 422 visitors to the site during this reporting period.
Schedule of Activities: Evaluate website quarterly and update as necessary.

Responsible Department: Facilities Management - Engineering & Sustainability

### 3.1.2 BMP: Classroom Education on Stormwater Impacts

**Program Description:** A variety of classes offered at the University cover issues related to the impact of urban stormwater runoff on the environment.

**Measurable Goals / Expected Results:** Record the number of classes that are offered at the University that cover stormwater impacts. Increase the overall awareness of the impacts of stormwater among the students at the University.

**Achievements for this permit year:** A minimum of 7 courses were offered that covered topics related to stormwater runoff or water quality. Students in the Instrumentation and Environmental Measurements courses also performed water quality sampling in Newman Lake in the Fall 2012 and Spring 2013 semesters. Additionally, three ISAT students performed their senior capstone projects on issues related to water quality.

**Schedule of Activities:** Courses will be taught as scheduled by the academic departments.

Responsible Department: Various Academic Departments - Integrated Science & Technology

### 3.1.3 BMP: Recycling & Trash Management

**Program Description:** Provide information on JMU's website regarding recycling & trash management and work with the Earth Club to promote recycling activities. The recycling program at JMU also participates in the annual RecycleMania competition. The mission statement of the Recycling Department is "to reduce the flow of waste and materials into the landfill, educate the JMU community on the proper disposal of waste items as well as the future impact of global waste stream issues".

**Measurable Goals / Expected Results:** Record the participation and amount of material that is recycled annually. JMU currently recycles 42% of its waste materials which exceeds the state guideline of 25%. Continue to meet or exceed the state guideline for recycling and "keep resources out of our waste stream".

**Achievements for this permit year:** The Recycling/Waste Management Department received approximately 6,113,000 pounds of waste and was able to recycle about 2,555,000 pounds. (These numbers are based on the 2012 calendar year)

**Schedule of Activities:** Continue current program and evaluate annually.

Responsible Department: Facilities Management - Recycling/Waste Management

### 3.1.4 BMP: Proper Disposal & Reduction of Hazardous Materials

**Program Description:** The University has hired an Environmental Health Coordinator who performs informal "area tours" to check for potential problems and assists in identifying hazardous materials which are no longer necessary and may be properly disposed of.

**Measurable Goals / Expected Results:** During area tours, the Environmental Health Coordinator ensures that all safety and health issues, including improper storage and/or handling of hazardous materials, are noted and communicated to the responsible parties. Follow-up to verify that issues have been satisfactorily addressed and to facilitate on-going compliance and environmental stewardship. Assist all areas of the University in identifying, and determining
proper disposal for unnecessary hazardous materials. Unnecessary hazardous materials will be identified and properly disposed of reducing their likelihood of polluting the environment. Report amount and type of hazardous materials disposed of during permit cycle.

**Achievements for this permit year:** Below is a table showing the amount of hazardous materials disposed of during this permit cycle.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos</td>
<td>202.5 yd³</td>
</tr>
<tr>
<td>Laboratory &amp; Art Studio generated RCRA waste</td>
<td>495 containers ranging in size from a few milliliters to 5 gallons.</td>
</tr>
<tr>
<td>Mercury</td>
<td>5,465 lbs</td>
</tr>
<tr>
<td>Non-Haz Oil Absorbents</td>
<td>275 lbs</td>
</tr>
<tr>
<td>Non-Regulated Material Water Based Paint</td>
<td>2,000 lbs</td>
</tr>
<tr>
<td>Paint related waste material</td>
<td>680 lbs</td>
</tr>
<tr>
<td>Pit Sludge</td>
<td>700 lbs</td>
</tr>
<tr>
<td>Solvent waste</td>
<td>2 x 55-gallon drums</td>
</tr>
</tbody>
</table>

**Schedule of Activities:** Continue current program and evaluate annually.

**Responsible Department:** Risk Management

### 3.1.5 BMP: Office of Environmental Stewardship and Sustainability

**Program Description:** The Office of Environmental Stewardship and Sustainability (OESS) is responsible for facilitating implementation of JMU’s 18th defining characteristic, “The University will be an environmentally literate community whose members think critically and act, individually and collectively, as model stewards of the natural world.” OESS has a role in carrying out the mission and vision of the university with regard to environmental stewardship.

The OESS coordinates the Institute for Stewardship of the Natural World (ISNW). The ISNW is currently divided into four committees with over 100 stakeholders who advance environmental stewardship via annual recommendations and programs that advocate for best environmental practices.

**Measurable Goals / Expected Results:** Document the activities that the OESS is participating in that facilitate environmental stewardship as it relates to stormwater. Improved coordination and communication between various departments within the University regarding their efforts towards environmental sustainability.

**Achievements for this permit year:** Through the fall semester of 2012, the Office of Environmental Stewardship and Sustainability (OESS) hosted a series of interdisciplinary programs called the “JMuse Café” that addressed a variety of environmental challenges. These events were open to students, faculty, staff members, and community members. The event held on October 10, 2012 was titled “Dividing Up the Pollution Pie in the Chesapeake Bay”, and
addressed the complexity of improving water quality on a regional scale. There was a total of 75 participants at this event.

Schedule of Activities: Activities will be coordinated by the OESS

Responsible Department: Office of Environmental Stewardship and Sustainability

3.1.6 BMP: Distribute Educational Materials/ Promote Education

Program Description: Seek innovative methods to distribute information related to stormwater impacts to students and staff. Three main issues have been identified as; (i) pollution prevention, (ii) the importance of good housekeeping, and (iii) public reporting of water quality issues. These three issues have been selected as they target audiences that are most likely to have significant impacts on stormwater quality. Possible methods of increasing public knowledge include; printed materials (newspaper advertisements, brochures, flyers, etc.), signage, websites, social media, training (seminars, presentations), and other activities deemed appropriate.

Measurable Goals / Expected Results: Record the number of methods utilized to distribute information to faculty, students and staff. Increase the overall awareness of the impacts of stormwater and the measures that the University is undertaking to improve stormwater quality.

Achievements for this permit year: JMU has approximately 20,000 students and 3,000 faculty/staff. One of our target audiences is Facilities Management which is comprised of approximately 580 staff. Facilities Management is primarily responsible for maintenance of buildings and grounds. An annual Stormwater Pollution Prevention/Illlicit Discharge Detection and Elimination presentation has been created for educating staff. Over a week long period, twelve presentations were given reaching 438 facilities management staff covering topics of stormwater pollution prevention, IDDE, good housekeeping and reporting of water quality issues. This presentation reached approximately 75% of the target audience. Beginning in April 2013, a Stormwater Pollution Prevention/Illlicit Discharge Detection and Elimination presentation has become part of new employee orientations. To date four presentations have been given for 15 new employees. We also had Koontz-Bryant, engineering consultants, provide training for upcoming stormwater regulations for design and construction members of Facilities Management staff.

Efforts aimed to reach 20% of the total JMU community with stormwater issues have included posters placed in both campus libraries, advertising on the JMU facebook page (with over 43,000 followers), stormwater presentation for the Environmental Hydrology class, and promoting JMU’s stormwater web page. Exhibits were also part of the Blacks Run CleanUp Day (see BMP 3.2.5) for community education. JMU also has educational signage in place next to a stream restoration project, biofiltration pond, green roof, and a hillside vegetation project on campus.

Schedule of Activities: Similar methods aimed at reaching at least 20% of the estimated target audience for each priority issue will be implemented each permit period.

Responsible Department: Facilities Management – Engineering & Sustainability

3.1.7 BMP: Pollution Reporting Hotline

Program Description: Create and publicize a Facilities Management phone number that students and staff can call to report illicit discharges or other pollution issues. Use the creation of a pollution hotline to educate staff and students of the hazards of illicit discharges and improper waste disposal.
Measurable Goals / Expected Results: Track the number of calls or emails received through the hotline number. Increase the public knowledge of the implications of illicit discharges and improper waste disposal.

Achievements for this permit year: No calls or emails reporting stormwater issues were received through our reporting hotline.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability

### 3.1.8 BMP: Storm Drain Marking Campaign

Program Description: The University has purchased stainless steel storm drain markers which state "No Dumping - Drains to Stream". The markers will be installed on inlets across campus.

Measurable Goals / Expected Results: Document the number of inlets that are marked across campus. Increased public knowledge and awareness of the fact that stormwater drains to waterways and not a public treatment facility.

Achievements for this permit year: A total of 23 markers were installed on storm drains this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability

### 3.2 MCM 2: Public Involvement/Participation

Permit Language: At a minimum, comply with applicable state, tribal, and local public notice requirements when implementing the MS4 Program. The operator shall identify, schedule, implement, evaluate and modify, as necessary, best management practices (BMPs) to meet the following public involvement/participation measurable goals:

a. Promote the availability of the operator's MS4 Program Plan and any modifications for public review and comment. Public notice shall be given by any method reasonably calculated to give actual notice of the action in question to the persons potentially affected by it, including press releases or any other forum or medium to elicit public participation. Provide access to or copies of the MS4 Program Plan or any modifications upon request of interested parties in compliance with all applicable freedom of information regulations.

b. Provide access to or copies of the annual report upon request of interested parties in compliance with all applicable freedom of information regulations.

c. Participate, through promotion, sponsorship, or other involvement, in local activities aimed at increasing public participation to reduce stormwater pollutant loads and improve water quality.

### 3.2.1 BMP: Forming Partnerships
Program Description: James Madison University seeks to build active partnerships with local groups and government agencies in respect to stormwater concerns to share information and resources whenever possible.

Measurable Goals / Expected Results: Record the partnership activities that JMU is involved in. The formation of partnerships will help to pool resources to complete shared objectives.

Achievements for this permit year: JMU continued its partnership with CSPDC, the City of Harrisonburg and the Town of Bridgewater with a grant from NFWF for a retrofit assessment project. JMU also partnered with the City of Harrisonburg for Blacks Run CleanUp Day (See BMP 3.2.5). JMU is a member of the Virginia Municipal Stormwater Association (VAMSA). JMU staff and faculty also volunteer for the Friends of the Shenandoah River which is a non-profit organization that does river monitoring.

Schedule of Activities: Continue involvement with partnerships as opportunities become available.

Responsible Department: Facilities Management - Engineering & Sustainability

3.2.2 BMP: Promote Availability of MS4 Program Plan & Reports

Program Description: Publish MS4 Program Plan and annual reports on Facilities Management website. Also provide printed copies of the MS4 Program Plan and annual reports to interested parties.

Measurable Goals / Expected Results: Record the frequency of updates to the website regarding program plan modifications and annual reports. Increase the accessibility of the information regarding the efforts JMU is taking to improve stormwater quality.

Achievements for this permit year: An up-to-date copy of the MS4 Program Plan is provided on the Facilities Management webpage at www.jmu.edu/stormwater. Copies of annual reports are also available on this web page.

Schedule of Activities: Update website as necessary to include program plan modifications

Responsible Department: Facilities Management - Engineering & Sustainability

3.2.3 BMP: Encourage Student Efforts to Improve Stormwater Quality

Program Description: Continue to support student efforts to improve stormwater quality by providing information and materials whenever possible.

Measurable Goals / Expected Results: Record the number of student activities that occur each semester which relate to stormwater quality. Increase the effectiveness of student activities by providing assistance whenever possible.

Achievements for this permit year: Refer to BMP 3.1.2 for a description of student activities related to water quality. The JMU Stormwater Coordinator also provided technical assistance to senior ISAT students performing research for capstone projects on stormwater quality and provided a lecture on Campus Stormwater Management to an Environmental Hydrology class and 3 sections of an Environmental Science class. Additionally, technical assistance was provided to sixteen groups of students that participated in EPA's 2012 Campus RainWorks Challenge.

Schedule of Activities: Offer assistance to students when requested.

Responsible Department: FM - Engineering & Sustainability, and Integrated Science & Technology
### 3.2.4 BMP: Student Water Quality Testing

**Program Description:** Students from the Environmental Instrumentation class perform water quality sampling of Newman Lake and Sibert Creek. Parameters measured include depth, water clarity, specific conductivity, pH, dissolved oxygen and Fecal Coliform / E. Coli counts. Facilities Management provides support for this activity as requested.

**Measurable Goals / Expected Results:** Record the number of students and sections of this course that is offered each semester. Increase the awareness of local water quality issues within the student body.

**Achievements for this permit year:** Students in the Environmental Instrumentation class performed water quality sampling of Newman Lake in the spring of 2013. There were a total of 22 students involved in the water quality testing.

**Schedule of Activities:** This course is scheduled to be offered in both fall and spring semesters.

**Responsible Department:** Academic Department – Integrated Science & Technology

### 3.2.5 BMP: Stream Clean-up Events

**Program Description:** Participate with the City of Harrisonburg in stream clean-up events.

**Measurable Goals / Expected Results:** Document the activities that JMU students or staff participate in related to stream clean-ups. Increase the awareness among students and staff of the opportunity to help improve the local water quality through these events.

**Achievements for this permit year:** Just over 450 volunteers collected approximately 4,600 lbs. of trash during the 16th annual Blacks Run CleanUp Day on Saturday, April 13th. Several JMU sororities, clubs and departments participated in this event. Exhibits from several groups were also onsite for educational purposes, including the Virginia Department of Forestry, Department of Environmental Quality and many more.

**Schedule of Activities:** Blacks Run/Downtown Clean-Up Day occurs annually in April.

**Responsible Department:** Facilities Management – Engineering & Sustainability

### 3.3 MCM 3: Illicit Discharge Detection and Elimination

**Permit Language:** The MS4 Program shall:

a. Develop, implement and enforce a program to detect and eliminate illicit discharges, as defined at 4VAC50-60-10, into the regulated small MS4. The Department recommends that the operator review the publication entitled “Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments”, for guidance in implementing and evaluating its illicit discharge detection and elimination program.

b. Develop, if not already completed, and maintain, an updated storm sewer system map, showing the location of all known outfalls of the regulated small MS4 including those physically interconnected to a regulated MS4, the associated surface waters and HUCs, and the names and locations of all impaired surface waters that receive discharges from those outfalls. The operator shall also estimate the acreage within the regulated small MS4 discharging to each HUC and impaired water.

c. To the extent allowable under state, tribal or local law or other regulatory mechanism, effectively prohibit, through ordinance, or other regulatory mechanism, non-stormwater discharges into the storm sewer system and implement appropriate enforcement procedures and actions.

d. Develop and implement procedures to detect and address non-stormwater discharges, including illegal dumping, to the regulated small MS4.
e. Prevent or minimize to the maximum extent practicable, the discharge of hazardous substances or oil in the stormwater discharge(s) from the regulated small MS4. In addition, the MS4 Program must be reviewed to identify measures to prevent the recurrence of such releases and to respond to such releases, and the program must be modified where appropriate. This permit does not relieve the operator or the responsible part(ies) of any reporting requirements of 40 CFR Part 110 (2001), 40 CFR Part 117 (2001) and 40 CFR Part 302 (2001) or §62.1-44.34:19 of the Code of Virginia.

f. Track the number of illicit discharges identified, provide narrative on how they were controlled or eliminated, and submit the information in accordance with Section II.E.2.

g. Notify, in writing, any downstream regulated MS 4 to which the small regulated MS4 is physically interconnected of the small regulated MS4’s connection to that system.

### 3.3.1 BMP: Storm Drain System Map

*Program Description:* The University currently has a storm sewer system GIS map and corresponding database. This map contains locations and attributes of the entire storm sewer system maintained by JMU and includes culverts, pipes, inlets, catch basins, trench drains, and outfalls. This map is used for illicit discharge tracking and recording maintenance activities.

*Measurable Goals / Expected Results:* Continue to update and maintain GIS map to ensure all structures are located. An accurate and up-to-date storm sewer system map will aid in illicit discharge detection and elimination.

*Achievements for this permit year:* The GIS map is continually updated as new structures are built or removed.

*Schedule of Activities:* Update map as new structures are completed. Report completed projects that added to the storm sewer system.

*Responsible Department:* Facilities Management – Engineering & Sustainability

### 3.3.2 BMP: Stormwater Outfall Inspections

*Program Description:* Conduct field investigations and inspections of stormwater outfalls. Monitor for dry weather discharges using visual observation, odor and other indicators to identify for possible illicit discharges.

*Measurable Goals / Expected Results:* Maintain records of outfalls that were inspected and number of illicit discharges detected. Prompt detection and elimination of illicit discharges.

*Achievements for this permit year:* A new outfall reconnaissance was completed, locating a total of 87 outfalls within JMU’s jurisdiction. There were 139 outfall inspections conducted this permit cycle. No illicit discharges were detected this permit cycle.

*Schedule of Activities:* Continue current program and evaluate annually. At a minimum, inspect at least 50 of outfalls per year.

*Responsible Department:* Facilities Management – Engineering & Sustainability

### 3.3.3 BMP: Identify Locations with a High Probability of Illicit Discharges

*Program Description:* Create a prioritized list of locations across the University where a higher probability of illicit discharges exists. Perform regular monitoring of these locations to ensure compliance with existing regulations.

*Measurable Goals / Expected Results:* Development of a prioritized list showing potential locations where illicit discharges could enter the storm sewer system. Create a map of these locations.
identified locations. Increase the likelihood of prevention and early detection and of illicit discharges.

Achievements for this permit year: Using the criteria mentioned within the stormwater regulations, 8 locations have been identified as high-priority facilities. These areas have been included in JMU's GIS and are regularly monitored for illicit discharges.

Schedule of Activities: Continue current program and evaluate annually. Monitor locations listed throughout the permit cycle.

Responsible Department: Facilities Management - Engineering & Sustainability

3.3.4 BMP: Spill Prevention Control & Countermeasure (SPCC) Plan

Program Description: A SPCC Plan was initially prepared for the University in 1975 and last updated in February of 2010. Continue to implement plan to reduce the risk of hazardous substances from entering the storm sewer system.

Measurable Goals / Expected Results: Maintain and update SPCC plan. Reduce the risk of hazardous substances from entering the storm sewer system.

Achievements for this permit year: SPCC plan continues to be implemented.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Power Plant

3.3.5 BMP: Trace and Remove Illicit Discharges

Program Description: Promptly address illicit discharges and utilize storm sewer system map to determine source of discharge. Determine best method of eliminating the discharge in a timely manner.

Measurable Goals / Expected Results: Track the number of illicit discharges detected and eliminated through a database. Timely removal of illicit discharge from storm sewer system.

Achievements for this permit year: No illicit discharges were reported this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management - Engineering & Sustainability

3.3.6 BMP: Illicit Discharge Detection & Elimination (IDDE) Education

Program Description: Refer to BMP 3.1.7 and 3.1.8. Establish pollution reporting hotline and storm drain marking campaign to increase awareness of what illicit discharges are.

Measurable Goals / Expected Results: Refer to BMP 3.1.6, 3.1.7 and 3.1.8. Increase the awareness among students and staff that storm drains are only intended to receive stormwater.

Achievements for this permit year: An annual Stormwater Pollution Prevention/Illicit Discharge Detection and Elimination presentation has been created for educating staff. Over a week long period, four presentations were given reaching 438 facilities management staff covering topics of stormwater pollution prevention, IDDE, good housekeeping and reporting of water quality issues. This presentation reached approximately 75% of the target audience. Beginning in April 2013, a Stormwater Pollution Prevention/Illicit Discharge Detection and Elimination presentation has
become part of new employee orientations. To date four presentations have been given for 15 new employees.

*Schedule of Activities:* Refer to BMP's 3.1.6, 3.1.7 and 3.1.8.

*Responsible Department:* Facilities Management - Engineering & Sustainability

### 3.3.7 BMP: Notification of Downstream MS4 Interconnections

*Program Description:* Notify downstream MS4’s of new outfalls that interconnect with their system.

*Measurable Goals / Expected Results:* Record when notification was given to the City of Harrisonburg. The City of Harrisonburg and VDOT has been made aware of JMU's physical interconnection with their system.

*Achievements for this permit year:* JMU continues to interconnect with the City of Harrisonburg and VDOT. No new notifications were required.

*Schedule of Activities:* Notification has been sent to MS4’s downstream.

*Responsible Department:* Facilities Management - Engineering & Sustainability

### 3.4 MCM 4: Construction Site Runoff Control

**Permit Language:**

a. The operator shall develop, implement, and enforce procedures to reduce pollutants in any stormwater runoff to the regulated small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act. Additionally, reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more. The procedures must include the development and implementation of, at a minimum:

1. An ordinance or other mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance with the Erosion and Sediment Control Law and attendant regulations, to the extent allowable under state, tribal, or local law. Such ordinances and other mechanisms shall be updated as necessary.
2. Requirements for construction site owners/operators to implement appropriate erosion and sediment control best management practices as part of an erosion and sediment control plan that is consistent with the Erosion and Sediment Control Law and attendant regulations and other applicable requirements of state, tribal, or local law. Where determined appropriate by the operator, the operator shall encourage the use of structural and non-structural design techniques to create a design that has the goal of maintaining or replicating predevelopment runoff characteristics and site hydrology.
3. Requirements for construction site operators to secure authorization to discharge stormwater from construction activities under a VSMP permit for construction activities that result in a land disturbance of greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act. Additionally, reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the procedures if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more;
4. Procedures for receipt and consideration of information submitted by the public; and
(5) Procedures for site inspection and enforcement of control measures.
b. The operator shall ensure that plan reviewers, inspectors, program administrators and construction site owners/operators obtain the appropriate certifications as required under the Erosion and Sediment Control Law.
c. The operator shall track regulated land-disturbing activities and submit the following information in accordance with Section II E 2:
   (1) Total number of regulated land-disturbing activities; and
   (2) Total disturbed acreage.

3.4.1 BMP: ESC Annual Standards and Specifications

Program Description: JMU initially received approval from DCR to operate its own erosion and sediment control program under a set of annual standards and specifications on July 6, 2009. JMU continues to submit ESC standards and specifications to DCR on an annual basis to continue its program. Refer to Appendix for a complete copy of the JMU ESC Annual Standards & Specifications.

Measurable Goals / Expected Results: JMU’s Erosion & Sediment Control Annual Standards and Specifications shall be kept current. With annual submissions, standards will keep up to date with any changes DCR implements into the Virginia Erosion and Sediment Control Law, Regulations, and Certification Regulations.

Achievements for this permit year: The JMU ESC Annual Standards and Specifications were renewed for 2013.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability

3.4.2 BMP: Requirement for ESC Plans and Review

Program Description: Site specific ESC plans shall be prepared for all JMU projects involving a regulated land-disturbing activity as defined in §10.1-560 of Virginia Erosion and Sediment Control Law and submitted to JMU’s Facilities Management Engineering department for review. Plans will be reviewed by a certified plan reviewer.

Measurable Goals / Expected Results: Plan review process will be able to be tracked through use of database and reports created as needed.

Achievements for this permit year: All JMU projects which disturbed over 10,000 square feet were required to prepare and submit a plan for review with adequate erosion and sediment control measures. See section 4.12 for a list of projects requiring an approved ESC plan for this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability

3.4.3 BMP: Contract Language

Program Description: All contractors performing land disturbing activities on campus property are required through contract documents to follow existing E&S requirements and obtain all applicable permits before construction activity commences. The CO-7 General Conditions of the Construction Contract as issued by DGS and included in every contract, stipulates in Section 31(e) that:
"The Contractor shall have, On-Site, an employee certified by the Department of Conservation and Recreation as a Responsible Land Disturber who shall be responsible for the installation, inspection and maintenance of erosion control and stormwater management measures and devices. The Contractor shall prevent Site soil erosion, the runoff of silt and/or debris carrying water from the Site, and the blowing of debris off the Site in accordance with the applicable requirements and standards of the Contract and the Virginia Department of Conservation and Recreation's Erosion and Sediment Control Regulations and the Virginia Stormwater Management Regulations."

**Measurable Goals / Expected Results:** Ensure contractors comply with the Erosion and Sediment Control Law and attendant regulations and implement applicable ESC controls.

**Achievements for this permit year:** All site projects at JMU included contract language requiring certified personnel be on-site for land disturbing activities. See section 4.12 for a list of projects requiring an approved ESC plan for this permit cycle.

**Schedule of Activities:** Continue current program and evaluate annually.

**Responsible Department:** Facilities Management – Engineering & Sustainability

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### 3.4.4 BMP: Construction and Professional Services Manual

**Program Description:** In addition to contract language all work performed on University property is required to comply with the Construction and Professional Services Manual (CPSM) published by the Bureau of Capital Outlay Management which requires that E&S plans (for land disturbances over 10,000 sq ft.) and stormwater management plans (for land disturbances over 1 acre) be submitted to DCR for approval before construction activity is allowed to begin (CPSM 902.2).

Furthermore, language is included in construction specifications for each project as required by CPSM 902.2.4 stating that contractors are responsible for satisfying any and all erosion control and stormwater management requirements for any land disturbing activities.

**Measurable Goals / Expected Results:** Ensure contractors obtain the necessary approval and applicable permits from DCR before any land disturbing activities begin.

**Achievements for this permit year:** All site projects at JMU received proper approval from local and state agencies before site work began. See section 4.12 for a list of projects requiring an approved ESC and/or SWM plan for this permit cycle.

**Schedule of Activities:** Continue current program and evaluate annually.

**Responsible Department:** Facilities Management – Engineering & Sustainability

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### 3.4.5 BMP: Requirement for Pre-Construction Meeting with Contractors

**Program Description:** JMU will notify the local DCR office of construction start dates and invite DCR personnel to the pre-construction meeting to discuss the erosion and sediment control and stormwater management plans with the contractor.

**Measurable Goals / Expected Results:** Approved plans will be able to be tracked through a database and reports created as needed. Ensure contractors fully understand the ESC measures shown in plans before construction begins.

**Achievements for this permit year:** Pre-Construction meetings were held to discuss erosion and sediment control measures and stormwater management facilities for all JMU site projects...
requiring an ESC and/or SWM plan. DCR was invited to meetings with projects that had 1 acre or more of land disturbance. See section 4.12 for a list of projects requiring an approved ESC and/or SWM plan for this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability

3.4.6 BMP: Requirement for ESC Site Inspections

Program Description: Projects approved for land-disturbance shall be inspected for compliance with the approved plan. A database shall be used to record inspections and violations for each project. Site inspector shall be certified by DCR for inspections. During site visits, all applicable ESC measures will be visually assessed to ensure continued performance of their intended function. Any comments and/or violations noted in an inspection report and forwarded to the project manager, RLD, and any other persons.

Site inspections will be made during or immediately following initial installation of erosion and sediment controls, at least once in every two-week period, within 48 hours following any runoff producing storm event, and at the completion of the project prior to the release of any performance bonds.

Measurable Goals / Expected Results: Track the number of inspections and noted violations through the use of a database. Routine site inspections can help identify problems sooner to reduce ESC related problems.

Achievements for this permit year: JMU currently has 3 individuals that are certified as a combined administrator for ESC. A total of 187 ESC inspections were conducted at 8 approved sites. Of those 187 inspections, 33 violations were noted. Violations were typically in reference to achieving stabilization, cleaning construction entrances and repairing, replacing or installing erosion control measures. All incidents were addressed in an acceptable manor and time frame, thus requiring no further methods of enforcement. Most items observed on-site are noted as comments on inspection reports and taken care of within 24 hours. Copies of inspection reports are kept on file and are available upon request.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability

3.4.7 BMP: Pollution Reporting Hotline

Program Description: Refer to BMP 3.1.7. Establish pollution reporting hotline and provide the public a method to share any information regarding stormwater runoff and construction activities. Any information submitted by the public will be reviewed by a JMU project manager.

Measurable Goals / Expected Results: Track the number of calls and emails received through the hotline number. Increase the public knowledge and awareness of issues regarding stormwater runoff from construction sites.

Achievements for this permit year: There were no issues reported through the hotline this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability
3.5 MCM 5: Post-Construction Stormwater Management

Permit Language:
a. The operator shall develop, implement, and enforce procedures to address stormwater runoff to the regulated small MS4 from new development and redevelopment projects that disturb greater than or equal to one acre, or equal to 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Destination and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act, including projects less than one-acre that are part of a larger common plan of development or sale, that discharge into the regulated small MS4. The procedures must ensure that controls are in place that would prevent or minimize water quality and quantity impacts in accordance with this section.

b. The operator shall:
   (1) Develop and implement strategies which include a combination of structural and/or nonstructural best management practices (BMPs) appropriate for the community. Where determined appropriate by the operator, the operator shall encourage the use of structural and non-structural design techniques to create a design that has the goal of maintaining or replicating predevelopment runoff characteristics and site hydrology;
   (2) Use an ordinance, regulation, or other mechanism to address post-construction runoff from new development and redevelopment projects to ensure compliance with the Virginia Stormwater Management Act and attendant regulations, and to the extent allowable under state, tribal or local law. Such ordinances and other mechanisms shall be updated as necessary;
   (3) Require construction site owners/operators to secure authorization to discharge stormwater from construction activities under a VSMP permit for new development and redevelopment projects that result in a land disturbance of greater than or equal to one acre or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation Act. Additionally, reduction of stormwater discharges from construction activity disturbing less than one acre must be included in the procedures if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more;
   (4) Require adequate long-term operation and maintenance by the owner of structural stormwater management facilities through requiring the owner to develop a recorded inspection schedule and maintenance agreement [to the extent allowable under state, tribal or local law or other legal mechanism]. The operator shall additionally develop, through the maintenance agreement or other method, a mechanism for enforcement of maintenance responsibilities by the operator if they are neglected by the owner;
   (5) Conduct site inspection and enforcement measures consistent with the Virginia Stormwater Management Act and attendant regulations;
   (6) Track all known permanent stormwater management facilities that discharge to the regulated small MS4 and submit the following information in accordance with Section II E 2:
      (a) Type of structural stormwater management facility installed as defined in the Virginia Stormwater Management Handbook;
      (b) Geographic location HUC);
      (c) Where applicable, the impaired surface water that the stormwater management facility is discharging into; and
      (d) Number of acres treated.

3.5.1 BMP: Compliance with Existing Regulations

Program Description: The University relies on existing Virginia Stormwater Management Regulations 4VAC 3-20 implemented by the Department of Conservation and Recreation to address stormwater runoff from new development and redevelopment projects occurring on campus. In choosing appropriate Best Management Practices (BMPs), DCR encourages James Madison University to participate in a combination of structural and non-structural BMPs when developing any site on campus to minimize water quality impacts resulting from post-construction runoff from new development and redevelopment.
Measurable Goals / Expected Results: Track the number of regulated land-disturbing activities and report the total disturbed acreage. Ensure construction activity operators obtain the necessary approval from DCR for land disturbing activities.

Achievements for this permit year: See section 4.12 for a list of projects requiring an approved ESC and/or SWM plan for this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Engineering & Sustainability

3.5.2 BMP: Maintenance of Stormwater Management Facilities

Program Description: Continue to implement the University's stormwater management policy which states that each structural stormwater management facility will be inspected on a semi-annual basis.

Measurable Goals / Expected Results: Record the number of structural management facilities that are inspected each year and the number of facilities that need more than regular maintenance. Ensure structural stormwater management facilities are maintained and operating properly.

Achievements for this permit year: JMU has 64 structural BMPs located on campus, of which 13 were added to the database this permit cycle. A total of 123 inspections were performed this permit cycle. Five BMPs were found to require more than regular maintenance. One basin requires the contributing channel to be re-established, one Filterra unit needs filter cartridges replaced, and three StormCeptor units need sediments/debris cleaned out. These deficiencies were found late in the permit cycle and have not been completed as of yet, but quotes from contractors have been received.

Schedule of Activities: Each stormwater management facility shall be inspected on a semi-annual basis, and maintenance reports forwarded to Grounds/Landscaping as needed. Results of inspections will be kept in a database. The number of inspections and the number of facilities needing repairs above normal maintenance will be reported.

Responsible Department: Facilities Management – Engineering & Sustainability

3.5.3 BMP: Map Structural BMP’s

Program Description: Track all known permanent stormwater management facilities that discharge to the regulated small MS4.

Measurable Goals / Expected Results: Maintain list of facilities and other required information about facility. Report number of structural BMPs added to system. Comply with conditions of MS4 General Permit.

Achievements for this permit year: A GIS map and separate database continues to be updated with all known SWM facilities. See section 4.13 for a list of BMPs added this permit cycle.

Schedule of Activities: Map new structures as built.

Responsible Department: Facilities Management – Engineering & Sustainability

3.6 MCM 6: Pollution Prevention/Good Housekeeping

Permit Language: Develop and implement an operation and maintenance program consistent with the MS4 Program Plan that includes a training component and has the ultimate goal of preventing or reducing pollutant
runoff from municipal operations. Using training materials including those available from EPA, state, tribe, or other organizations, the program shall include employee training to prevent and reduce stormwater pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and MS4 maintenance. The operator is encouraged to review the Environmental Protection Agency's (EPA's) National Menu of Stormwater Best Management Practices for ideas and strategies to incorporate into its program.

The operator shall identify, implement, evaluate and modify, as necessary, best management practices (BMPs) to meet the following pollution prevention/good housekeeping for municipal operations measurable goals:

1. Operation and maintenance programs including activities, schedules, and inspection procedures shall include provisions and controls to reduce pollutant discharges into the regulated small MS4 and receiving surface waters.
2. Illicit discharges shall be eliminated from storage yards, fleet or maintenance shops, outdoor storage areas, rest areas, waste transfer stations, and other municipal facilities.
3. Waste materials shall be disposed of properly.
4. Materials that are soluble or erodible shall be protected from exposure to precipitation.
5. Materials, including but not limited to fertilizers and pesticides, that have the potential to pollute receiving surface waters shall be applied according to manufacturer’s recommendations.
6. For state agencies with lands where nutrients are applied, nutrient management plans shall be developed and implemented in accordance with the requirements of §10.1-104.4 of the Code of Virginia.

3.6.1 BMP: Spill Prevention Control and Countermeasure (SPCC) Plan

Program Description: A SPCC Plan was initially prepared for the University in 1975 and last updated in February of 2010. Continue to implement plan to reduce the risk of hazardous substances from entering the storm sewer system.

Measurable Goals / Expected Results: Maintain and update SPCC plan. Reduce the risk of hazardous substances from entering the storm sewer system.

Achievements for this permit year: SPCC plan continues to be implemented.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Power Plant

3.6.2 BMP: Hazardous Materials and Chemical Storage

Program Description: Inspect and evaluate storage locations and method of storing hazardous materials and chemicals to ensure compliance with State and EPA regulations and ensure proper disposal of these materials. Continue to phase out the use of hazardous materials and chemicals whenever possible.

Measurable Goals / Expected Results: As part of the project to expand the current chemical inventory system, ensure that the types, quantities, and storage locations of hazardous materials are properly identified. Perform periodic audits to verify accuracy of the records and monitor overall inventory for opportunities to reuse, recycle, or reduce the amount of hazardous materials at JMU. Ensure hazardous materials are properly stored. Report the number of spills. Reduction in the overall presence of hazardous materials on Campus.

Achievements for this permit year: There were no spills reported with storage of hazardous materials. Below is a table explaining four clean-ups performed during this permit cycle. All clean-ups were contained before transporting to storm sewer system.

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<tr>
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<td>Hydraulic line break on backhoe</td>
<td>~ 1 gallon</td>
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<tr>
<td>10/18/12</td>
<td>Hydraulic line break on trash truck</td>
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</table>
3.6.3 **BMP: Oil & Antifreeze Recycling**

*Program Description:* Continue to collect and recycle used oil and antifreeze.

*Measurable Goals / Expected Results:* Monitor the locations where vehicle maintenance operations take place. Document any incidents where waste materials were improperly disposed of. Ensure waste materials are properly disposed of.

*Achievements for this permit year:* There were no documented incidents of improper disposal of oil and antifreeze from activities involving the Recycling/Waste Management Department. Approximately 589 pounds of antifreeze, 9,250 pounds of oil and 2,380 pounds of oil filters were recycled.

*Schedule of Activities:* Continue current program and evaluate annually.

*Responsible Department:* Facilities Management – Recycling/Waste Management

3.6.4 **BMP: Storage of Erodible Materials**

*Program Description:* Evaluate the storage of all soil, sand and other erodible materials on campus to ensure proper techniques are being utilized to minimize stormwater pollution.

*Measurable Goals / Expected Results:* Monitor the locations where erodible materials are being stored to check for the possibility of stormwater pollution. Prevent the storage of erodible materials on campus from causing stormwater pollution.

*Achievements for this permit year:* One soil stockpile on campus is operating under an approved ESC plan and is routinely inspected to ensure it is properly managed. This project is known as the South Main Spoils Site and is listed in section 4.12.

*Schedule of Activities:* Continue current program and evaluate annually.

*Responsible Department:* Facilities Management – Engineering & Sustainability

3.6.5 **BMP: Salt Storage, Application and Snow Removal**

*Program Description:* Salt is currently stored under a cover and on an impervious surface to minimize the amount of infiltration and runoff that leaves the site. The minimum amount of salt necessary is being used for deicing and more environmentally friendly alternatives are currently being evaluated by the Landscaping Department. Following a storm event where salt or other materials are applied, regularly scheduled street sweeping will occur to remove the materials from roadways and parking lots to prevent it from entering the storm sewer system. Also, whenever possible, snow stockpiles will be stored in a way that they do not block stormwater inlets and away from environmentally sensitive areas such as streams, lakes and swales.

*Measurable Goals / Expected Results:* Document the estimated amount of salt applied each winter and the other types of materials applied to aid in ice and snow removal. Ensure snow and ice removal on campus is done in a manner that minimizes stormwater pollution.
Achievements for this permit year: Approximately 800 tons of salt and 400 bags of Ice Mag (50 lb. bags) were used for snow removal this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management - Operations

3.6.6 BMP: Vehicle and Equipment Washing

Program Description: The University has a contract with a car wash vendor where the majority of vehicles are washed. Equipment is washed at the Sports Park facility or the Main Street Landscaping facility. Continue to work with the Landscaping Department to determine suitable locations to wash their equipment.

Measurable Goals / Expected Results: Monitor the locations where vehicles or equipment are washed and seek alternative washing practices to reduce stormwater pollution. Reduction in illicit discharges from vehicle and equipment washing operations.

Achievements for this permit year: Vehicle and equipment washing are done at approved locations. Locations are mentioned during annual and new employee stormwater pollution prevention training.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Operations

3.6.7 BMP: Employee Training

Program Description: A “Stormwater Pollution Prevention/IDDE” presentation has been developed for employee training. This training is offered once a year for Facilities Management (FM) staff and during FM new employee orientation. Material in this presentation teaches basic stormwater information, stormwater pollution prevention, good housekeeping measures, and how to recognize and report illicit discharges.

Appropriate emergency response employees shall have training in spill response.

Measurable Goals / Expected Results: Document the number of individuals which attend training when it is offered. Increase the overall awareness of the impacts of stormwater and the measures that the University is undertaking to improve stormwater quality.

Achievements for this permit year: Facilities Management is primarily responsible for maintenance of buildings and grounds. Over a week long period, twelve presentations were given reaching 438 facilities management staff covering topics of stormwater pollution prevention, IDDE, good housekeeping and reporting of water quality issues. Beginning in April 2013, a Stormwater Pollution Prevention/Illicit Discharge Detection and Elimination presentation has become part of FM new employee orientations. To date four presentations have been given for 15 new employees. Twelve employees completed a refresher course for “Hazardous Waste Operations and Emergency Response” in December 2012.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management - Engineering & Sustainability

3.6.8 BMP: Parking Lot and Street Sweeping
Program Description: The University owns and regularly operates a street sweeper to pick up litter and debris from parking lots and streets on campus. All campus parking lots and streets are scheduled to be swept three times each month, or on an as needed basis, with additional measures taken to address the cleanup of parking lots that are used during football games.

Measurable Goals / Expected Results: Record the number of times the street sweeper cleans campus streets and parking lots. Reduce the amount of sediment and debris that enters the storm sewer system from streets and parking lots.

Achievements for this permit year: Streets were typically swept four times a month this permit cycle, with approximately 6.7 tons of material from the sweeper taken to the landfill.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Operations

3.6.9 BMP: Storm Structure Maintenance and Cleaning

Program Description: Storm structures are inspected and cleaned by Facilities Management staff to ensure they remain free of obstructions and to prevent sediment and other pollutants from entering the storm sewer system.

Measurable Goals / Expected Results: Record the number of structures cleaned and/or man-hours spent performing maintenance on storm structures. Reduce the amount of sediment and debris that enters the storm sewer system.

Achievements for this permit year: Approximately 80 man-hours were spent performing maintenance to storm structures this permit cycle.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management – Landscaping

3.6.10 BMP: Outdoor Trash, Ground Litter and Landscaping Debris Collection

Program Description: The Recycling Department oversees the collection of outdoor trash and ground litter. The mission statement of the Recycling Department is “to reduce the flow of waste and materials into the landfill, educate the JMU community on the proper disposal of waste items as well as the future impact of global waste stream issues. The Grounds Department is responsible for the collection of landscaping debris and performs this activity on a regular basis. During the fall there are up to 20 people performing leaf collection daily.

Measurable Goals / Expected Results: Record the activities that the Recycling and Landscaping Department undertakes regarding outdoor trash, litter and landscaping debris collection. Reduce the amount of trash, ground litter, and landscaping debris that enters the storm sewer system.

Achievements for this permit year: There was approximately 5200 total hours dedicated to ground litter cleanup during this report cycle, with four part-time employees working during the schools regular sessions at a combined 116 hours per week, and approximately 60 hours per week during the summer months.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: FM – Landscaping, and FM – Recycling/Waste Management
3.6.11 BMP: Fertilizer & Pesticide Application

Program Description: The application of all fertilizers and pesticides will be conducted in accordance with the Virginia Department of Agriculture and Consumer Services (VDACS) rules and regulations for agricultural chemical operations. The University currently has an Integrated Pest Management (IPM) program which seeks to control pests with a minimum of pesticide use while maximizing effectiveness and cost efficiency. A joint project between Facilities Management staff, academic faculty, and students is underway to develop a document that outlines all pesticides used on campus and identify the most environmentally friendly product that may be used for a particular application. The University also has a Nutrient Management Plan which outlines the proper application of fertilizer. Only property trained and/or certified employees or contractors will apply fertilizer or pesticides on campus.

Measurable Goals / Expected Results: Record the number of certified applicators for fertilizer and pesticides. Ensure the proper application of fertilizer and pesticides.

Achievements for this permit year: JMU has 22 Certified Fertilizer Applicators and 20 Certified Pesticide Applicators.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: Facilities Management - Operations

3.6.12 BMP: Nutrient Management Plan

Program Description: The University is currently implementing a Nutrient Management Plan. The Nutrient Management Plan covers all lawn and landscaped areas of the University that receive nutrients and outlines the rates and frequencies that nutrients may be applied. The plan also covers best practices to follow regarding the application of these nutrients. A copy of this plan can be located in the office of the Landscape Manager and the Stormwater Coordinator.

Measurable Goals / Expected Results: Maintain records of nutrient applications per requirements outlined in Nutrient Management Plan. Ensure nutrients are applied in a manner that will minimize their impact on stormwater quality.

Achievements for this permit year: The University’s Nutrient Management Plan has been updated and approved by DCR on August 24, 2012 and is currently being implemented. Application records are kept on file and are available upon request.

Schedule of Activities: Continue current program and evaluate annually.

Responsible Department: FM - Engineering & Sustainability, and FM - Operations

SECTION 4: ANNUAL REPORT INFORMATION

4.1 Modification to Operator’s Department Roles & Responsibilities

There were no modifications to the operator’s department's roles and responsibilities in this permit year. JMU is continuing to operate their own erosion and sediment control program under a set of annual standards and specifications.

4.2 New MS4 Outfalls

No new outfalls were added to the storm sewer system. With the acquisition of additional property known as the Rockingham Cooperative property consisting of approximately 7.86 acres, three existing outfalls
from the City of Harrisonburg were added to James Madison University’s storm sewer system.

4.3 Signed Certification

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure 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 is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

Print Name: Dale Chestnut
Title: Stormwater Coordinator
Signature: __________________________ Date: 9/1/13

4.4 Status of Compliance with Permit Conditions

A review of the MS4 Program Plan currently implemented at JMU has found that we are in compliance with all conditions of the permit. An assessment of the identified BMPs has determined that they are appropriately addressing the minimum control measures outlined in the MS4 General Permit. The progress towards achieving the identified measurable goals for each of the minimum control measures is included in Section 3 of this report.

4.5 Results of Information Collected and Analyzed

The results of information collected by the students in the Environmental Instrumentation course (BMP 3.2.4) is used for reference purposes only and is not included in this report.

4.6 Summary of Future Stormwater Activities

A summary of future activities for each BMP is listed in Section 3 with each individual BMP measure.

4.7 Modifications to BMPs or Measurable Goals

BMP 3.15 Institute for the Stewardship of the Natural World: Changed BMP name to “Office of Environmental Stewardship and Sustainability” to reflect an updated organizational structure.

BMP 3.1.6 Distribute Educational Materials/Promote Education: Modifications were made in preparation to meet upcoming changes to the MS4 General Permit to annually conduct education and outreach activities designed to reach an equivalent 20% of each high-priority issue target audience.

BMP 3.3.2 Stormwater Outfall Inspections: Changed total requirement for outfall inspections to a minimum of 50 annually per section II-B-3

BMP 3.6.5 Salt Storage, Application and Snow Removal: Pre-treatment for snow and ice is no longer used.

BMP 3.6.11 Pesticide Application: Modified to also include fertilizer application.

4.8 Notice that Operator is Relying on another Government Entity

JMU is currently not relying on another government entity to satisfy any of the permit obligations.

4.9 Approval Status of any Programs Pursuant to Section II C
Currently, no existing program has required the implementation of any minimum control measures pursuant to Section II C.

4.10 **Information Pursuant to Section 1B 9**

There are currently no waste load allocations assigned to JMU.

4.11 **Illicit Discharges Identified**

During the MS4 Permit Year V, there were no illicit discharges reported in the JMU storm sewer system.

4.12 **Regulated Land-Disturbing Activities**

During this permit cycle, 8 regulated land-disturbing activities were active.

<table>
<thead>
<tr>
<th>Project</th>
<th>Disturbed Acreage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-Op Demolition</td>
<td>2.61</td>
</tr>
<tr>
<td>Demolition: Grace St./Walnut Lane</td>
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<tr>
<td>Duke Hall Renovations</td>
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<tr>
<td>Port Republic Road Sports Complex</td>
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<tr>
<td>Railroad Culvert Crossing</td>
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<td>Slope Remediation</td>
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<td>South Main Spoils Site</td>
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<tr>
<td>Student Success Center</td>
<td>2.70</td>
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<td><strong>Total</strong></td>
<td><strong>75.43</strong></td>
</tr>
</tbody>
</table>

4.13 **New Stormwater Management Facility Data**

During this permit cycle, 13 BMPs were added to JMU's database and GIS.

<table>
<thead>
<tr>
<th>MS4 Permit Year V</th>
<th>Permit No.</th>
<th>James Madison University</th>
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<tbody>
<tr>
<td>VAR040112</td>
<td>PS22</td>
<td>Blacks Run 66.04</td>
</tr>
<tr>
<td>Manufactured BMP</td>
<td>PS22</td>
<td>Blacks Run 66.04</td>
</tr>
<tr>
<td>Detention Basin</td>
<td>PS22</td>
<td>Blacks Run 16.51</td>
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<tr>
<td>Manufactured BMP</td>
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<td>Infiltration</td>
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<td>Blacks Run 20.68</td>
</tr>
</tbody>
</table>

4.14 **Third Party Agreements**

The University does not have any signed agreements with a third party to implement any of the minimum control measures.

4.15 **MS4 Program Plan Comments**

No written comments were received regarding the MS4 Program Plan.

4.16 **Other Information**
JMU has contracted Vanasse Hangen Brustlin, Inc. (VHB) to provide a Comprehensive Campus Stormwater Management Master Plan to be used as a planning tool in order to meet the required pollutant reductions. This plan is currently being reviewed by DEQ.