University of Maryland, College Park
National Pollutant Discharge Elimination
System Phase II Annual Report 2014
General Discharge Permit #05-SF-5501
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The University of Maryland College, Park Annual Stormwater NPDES Phase II Report 2014

The University of Maryland, College Park (UMCP) Stormwater Management program experienced many successful accomplishments in its eleventh year of operation. Based on our growing understanding of stormwater management, original programs and the permit maintenance, the University has continued to expand and improve its program to ensure compliance with the outlined areas of the National Pollutant Discharge Elimination System (NPDES) requirements. This report outlines the progress and continued improvement of the University’s stormwater program.

1. Overview of the University of Maryland, College Park’s Stormwater Program:

a. Stormwater Program Administrative Information

The Stormwater compliance program is coordinated and managed by the Environmental Affairs section of the Department of Environmental Safety (DES) at UMCP. The DES is directly reportable to and funded through the Division of Administration and Finance. The University of Maryland, Department of Facilities Management is responsible for the design, construction, and maintenance of the stormwater drainage system.

- **Stormwater Program Contacts:**

  John Follum  
  Assistant Director  
  Department of Environmental Safety  
  University of Maryland, College Park  
  301-405-3163  
  jfollum@umd.edu

  Russell Furr  
  Director  
  Department of Environmental Safety  
  University of Maryland, College Park  
  301-405-3099  
  furr@umd.edu

  Stephen Reid
b. Stormwater Budget Information

The Department of Environmental Safety (DES) currently employs four full time
employees who dedicate approximately 20 percent of their time to administer and
manage the stormwater program. Additionally, the Department of Facilities Management
has two full time staff that dedicate time to stormwater management, installation upkeep
and maintenance, this includes the following: a coordinator of stormwater facility
maintenance, and an environmental planner. Facilities Management also employs three
landscape architects, and a civil engineer that dedicate part of their time to storm water
management projects.

An Associate Vice President & Chief Facilities Officer is currently working on obtaining
a budget specifically for stormwater management facility maintenance. Currently, a date
has not been established yet, but we are optimistic that it will come soon.

c. Discharge and Receiving Waters

The University’s main campus stormwater system predominately drains to the Paint
Branch Creek, Campus Creek, or unnamed tributaries of the Paint Branch Creek.
d. Map of Stormwater Creek Locations
e. Map of Stormwater discharges, ponds and projects
2. Compliance Assessment:

a. Status of Compliance with Outlined Permit Conditions

The University is currently following the guidelines of the NPDES permit. The University is committed to improving its stormwater management program, and improving the quality and decreasing the quantity of stormwater runoff from the College Park campus. UMCP’s 2014 stormwater management accomplishments are outlined below. Supporting documents not included in this report are on file with DES.

b. Pollution Prevention/Good Housekeeping

*Goal: The goal of this best Management Practice is to reduce the potential for pollution by control measures instituted at the source.*

1. Training:

The Environmental Affairs section of DES trained 82 people in two separate spill prevention, control and countermeasures courses during 2014. This included classes held for HVAC, Landscape Services, and Facilities Management. Our online training course was taken by 107 people from various departments.

Campus Dining Services employees who handle waste oil and grease are all trained in the procedures established by dining services. Waste oil is stored at loading docks where it is placed into a 55 gal drum with a sealable lid, which sits in a containment dike/vessel with a sealable lid, so it is never exposed to the elements. A spill kit is located in each loading dock storage area.

Facilities Management personnel, who are registered applicators of pesticides, receive in-house training for proper pesticide application to ensure that the storm water system is not impacted by pesticide application. This training exceeds the standards set forth by the Maryland Department of Agriculture, including review of new laws, regulations, and new technology, integrated pest management principals, safety, environmental concerns, pest biology, and proper storage and disposal of pesticides.
2. Maintenance:

Facilities Management-Landscape Services inspect UMCP stormwater inlets for surface level blockages on a continuous basis and the inlets are cleared as necessary. There is also one fulltime employee dedicated to street sweeping activities and there is an average of debris removal from streets and parking lots of UMCP of eight cubic yards per day.

Facilities Management-Landscape Services follow all procedures set forth by the State of Maryland and the University of Maryland regarding pesticide storage and application. Pesticides are secured and distributed only to licensed and registered applicators and reports are submitted and kept on file in the Landscape Services office. Applications are made as appropriate within an IPM framework under the guidance of the designated IPM specialist and supervision of the Manager of Operations. Storage areas are posted, all materials are applied according to label, containers are triple rinsed and materials field applied prior to container recycling. Fertilizer applications are planned according to soil test results and according to Maryland Nutrient Management regulations. Manager of Operations is a Certified Nutrient Management Consultant.

3. New Features:

Many new stormwater features were designed in 2014. A number of these were completed, one is in construction, and some are still in the design phase.

**Completed Features:**

**Prince Frederick Hall:**
Construction completed April 2014 and reduced existing impervious area by 39,000 sf. Project included 2 microbioretention facilities to treat 20,000 sf of roof and impervious surface area.

**Pocomoke Building Renovation:**
Construction completed March 2014. Due to site restrictions, the renovation did not provide any additional stormwater management features on-site, but removed 4000 sf of existing impervious surface area.

**Building Landscape Service Building:**
Construction completed January 2014. Runoff from the 7000 sf roof of the building is collected in an underground rainwater harvesting cistern where the
water is used to irrigate plants at the facility being held prior to planting around campus. Excess runoff is bypassed and treated in a microbioretention facility.

**Features under Construction:**

**Edward St. John Learning and Teaching Center:**
Education facility has completed design and will hold a 7,000 sf green roof. Existing and outdated facilities will be removed/redeveloped to accommodate the new facilities. Stormwater quantity management piping will also be installed that will decrease stormwater flow off-site. It is still under construction.

**Bioengineering Building:**
Research and instructional facility currently under design and will incorporate several microbioretention facilities for stormwater management. Construction has begun.

**Features in Design/Planning phase:**

**McKeldin Mall:**
Improvements to McKeldin Mall will began design in late 2014 to address drainage and stormwater management issues. Enhancements to the landscaping and hardscape will provide additional outdoor gathering spaces and provide better pedestrian and ADA accessibility.

c. **Public Participation and Involvement:**

*Goals: To encourage the UMCP community to participate in local stormwater issues and to encourage regional stewardship through information sharing institutional involvement and proactive contribution.*

1. Numerous faculty from various departments are advising ongoing graduate research projects in topics such as:

   - *Transport and Capture of Pathogens from Urban Stormwater Runoff using Bioretention* sponsored by Cooperative Institute for Coastal and Estuarine Environmental Technology.
• Storm Water Runoff Storage Temperature Studies sponsored by Maryland State Highway Administration.

• Optimizing Grass Swales for Pollutant Removal also sponsored by Maryland State Highway Administration.

Faculty are also pursuing their own research such as:

• Golf Turf Agrochemical Runoff

• Comparison of Turf Chemical Runoff from Small and Large Size plots

• Green Walls for Buildings.

d. Personnel Education and Outreach

Goals: To educate the campus community about stormwater and stormwater related issues. To encourage involvement and responsibility in an effort to motivate the campus community to proactively take steps to ensure the quality of UMCP’s stormwater discharge.

1. The storm water management features that have been constructed throughout campus are utilized by the faculty of UMCP as real life labs. Classes such as Environmental Science and Technology 444: Restoration Ecology and Environmental Science and Technology 281: Computer-aided Design in Ecology make use of the rain gardens, green roofs, and intentional wetlands, as examples of erosion and runoff control, and bio retention. Over 70 students take these classes each year. In addition these stormwater features have been used by the Environmental Engineering and Landscaped Design departments as teaching tools.

2. As mentioned above, the Environmental Affairs section of DES trained 82 people in spill prevention, control and countermeasures during 2014 in classroom training and 107 people online.

This training includes but is not limited to informing the campus community of the steps needed to prevent and control spills, identify and contain the released material, and initiating spill response and notification procedures. It also covers best management practices that have been designed to help insure that spills do not occur, such as using secondary containment, regular documented inspections of storage areas and loading docks, using correct containers, and making sure all
storage containers are always closed. The training is followed up with a short quiz to help reinforce what was contained in the training.

3. A spill prevention control and countermeasure web based training is now available for use in addition to the training that DES provides in a classroom setting. In addition to the new online training, the DES website has a stormwater fact sheet available. Also, the Office of Sustainability section of the DES website has a detailed page on recent, current, and upcoming stormwater management projects on campus.

4. Department of Environmental Safety also participated in the annual Maryland Day April 26th 2014. An event attended by over 75,000 members of the public. DES staff manned a table on the McKeldin Mall and were available to the public to answer questions about any of the department’s functions including stormwater management. Also at this event, members of the Arboretum and Botanical Garden handed out brochures detailing the rain gardens’ function on the campus. They were located near a rain garden and were available to the public to answer specific questions on these features.

5. The student group: Maryland Sustainability Engineers (MSE) continues to pursue bioretention design build projects as an educational and community outreach vehicle.

6. A service Fraternity, Alpha Phi Omega, volunteered 50 students to participate in a clean-up for Campus Creek.

e. **Construction Site Runoff Control**

   *Goal: To monitor and maintain any construction sites at UMCP that have disturbed more than 5000 square feet of earth, and to ensure that these projects have sediment and erosion control plans in place*

   The Facilities Management Department at UMCP ensures that all active construction sites have sediment and erosions control plans in place prior to the start of construction. They also monitor these control measures during construction to ensure they are functioning properly. Nine employees of Facilities Management Capital Projects received the State of Maryland Sediment & Erosion Control Green Card Certification to ensure compliance.

   The following is a list of construction projects active during 2014 that required Sediment and Erosion Control Plans.

   1. Prince Frederick Hall: May 2012 through April 2014
   2. Pocomoke Building Renovation: August 2012 through March 2014

f. Post Construction Site Runoff Control

*Goal: To maintain functional stormwater management areas (SWA) through annual structural reviews, inspect, and rectify any issues that arise in these areas; to ensure maximum functionality.*

1. The University Landscape Services department maintains the stormwater management areas on a regular basis to ensure proper functioning. They also respond to and correct any reported problems.

2. Environmental Affairs staff conducted periodic visual inspections of the stormwater areas on campus during the 2014 calendar year, including outfalls, retention ponds, storm drains, creeks, rain gardens, and intentional wetlands. Any issues identified were brought to the attention of the appropriate department, for follow up and repair.

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g. Illicit Discharge Detection and Elimination

*Goals: To survey campus outfall areas for possible detection of improper discharges, and to investigate and mitigate any spill or improper discharge incidents.*

1. Outfalls around the campus are inspected monthly. All inspections showed clear unimpacted stormwater.

2. With the exception of 3 or 4 storm drains located in the City of College Park, the entire remaining stormwater management structure of UMCP is self-contained, making illicit discharge detection an almost wholly in-house operation.

3. In addition to the monthly outfall inspections, the UMCP’s police department has been instructed to be aware of the potential for illicit dumping. Areas that have been previously identified as likely areas of illicit dumping are slowly being improved to reduce this activity with better lighting, increased patrols, and possible security camera installations.
h. Photos

* A few photos of the for 2014

Public Health Building:

![Photo of Public Health Building](image1.png)

Replanting At Woods Hall Bioretention Garden:

![Photo of replanting](image2.png)
Campus Creek Clean up: