

University of Maryland, College Park
National Pollutant Discharge Elimination
System MS4 Phase II Annual Report 2015
General Discharge Permit #05-SF-5501



Table of Contents

I.	NPDES MS4 PERMIT UMCP AUTHORIZATION	1
II.	UMCP MS4 PERMIT ADMINISTRATION	2
A.	Reporting Period	2
B.	Contact Information	2
C.	UMCP NPDES MS4 Organizational Structure	2
D.	Financial Analysis/Budget Impact	3
III.	2015 IMPLEMENTATION OF THE SIX MINIMUM CONTROL MEASURES	4
A.	Personnel Education and Outreach	4
B.	Public Involvement and Participation	6
C.	Illicit Discharge Detection and Elimination (IDDE)	9
D.	Construction Site Stormwater Runoff Control	11
E.	Post Construction Stormwater Management	12
F.	Pollution Prevention and Good Housekeeping	15

List of Tables

Table 1.	Personnel Education and Outreach BMP Implementation Table	5
Table 2.	Public Involvement and Participation BMP Implementation Table	8
Table 3.	Illicit Discharge Detection and Elimination BMP Implementation Table	11
Table 4.	Construction Site Stormwater Runoff Control Implementation Table	12
Table 5.	Post Construction Stormwater Management Implementation Table	14
Table 6.	Pollution Prevention and Good Housekeeping Implementation Table	17

List of Attachments

- Attachment A. Rain Garden Brochure Given Out at Volunteer Events
- Attachment B. Map of Current UMCP Storm Drain System
- Attachment C. UMCP Stormwater Inspection and Maintenance Program
- Attachment D. Map of UMCP Stormwater Management Facilities
- Attachment E. UMCP Campus Tree Management Plan

List of Acronyms

AWRP	Anacostia Watershed Restoration Partnership
AWS	Anacostia Watershed Society
BLM	Facilities Management—Department of Building & Landscape Maintenance
BMP	Best Management Practice
BWPFS	Baltimore-Washington Partners for Forest Stewardship
CAD	Computer-Aided Design
CBT	Chesapeake Bay Trust
COG	Metropolitan Washington Council of Governments
D&C	Facilities Management—Department of Design & Construction
DESSR	Department of Environmental Safety, Sustainability & Risk
E&E	Facility Management—Department of Engineering & Energy
E&SC	Erosion & Sediment Control
ESD	Environmental Site Design
FM	Facilities Management
FP	Facilities Management—Department of Facilities Planning
GIS	Geographic Information Systems software
HVAC	Heating, Ventilation, and Air Conditioning
IDDE	Illicit Discharge Detection and Elimination
IPM	Integrated Pest Management
MCM	Minimum Control Measure
MDE	Maryland Department of the Environment
MEP	Maximum Extent Practicable
MES	Maryland Environmental Services
MS4	Municipal Separate Storm Sewer System
NNI	Non-native invasive
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OS	Office of Sustainability
SPCC Plan	Spill Prevention Control and Countermeasure Plan
UMD/UMCP	University of Maryland-College Park

I. NPDES MS4 PERMIT UMCP AUTHORIZATION

The University of Maryland-College Park (UMCP) owns and operates a municipal separate storm sewer system (MS4) and, therefore, must comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from State and Federal Small Municipal Separate Storm Sewer Systems. Maryland Department of the Environment (MDE) has regulatory authority to implement this program under their General Discharge Permit No. 05-SF-5501. UMCP submitted a Notice of Intent (NOI) in January of 2005, and MDE authorized coverage on October 20, 2005. Permit 05-SF-5501 expired on November 12, 2009; however, MDE has been managing the permit administratively and instructed MS4 permit holders to continue to implement the existing requirements until a new permit is issued.

The NPDES MS4 permit requires that permit holders implement Best Management Practices (BMPs) for the following Minimum Control Measures (MCMs):

- Personnel Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post Construction Management
- Pollution Prevention and Good Housekeeping

This 2015 annual report presents progress made on each of these MCMs, as well as challenges faced and steps taken to improve future performance.

II. UMCP MS4 PERMIT ADMINISTRATION

A. Reporting Period

This report covers the period from January 1, 2015 through December 31, 2015.

B. Contact Information

Agency Name: University of Maryland-College Park Campus

Contact Person and Title: Stephen Reid, Environmental Planner

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C. UMCP NPDES MS4 Organizational Structure

For calendar year 2015, the Department of Environmental Safety, Sustainability & Risk (DESSR; formerly the Department of Environmental Safety) managed and administered the NPDES MS4 permit. Several units/departments helped implement MS4 permit requirements; however, the following units/departments were instrumental in implementing the BMPs within the six MCMs:

- DESSR—Environmental Affairs (Primary Manager)
- Facilities Management—Department of Facilities Planning (FM-FP)
- Facilities Management—Department of Building & Landscape Management (FM-BLM)
- Facilities Management—Department of Design & Construction (FM-D&C)
- Facilities Management—Department of Engineering & Energy (FM-E&E)
- DESSR—Office of Sustainability (OS)

As seen above, several units within the Facilities Management (FM) are actively involved in implementing permit requirements. Realizing this role and to better implement permit requirements, UMCP transferred management of the MS4 permit to FM in 2016. FM is the main organization within the campus that operates and maintains the storm drain system and associated stormwater management facilities. This change will allow UMCP to better integrate permit requirements into daily management activities.

D. Financial Analysis/Budget Impact

Compliance with the NPDES MS4 program requires significant funding, which is provided through both operational and capital budgets. Much of the MS4 requirements are implemented by UMCP staff that are either fully or partially dedicated to this effort. The following departments dedicate staff to this program as follows:

- DESSR: Four full-time employees dedicate at least 20 percent of their time to MS4/stormwater issues.
- FM-BLM: One full-time staff inspects and maintains stormwater facilities, and several other staff dedicate time to public outreach and volunteer events, forest/tree management, and landscape maintenance.
- FM-FP: One full-time staff dedicates at least 50 percent of the time to MS4 permit and stormwater regulations. In addition, several other staff members are partially dedicated to supporting stormwater inventory and GIS efforts.
- FM-D&C: One full-time staff dedicates 25 percent of the time reviewing stormwater management designs and stormwater compliance.
- FM-E&E: Two full-time staff members dedicate at least 20 percent of the time to engineering and water-related issues.

In addition to labor costs, UMCP dedicated significant funds for the maintenance of stormwater management facilities. In late 2015, \$200,000 was secured to hire contractors and buy necessary materials to ensure facilities are consistent with MDE standards. It is noted that while these funds were secured in late 2015, the money was primarily spent in 2016. In addition, capital funds were spent on building new stormwater management facilities as part of new construction projects.

III. 2015 IMPLEMENTATION OF THE SIX MINIMUM CONTROL MEASURES

This section presents progress made on each of the six MCMs during 2015. BMPs selected for each MCM are included, and measurable progress towards implementing each BMP is documented. In addition, future steps to better implement each MCM are discussed.

A. Personnel Education and Outreach

UMCP is first and foremost an academic and research institution. As such, the over 50,000 students, faculty, and staff that come to campus every day have the opportunity to get involved in dozens of departments, classes, groups, and activities related to water resources. It would be impossible to accurately track all these activities and, therefore, progress for this MCM is likely to be significantly underreported. Below includes a general discussion on how UMCP is implementing this BMP. Refer to Table 1 for specific BMPs and measurable progress.

The overarching BMP for this MCM is to educate as many students, faculty, and staff as possible about the impacts of stormwater. In addition, it is important for everyone to know what they can do to reduce the impacts of stormwater as well as what UMCP is doing to address these concerns.

UMCP students can select from over 30 major, minor, and graduate degree programs that focus on environmental issues, including water resources. In addition, there are approximately 50 courses that over three thousand students take every year that introduce these topics to the student population. FM personnel regularly work with several professors to provide materials and even in-classroom presentations, reaching well over 200 students. This student-faculty-staff collaboration even led to a landscape architecture class winning the national 2015 EPA Campus RainWorks Challenge.



2015 USEPA Campus RainWorks Challenge Winning Team

Staff training is also an important component for reducing stormwater pollution. In 2014, UMCP created the Sustainable Water Use and Watershed Workgroup to address water-related issues, including stormwater runoff and the MS4 permit. Throughout 2015, staff members from several departments met to discuss why this initiative is important and how each unit can make improvements to managing water resources. These recommendations have been summarized in

annual reports, presented to UMCP administration, and the reports are made available to the public via the Office of Sustainability website.

DESSR-Environmental Affairs works with the campus community on proper material handling and disposal. In addition, they are responsible for emergency spill response and provide information on helping campus departments order and maintain spill kits. They have developed an “Emergency Response Guide” that is available on their website (<http://essr.umd.edu/hw/index.html>) and provide training to UMCP staff in classroom settings as well as on-line.

Table 1 below provides specific BMPs that UMCP continually works toward implementing, as well as progress made in 2015.

Table 1. Personnel Education and Outreach BMP Implementation Table

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Train staff and faculty on material handling and spill prevention, control and countermeasures	Ongoing	Train staff and faculty on material handling and spill prevention, control and countermeasures: 113 people were trained in classroom and an additional 147 people took the DESSR on-line training	DESSR
Provide stormwater information on the UMCP website	Ongoing	UMCP provides information on stormwater via several websites, including: www.sustainability.umd.edu/campus/water www.des.umd.edu/compliance/factsheet/stormwater.html www.facilities.umd.edu/arboretum	OS, DESSR, FM
Work with student interns on stormwater management facilities and education	Ongoing	FM-BLM worked with five student interns	FM-BLM
Participate in Arbor Day	Annually in April	UMCP holds an annual Arbor Day event which includes a ceremonial tree planting. In 2015, this event attracted over 40 people.	FM-BLM

Future Progress: UMCP will continue to make good progress on this MCM. Moving forward, efforts will be made to better track the number of people engaged in various activities as well as information provided to various groups. In addition, work will be done to centralize and improve the information provided on various websites.

B. Public Involvement and Participation

UMCP offers many opportunities for public involvement and participation related to stormwater activities. While public involvement is often in the form of UMCP student and faculty volunteerism, staff also work with our local and regional neighbors on a variety of environmental and stormwater issues. Due to the number of student groups and public events held on campus it is likely that progress for this MCM is significantly underreported. Table 2 presents specific BMPs and 2015 measurable progress.

Under the Public Involvement and Participation MCM, UMCP implemented several BMPs in the areas of: streamside tree plantings and invasive removal events, campus trash cleanups, volunteer stormwater BMP events, and coordinating with local and regional watershed groups.

The UMCP Department of Facilities Management-Building & Landscape Management (BLM) has a full-time Volunteer Coordinator on staff. This staff person works to get individuals and groups involved in various environmental and landscape volunteer events. In 2015, staff in BLM were successful in coordinating 10,158 volunteer hours, including events to weed stormwater BMPs and improve riparian buffers. These events are opportune times to talk about the importance of stormwater management and hand out information/brochures. The Rain Garden brochure that was handed out is included as Attachment A. UMCP handed out over 1,500 brochures in 2015, not including brochures and other information that was printed from the website.



There are over 420 acres of forest/tree canopy within the UMCP campus footprint (including over 70 acres in forest conservation easements). These trees are under constant stress from non-native invasive (NNIs) species. During 2015, UMCP staff ran at least three events that focused on removing NNI species and picking up trash in forested areas, and various student groups ran additional clean up events (one event had over 70 people). In addition, over 100 streamside trees were planted by student volunteers.



Staff worked with students to keep our streams clean and remove invasives.

UMCP also offers the campus community the opportunity to learn about sustainable agriculture and purchasing locally sourced foods. During the summer months, UMCP hosts a farmer's market every Wednesday in the heart of the campus. Only local vendors (less than 250 miles from campus) who use sustainable farming practices can participate. In addition, students can get involved in growing produce that is used in campus dining halls. There are several small gardens throughout campus; however the two major gardens are the Community Learning Garden and Terp Farm. The Community Learning Garden is located on-campus and is managed by Garden Club in

conjunction with a faculty-advisor. It is irrigated using a rainwater cistern and was recently expanded using Envirobloxx™ to reduce slope erosion and allow the slope to be planted with more vegetables. Terp Farm is located 15 miles from the main campus and managed by the Department of Dining Services. They also use sustainable farming practices and grow produce that is used in dining halls and donated to local food banks. Students help manage both of these farms.

Finally, UMCP is engaged with our local and regional stormwater partners. UMCP is a member of the Baltimore-Washington Partners for Forest Stewardship (BWPFs) and Anacostia Watershed Restoration Partnership (AWRP), and works with local watershed groups like Anacostia Watershed Society (AWS) and the Metropolitan Washington Council of Governments (COG). These valuable partnerships encourage collaboration and communication within the local MS4 community, and can create opportunities to seek grants and/or coordinate watershed restoration activities. For example, UMCP partnered with AWS to apply for a Chesapeake Bay Trust (CBT) Fund grant to retrofit a parking lot and conduct volunteer outreach events. The application was submitted and the grant was awarded to UMCP and AWS in 2015; however, the work was performed in 2016.

Table 2. Public Involvement and Participation BMP Implementation Table

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Participate in Good Neighbor Day	Annually in April	Coordinated with community members to conduct an environmental activity. In 2015, over 300 people participated in various activities, including a Paint Branch/Campus Creek stream cleanup and stormwater management facility trash and weed/invasive removal.	Office of Community Engagement, FM
Participate in Maryland Day	Annually in April	Over 65,000 people came to UMCP on MD Day. FM, Office of Sustainability, and other campus groups provided information on sustainability efforts and reducing the campus' environmental impacts.	OS, FM departments, student groups
Campus Trash Cleanups and Forest NNI Removal Events	Ongoing	At least four major trash cleanups (focused around streams) were conducted that engaged over 150 students. In one of these events, at least 250 pounds of trash was collected. In addition, NNIs were removed from several areas of campus as part of these events, including removing NNIs along segments of Campus Creek.	FM, DESSR
Participate in local watershed groups and coordinate with regional partners	Ongoing	In 2015, UMCP participated in several watershed group meetings including BWPFS and AWRP, as well coordinated with local partners including AWS and COG. UMCP partnered with AWS to apply for a CBT grant to retrofit a parking lot.	FM
Engaging Individuals and Groups in Volunteer Events	Ongoing	There were over 10,158 volunteer hours in 2015. This includes 212 individuals volunteering at least 740 hours to improve stormwater BMPs and riparian areas.	BLM
UMD Farmer's Market	March thru November	Every Wednesday local farmers sell sustainably-grown produce, meat, and other products. Currently, nine vendors from Maryland sell their products to hundreds of customers.	Dining Services
Terp Farm	Ongoing	Terp Farm produced 11,233 pounds of produce with the help of 796 people. It also had seven academic course partners.	Dining Services, College of Agriculture and Natural Resources, OS

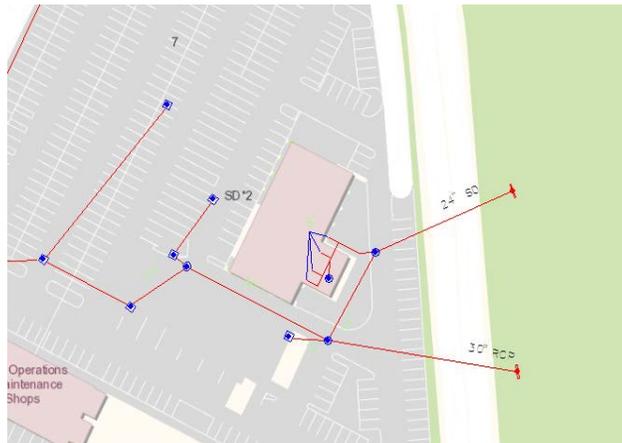
BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Community Learning Garden	Ongoing	Over 80 volunteers a month learn how to sustainably grow vegetables and about stormwater management and landscape design and maintenance. In addition, the Community Learning Garden is used as an instructional space for several classes and for tours and workshops by local clubs.	Institute of Applied Agriculture

Future Progress: There continues to be a very high rate of public participation and involvement at UMCP. Moving forward, UMCP staff will make efforts to better track the number of people engaged in public activities, as well as the amount of trash collected during trash cleanups.

C. Illicit Discharge Detection and Elimination (IDDE)

The goal of a comprehensive IDDE program is to identify unregulated discharges going through the storm drain system. The main components of an IDDE program are an accurate storm drain map/inventory and an inspection and illicit discharge elimination program. Proper disposal of hazardous waste and stringent spill cleanup procedures is also an important part of the IDDE program. Table 3 presents specific BMPs and 2015 measurable progress.

Currently, UMCP maintains the storm drain map in CAD files (a copy of the inventory is provided as Attachment B). These maps provide locational information including locations of inlets, manholes, and outfalls, and they are updated with storm drain information as construction projects are completed or when other information becomes available. In light of forthcoming MS4 retrofit requirements and as part of a larger utility asset management effort (see Section III(F) below), UMCP is revamping the storm drain asset inventory. In 2015, UMCP worked with Maryland Environmental Services (MES) to execute a Master



Example of the UMCP storm drain inventory

Agreement that allows MES to provide consulting services to transfer the CAD files into a fully-

referenced GIS database. MES will also be conducting field work to survey (horizontal and vertical) structures and to add any structures that may be missing. Storm drain networks will also be created so that illicit discharges can be better tracked to potential sources. The majority of this work is scheduled for 2016 and 2017, and progress will be described in more detail in the 2016 MS4 annual report.

UMCP also has an NPDES Discharge permit (Permit Number 08-DP-2618) for industrial discharges primarily associated with non-contact cooling water, boiler blowdown, and condensate water through the storm drain system to 13 regulated outfalls on campus. As part of this permit, the 13 outfalls are inspected on a monthly basis, water quality samples are collected, and each outfall is inspected for the presence of illicit discharges (i.e., discharges other than those approved discharges listed above). No illicit discharges were identified at any of the 13 outfalls in 2015.

It is recognized that there are more than 13 outfalls on campus, and UMCP is developing an outfall inspection program that takes a broader approach to inspecting additional outfalls in order to better identify and eliminate illicit discharges. Therefore, UMCP has also contracted with MES to develop and help implement a more comprehensive IDDE program that includes: a written standard operating procedure for field screening, frequency of inspections, and methods for identifying the source of suspected illicit discharges. Methods for informing personnel of proper actions related to reporting illicit discharges will also be developed. Finally, MES will provide on-site training for staff involved in implementing the more comprehensive IDDE program. These program improvements are scheduled to be in place by the end of 2016 and will be reported in more detail in the 2016 MS4 annual report.

Finally, DESSR is responsible for handling of all hazardous waste on campus. Not only is all hazardous waste closely tracked and accounted for, they use secured facilities to store and transfer hazardous waste for proper disposal. In addition, they ensure spill cleanup kits are installed at appropriate locations and provide training on hazardous waste handling and spill prevention and cleanup. These efforts are supplemented by DESSR's Office of Research Safety that provides continuous training, inspection and consultation to laboratory personnel concerning the proper management of hazardous materials.

Table 3. Illicit Discharge Detection and Elimination BMP Implementation Table

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Update and improve storm drain inventory	2015-2017	Storm drain map is updated as necessary. UMCP worked with MES to develop a contract that will be used to convert storm drain inventory from CAD files to a GIS database. A majority of the work will be done in 2016 and 2017.	FM
Implement a more comprehensive outfall monitoring program	2015-2016	UMCP worked with MES to develop a contract that will be used to develop a more comprehensive outfall monitoring program. A majority of the work will be done in 2016.	FM & DESSR
Continue outfall monitoring as part of industrial discharge permit	Ongoing	All 13 outfalls listed in the NPDES Discharge Permit (Permit Number 08-DP-2618) were inspected monthly and no illicit discharges were identified.	DESSR

Future Progress: MES is under contract to develop the storm drain asset inventory and help develop a more comprehensive IDDE program. Significant progress will be made in these areas during the 2016 and 2017 calendar years.

D. Construction Site Stormwater Runoff Control

The University of Maryland-College Park complies with all applicable MDE construction site stormwater runoff requirements. This includes obtaining Erosion & Sediment Control (E&SC) permits for all projects with limits of disturbance greater than 5,000 square feet and NPDES Permits for Construction Activities on projects greater than one acre. All E&SC devices are designed and installed in accordance with the latest MDE E&SC standards and specifications.

MDE inspects and enforces the E&SC plan throughout the construction process; however, UMD also has several construction inspectors that regularly visit construction sites. These inspectors have the authority to make the contractor implement corrective actions if any E&SC are deemed to be insufficient or failing.

Table 4 below shows specific projects that received required E&SC permits, projects that began or continued to be under construction in 2015, as well as the number of staff that received specialized E&SC training.

Table 4. Construction Site Stormwater Runoff Control Implementation Table

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Develop and enforce erosion and sediment control plans	Ongoing	<p>All projects over 5,000 square feet or moving greater than 100 cubic yards of soil are required to develop E&SC plans that are approved by MDE. UMCP staff and MDE personnel inspect and enforce adherence to these plans.</p> <p>Projects receiving approval in 2015: Terrapin Trail Bridge, Shipley Field Renovation, Frat Row Water Line replacement.</p> <p>Projects completed in 2015: Terrapin Trail Bridge and Shipley Field Renovation.</p> <p>Projects continuing construction from 2014: Edward St. John Learning and Teaching Center, A. James Clark Hall.</p>	FM-D&C
MDE E&SC Training Course (“Green Card”)	Ongoing	UMCP continues to encourage appropriate staff to get additional training in E&SC techniques, including getting certified as an MDE “Responsible Person”. In 2015, 17 UMCP staff in D&C had completed this training.	FM-D&C

Future Progress: UMCP will continue to comply with all MDE erosion and sediment control requirements for construction sites.

E. Post Construction Stormwater Management

Post construction stormwater management includes providing stormwater management for new construction projects as well as redevelopment projects, and ensuring that all stormwater BMPs are properly maintained in order to achieve maximum stormwater treatment. In addition, UMCP personnel look for opportunities to retrofit existing impervious areas with stormwater management wherever possible. Table 5 presents specific BMPs and 2015 measurable progress.

During the design of new construction projects and redevelopment projects, UMCP complies with all MDE stormwater management regulations. This includes providing Environmental Site Design (ESD) stormwater management facilities to the maximum extent practicable (MEP) for all projects, and incorporating other stormwater BMPs as needed. In 2015, no new ESD stormwater management facilities were completed as part of construction projects. However, stormwater storage chambers were installed as part of the Shipley Field renovation project, and several large projects continued to be under construction including the Edward St. John Learning and Teaching Center and A. James Clark Hall. These projects incorporated required stormwater management facilities and the design plans were reviewed and approved by MDE.

A robust stormwater management maintenance program is necessary to ensure these facilities are operating at peak performance. To this end, UMCP has made significant progress in 2015.



Woods Hall Bioretention Volunteer Event

Facilities Management-Building & Landscape Maintenance (BLM) is responsible for inspections and maintenance of all 110 stormwater BMPs. One full-time staff member is dedicated to managing this program; however, several staff members from other departments (e.g., DESSR, Facilities Planning) assist. Staff and student volunteers (see Table 2 above) are able to perform a significant amount of maintenance; however, it was necessary to supplement this work with contractors. UMCP dedicated money and managed a maintenance contract in late 2015 to assist with these efforts.

UMCP follows MDE procedural guidance for performing inspections, including inspection intervals and checklists. The UMCP stormwater management inspection program is provided as Attachment C. In 2015, all 110 stormwater BMPs were visually inspected to ensure proper functioning. During these inspections, 38 facilities were identified as needing more thorough inspections and maintenance. These facilities were prioritized based on scope of maintenance, technical complexity, and available funding. Based on these criteria, 20 facilities were significantly improved in 2015, with the remaining facilities to be addressed in 2016.

In 2015, staff began an effort to utilize GIS technologies to digitize the inspection program. The goal of this effort is to eliminate paperwork and improve how maintenance records are stored and maintained. Using network-connected tablets, field personnel will have access to facility information including record drawings and past inspection results. New inspection results can be instantaneously recorded in the maintenance database.

Progress was also made on the GIS-based stormwater BMP asset inventory (see Attachment D). In 2015, stormwater BMPs were added and geometries were refined. The database structure was also updated to include attribute information like drainage areas, construction completion date,

and stormwater design criteria. UMCP staff continue to work filling in the database with as much information as possible.

In addition to building stormwater management facilities as a part of construction projects, UMCP also seeks out opportunities to retrofit existing impervious areas that have little or no stormwater management. For example, staff retrofitted a steep and eroding slope into a series of terraces at the Community Learning Garden in order to reduce erosion, create greater surface area, and allow the terraces to be planted with vegetables. To further this effort, the UM Sustainability Fund provides funds to students, faculty and staff to implement projects that promote environmental sustainability. The Sustainability Fund is funded by student fees and it is administered through a student-majority subcommittee of the University Sustainability Council. For the 2015 funding cycling, the Sustainability Fund awarded approximately \$400,000 in grants for sustainable projects, including money to support a bioswale, rooftop garden, organic landscape practices, and a living wall. Finally, a GIS database was created to better identify and prioritize potential stormwater management retrofit projects. This database will be used as a planning and implementation tool to track and prioritize potential projects based on a variety of factors including costs, treatment, and location.

Table 5. Post Construction Stormwater Management Implementation Table

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Construction stormwater management facilities as part of new construction projects	Ongoing	<p>No new ESD facilities were completed in 2015. MDE reviewed and approved stormwater management plans for three projects last year: Terrapin Trail Bridge, Shipley Field renovation, and Fraternity Row water line replacement. Underground stormwater vaults were constructed as part of the Shipley Field renovation.</p> <p>Construction continued on the Edward St. John Learning and Teaching Center and A. James Clark Hall. Both of these projects incorporated required stormwater management facilities and the plans were reviewed and approved by MDE in 2014.</p>	FM-D&C
Inspect and maintain existing stormwater management facilities	Ongoing	In 2015, all 110 facilities were visually inspected, and 38 facilities were inspected in more detail. These inspections led to 20 significant maintenance improvements.	FM-BLM

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Maintain and update stormwater management asset inventory	Ongoing	The BMP asset inventory was improved and additional attributes were added to be more consistent with MDE reporting requirements.	FM-FP
Develop a stormwater plan to identify retrofit opportunities	Ongoing	A GIS layer was created to identifying, track, and prioritize potential stormwater retrofit opportunities within the campus.	FM-FP

Future Progress: UMCP will continue to comply with all MDE stormwater management regulations for construction projects. The inspection and maintenance program continues to evolve and improve. Progress will be made on the digital inspection forms and the BMP asset inventory. It is likely that a consultant will be hired to assist with these efforts, including ensuring database consistency with MDE reporting requirements, filling in required attribute information, and identifying retrofit opportunities.

F. Pollution Prevention and Good Housekeeping

University of Maryland-College Park is required to implement and maintain pollution prevention and good housekeeping practices to reduce pollution from all operations. In 2015, progress was made towards reducing pollution and ensuring UMCP has appropriate coverage under various State and Federal water pollution control programs. Table 6 presents specific BMPs and 2015 measurable progress.

Reducing and preventing pollution from diverse sources can be challenging. Staff continue to evaluate campus activities to look for opportunities to reduce pollution and to determine if UMCP has all required permits. As mentioned in Section III(C) above, UMCP does have an NPDES Discharge permit (Permit Number 08-DP-2618) for industrial discharges primarily associated with non-contact cooling water, boiler blowdown, and condensate water through the storm drain system to 13 regulated outfalls on campus. The most recent permit included a new discharge limit for copper. UMCP staff conducted an extensive investigation to identify sources of copper from mechanical equipment and sample regulated outfalls. While low levels of copper were detected in several outfalls, one outfall has been identified as the main source of copper—the outfall that discharges water from the Eppley Recreation Center swimming pool. As moisture is removed from the air to ensure proper humidity levels in the pool area, water is discharged through a series of systems that contain copper air coils. Copper is leached out of

these coils as it is discharged through the storm drain. In 2015, UMCP began design to replace the existing system and remove the copper sources. This multi-million dollar project is currently scheduled (including funding) for construction in summer 2017. This project will significantly reduce the amount of copper discharged through the UMCP storm drain system. Staff are also evaluating other sources of copper and eliminating them as part of routine HVAC equipment upgrades.

In 2015, several other measures were taken to reduce the potential for pollution from entering the storm drain system, including street sweeping, maintaining healthy tree canopies, and reducing pesticide applications. There are approximately 21 lane-miles of roads and 70 acres of parking lots on campus. Street sweeping trucks are used to sweep all the roads and parking areas once every two weeks (on average). Maintaining a healthy tree canopy also reduces stormwater runoff and associated pollution. UMCP actively manages and maintains tree/forest health and seeks opportunities to plant more trees. All trees and forests are managed in accordance with the “Campus Tree Management Plan” (Attachment E) by the UMCP campus arborist and over 125 trees were planted in 2015. Finally, sound IPM practices are used to reduce the need for pesticide applications. UMCP has 15 certified pesticide applicators and an IPM scout to ensure pesticides are used only when necessary.

To further our ability to better manage water resources and implement pollution prevention practices, UMCP initiated a campus-scale water utility asset inventory. In addition to improving the storm drain inventory (as discussed in Section III(C) above), MES will also be improving the existing asset inventories for the potable water and sanitary sewer systems. MES will be conducting field surveys and condition assessments for all three water systems (storm drain, potable water, sanitary sewer) and integrating the results into a fully-referenced GIS database. A more reliable system of record will lead to more accurate monitoring and reporting of system infrastructure, and better operational awareness. The goal of this approach is to synergistically manage all water infrastructure. By taking this approach, opportunities can be identified to capture and redistribute stormwater for nonpotable uses. This will ultimately lead to reduced stormwater pollution and lower potable water demand. This work began in 2016 and will continue into at least 2017.

UMCP maintains, under the Clean Water Act, a Spill Prevention Control and Countermeasure Plan (SPCC Plan) that governs the storage of all bulk oil storage locations oil having over 50 gallons of capacity. The inspections are conducted monthly by UM's Environmental Affairs staff to identify leaks, cracks or other conditions that may create a potential release. Further, DESSR conducts annual training for those involved in oil transfer activities and routinely updates the SPCC Plan as storage facilities are added or removed.

Nuisance geese continued to be a problem at two stormwater ponds on campus—introducing bacteria into the water and grazing of beneficial landscaping. Various efforts to deter geese (including decoys and landscaping) were unsuccessful. In response, staff installed robust goose fencing/netting around the ponds in 2015. Since this installation, emergent vegetation has thrived and geese have not been a problem in these stormwater ponds.



Goose Barrier at Xfinity Center Stormwater Pond

UMCP will also be seeking coverage for general stormwater discharges associated with industrial activities (Discharge Permit No. 12-SW). UMCP retained MES to help prepare the Notice of Intent (NOI) for coverage under the 12-SW permit and associated stormwater pollution prevention plans, which is scheduled to be completed by the end of the 2016 calendar year.

Table 6. Pollution Prevention and Good Housekeeping Implementation Table

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Ensure Proper Handling and Disposal of Hazardous Waste	Ongoing	DESSR collects approximately 10,000 containers of hazardous waste each year and manages an MDE-permitted hazardous waste storage facility.	DESSR
Pesticide Applications	Ongoing	Pesticide applicators must maintain MDE certifications. UMCP has 15 certified pesticide applicators, and another 15 registered applicators who work under the direct supervision of a certified pesticide applicator. In addition, UMCP uses the principles of Integrated Pest Management (IPM) to reduce pesticide use, including employing an “IPM Scout” to determine pest pressures and appropriate actions prior to applying pesticides.	FM-BLM

BMP Selected	Schedule/ Date	2015 Measurable Progress	Responsible Entity
Road Salt Reduction	Winter/ Snow	To reduce the amount of road salt applied, staff emphasize clearing snow from roads and walkways completely prior to applying salts or alternative deicing materials. In addition, faculty and students have investigated safe and effective alternatives to road salt, and FM-BLM will continue to evaluate new materials as they become available.	FM-BLM
Street Sweeping	Every two weeks	Swept all of the approximately 21 miles of roads and 70 acres of parking lots every two weeks (on average).	FM-BLM
Tree/Forest Management	Ongoing	Trees are managed according to our “Campus Tree Management Plan” (Attachment E). This plan is updated every five years, and will next be updated in 2017.	FM-BLM
Tree Planting and NNI Removal	Ongoing	Over 125 trees were planted, mostly within stream buffers. NNIs were removed from four different stands of trees.	FM-BLM

Future Progress: UMCP will submit an NOI for coverage under the 12-SW permit by the end of 2016. UMCP’s NPDES Discharge permit associated primarily with copper discharges (Permit Number 08-DP-2618) expires in 2017; therefore, UMCP will prepare a permit renewal application by November 2016. UMCP has contracted with MES to provide consultant services to assist with NOI preparation and submittal, as well as the NPDES Discharge permit renewal application. In addition, UMCP will continue to make progress on the water utility asset inventory and implement other pollution prevention practices as they are identified.