MUNICIPAL STORMWATER NPDES PERMIT MI0053902
FISCAL YEAR 2013-2014 ANNUAL REPORT
FOR
THE UNIVERSITY OF MICHIGAN
ANN ARBOR, DEARBORN & FLINT CAMPUSES
& OTHER REGULATED U-M PROPERTIES

UPDATED PER THE REQUIREMENTS OF NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES) FOR DISCHARGE OF STORMWATER TO SURFACE WATERS FROM A MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

PREPARED BY:

OCCUPATIONAL SAFETY & ENVIRONMENTAL HEALTH

Campus Safety Services Building
1239 Kipke Drive
Ann Arbor, Michigan 48109-1010

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For clarification purposes, the following acronyms/definitions are used throughout this report:

*AEC*  
UMA2 Architecture, Engineering and Construction

*ARC*  
Alliance of Rouge Communities

*BMPs*  
Best Management Practices

*CAER*  
Center for Applied Environmental Research associated with UMF

*CCRB*  
Central Campus Recreation Building located on the UMA2 campus

*City*  
The City of Ann Arbor, Dearborn or Flint, as appropriate

*DPSS*  
UMA2 Division of Public Safety & Security

*EIC*  
The Environmental Interpretive Center on UMD campus

*EHS*  
UMF Environment, Health and Safety Department

*EHSEM*  
UMD Environmental, Health, Safety and Emergency Management Department

*FOTR*  
Friends of the Rouge River

*FRWC*  
Flint River Watershed Coalition

*GIS*  
Geographical Information System

*G&WM*  
Plant Operations Grounds and Waste Management Department

*HRWC*  
The Huron River Watershed Council

*HVAC*  
Heating, Ventilation, and Air Conditioning

*IDEP*  
Illicit Discharge Elimination Program

*Illicit Connection*  
A physical connection to the drainage system that 1) primarily conveys illicit discharges into the drainage system or 2) is not authorized or permitted by the local authority (where a local authority requires such authorization or permit).

*Illicit Discharge*  
Any discharge or seepage that is not composed entirely of stormwater into the drainage system, except for discharges specified in Parts I.A.1.b. and c. of the permit. Illicit discharges include dumping of motor vehicle fluids, hazardous wastes, grass clippings, leaf litter, domestic animal wastes, litter or unauthorized discharges of sewage, industrial waste, food services wastes, or any other non-stormwater waste into the drainage system.

*MGP*  
Manufactured Gas Plant

*MDEQ*  
Michigan Department of Environmental Quality

*MHI*  
Middle Huron Initiative

*NPDES*  
National Pollutant Discharge Elimination System

*NREPA*  
State of Michigan Natural Resources Environmental Protection Act, Act 451

*OCS*  
Office of Campus Sustainability (OCS) associated with UMA2

*OSEH*  
U-M Department of Occupational Safety and Environmental Health

*Outfall*  
A discharge point from an MS4 directly to surface waters of the state

*P2*  
Pollution Prevention

*PEP*  
Public Education Program

*Permit*  
The NPDES Stormwater Permit Number MI0053902 issued by MDEQ to the U-M, effective October 1, 2001

*PIPP*  
Pollution Incident Prevention Plan
Plant Extension

This division includes architects, engineers, construction managers, and the planner involved in facilities design activities.

Plant Operations

This division includes G&WM, Utilities, Parking Services, Maintenance Services and other activities associated with maintenance of the facilities.

PPE

Personal Protective Equipment.

PSA

Public Service Announcement.

RCRA

Resources Conservation and Recovery Act.

SEMCOG

Southeast Council of Governments.

SESC

Soil Erosion and Sedimentation Control.

SPCC

Spill Prevention and Countermeasure Control.

SWMPP

Stormwater Management Program Plan prepared for the Permit and approved by MDEQ.

SWPPP

Stormwater Pollution Prevention Plan.

TMDL

Total Maximum Daily Load.

TSS

Total Suspended Solids.

U-M

The University of Michigan, Ann Arbor, Dearborn & Flint.

UMA2

The University of Michigan Ann Arbor Campus.

UMD

The University of Michigan Dearborn Campus.

UMF

The University of Michigan Flint Campus.

UMPD

U-M Police Department, within the U-M DPSS.

University

The University of Michigan, Ann Arbor, Dearborn & Flint.

U-M SNRE

University of Michigan School of Natural Resources and Environment.

US EPA

The United States Environmental Protection Agency.
In accordance with Part I, Section C.1.e. of National Pollutant Discharge Elimination System (NPDES) Permit MI0053902, the University of Michigan (University/U-M) is required to submit an annual report of activities associated with the stormwater management program. This program is a requirement of the NPDES permit reissued by the Michigan Department of Environmental Quality (MDEQ) Surface Water Quality Division on October 1, 2001. This report covers the period July 1, 2013 through June 30, 2014 and follows the format identified in the permit.

1. **Compliance Assessment –**
   
   a. **Describe the status of compliance with permit conditions.**

   The U-M is in compliance with the Stormwater Management Program Plan (SWMPP) for the Ann Arbor (UMA2), Dearborn (UMD), and Flint (UMF) campuses, as revised in May 2010 and approved by MDEQ on June 2, 2010. The University is also continuing to implement the approved post-construction stormwater management requirements outlined in the Stormwater Management – Post-Construction Requirements Guideline (EP3-001). U-M submitted a Phase II permit renewal application to the MDEQ in accordance with the notification from the MDEQ dated February 5, 2013, prior to June 1, 2013 and is awaiting reissuance of a NPDES permit. For the purposes of this report, please note that the Occupational Safety and Environmental Health (OSEH) Department is associated with UMA2, the Environmental Health Safety and Emergency Management (EHSEM) Department is associated with UMD, and the Environment, Health, and Safety (EHS) Department is associated with UMF.

   b. **Provide a report of illicit discharges and illicit connections removed.**

   No new cross connections were identified during this reporting period.

   Dye testing was completed by UMA2 at the following buildings during the reporting period: the Lawyer’s Club and Munger Residences, the Intramural Sports Building, Building 22 at the North Campus Research Complex (NCRC), Dennison Hall, and West Quad. No new cross connections were identified during these testing events.

   The following potential and existing illicit connections, as listed in previous reports, are under further investigation.

   - **Central Campus Recreation Building (CCRB):** Cross connections were found as a result of dye testing that was conducted in August 2012. It was found that the swimming pool filter back-wash and deck drains at CCRB were routed to the storm sewer system. These connections were repaired in October of 2012 and no longer discharge to the storm sewer system. In addition, it was determined that the floor drains in the Machine Room, and possibly the pool drain, are connected to the storm sewer system. Dye testing is recommended to further evaluate the pool drain and to determine if the drain is connected to storm. Evaluations are currently ongoing.
- **UMA2** is continuing follow-up investigations for flows identified during dry weather screening events at the following locations: Literature, Science, and the Arts/Student Activities Building (MH-5); News & Information Services (MH-8); Modern Languages Building (MH-14); Biomedical Science Research Building (MH-20); Wolverine Tower; Briarwood; M-Stores; Northwood III (MH-4); Northwood II (MH-8). Follow-up investigation activities by U-M are being prioritized for review in conjunction with other priority corrections of cross connections and water main replacement projects.

- **Manufactured Gas Plant (MGP):** Although not considered an “illicit connection” it may be relevant to note that during 2011-2012, Consumers Energy reported that while investigating their company’s former MGP located under and adjacent to property currently owned by the UMF Campus, a sheen was observed along the riverbank adjacent to the university property. This was reported to the MDEQ by Consumers Energy; booms have been deployed, and the situation is being closely monitored/investigated further. The actual source has not yet been determined but the historic MGP site is considered suspect. Consumers Energy continues to keep UMF as well as the MDEQ and The City of Flint informed of their ongoing monitoring/investigations.

The following existing and potential illicit connections, as reported in previous reports, have been addressed through correction or through appropriate investigations. The majority of investigations described below occurred in older buildings where basement level floor drains may be routed to the storm network, as was standard practice at the time of construction. As these issues are discovered in older buildings, follow up site visits are performed to ensure no illicit discharges are occurring to the cross-connected floor drains and, when applicable, storm drain buttons marked with the message “Dump No Waste – Flows to River” are applied. Furthermore, renovation activities by U-M are prioritized for review in conjunction with other priority corrections of cross connections and water main replacement projects.

- **Naval Architecture & Marine Engineering:** A potential issue was identified by UMA2 Architecture, Engineering and Construction (AEC). Floor drains in a 1960 drawing of the building appear to be routed to the storm system. At a site visit in March of 2014, OSEH noted that several basement level floor drains were receiving non-contact cooling water (potable water) discharges. Storm drain buttons, marked with the message "Dump No Waste – Flows to River" were applied to seven floor drains in late March of 2014 to inform building users not to dump waste into these drains.

- **Ruthven Natural History Museum:** Floor drains in the basement level of Ruthven Natural History Museum were determined to be connected to the storm sewer system. Non-contact cooling water from an electric air conditioning unit and a tub sink were discovered to discharge into the cross connected floor drain. In March of 2014 both the air conditioning unit and the tub sink were disconnected and removed from service.

- **School of Public Health 2:** The plumbing shop manager reported that chiller machine discharge (non-contact cooling condensate) routed to floor drains in the basement may tie into the storm sump for the building. Dye testing was conducted in October 2013 to verify floor drain connections. It was found that three floor drains in the lower maintenance shop go to a storm sump and the remaining floor drains go to the sanitary system. Storm drain buttons, marked with the message "Dump No Waste – Flows to River", were placed by each of the identified floor drains in early February of 2014 to inform building users not to dump waste into these drains.
• UMD College of Arts, Sciences, and Letters (CALS) Building Mechanical Room: A cross connected vent pipe was identified in the UMD CALS Building Mechanical Room. A stormwater roof pipe is discharging into sanitary. The concern is that with enough rain water, the sanitary line could potentially flood the building. The cross connected vent pipe was repaired in September 2013.

c. Assess Best Management Practice appropriateness and progress toward goals identified in the SWMPP.

Note: (Excerpts from the SWMPP are shown in italics.)

i. Total Maximum Daily Loads (TMDL)

The U-M participates in TMDL reduction efforts throughout the permit cycle for Total Phosphorus – Ford & Belleville Lakes; E.coli – Geddes Pond; Biota – Malletts Creek; E.coli – Rouge River; and Biota – Rouge River.

TMDL -1. Major Discharge Points

Measurable Goal: Review existing outfalls to identify major discharge points discharging directly to surface waters of the state within the portion of the TMDL. Major discharge points are pipes or open conveyances measuring 36 inches or more at its widest cross section.

No updates during this reporting period:

As previously reported, outfalls have been evaluated to determine if they are “major” discharge points. A list of major outfalls is kept on file. UMA2 has identified four major discharge points within TMDL reaches. O-41 and O-47R discharge directly into Millers Creek. O-30R and O-88R discharge directly to the Huron River.

UMD identified three major discharge points, two of which discharge directly into the Rouge River and one that discharges into the City of Dearborn’s storm line on Hubbard Drive.

UMF is not currently in a TMDL program.

TMDL -2. Sampling Major Discharge Points

Measurable Goal: By April 15, 2012, U-M will take samples of at least 50% of the major discharge points within the portion of the TMDL watershed in the urbanized area. At a minimum, these samples will be analyzed for the applicable TMDL parameter (E. coli or total phosphorus). The sampling results will be retained and reported in the second progress report.

The above goal was completed during a previous reporting period:

As previously reported, UMA2 conducted sampling and analysis of O-41 and O-47R on March 30, 2012 for E. coli and total phosphorus. This represents 50% of the major discharges.

UMD conducted sampling and analysis on all identified major discharge points. Two discharge points were sampled on November 22, 2011 and the last discharge point was sampled on June 19, 2012.

UMF does not discharge to a TMDL watershed.

TMDL -3. Action Plan to Reduce TMDL Discharges

Measurable Goal: By October 1, 2013, sampling results and other available information will be reviewed. A plan will be developed to reduce the discharge of the applicable TMDL parameter (E.
coli or total phosphorus). These prioritized actions will be reported with implementation targeted during the 5-year permit cycle that begins 2013.

No updates during this reporting period:

As previously reported, based on the sampling results and an overall review of the SWMPP, the U-M has developed a plan to reduce the discharges of the applicable TMDL parameters. In an effort to maximize resources and minimize duplicate efforts, U-M is addressing TMDLs in a consistent manner as the HRWC and other area MS4s. HRWC has written a TMDL Implementation Plan for the Huron River Watershed MS4s in Washtenaw County. Aspects of that Implementation Plan are incorporated in the updated SWMPP as part of the NPDES Application for discharge of stormwater to surface waters from an MS4. To comply with the U-M NPDES stormwater permit requirements, the suite of BMPs presented in the updated SWMPP represents project priorities that will be implemented during the new permit cycle which will collectively make progress toward achieving each of the TMDL pollutant load reduction targets. The updated SWMPP includes a schedule, for BMP implementation, and a prioritization process where appropriate. Where relevant, BMPs in the updated SWMPP identify TMDL pollutants that are targeted (e.g., phosphorus, E.coli). Management activities addressing the specific TMDLs have been identified and prioritized in Appendix G of the updated SWMPP.

ii. Public Education Program (PEP) – Education and Outreach on Stormwater Impacts

Recognizing the need for public involvement in the effort to reduce stormwater pollutants, the U-M has developed a broad and aggressive stormwater education and outreach program. This multi-faceted program is closely connected to the U-M’s pollution prevention (P2) program and its many initiatives. Specifically, the stormwater education curriculum is designed to promote, publicize, and facilitate watershed education while encouraging the P2 practices developed under the U-M’s environmental stewardship agenda. The intended audience for the program is all persons associated with the University who could potentially affect the quality of stormwater discharges, including, but not limited to: campus residents; University faculty, staff, and students; visitors to the campus; contractors and vendors working on the campus; and commercial and industrial operations on campus. U-M’s overall goal for the PEP is to bring awareness of stormwater issues to 70% of the University community by the end of 2013. Levels of stormwater awareness are anticipated to vary widely among the different community groups, with more emphasis given to key staff having greater potential to impact stormwater quality during their day-to-day work activities. The remainder of the University community is targeted through other means, such as brochures, posters, websites, storm drain markers, PSAs, etc.

The following is a description of each of the public education topics identified in the permit, to be included as appropriate, based on the potential impact on the receiving waters:

- Educate the public of hazards associated with illicit discharges and improper disposal of waste. Part of this education is to encourage public reporting of the presence of illicit discharges or improper disposal of materials into the U-M drainage system.
- Educate the public concerning the water body that would be potentially impacted by improper actions at or near a person’s home.
- Educate the public on the availability, location and requirements for household hazardous waste disposal, travel trailer sanitary wastes, chemicals, grass clippings, leaf litter, animal wastes and motor vehicle fluids.
Educate the public regarding acceptable application and disposal of pesticides, herbicides, and fertilizers, including the use of phosphorus-free fertilizer alternatives, as appropriate.

Educate the public on preferred car cleaning agents and procedures for noncommercial car washing.

Educate property owners with a septic system on proper maintenance and how to recognize system failure.

Educate riparian land owners of management of lands to protect water quality.

Educate the public about their responsibilities and stewardship of their watershed.

Educate the public on the benefits of using native vegetation instead of non-native vegetation.

Educate commercial and institutional entities likely to have significant stormwater impacts. (At a minimum, commercial food services shall be educated to prevent grease and litter discharges to the MS4).

The following Best Management Practices (BMPs) are used to meet the requirements of Part I, Section B.1 of the U-M’s NPDES Permit for the PEP requirements:

**PEP -1. Stormwater Education Brochures**

In cooperation with the U-M School of Natural Resources and Environment (SNRE), OSEH developed a series of brochures to assist various members of the University community in preventing stormwater pollution on campus. The brochures have been designed to meet the overall program objectives for specific audiences.

**Measurable Goal:** Review existing brochures and update as needed. Create additional brochures, tip cards, posters, etc. as new needs are identified. The number of new or revised brochures, flyers or other educational media created will be tracked. Copies of brochures (and other handouts/postings) will be kept on file.

**Actions during the reporting period:**

**UMA2:**

The OSEH Department reviewed the available brochures and brochure content over the reporting period. Currently UMA2 has brochures targeting students, faculty & staff, vendors, and film projects. The existing brochure targeting students, faculty & staff, titled, “Stormwater: Our Job, Our Community, Our Responsibility, A Guide to assist in Preventing Stormwater Pollution on The University of Michigan Campus” was updated for use at the U-M Planet Blue Ambassador Appreciation Dinner on May 1, 2014. An EPA stormwater cross-word puzzle was also customized for hand-out at this event.

The Fall 2013 OSEH Update Newsletter included the article “Common Pollutants in Stormwater Runoff” which discussed what stormwater runoff is, what pollutants stormwater contains and why they are of concern, and what can be done to help reduce pollutants in stormwater runoff.

UMA2 students created a brochure entitled “How to be a greenWolverine” in 2009 as a class project for ENVIRON 391: Sustainability & the Campus. The brochure has since been updated annually by U-M’s Graham Institute and distributed across campus each summer. The brochure content includes information on energy efficiency, waste prevention, land and water management (including a section on water quality/stormwater), and community education/awareness. A copy of the brochure is located at the following website: [http://sustainability.umich.edu//media/files/StudentSustainabilityGuide2012.pdf](http://sustainability.umich.edu//media/files/StudentSustainabilityGuide2012.pdf)
UMA2 OSEH created a stormwater digital display; titled “Keep our Michigan Waters BLUE!” which explained what stormwater runoff is and why it can pose a threat to surface waters. The digital display was exhibited on two flat screen televisions located within the Shapiro Undergraduate Library (one is located in the first floor lobby next to Bert’s Cafe and the second is located on the third floor lobby entrance to the Science Library). The digital displays were exhibited from mid-November through January.

OSEH is attempting to utilize more posters and digital displays (in lieu of paper copy brochures) to publicize the website and provide stormwater education in an effort to promote sustainability of resources with reduced paper waste.

**UMD:**
In July of 2013, EHSEM revised and printed all six of their brochures. These brochures, a bookmark, and a stormwater mouse pad are passed out during all training events, orientations, and other various campus events. This packet provides general stormwater awareness to the campus with additional tips on how to handle household hazardous waste and pet waste as well as information on fertilizers, pesticides, paints, and vehicle maintenance. In April of 2014, EHSEM revised and printed a pamphlet that is passed out to contractors titled “Storm Water: A Shared Responsibility” which provides a brief overview of how stormwater is discharged from campus and some best management practices for the various types of contractors (food services, custodial services, construction contractors, etc.) to use while working on campus.

Contractors that are hired at UMD are required to take the UMD online stormwater training course which includes a 20 minute video and an eight question quiz. In certain circumstances, EHSEM will provide on-site stormwater training and provide the contractors with a flip chart and stormwater brochures. Contractors are required to sign-in with Facilities Management each day they are on-site. They also receive a University identification badge which provides information on how to report an illicit discharge on campus. UM-Dearborn has been making an effort to include spill clean-up language during the bidding process.

**UMF:**
UMF distributed stormwater education bookmarkers to the campus bookstore in September 2013, at the beginning of the fall term, to promote stormwater education.

At UMF, the outdoor display case located on the Harrison Parking Ramp was maintained during this reporting period to promote awareness of stormwater, watershed management, best management practices at work and home, and who to call if a spill occurs or if a spill is observed. This information has been posted for the entire year – informing students, faculty, and staff as they walk by daily. An additional bulletin board has been developed to promote SW management/BMPs in the Facilities & Operations break area. As of July, 2014, the display case is currently being used for other purposes, but UMF EHS will resume promoting the awareness of stormwater, watershed management, best management practices at work and home, and who to call if a spill occurs, in October 2014.

UMF EHS hired three additional student interns in May, 2014. One of the interns is from the Earth and Resource Science Department and devoted their time to the update of the SPCC/PIPP plan for the UMF campus as well as spill prevention education, stormwater management education, and related environmental initiatives. The second intern devoted their time to health
and safety training/awareness, to updating the Chemical Hygiene Plan, and to updating various Standard Operating Procedures, which provide a safer environment within the labs on campus. The third intern has improved communications to the campus community by improving the organization and formatting on the UMF EHS web-site.

UMF EHS continues to utilize several different flyers to promote stormwater management and related best environmental practices for the UMF campus community. Fliers include a revised version of the MDEQ’s “Our Actions Can Affect Michigan’s Rivers” brochure to specifically identify the Flint River, provide specific contact information to report spills in the UMF community and to highlight the University’s stormwater management website for further information.

UMF EHS has updated and continues to distribute the two-sided “Only Rain in the Drain” bookmark that provides campus specific stormwater educational information, including information on the Flint River, and specific things individuals can do to protect drains and surface water. These bookmarks are distributed via the Campus Bookstore, the University Library and are available at UMF Information Centers in several campus buildings.

UMF EHS developed a Stormwater Reference Sheet for Contractors in 2013 that is posted on the UMF EHS website as a tool to educate contractors and project managers about stormwater management and protection of drains and surface water.

**Measurable Goal:** A minimum of 1,800 brochures will be distributed annually during presentations, training courses and new employee orientation sessions. The quantity of brochures distributed throughout the year will be tracked.

**Actions during the reporting period:**
An estimated 12,452 brochures and 676 bookmarks including stormwater management and pollution prevention topics were distributed at U-M’s three campuses. Additionally, 30 stormwater mouse pads were distributed at the UMF campus. Over 1,637 employees attended training, orientation or workshop sessions including stormwater topics throughout the reporting period.

U-M’s Graham Institute distributed 10,285 “How to be a green Wolverine” brochures to housing facilities, Greek Life, libraries, and staff across campus. The brochure content includes information on energy efficiency, waste prevention, land and water management (including a section on water quality/stormwater), and community education/awareness. A copy of the brochure is located at the following website: [http://sustainability.umich.edu//media/files/StudentSustainabilityGuide2012.pdf](http://sustainability.umich.edu//media/files/StudentSustainabilityGuide2012.pdf)

UMA2 OSEH provided stormwater brochures and word searches for the U-M Planet Blue Ambassador Appreciation Dinner on May 1, 2014. Seven EPA Stormwater Word Searches and four updated stormwater brochures were taken by students and/or staff during the event.

Additionally, OSEH is making an effort to promote stormwater education through alternate forms of media such as through the stormwater website and other electronic media. For example, UMA2 OSEH created a stormwater digital display; titled “Keep our Michigan Waters BLUE!” which explained what stormwater runoff is and why it can post a threat to surface waters (described in further detail in the previous measurable goal section).
UMD distributed 176 stormwater bookmarks and a total of 2,056 stormwater brochures, including 1,000 car care brochures that are distributed annually with parking permits.

At UMF, more than 500 “Only Rain in the Drain” bookmarks were distributed through the campus bookstore, library, information desks, and other scheduled student and staff events. In addition, approximately 100 “Our Actions Can Affect Michigan’s Rivers” and “Protect the Flint River – Only Rain in the Drain” brochures were distributed during the reporting period. Additionally, over 30 stormwater mouse pads were distributed to computer labs and workstations around campus during the reporting period.

**Measurable Goal:** In 2010-2011, develop/add additional brochures to fill any gaps in the topics needed to meet the permit requirements. Keep a copy of newly developed/added brochures with dates finalized.

The above goal was completed during a previous reporting period: Existing information will be kept on file. Additional accomplishments, completed during this reporting period are provided:

No new brochures were developed during the last six months; however, one brochure entitled, “How to be a greenWolverine” was updated by the U-M’s Graham Institute. UMA2 students created a brochure entitled “How to be a greenWolverine” in 2009 as a class project for ENVIROIN 391: Sustainability & the Campus. The brochure has since been updated annually by U-M’s Graham Institute and distributed across campus each summer. The brochure content includes information on energy efficiency, waste prevention, land and water management (including a section on water quality/stormwater), and community education/awareness. A copy of the brochure is located at the following website: [http://sustainability.umich.edu//media/files/StudentSustainabilityGuide2012.pdf](http://sustainability.umich.edu//media/files/StudentSustainabilityGuide2012.pdf)

Additionally, UMA2 OSEH created a stormwater digital display; titled “Keep our Michigan Waters BLUE!” which explained what stormwater runoff is and why it can pose a threat to surface waters (discussed in further detail in PEP-1 above). Furthermore, the UMA2 website was updated with a new dye testing procedure (refer to PEP-2 for additional information).

**Measurable Goal:** In 2011-2012, create a dissemination strategy to reach the target audiences and any new audiences identified by U-M. Identify educational information available/developed for each target audience applicable at U-M and keep this information on file.

The above goal was completed during a previous reporting period: Existing information will be kept on file. Strategies developed during this reporting period are provided:

OSEH is attempting to utilize more posters and digital displays (in lieu of paper copy brochures) to publicize the website and provide stormwater education in an effort to promote sustainability of resources with reduced paper waste. Additionally, OSEH is coordinating with U-M Planet Blue and the UMA2 Office of Campus Sustainability (OCS) to promote online training modules and to further strengthen and expand educational resources.
OSEH is actively investigating the potential for electronic stormwater displays on the U-M Stadium Marquis during football games and for additional electronic and hard copy display options.

**Measurable Goal:** In 2012-2013, implement the new dissemination strategy/plan for educational brochures. Tally the number of brochures distributed and provide in the annual reports.

The above goal was completed during a previous reporting period:

Existing information will be kept on file. Strategies developed during this reporting period are provided in the previous measurable goal.

**PEP -2. OSEH/SNRE Stormwater Education Websites**

Developed in cooperation with the U-M SNRE and maintained by OSEH, the Stormwater Education Website builds upon the information contained in the brochures and disseminates information to the general University community and the public at large. This website is intended to help students, employees, and visitors in the U-M community understand how the University’s stormwater system operates, various legal requirements, and what individuals can do to reduce contamination in the stormwater system from surface runoff. As viewers move through the site they learn about stormwater, what they can do to help protect it, how regulations impact the University’s operation, and various safe practices. The UMD and UMF websites also provide topical information for practices potentially impacting stormwater.

Stormwater website content is updated on a regular basis to include pertinent information related to stormwater management and pollution prevention. Current material on the websites can be viewed via the following links: U-M Ann Arbor’s website is found at: [www.oseh.umich.edu/environment/storm.shtml](http://www.oseh.umich.edu/environment/storm.shtml), U-M Dearborn’s website is found at [www.umd.umich.edu/691923/](http://www.umd.umich.edu/691923/), and the U-M Flint campus website is found at [http://www.umflint.edu/ehs/flint-river-storm-water-management-university-michigan-flint](http://www.umflint.edu/ehs/flint-river-storm-water-management-university-michigan-flint).

An additional website has been developed through the UMA2 Office of Campus Sustainability (OCS) and Planet Blue at [http://sustainability.umich.edu/](http://sustainability.umich.edu/). Through Planet Blue, staff and students can become a Planet Blue Ambassador by completing modules. More information regarding the implementation of this program is outlined in the additional measures taken to achieve the PEP goals at the end of this section.

**Measurable Goal:** The number of visitors to the websites will be tracked annually for subsequent reporting. The goal is to have 2,000 website hits annually. This website is intended to help students, employees, and visitors in the U-M community understand how the University’s stormwater system operates, various legal requirements, and what individuals can do to reduce contamination in the stormwater system from surface runoff. This website tally may also serve as an indication of the community seeking additional stormwater information from the link provided in the brochures, as detailed above.

**Actions during the reporting period:**

As of July 1, 2014 there were 24,791 website visits registered on the UMA2 stormwater website. This is an increase of 1,251 visits over the 2012-2013 reporting period.

The UMD stormwater website received 847 visits during this reporting period. Note: the visits that occurred between May 5th, 2014 and May 11th, 2014 were not counted due to an IT error.
UMF EHS expanded the UMF stormwater website two years ago and is currently redesigning the format to make the website more user-friendly. The UMF stormwater website is available at the following link: [http://www.umflint.edu/ehs/flint-river-storm-water-management-university-michigan-flint](http://www.umflint.edu/ehs/flint-river-storm-water-management-university-michigan-flint). In past years, UMF experienced technical difficulties tracking website visits; however, UMF EHS began successfully tracking visits to the website in February of 2013. There were approximately 2,640 visits to the website for the previous reporting period (2012-2013) and 2,200 visits for the current reporting period. Note: tracked visits are not specific to the stormwater webpage; visits are tracked for the entire UMF EHS website.

During this reporting period, EHSEM substantially enhanced the UMD stormwater website. The website provides the UMD campus community with information on how the stormwater system operates, what the laws require, and what can be done to reduce contamination in the storm system and ultimately, the Rouge River. The website offers links to various external organizations such as Friends of the Rouge (FOTR), Alliance of Rouge Communities (ARC), the MDEQ, Southeast Michigan Council of Governments (SEMCOG), and Earth 911. The stormwater website also provides links to two stormwater awareness videos. ([http://www.umd.umich.edu/691923/](http://www.umd.umich.edu/691923/))

The website provides the UMD campus community with information on how the stormwater system operates, what the laws require, and what can be done to reduce contamination in the storm system and ultimately, the Rouge River. The website offers links to various external organizations such as FOTR, ARC, the MDEQ, SEMCOG, and Earth 911. The stormwater webpage also provides links to two stormwater awareness videos. ([http://www.umd.umich.edu/691923/](http://www.umd.umich.edu/691923/))

EHSEM created an online stormwater training course which is offered on the stormwater webpage. The training consists of a video and an 8 question quiz. During this reporting period, 157 people completed the training. ([http://www.umd.umich.edu/696586/](http://www.umd.umich.edu/696586/))

UMF EHS & Facilities and Operations maintain a website, located at: ([http://www.umflint.edu/facilities/contractinfo.htm](http://www.umflint.edu/facilities/contractinfo.htm)) to help contractors and project managers quickly locate environmental health and safety information. EHS also maintains a separate departmental link with reference materials and environmental programs for contractors, located at: [http://www.umflint.edu/ehs/environment-health-and-safety-project-review](http://www.umflint.edu/ehs/environment-health-and-safety-project-review). Website topics include: stormwater management, SESC, and environmental due care requirements, all of which are critical in ensuring contractors clearly understand and comply with the University’s stormwater management program and University expectations when working on University property. The web links for the UM construction safety requirements, stormwater management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents. Additionally, new this year, a fact sheet was developed specifically for contractors working on UMF campus.

**Measurable Goal:** Review and update existing websites and perform periodic review. Print a copy of website changes made, noting the date of revision, etc. A copy of these changes will be kept on file.

**Actions during the reporting period:**
During the 2013-2014 fiscal year, OSEH updated several pages on the UMA2 stormwater website, as outlined below:
• The 2013 annual report was added to the website on October 10, 2013 at the following location: http://www.oseh.umich.edu/environment/reports.shtml
• A link to the updated dye testing procedure was added to the existing dye testing webpage on October 16, 2013 and can be found at the following location: http://www.oseh.umich.edu/environment/dye.shtml
• The 2013 Semi-Annual Report was added to webpage on January 14, 2013 at the following location: http://www.oseh.umich.edu/environment/reports.shtml
• The “About” webpage was updated on January 14, 2013 at the following location: http://www.oseh.umich.edu/environment/about.shtml
• A new webpage was created with information on structural stormwater BMPs. The webpage also highlights several key BMPs utilized on U-M campus. The webpage link was made live on January 14, 2013 and is provided below: http://www.oseh.umich.edu/environment/ssbmp.shtml
• The post-construction guidelines were updated and reposted to the webpage on January 15, 2014 at http://www.oseh.umich.edu/pdf/guideline/guidePCSW.pdf
• On June 2, 2014, the 2014 Semi-Annual Report was added to the webpage at the following location: http://www.oseh.umich.edu/environment/reports.shtml

**Measurable Goal:** In 2010-2011, create a website information dissemination and coordination strategy (all campuses) to reach the target audiences. Identify educational information available/developed for each target audience applicable at U-M. This information will be kept on file.

The above goal was completed during a previous reporting period:

Existing information will be kept on file. Additional accomplishments, completed during this reporting period are provided:

Improvements to the OSEH stormwater website are continually ongoing. As noted in the previous measurable goal (within the PEP-2 Section), OSEH updated the dye testing procedure and updated the dye testing webpage. OSEH also created a new page with information on structural stormwater BMPs.

**Measurable Goal:** In 2011-2012, develop/add additional topics, web links, etc. to fill any gaps in the topics needed to meet the permit requirements. Print a copy of website changes made, noting the date of revision, etc. A copy of these changes will be kept on file.

The above goal was completed during a previous reporting period:

Existing information will be kept on file. Additional accomplishments, completed during this reporting period are provided:

Improvements to the OSEH stormwater website are continually ongoing. As noted in the previous measurable goal (within the PEP-2 Section), OSEH updated the dye testing procedure and updated the dye testing webpage. OSEH also created a new page with information on structural stormwater BMPs.

**Measurable Goal:** In 2012-2013, implement the new dissemination strategy/plan for the stormwater education website. The number of website hits will be tracked for reporting (above).

Actions during the reporting period:

As of July 1, 2014, 24,791 website hits were registered on the UMA2 Stormwater website. This is an increase of 1,251 hits over the 2012-2013 reporting period.
The UMD stormwater website received 847 views during this reporting period. Unfortunately, the views that occurred between May 5, 2014 and May 11, 2014 were not able to be counted due to an IT error.

UMF expanded its campus stormwater education website last fiscal year (2012-2013) and is continuing to improve electronic training materials and resources. UMF had some difficulty with tracking visits to the web resources; however, EHS began tracking visits to the EHS website in February 2013. There were approximately 2,640 visits to the website during the 2013 reporting year and approximately 2,200 visits during the 2014 reporting year.

**PEP -3. Stormwater Management at U-M - Video & Public Service Announcements**

The video Stormwater Management at the University of Michigan provides viewers with an overview of stormwater issues as they pertain to University operations and activities. The video begins with an overview of the UMA2’s stormwater drainage system and it’s receiving bodies followed by a synopsis of the legal requirements that mandate the NPDES permit and the development of a stormwater management program. The remainder of the video focuses on how stormwater can become polluted because of human activities. It proceeds to inform viewers of the University’s actions to protect stormwater quality in the following areas: salt use and deicing activities, waste management and spill response, campus planning and expansion, cleaning outdoor equipment and vehicles, chemical disposal practices, and food vendor training.

This video or other stormwater video content is offered for viewing on an as needed basis for inclusion in faculty and staff presentations, classes, workshops, etc.

**Measurable Goal:** The number of offerings of stormwater videos will be tracked annually. A listing of available stormwater videos will be kept on file.

**Actions during the reporting period:**

Stormwater video content is offered for viewing on the U-M OSEH website, located here: [www.oseh.umich.edu/environment/storm.shtml](http://www.oseh.umich.edu/environment/storm.shtml). In addition, all new employees are sent a welcome email that includes the following:

*Stormwater: The State requires that everyone at U-M be trained on stormwater management. Learn about your responsibility to help reduce pollutants reaching our storm drains: [http://www.oseh.umich.edu/environment/storm.shtml](http://www.oseh.umich.edu/environment/storm.shtml)*

There were approximately 783 new employees during the reporting period.

The exhibit area at the UMD’s Environmental Interpretive Center (EIC) is generally open to the public six days a week from 10 am until 5 pm. The exhibit area contains several interactive exhibits that allow the visitors to learn about various aspects of the Rouge River Watershed, water quality concerns and conservation efforts and practices. These exhibits are also used in UMD’s formal education programs and university courses. The exhibits begin with an overview of the concept of a watershed and an aerial photo of the Rouge River, so visitors can get a perspective of the entire area of southeastern Michigan. The multi-media videos offer three six-minute videos about the watershed, hydrologic cycle, and the problems the Rouge River is facing. The exhibit area also houses several kiosks that encourage visitors to find ways to be a part of the solution by providing steps to take at home to improve water quality.

EHSEM created an online stormwater training course which is offered on the UMD stormwater website. The training consists of a video and an 8 question quiz. The course went live in June of
UMF offered several stormwater training classes to a variety of Facilities & Operations employees in August – September of 2013. Classes focused on each particular unit’s unique role/responsibilities in protecting drains and implementing BMPs in their respective areas.

**Measurable Goal**: Stormwater, waste disposal, and recycling related Public Service Announcements will be distributed annually for use during the Football season home games. These short educational messages will provide stormwater information to visitors, students, staff and contractors attending the U-M football games. The total anticipated audience for these messages is over 109,000 per game. An example announcement follows: Stop trash, food, and drink wastes from going down the storm drain and to the Huron River! Please recycle and properly dispose of your trash, food, and drink wastes. Help keep our Michigan waters BLUE!

**Actions during the reporting period:**

Public Service Announcements were made at the seven U-M football home games during the 2013 football season, reaching an audience in excess of 780,000 people.

Due to the fact that the UMD Fieldhouse is not equipped with an announcement system, EHSEM used one of the poster designs that was created by the Communications and Marketing Department and posted several of them in the Fieldhouse/Wellness Center in order to spread stormwater awareness.

UMF has dedicated an outdoor display case to stormwater education. The display case is located on the faculty/staff Harrison parking ramp which is along a high traffic pedestrian walking area. UMF continues to champion the campus wide recycling in all buildings and encourages proper management of waste whether one is on campus or at home.

In addition, UMF provides PSA’s promoting community household hazardous waste collection days in October and May of each year through e-mails and printed materials/post cards, etc. These are typically sent to all faculty, staff and students (> 9,000 individuals).

UMF EHS also promotes stormwater management at the UMF Welcome Back Picnic by having a display table and educational handouts, and signing up volunteers for storm drain stenciling activities in the Fall. An estimated 2,500-3,000 students, staff and faculty attended. Additional materials are distributed during the annual Earth Day Celebration in which more than 750 community members attend with families.

**PEP -4. Stormwater Education Presentations (includes Training Sessions, Workshops, etc.)**

Stormwater education presentations are provided to key staff having greater potential to impact stormwater quality during their day-to-day work. The remainder of the University community is targeted through other means. The presentations discuss the stormwater drainage system; the need for protecting the quality of stormwater discharges; the NPDES permit, its legal requirements, and the stormwater management program; and the most common stormwater pollutants and ways to limit their effects on stormwater. The presentations can also feature the stormwater video.

Stormwater education is provided during new employee orientation sessions (all employees at the U-M), new laboratory employee training classes and at new Plant employee training classes. In addition, presentations
including stormwater topics are provided on an annual basis to UMA2 Plant staff which includes the following sub-groups:

- Building Services,
- Construction Services (including the Cabinet, Sign, Glass, and Upholstery shop departments),
- Facilities Maintenance (including HVAC, Plumbing, Pumps, Steam Distribution & Insulation, Electrical, Fire Systems, Elevators, Roofing, Metal Crafts & Machine Repair shop departments),
- Grounds & Waste Management Services,
- Utilities & Plant Engineering (includes purchasing, generation, distribution, conservation, and accounting of utilities for the University), and the
- Work Control group (responsible for single point of contact for services, all estimates and preventive maintenance planning).

**Measurable Goal:** Stormwater topics will be included in a minimum of 50 classes, workshops or presentations annually. The number of sessions including training on stormwater issues will be tracked for subsequent reporting.

**Actions during the reporting period:**
Stormwater topics were included in over 110 classes, workshops or presentations that reached over 1,630 people during the reporting period. Examples of classes include: Spill Prevention Control and Countermeasure training, Annual Safety Refresher training, Hazard Communication training, Hazardous Waste Management training, Personal Protective Equipment (PPE) training, “All in One Training” for Public Safety staff and the Environmental Requirements Update training. Additionally, 783 new hires were sent a link to a stormwater education video and to the UMA2 stormwater website within a month of hire.

UMD held 19 stormwater training sessions for faculty, staff, students and contractors where a total of 176 people were trained. Eight contractor companies were trained resulting in a total of 57 contractor employees.

Annually in May, the EIC sponsors the Rouge River Water Festival. This year, 1,265 people attended from 20 schools and 89 presenters from 40 organizations. Water Festival participants attend presentations or exhibits that address topics such as uses of water; hydrologic cycle; wastewater treatment; soil erosion; and wetlands. Volunteers include organizations like the MDEQ; Ford Motor Company; Cranbrook Institute of Science; the United States Environmental Protection Agency (US EPA); Friends of the Detroit River; FOTR; and Marine Pollution Control to name a few. In addition, the EIC’s half-acre rain gardens collect on-site stormwater.

UMF refreshed training materials for the newly implemented UMF SWPPP, which was finalized in December 2013. Training materials will be used to train select Facilities and Operations management and staff. Additionally, EHS includes the protection of storm drains in other health & safety classes such as hazard communication, hazardous waste, Student Housing Resident Assistant Orientation, and Respiratory training.

UMF EHS continues to meet with contractors prior to starting construction and renovation projects to go over specific environmental and occupational safety requirements and to discuss soil management, the University’s construction safety requirements and protection of storm...
drains, safe/proper management of chemicals and waste, and so forth. EHS staff also conducts routine inspections of work sites throughout the year to ensure protective measures are in place prior to and during contractor work activities. SESC weekly inspections are performed as required.

**Measurable Goal:** A minimum of 500 laboratories will be inspected annually. The inspections will include a review of issues impacting stormwater quality, chemical storage, waste management and disposal. These inspections may also serve as an indicator of the effectiveness of stormwater education received, or the need for additional education. The number of inspections performed annually will be tracked for subsequent reporting.

**Actions during the reporting period:**
A total of 1,966 laboratory rooms (822,068 ft² of lab space) were inspected during the reporting period at UMA2.

UMD conducted a total of 73 lab inspections during this reporting period.

UMF conducted over 35 lab inspections during this reporting period which included inspection of studios and the decommissioning of labs in preparation of the Murchie Science Building Renovations.

**Measurable Goal:** All outdoor food vendors will receive training/education including related stormwater issues annually. Food establishment inspections will include items to ensure stormwater BMPs are being followed. These inspections may also serve as an indicator of the effectiveness of stormwater education received, or the need for additional education. The number of inspections performed will be tracked for subsequent reporting.

**Actions during the reporting period:**
A total of 222 inspections were performed by OSEH sanitarians on temporary food establishments during the reporting period. Additionally, 51 food selling locations were inspected at each home football game to ensure the appropriate food safety signage/poster, displaying proper disposal tips, was conspicuously displayed at each location, which resulted in 357 total signage verification checks. An additional 51 verification checks were performed at the NHL Winter Classic event that was held at U-M stadium in January 2014, raising the total number of signage verification checks to 408.

UMD provides training for food vendors even though such vendors typically do not partake in any outdoor cooking activities.

UMF EHS provided training to key representatives of food vendors in September 2013. EHS routinely inspects loading dock areas that are used by food service vendors and their suppliers to ensure waste materials are being properly managed.

**Additional measures taken to achieve goals:**

**UMA2:**
- OSEH continues to work with U-M football stadium vendors/concession stands to prevent potential discharges from entering the stormwater system. Concession stands were posted with signage detailing procedures for proper grease and wastewater management during the 2013 football season. A total of 50 laminated brochures were posted in the fall of 2013, prior to the onset of the 2013 football season.
Through the Planet Blue Ambassador program students, faculty, and staff can complete training modules on different relevant topics (e.g., water). For the Water module portion of the Planet Blue Ambassador Training, students and staff are encouraged to make pledges including, but not limited to:

- I will always properly dispose of extra household hazardous waste (HHW)
- I will fix any oil or other automotive fluid leaks on my vehicle immediately
- I will wash my vehicle on a permeable surface or at a carwash that reuses water
- I will properly dispose of my extra medications and not flush them

The U-M has a 24-hour Emergency Response Team to quickly and efficiently respond to and mitigate releases of polluting materials on campus. The campus community is encouraged, through presentations, training, signage, and other educational materials, to report illicit discharges and spills to OSEH/EHSEM/EHS and to the U-M Police Department (UMPD) so appropriate measures can be taken to correct issues which may impact stormwater quality. The response team is primarily comprised of U-M staff as well as 24-hour emergency response vendors to efficiently respond to and mitigate releases on campus.

In September (2013), U-M OCS hosted a “Where on Planet Blue? Social Media Challenge” where daily images of campus were posted on Facebook and Twitter. The first student who guessed where the image was taken on campus was entered into a raffle for a chance to win reusable prizes. Pictures posted included LEED certified buildings and stormwater BMPs on campus.

On September 19, 2013 “2013 Earthfest: Party of the Planet” was held at the UMA2 campus. This event promoted overall sustainability practices including waste prevention and healthy environments.

On November 6, 2013 a Sustainability Town Hall was held at the Hatcher Graduate Library on the UMA2 campus. The Town Hall featured presentations and displays focused on climate adaptation which included stormwater management and the impact climate change has on precipitation and flooding.

UMA2 collaborated with the City of Ann Arbor to host a Green Infrastructure Bus Tour, highlighting green infrastructure across the City on November 7, 2013.

UMA2 hosted a presentation by Monica Ellis, CEO of the Global Water Challenge on November 11, 2013. Ms. Ellis’s presentation, titled “Tackling Our Global Water Challenge” included information on drinking water and water sanitation issues and solutions across the globe.

U-M’s Graham Sustainability Institute, the Great Lakes Adaptation Assessment for Cities (GLAA-C), the Great Lakes Integrated Sciences & Assessments (GLISA), the Institute for Sustainable Communities, and the Kresge Foundation jointly organized the GLAA-C Capstone Conference: Adaptation in the Great Lakes Region which included topics such as how changes in precipitation, infrastructure, and landscapes will impact stormwater management. The two day conference, held on June 24 – 25, 2014, also included a bus tour highlighting some of Ann Arbor’s Green Infrastructure including the LEED Gold City Hall addition, Mary Beth Doyle stormwater Park, and a porous pavement parking lot.

**UMD:**

After the successful pilot recycling program that took place at the UMD University Center in the summer of 2011, the Dearborn campus started a single stream recycling program campus wide on July 1, 2012.
The program is projected to divert 1.4 million pounds of waste from entering landfills; 1,913 metric tons of carbon dioxide emissions (equivalent to taking 69 cars off of the road); and will save 4.3 million gallons of water, 3.4 million kWh of energy, and 9,982 trees over a 5 year period. 
http://www.umd.umich.edu/singlostreamrecycling/

- The EIC hosts monthly Stewardship Saturdays. Volunteers are called upon to participate in the removal of invasive species and garbage from the EIC grounds near the Rouge River.

- UMD has been directly promoting or distributing educational information or indirectly by supporting local agencies that are involved in such activities. Examples include the following:

  - EHSEM promotes the UMD website on all of their educational materials including the six (6) brochures, the bookmark, and the stormwater mouse pads. The website contains links to local agencies including FOTR, ARC, SEMCOG, the MDEQ, Earth 911, and local county websites which provide information on household waste collection dates and locations.

  - Annually in May, the EIC sponsors the Rouge River Water Festival. This year, 1,265 people attended from 20 schools and 89 presenters from 40 organizations. Water Festival participants attend presentations or exhibits that address topics such as uses of water; hydrologic cycle; wastewater treatment; soil erosion; and wetlands. Volunteers include organizations like the MDEQ; Ford Motor Company; Cranbrook Institute of Science; the United States Environmental Protection Agency (US EPA); Friends of the Detroit River; FOTR; and Marine Pollution Control to name a few. In addition, the EIC’s half-acre rain gardens collect on-site stormwater.

  - EHSEM partners with several internal groups around campus to pass out stormwater materials. This includes Mailing/Parking and the University Center who pass out Car Care brochures with parking passes to all faculty, staff, and students; Public Safety who pass out stormwater brochure packets during student orientation; and the campus library and bookstore who pass out bookmarks throughout the year.

  - UMD partnered with FOTR and hosted two Rouge Rescue Events in 2014; 27 volunteers assisted in the event at the EIC and HFE and 19 volunteers assisted in the event at the EIC. Both events involved the removal of invasive species.

  - FOTR have office space on the UM-Dearborn campus. They host monthly Public Involvement Task Force Meetings, Rouge Education Project Task Force Meetings and board meetings. FOTR facilitates several volunteer monitoring programs including benthic macroinvertebrate monitoring, frog and toad surveying, and fish monitoring. Additionally, FOTR provides various workshops and educational presentations as well as play active roles in restoration projects within southeastern Michigan. Reports and additional information on their services can be found on their website at http://therouge.org/.

  - UMD maintains three (3) pet waste stations along the “Rouge River Gateway Greenway Trail” which runs through campus.

  - All UMD safety training classes include information on the importance of stormwater protection and how to identify an illicit discharge, identifying how to report spills and who to call if an illicit discharge or a spill is observed.

  - EHSEM is currently in the process of updating the UMD Spill Prevention Control and Countermeasure (SPCC)/Pollution Incident Prevention Plan (PIPP).
EHSEM provides stormwater management training to contractors to ensure awareness of environmental and occupational safety requirements. The flip chart covers a variety of topics including tornado safety, power outages, stormwater, soil erosion and sedimentation control, etc. along with emergency contact information.


UMF:

A bulletin board in the Hubbard Building and on the Harrison Parking Structure displays reminders and tips for employees and students on how to protect storm drains and ultimately the Flint River.

All Hazard Communication, Hazardous Waste, PPE, HAZWOPER, and other general safety training classes address the difference between sanitary and storm drains, illicit discharges, reporting spills, protection of drains, and who to call if an illicit discharge or spill is observed.

SPCC/PIPP, Stormwater Management and Environmental Due Care training is provided to select employees in Facilities & Operations. The training is offered at least every 2-3 years. Training covers BMPs, housekeeping, protection of storm drains, reporting spills, etc.

UMF promotes the local Genesee County Household Hazardous Waste Collection in the spring and summer of each year.

Annual Earth Day events and activities include participation of many local environmental organizations including the Flint River Coalition and the Flint River Corridor Alliance (in which UMF is a member of both). During the annual Earth Day events, participating organizations provide educational materials on how to protect the Flint River, by handing out brochures. In addition, organizations participate in one-on-one discussions with University and community members about specific actions individuals can do to improve water quality, how individuals can report problems, how individuals can get involved, and how individuals can participate in river clean ups, etc. Participating organizations also offer presentations to the general public during the Earth Day event.

UMF Outreach and student clubs partner with members of the Flint River Watershed Coalition (FRWC) to organize several (3-4) Flint River clean up volunteer days in the spring and fall. The University coordinates the student and community volunteers while the City of Flint coordinates the transportation and disposal of the trash and debris that is picked up & pulled from the banks of the river by volunteers.

UMF EHS meets with contractors prior to starting jobs to go over environmental and occupational safety requirements; this includes discussion of soil management, University’s construction safety requirements, protection of storm drains, etc. EHS staff also conducts random inspections of work sites to ensure cautionary measures are in place prior to, and during, contractor work. In some cases, SESC weekly inspections are conducted.

At UMF, the campus community is instructed through trainings, posters, signage, websites, display boards, bookmarks, flyers, and e-mail communications to contact UMF Public Safety in the event of any emergency, including those involving a potential release of pollutants to a sewer or surface water. Additionally, individuals are instructed to always attempt to protect nearby drains if a material is spilled in the area, if it is safe to do so.

- UMF’s University Outreach continues to be an engaged and active supporter of: promoting environmental stewardship, watershed management planning, greening of the community,
stormwater intervention workshops, Flint River clean ups, and volunteer projects throughout the City of Flint including the Genesee County area and surrounding counties within the Saginaw Bay Watershed. For more information about past and present University Outreach activities in the community regarding watershed management, contact Sara McDonnell at (810) 424-5489, or visit http://www.umflint.edu/outreach/land-water-people.

- The web links for the U-M construction safety requirements, stormwater management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents during the reporting year.

iii. Public Involvement and Participation

The University encourages public input in all aspects of its stormwater management program. In order to facilitate public participation, this plan and information related to the stormwater management program are made available on the stormwater web site. By viewing the Annual Reports that are placed on the web site, the general public and members of local stream and watershed protection organizations can make themselves aware of activities the University carries out under its stormwater management program. In addition, when new stormwater management program plans are developed and finalized, the City, County, and interested local stream and watershed protection organizations are allowed to review and comment on them. Website feedback link(s) will be provided to facilitate feedback on the Stormwater Management Program Plan (SWMPP) from the community.

One public awareness group that UMA2 works with on a regular basis is the Huron River Watershed Council (HRWC). Many of the HRWC’s goals are consistent with the University’s ideals for the preservation and protection of the surrounding natural water bodies. As a result, the University has established an informal partnership with the HRWC and has provided input to the HRWC on issues concerning the Total Maximum Daily Load program for water bodies that lie within the Huron River Watershed.

The following BMPs are used to meet the requirements of Part I, Section B.2 of the U-M’s NPDES Permit for Public Involvement and Participation (PIP):

**PIP -1. Stormwater Reports**

**Measurable Goal:** The SWMPP and NPDES reports will be made available on the U-M stormwater website. The date of addition to the website will be tracked for subsequent reporting.

**Actions during the reporting period:**

- The annual report for 2013 was added to the U-M OSEH stormwater website on October 10, 2013 and the semi-annual report for 2014 was added to the U-M OSEH stormwater website on June 3, 2014. Additionally, both reports were shared with key stakeholders and decision makers on the UMF Campus in the areas of Facilities and Operations, Business and Finance, and others.
- The UMD stormwater webpage provides a permanent link to the OSEH’s reports section: http://umdearborn.edu/691923/.

**PIP -2. Community Meeting Participation**

**Measurable Goal:** The U-M will attend a minimum of ten (10) meetings annually with local watershed/creekshed organizations like the HRWC, Washtenaw County Drain Commission, City of Ann Arbor (A2), the Millers Creek Action Team (MCAT), Flint River Corridor Alliance, FOTR, or other local stream protection organizations for collaboration on stormwater issues in the community.
U-M’s participation in meetings, community events, etc. with these groups will be tracked for subsequent reporting.

**Actions during the reporting period:**

Approximately 32 meetings were attended during the reporting period including Miller’s Creek Action Team, Mallett’s Creek Coordinating Committee, Middle Huron Initiative (MHI), Flint River Corridor Alliance, Hamilton Dam Committee, FOTR, and ARC.

Also, one (1) OSEH staff member attended the City of Ann Arbor- Mallets Creek Sediment Study Presentation on February 5, 2013 and two (2) OSEH staff members attended two (2) Neighborhood Meetings for the Mobility Transformation Facility (MTF) on March 24, 2014 and May 13, 2014. One (1) OSEH member attended the Green Infrastructure Forum hosted by the Huron River Watershed Council on July 2, 2013 and also attended the first Green Infrastructure Conference in Michigan on May 8-9, 2014.

UMD EHSEM attended six (6) monthly FOTR Task Force Meetings between July 2013 and May 2014. EHSEM is also an active member of the ARC. EHSEM attended three ARC meetings over the 2013-2014 fiscal year.

The UMD’s EIC supports various off-campus community organizations that are involved in a variety of initiatives to improve the surrounding watershed and to educate the public about the importance of being good stewards of water resources and the surrounding land. The EIC hosts events and meetings and are involved in various activities concerning education and outreach with the following organizations that are directly related to water quality concerns:

- Friends of the Rouge River
- Friends of the Detroit River
- Southeast Michigan Land Conservancy
- Lake Plain Stewardship Coalition
- Sustainable Business Forum
- Community Organic Garden

UMF is involved in the local FRWC planning and outreach related activities both by attending meetings as well as playing a leadership role on various committees. UMF involvement includes the following:

- UMF is an active and committed Flint River Corridor Alliance (FRCA) Partner member. The UMF Government Relations Director, David Lossing, is the administrative contact for FRCA. Mr. Lossing also co-chairs the FRCA Hamilton Dam committee. A UMF Environment, Health and Safety employee, attends most monthly meetings throughout the year. UMF occasionally hosts the monthly meetings and several open forums to discuss watershed issues as well. [http://www.frcalliance.org/](http://www.frcalliance.org/).

- UMF is a sponsor of the Flint River Watershed Coalition, and the UMF Alumni Relations Manager is an active board member. [http://www.flintriver.org/](http://www.flintriver.org/)

**PIP -3. Stormwater Management Program Plan (SWMPP) - Community Feedback**

**Measurable Goal:** The City, County and interested local stream and watershed protection organizations will be notified of the online availability of the U-M SWMPP for review and comment on the same frequency the information is provided to the Department. The SWMPP will be
accessible on the U-M website for review by the public. Any comments received will be reviewed by U-M OSEH/EHSEM/EHS and evaluated for inclusion in the SWMPP. Comments submitted and any actions taken in response to comments will be documented and kept on file.

The above goal was completed during a previous reporting period:

As previously reported, the draft SWMPP was shared with local watershed organizations and local government in the Ann Arbor/Huron River, Dearborn/Rouge River and Flint/Flint River areas for comments and feedback.

**PIP -4. Middle Huron Initiative Participation / Phosphorus TMDL Participation**

**Measurable Goal:** The U-M will participate in meetings of the MHI (typically semi-annual) to address the Ford & Belleville Lake TMDL on phosphorus reduction throughout the permit cycle. Attendance at these meetings will be tracked for subsequent reporting.

**Actions during the reporting period:**

- U-M participated in three MHI meetings during this reporting period, one of which was hosted by OSEH-EP3 and held on the UMA2 campus. The MHI partnership continues to contract with the HRWC to perform monitoring of the Middle Huron tributaries for the 2013 and 2014 sampling seasons.

**PIP -5. E. coli TMDL Participation**

**Measurable Goal:** The U-M will participate in Geddes Pond – E. coli TMDL efforts throughout the permit cycle. Management activities addressing E. coli include dry weather screening and illicit discharge elimination, semi-annual catch basin cleaning, pollution prevention, and public education. These efforts as well as attendance at meetings/events on this issue will be documented for subsequent reporting.

**No updates during this reporting period:**

- No meetings were held during this reporting period; however, U-M staff attends HRWC meetings and other creekshed meetings to help address regional TMDLs.

**PIP -6. Environmental Stewardship / Volunteer Opportunities**

**Measurable Goal:** The U-M will sponsor/offer a semi-annual volunteer opportunity for participants to get involved with stormwater improvement and education programs. Examples of opportunities include storm drain stenciling/marking and invasive species removal projects. The number of volunteer events offered will be tracked annually for subsequent reporting. The number of participants in volunteer stewardship events will be tracked for subsequent reporting.

**Actions during the reporting period:**

- Over 8 volunteer events were sponsored by U-M during this reporting period.

At UMA2, volunteer invasive species removal events were held on October 26, 2013 and March 29, 2014 with 21 and 25 participants, respectively. In addition, the U-M Office of Campus Sustainability webpages include volunteer opportunities in a variety of areas including stormwater/water quality to encourage the U-M community to get involved.

The U-M received a 2013 Tree Campus USA recognition from the Tree Campus USA program, sponsored by the Arbor Day Foundation and Toyota. According to Tree Campus USA, there are five requirements to receive this recognition, including: “establishment of a tree advisory committee, evidence of a campus tree-care plan, dedicated annual expenditures for this campus tree program, an Arbor Day observance and the sponsorship of student service-learning projects.”
Also, the UMA2 Radrick Farms Golf Course was awarded the 2014 Clean Corporate Citizen (C3) designation from the MDEQ. According to Jim Sygo of the DEQ, “Michigan’s C3 program is one of the most rigorous and long-standing environmental stewardship programs in the nation, requiring facilities to have an active Environmental Management System; a strong environmental compliance history; and pollution prevention goals and measures in place.” While the Radrick Farms Golf Course is outside of the urban area boundary, U-M still considered this prestigious award worth mentioning.

UMD surveyed both the main campus and the Fairlane Center storm drains and re-marked those which had missing or destroyed markers (approximately 200) in August of 2013.

Annually in May, the EIC sponsors the Rouge River Water Festival. This year, 1,265 people attended from 20 schools and 89 presenters from 40 organizations. Water Festival participants attend presentations or exhibits that address topics such as uses of water; hydrologic cycle; wastewater treatment; soil erosion; and wetlands. Volunteers include organizations like the MDEQ; Ford Motor Company; Cranbrook Institute of Science; the US EPA; Friends of the Detroit River; FOTR; and Marine Pollution Control to name a few. In addition, the EIC’s half-acre rain gardens collect on-site stormwater runoff.

The EIC hosts monthly Stewardship Saturdays. Volunteers are called upon to participate in the removal of invasive species and garbage from the EIC grounds near the Rouge River.

UMD partnered with Friends of the Rouge and hosted two Rouge Rescue Events in 2014; 27 volunteers assisted in the event at the EIC and HFE and 19 volunteers assisted in the event at the EIC. Both events involved the removal of invasive species.

FOTR have office space on the UM-Dearborn campus. They host monthly Public Involvement Task Force Meetings, Rouge Education Project Task Force Meetings and board meetings. FOTR facilitates several volunteer monitoring programs including benthic macroinvertebrate monitoring, frog and toad surveying, and fish monitoring. Additionally, FOTR provides various workshops and educational presentations as well as play active roles in restoration projects within southeastern Michigan. Reports and additional information on their services can be found at http://therouge.org/.

UMF EHS coordinated the Flint Community event “2014 Earth Day Celebration” where more than 50 organizations participated and over 60 volunteers helped with planning, setup, and moderating presentations throughout the day’s activities. A significant portion of the day’s activities addressed environmental stewardship, conservation, protecting natural resources, Flint River watershed management, organic gardening, composting and permaculture, alternative energy technologies, and recycling/waste management.

UMF EHS organized and coordinated the “Flint College Recycling Challenge 2014,” a fun spirited recycling competition between local colleges. UMF, Kettering University, Baker College and Mott Community College competed this year for the month of March leading up to the Earth Day 2013 event. In promoting the event, colleges were able to highlight the importance of environmental stewardship for the Flint community. EHS included the City of Flint in the event to further help the new Flint curbside recycling program created in 2014.
Additionally, an estimated ten individuals participating in EHS’s stormwater stenciling activities. Several student organizations organized individual Flint River Clean-up events during Fall of 2013 and Spring of 2014.

**Measurable Goal:** In 2010-2011, meet with local watershed/creek groups to identify joint activities and opportunities to meet permit requirements. Identify local creek/watershed groups, etc. timeframes, staffing and participation opportunities. This information will be kept on file.

The above goal was completed during a previous reporting period:
As previously reported, U-M has been participating in local watershed groups/meetings to coordinate efforts, actions, etc., as appropriate. U-M is also contributing to the MHI activities. Details of activities are provided above.

**Measurable Goal:** In 2011-2012, develop a participation plan for all campuses. Keep records of meetings attended, possible opportunities for coordination with local groups, etc. This information will be kept on file.

The above goal was completed during a previous reporting period:
During this reporting period, U-M staff attended local watershed group meetings, as described in PIP-2 (above), and met with HRWC and the Washtenaw County Water Resources Commissioner’s Office to discuss opportunities for collaboration.

**Measurable Goal:** In 2012-2013, implement the participation plan. Tally the number of meetings attended for annual reporting (as detailed in goals above).

The above goal was completed during a previous reporting period:
During this reporting period, U-M staff attended local watershed group meetings, as described in PIP-2 (above) and also attended TMDL group meetings as described in PIP-4 (above).

**Additional measures taken to achieve goals:**

- OSEH/EHSEM/EHS staff members continue to create, improve, and revise project/contract specifications for inclusion of BMPs during construction and renovation projects on campus.
- The U-M continues to work with the local City governments and watershed organizations to improve stormwater quality. This is accomplished through sharing information and resources.

**iv. Illicit Discharge Elimination Program (IDEP)**
The removal of illicit discharges is an ongoing program being conducted by the U-M. As illicit discharges are identified, they are discontinued or otherwise corrected. The program described in this section will be used to determine the existence, location, and extent of possible illicit connections and discharges to the stormwater drainage system. At a minimum, it will address the elements presented in Part I, Section B.3 of the Permit.

The UMA2 has been involved in an ongoing program for identifying and controlling non-point source pollution to the Huron River. The Huron River Pollution Abatement Project was developed from a grant from the federal Clean Water Act and used by the UMA2 to identify illicit connections to the stormwater system. The project was completed in 1990.

The U-M will continue to encourage reporting of water quality problems and possible illicit connections and discharges to the stormwater system. OSEH, Plant Operations, and/or Facilities Management will receive
reports of water quality problems and possible illicit connections and perform follow-up investigations, leading to elimination where appropriate.

The following BMPs are used to meet the requirements of Part I, Section B.3 of the U-M’s NPDES Permit for the Illicit Discharge Elimination Program (IDEP):

**IDEP -1. Storm Sewer Map**

**Measurable Goal:** By February 1, 2011 the U-M will create a storm sewer system map identifying the location of all of its discharge points and the names and locations of all the surface waters that the MS4 discharges into.

The above goal was completed during a previous reporting period:

As previously reported, storm sewer maps identifying outfalls at Ann Arbor, Dearborn and Flint have been completed. Geographic Information System (GIS) integration of the outfall information from each campus is ongoing.

A GIS mapping system was completed for the Ann Arbor campus in 2010. Updates to the system will continue, as needed.

UMD updates campus stormwater maps as needed; updated information is sent to a vendor to provide up-to-date master copies.

UMF has completed GPS mapping for outfalls into the Flint River or City of Flint MS4. In addition, a labeling plan to identify catch basins to specific outfalls has been completed. The updated maps were used for 2012 dry weather screening activities. Additional mapping of catch basins occurred in September - October of 2013 during the development of the UMF SWPPP.

**Measurable Goal:** The storm sewer system map will be updated periodically as discharge points are identified or added. The dates of modification of the system map will be tracked and kept on file.

**Actions during the reporting period:**

UMA2 continues to work with the Plant Utilities Department to review and update the storm sewer maps as changes/updates are needed.

UMD updates campus stormwater maps as needed; updated information is sent to a vendor to provide up-to-date master copies.

UMF EHS partnered with University Outreach staff to complete GIS mapping of storm drains and outfalls on campus. This information was also used for two other related projects related to 2012 dry weather screening and hazard mitigation planning activities. Additional mapping, data review, and quality assurance was conducted on the GIS maps for storm drains in 2013 - 2014.

**IDEP -2. Survey of Facility Discharge Points**

**Measurable Goal:** U-M will create a prioritized listing for the performance of dry-weather screening considering the criteria in Part I.A.7.b.2 of the permit. The list will be developed in 2011 to ensure the use of the most up to date storm sewer system map/information will be utilized. The list will be kept on file.

The above goal was completed during a previous reporting period:

During this reporting period, in October 2013, UMA2 requested a modification to the IDEP dry weather screening procedure that is utilized to screen stormwater outfalls located on the Ann
Arbor campus. The modified procedure was approved by the DEQ in November, 2013. Copies of the updated procedure and the MDEQ approval letter were included in the semi-annual report.

**IDEP -3. Dry Weather Screening**

**Measurable Goal:** The U-M will perform dry weather screening on each MS4 discharge point at least once every 5-years beginning on February 1, 2010, (per Part I.A.7.b.3) to determine the existence, location, and extent of possible illicit discharges into the U-M stormwater drainage system on all three campuses. This is typically done during four to five rounds of screening. Any issues identified for further investigation or correction will be tracked for subsequent reporting. The number of illicit discharges and connections identified and subsequently corrected or removed will be tracked for subsequent reporting (see IDEP section).

**Actions during the reporting period:**
OSEH-EP3 has screened 46 of 78 outlets located on the UMA2 campus. Additional dry weather screening is ongoing.

UMD performed dry weather screening on two major outlets (DOF-001 and DOF-006) on May 21, 2012. As of September 2014, EHSEM dry weather screened 186 catch basins.

UMF completed dry weather inspections on all 13 outlets associated with the campus between the months of June and October 2012. The inspections were performed following the guidance in U-M's *January 2010 Dry Weather Screening Program Guideline for the University of Michigan*. Flow was observed at four of the outlets during dry weather conditions. Two of the sources were backtracked to off campus sources, and the remaining two were determined to be building foundation sump pumps. The complete report, including figures, analytical data and field data sheets, was provided as an attachment to the April 2013 Mid-Year Report.

**IDEP -4. Public Reporting of Illicit Discharges**

**Measurable Goal:** The emergency response system on campus will be maintained by UMPD (24/7) for use by the public to report illegal dumping, spills or suspicious discharges at the University throughout the permit term. The number of calls received by the UMPD/OSEH emergency response call system on potential discharges to the stormwater system will be tracked for subsequent reporting. The number of incidents remedied as a result of these calls will also be tracked and reported annually.

**Actions during the reporting period:**
A total of 60 calls of outdoor incidents were reported via the UMPD/OSEH/EHSEM/EHS emergency response systems. A majority of these outdoor incidents were remedied (55) prior to surface water impact; however, five (5) incidents resulted in discharge or possible discharge to surface waters which were reported to the appropriate agencies.

During this reporting period, UMA2 personnel responded to approximately 180 indoor and outdoor incidents, involving natural gas leaks, fires, improper disposal of medical equipment, and spills and leaks of materials that could have potentially impacted stormwater. The majority of the spills with potential to impact stormwater were small, ranging from a few milliliters to five gallons; however there were a few larger spills including a water main break (>1000 gallons) and a sewer leak at the Arboretum (approximately 500-gallons, although this spill was on City property). Typically, the spilled materials were contained with spill kits; cleaned up using absorbent materials, and removed for appropriate disposal by U-M’s on-call emergency response team. Response activities involved leaks and spills of materials such as automotive fluids (gasoline, hydraulic oil, glycol, transmission fluid, diesel, power steering fluid, brake fluid,
antifreeze, and motor oil), soil/sediment, soap/detergent/chemicals, latex paint, and blood. A few examples of such releases and the corresponding response actions are provided below.

- OSEH was notified of a water main break in front of the Duderstadt Media Union on 7/20/13. OSEH personnel arrived on scene to find water flowing down Bonisteel Blvd. on to Fuller Rd. Nearby buildings were checked for flooding; however, no buildings were affected. The Plumbing Shop was contacted and diverted pressure around the break until the break was repaired. Plumbing staff estimated that no more than 1-2 yards of soil could have impacted the nearby drains and storm lines. UM staff jetted and vacuumed the affected storm inlets and lines to remove the soils/sand/gravel that was carried from the area around the water main break. Road surfaces and associated curb and gutter downstream of the water main break were swept as well. OSEH filed a follow up written report with the MDEQ Jackson Office on July 23, 2013. There were no injuries or exposures.

- OSEH was contacted regarding a sewer odor and a gray pool of water at the U-M Arboretum on 8/29/13. The pooled water was located east of the Arboretum entry from parking lot M-29, south of the Huron River. OSEH arrived on scene and met with Arb staff, UMPD staff, and U-M plumbing staff. OSEH investigated and found liquid flowing from the ground, toward the Huron River. Water with a sewer odor was observed entering the river. It was determined that the line was a City line. It was also determined that the water was coming from a buried manhole. The City was informed of the situation and arrived on scene. City personnel mobilized city resources to come out and jet the line. Jetting the line removed the blockage and the water stopped flowing to the surface. The City suspected possible tree roots as the cause, as the line is quite shallow, and traverses woods. The City applied lime to impacted areas to kill bacteria and OSEH, UMPD, and Arb staff deployed caution tape at the river adjacent to the outfall, and downstream as well as along the area of surface contamination. Notification signs of the lime application were created and posted as well. In addition, the City took responsibility for all necessary notifications, as the line with the blockage was City owned.

- OSEH was contacted regarding a spill of motor oil in Parking Lot NC-74. OSEH personnel arrived on scene and found that the oil affected approximately 2000 square feet of the parking lot. OSEH applied Oil Dri to the affected areas. The Oil Dri was ground in and then collected by the UM-Grounds street sweeper.

- A vehicle broke down on 4/16/14 in the Westbound lane of E Medical Center Dr, west of the intersection with E Hospital Dr. The vehicle started to leak oil (approximately 1 quart total) when it was lifted by a tow truck. DPSS blocked the affected lane and contacted
OSEH for assistance. OSEH arrived on scene and applied Oil Dri to the affected area. The UM Grounds street sweeper was contacted to collect the material.

No outdoor spills were reported at UMF for the 2013-2014 fiscal year. EHSEM responded to a total of five (5) incidents involving spills and leaks that could impact the storm system, none of which were reportable:

- An EHSEM staff member noticed oil trailing from the first floor of the parking structure to the second floor, which lead to a leaking parked vehicle. EHSEM used Oil-Dri and absorbent pads to aid in clean-up.
- A contractor vehicle’s hydraulic line failed. The contractor used its own spill kit materials. EHSEM was on scene and assisted.
- Public Safety reported a spilled paint can in the parking lot of the Fairlane Center. EHSEM was called in and cleaned the impacted area.
- A contractor had oil leaking from a piece of equipment. EHSEM responded. EHSEM reported the leaking equipment to the on-site supervisor and used Oil-Dri to clean the affected area.
- An EHSEM staff member noticed oil that was tracked out from a construction area. EHSEM and Grounds staff responded to the clean-up. EHSEM spoke with the on-site supervisor to correct the problem.

Additional measures taken to achieve goals:

- EHSEM applied and was approved by the MDEQ for a Notice of Intent to use Rule 97 tracer dye when necessary.
- UMA2 recycled 24 tons of batteries, 13 tons of fluorescent lamp ballasts, 48 tons of fluorescent lamp bulbs, and 137 tons of consumer electronics.
- UMD recycled a total of 4,357 fluorescent light bulbs and 17 tons of electronic equipment.
- UMD EHSEM oversees the disposal of hazardous waste. EHSEM personnel are properly trained in RCRA and the University utilizes qualified contractors for transport and disposal off site.
- UMF recycled 7,665 spent lamps and other electronic waste, totaling approximately 19 tons of e-waste.
- UMF - EHS coordinated the Flint College and University Recycling Challenge in which UMF, Kettering, Baker and Mott Community College competed for the month of March for the top award for collecting the most cardboard, paper, plastic and metal. UMF recycled approximately 14,000 pounds of materials as part of the March 2014 Recycling Challenge, and the total cumulative amount recycled by all participants was 40,000 pounds of recyclables during the competition.
- Recycling Efforts – The U-M promotes environmental awareness by sponsoring recycling programs on campus. Educational materials have been developed by Grounds and Waste Management (G&WM) which address student contributions to the U-M recycling effort, educate students on the types of recyclables and where they may be taken for recycling, and educate students on the impact that recycling has on the environment.
OSEH sanitarians continue to work with kitchen and food vendors on campus to ensure proper waste management and disposal methods are used. In addition, OSEH continues to work with U-M football stadium vendors/concession stands to prevent potential discharges into the stormwater system. Concession stands were posted with signage detailing procedures for proper grease and wastewater management for these operations during the 2013-2014 football season to reinforce proper waste management for these temporary operations.

The University continues to review owned facilities in an effort to identify discharges into the storm and sanitary systems. As part of this survey, any areas that contain suspect flows are noted for potential dye testing.

EHSEM applied and was approved by the MDEQ for a Notice of Intent to use Rule 97 tracer dye when necessary.

Additional campus programs, which assist in maintaining or improving the quality of stormwater discharges, include: recycling, training and education of staff and students, designing to minimize seepage, and erosion control. In 2014, UMA2 completed its eighth year participating in RecycleMania, a nationwide collegiate recycling and waste reduction competition. The competition is comprised of four categories: recycling rate, per capita recycling, per capita total waste, and total pounds of recycling. UMA2 competed against 274 schools in this 10 week competition running from January 19th through March 29th. U-M finished 111th place in total pounds of recycling with 715,684 lbs.

Erosion Control – Part 91 of the Natural Resources Environmental Protection Act (NREPA) provides for a statewide soil erosion and sedimentation control program. This program outlines the proper provisions for water disposal and the protection of soil surfaces during and after construction and is adhered to by the U-M.

Employee Training and Education – U-M personnel involved in the application of herbicides, pesticides, and fertilizers have been trained and are licensed applicators. All applicators in the following departments are trained and licensed: G&WM, Facilities Management Grounds Department, Matthaei Botanical Gardens, Nichols Arboretum, Radrick Farms, and Athletics. In addition to the courses taken through the Michigan Department of Agriculture, G&WM also employs a foreman to train all of its employees. Training programs will also be conducted to address the purpose and operation of BMP activities under this SWMPP. In addition, staff in various departments have received, or are in training to receive certification from MDEQ in Stormwater Management – Construction Site, Stormwater Management – Industrial Site or Soil Erosion & Sedimentation Control.

Hazardous Materials Response – OSEH, EHS & EHSEM are instrumental in maintaining a safe and healthy environment for faculty, staff, students, and visitors. Routine training is provided to new faculty, staff, and students regarding hazardous materials and conditions at U-M facilities. The University also maintains spill response teams (U-M staff and contracted vendors) for each campus that can quickly and efficiently respond to and mitigate releases of hazardous materials.

Hazardous Waste Disposal – OSEH is responsible for the appropriate collection and disposal of hazardous waste and hazardous materials used and generated by the U-M units. The program ensures tracking of the materials from point of generation through collection and ultimate disposal. Personnel are properly trained and appropriately licensed to handle the material and transport the waste on campus. Qualified contractors are used for ultimate transport and disposal off site. The UMF EHS and UMD EHSEM oversee the disposal of hazardous wastes on their respective campuses. EHSEM and EHS personnel are properly trained in RCRA and the University utilizes qualified contractors for transport and proper disposal of waste off site.
Plan Review – OSEH, EHSEM & EHS review plans for the renovation of existing structures and the construction of new facilities. The plans are reviewed to identify potential environmental concerns and to ensure the protection of stormwater quality and the stormwater drainage system.

Stormwater Basins – Stormwater management basins are used to reduce the impact of stormwater discharges from campus locations. Although the primary function of these basins is to provide first-flush holding capacity for stormwater, the design also provides for sediment deposition within the basin structure which can significantly reduce pollutant loads in receiving waters.

UMF – EHS routinely walks the campus and inspects loading dock areas, dumpsters, facilities operations and vehicle maintenance/storage areas, and refueling operations to ensure that materials continue to be stored properly, secondary containment is functioning and any outdoor storage containers remain in good condition.

v. Post-Construction Stormwater Control for New Development and Redevelopment Projects

The U-M has a program to address stormwater runoff from new development and redevelopment projects. As part of this program, the U-M manages, reviews, and continually updates campus-wide planning to address stormwater runoff from each new regulated development and redevelopment project. This program helps to ensure that controls are in place that will minimize and in some cases prevent impacts on water quality from new development and redevelopment projects that disturb areas greater than one acre or disturb areas less than one acre but which are part of a larger common plan of development.

PCSW -1. Post-Construction Stormwater Runoff

**Measurable Goal:** By August 1, 2009 the Post-Construction Stormwater Requirements guideline which details the minimum treatment volume standard and the channel protection criteria was issued by U-M. The guideline is available on the U-M-OSEH website and in Appendix G of the SWMPP.

The above goal was completed during a previous reporting period:

As previously reported, the Post-Construction Stormwater Requirements Guideline was submitted to MDEQ on July 28, 2009.

PCSW -2. SESC Plan Review for Structural & Non-Structural Best Management Practices

**Measurable Goal:** OSEH/EHS/EHSEM and/or the University Planner’s Office will review all construction and renovation plans for use of structural and non-structural BMPs to prevent receiving water quality from the impacts of development and limit the rate at which surface water runoff discharges from any specific site to not exceed the pre-development hydrologic regime. The number of sites implementing various non-structural and structural BMPs will be tracked annually for subsequent reporting.

**Actions during the reporting period:**

The U-M utilizes a variety of structural BMPs (some were installed to comply with post-construction standards and others were installed as acts of good environmental stewardship). Examples of BMPs installed at the U-M include: hydrodynamic separators, in-ground detention systems, detention and retention stormwater basins (including regional systems), bioretention, infiltration basins, and green roofs. There are over 100 structural stormwater BMPs installed throughout the UMA2, UMF, and UMD campuses.

Bioretention traffic islands and porous pavement and parking lot stormwater treatment systems to remove sediments, oil, grease and trash have been installed at various locations on campus. Additional low impact development options such as green roofs have been constructed at the
Ross School of Business, North Quad, and Children & Women’s Hospital. Examples of additional stormwater controls installed include a hydrodynamic separator at Parkview Turner, a water quality unit at the U-M Golf Course, an underground retention system at the U-M Baseball and Softball fields, and a detention structure at Parkview Turner.

**PCSW -3. Operation & Maintenance of Best Management Practices**

**Measurable Goal:** Stormwater management basins on campus will be inspected annually, at a minimum. The number and frequency of inspection of stormwater basins will be tracked for subsequent reporting. Maintenance issues identified during these inspections will be tracked until corrected.

**Actions during the reporting period:**
Annual inspections were completed on the 46 stormwater management basins on campus by U-M personnel during this reporting period during spring 2014. Stormwater management basins were also maintained through mowing, invasive plant removal, and controlled burns.

UMF has initiated inspections of the catch basins as part of the dry weather screening activities. Additionally, during normal grounds area inspections, drains and areas around drains are also inspected, and if problems are observed they are reported appropriately. During the Spring of 2014, several catch basins on the campus required repairs. Precautions were taken to ensure drains were adequately protected while repairs were being made to the drains.

**PCSW -4. SESC Plan Review for PCSW Controls**

**Measurable Goal:** OSEH/EHSEM/EHS and/or the University Planner’s Office review all plans to ensure projects have adequate post-construction stormwater management controls. The number of plan reviews will be tracked for subsequent reporting.

**Actions during the reporting period:**
Approximately 162 plan reviews, with 22 requiring a separate SESC Plan review and approval, were performed during this reporting period. Sites with greater than one-acre of earth disturbance are evaluated as required to meet the PCSW controls requirement.

UMD had five (5) SESC projects that EHSEM reviewed for appropriate soil erosion and sedimentation control best management practices such as silt fence and inlet filters.

UMF reviewed many project scopes/drawings to determine if SESC measures were necessary. Of those project scopes and related documents reviewed, no projects required general monitoring/inspections throughout the duration of the projects.

**Additional measures taken to achieve goals:**

- Construction sites are stabilized with the addition of permanent controls and vegetation to reduce the amount of sedimentation that could impact receiving waters.
- OSEH is working with Construction Management to implement standard protocols to dye test the internal piping in new building construction and building renovation projects where more than 10 fixtures are impacted to confirm proper connection to the sanitary sewer system. A program for confirmation of taps to exterior pipes is already in place.
vi. Construction Stormwater Runoff Control

In 1982, the U-M received approval from the Michigan Department of Natural Resources to operate as an Authorized Public Agency (APA) under the authority of Part 91, Soil Erosion and Sedimentation Control (SESC) of the Natural Resource & Environmental Protection Act, 1994 PA 451, as amended (Part 91). Reauthorization of U-M’s APA status was received in 2004 from the Michigan Department of Environmental Quality. APA status allows the U-M to establish and manage the Soil Erosion and Sedimentation Control procedures on its properties. Construction activity at U-M may involve contractor or in-house construction activities performed by Plant Operations.

The overall CSW program accomplishes the following goal:
- Provide and implement controls to minimize or prevent impacts on water quality from construction activity.

The following BMPs are used to meet the requirements of Part I, Section B.5 of the U-M’s NPDES Permit for Construction Stormwater (CSW):

CSW -1. Site Plan Reviews
**Measurable Goal:** Formal SESC plans are required for sites with earth disturbance (greater than 24 hours) of 1 acre or greater and projects (of any size) within 500 feet of “Waters of the State.” The number of SESC site plan reviews will be tracked annually for subsequent reporting. This review process allows OSEH/EHS/EHSEM to require projects to insert stormwater management controls into the front end of all projects.

**Actions during the reporting period:**
Twenty-two U-M sites required formal SESC plans, which were reviewed and approved by OSEH-EP3, during the reporting period.

UM-Dearborn had one (1) project that met the requirements described in CSW-1.

CSW -2. Best Management Practices (for SESC on Construction Sites)
**Measurable Goal:** The use of BMPs is required on all projects under the approved SESC Procedures for the University. The number of projects using the BMPs identified above for SESC will be tracked annually for subsequent reporting. BMPs will be selected as appropriate for site conditions.

**Actions during the reporting period:**
Over 90 U-M projects during this reporting period used a variety of BMPs on their sites. Examples of BMPs included, but are not limited to, the use of vegetation, silt fences, catch basin inlet filters, stone dykes, temporary roof conductors, and street sweeping.

UMD had five (5) minor SESC projects and utilized appropriate soil erosion and sedimentation control BMPs i.e., silt fence, inlet filters, etc.

UMF had no projects requiring SESC measures during the reporting period.

CSW -3. SESC Inspections
**Measurable Goal:** Sites will be inspected weekly and after significant rain events until final stabilization of the project site. The number of SESC inspections performed annually on U-M sites will be tracked for subsequent reporting.

**Actions during the reporting period:**
Approximately 1,646 weekly and after storm SESC inspections were performed during this reporting period.

UMD conducted approximately 77 SESC inspections on five (5) project sites.

There were no projects on UMF campus that required general SESC monitoring/inspections; however UMF EHS wanted to ensure best management practices were in place nonetheless and performed periodic inspections regardless of SESC requirements.

**CSW -4. SESC Training by MDEQ**

**Measurable Goal:** Select staff from OSEH, EHSEM, EHS and the University Planner’s Office will be SESC trained by MDEQ. The number of U-M staff who have received MDEQ SESC training will be tracked annually for subsequent reporting.

**Actions during the reporting period:**
- Nine (9) total U-M staff have received comprehensive SESC training from MDEQ and are current with the associated Certificate of Training, including one UMD staff member and one UMF staff member.

**CSW -5. Stormwater Operator Certification for Construction Sites**

**Measurable Goal:** Select U-M staff from OSEH University Planner’s Office and Construction Management/AEC will be certified in Stormwater Management for Construction Sites. The number of U-M staff who have received MDEQ certification will be tracked annually for subsequent reporting.

**Actions during the reporting period:**
- Thirteen (13) U-M staff, including two UMD staff members and one UMF staff member, are Certified Stormwater Operators in the State of Michigan for Construction sites at the time of this report.

Additionally, nine (9) U-M staff have received Industrial Stormwater training from MDEQ and are current with the associated Certificate in Training, including one UMD staff member.

**CSW -6. Sedimentation Control During Maintenance Activities**

**Measurable Goal:** The use of SESC controls is required for all maintenance projects involving earthwork. The number of SESC inspections performed annually on U-M sites will be tracked for subsequent reporting.

**Actions during the reporting period:**
- Approximately 1,646 weekly and after storm SESC inspections were performed during this reporting period.

UMD conducted approximately 77 SESC inspections on five (5) project sites.

There were no projects on UMF campus that required general SESC monitoring/inspections; however UMF EHS wanted to ensure best management practices were in place nonetheless and performed periodic inspections regardless of SESC requirements.

**Additional measures taken to achieve goals:**
- Contractors at U-M are required to clean/sweep construction areas and adjacent areas to prevent trackout from a work site.
A street sweeper is recommended by U-M for contractor usage at construction sites to reduce the amount of sediment that could potentially reach receiving waters.

- The stormwater drainage system is vacuumed periodically to remove sediment buildup within the system and to lessen potential sediment impacts to receiving waters.

- The post construction stormwater guidelines and soil erosion and sedimentation control requirements for construction projects are incorporated into the project specifications and bid documents.

- At UMD, street sweeping occurs approximately twice a year at the main campus, once in the spring and once in the fall, and monthly at the Fairlane Center. The parking structure is swept at least once a year. Street sweeping is available when necessary.

- UMD personnel pick up litter and debris on a daily basis from the main campus streets and parking lots and weekly from April to November. UMD personnel also pick up litter and debris monthly from December to March at the Fairlane Center.

- The Dearborn campus’ “no smoking” policy has nearly eliminated cigarette debris from campus grounds.

- EHSEM personnel walk the campus daily to check on project sites and address potential issues with responsible parties.

- At UMF, street sweepers are available, on an as-needed basis. The street sweepers are used at least once, usually twice per year, on all parking ramps and main roadways. The street sweepers are used in high priority areas more frequently such as at loading docks, near compost areas, and the Hubbard Parking area.

- UMF personnel walk the campus regularly to check on project sites and to address potential issues with responsible parties (e.g. covering a dumpster, debris/litter, inappropriate outdoor storage by contractors, etc.)

### vii. Pollution Prevention/Good Housekeeping for Municipal Operations

The University’s stormwater pollution prevention and good housekeeping initiatives include, but are not limited to the following six areas:

- **Structural Controls**
- **Roadways**
- **Fleet Maintenance**
- **Storm Sewer Labeling**
- **Flood Control Projects**
- **Pesticides and Fertilizers**

Each area has operation and maintenance Best Management Practices with the ultimate goal of reducing and in some cases preventing pollutant runoff from University operations to the maximum extent practicable. The overall P2/GH program accomplishes the following goal:

- Develop and implement a program of operational and maintenance Best Management Practices to prevent or reduce pollutant runoff from University operations.
The following BMPs are used to meet the requirements of *Part I, Section B.6 of the University of Michigan’s NPDES Permit* for Pollution Prevention & Good Housekeeping (P2/GH):

**P2/GH -1. Stormwater Management Basin Inspections**

**Measurable Goal:** Stormwater management basins will be inspected annually during the permit term. The number and frequency of inspections on the U-M retention basins and detention basins will be tracked for subsequent reporting.

**Actions during the reporting period:**
Annual inspections were completed on the 46 stormwater management basins on campus by U-M personnel during this reporting period during spring 2014. Stormwater management basins were also maintained through mowing, invasive plant removal, and controlled burns.

**P2/GH -2. Stormwater Catch Basin Maintenance**

**Measurable Goal:** Maintenance cleaning of the catch basins and storm sewer system piping will be performed periodically, with higher traffic areas and those identified via service requests receiving more attention. The goal will be to clean all catch basins in the system at least once per 5-year cycle. The number of catch basins maintained will be tracked for subsequent reporting.

**Actions during the reporting period:**
Catch basins across the UMA2 campus are cleaned and the sewer lines rodded. Liquid waste is decanted and drained to approved sanitary locations and the remaining non-hazardous sediment and debris is transported for disposal off-site. To more effectively handle the storm and sanitary cleaning solids, UMA2 constructed a storage pad for drying the solids. The solids are then loaded onto a dump truck or a roll-off container and transported to a sanitary landfill for proper disposal as non-hazardous, non-regulated waste.

The UMA2 has moved to a GIS-based system for catch basin cleanout which has improved tracking for reporting. During the reporting period, 1,123 catch basins were cleaned and approximately 612 cubic yards of debris was removed from the storm lines, catch basins and manholes.

UMD began implementing a 5-year cycle catch basin cleaning strategy in December 2012 and cleaned a total of 54 structures, 48 at the main campus and 6 at the Fairlane Center, to-date.

At UMF catch basins are inspected and cleaned out as needed by Facilities and Operations staff. This activity tends to occur more frequently in the fall when leaves and debris are more likely to accumulate near grate openings. Approximately 13 hours were logged during the report period of facilities’ staff cleaning catch basins accumulating over 1 cubic yard of waste from inside the basins and an additional 59 hours cleaning the ventilation pits that accumulated 1 cubic yard of waste. With the extreme winter weather experience from December – March, a significant amount of catch basin repairs were required around the University Center, Recreation Center, and WSW Building amounting to $19,200, which included some waste disposal as well.

**P2/GH -3. Municipal Properties with Stormwater Controls**

**Measurable Goal:** By October 1, 2011 a list of municipal properties and structural stormwater controls owned or operated by U-M will be created, which includes the type and number of properties and structural controls. This list will be kept on file.
The above goal was completed during a previous reporting period:
As previously reported, this information will be kept on file. This list is continuously updated as U-M properties are renovated and constructed and as new stormwater BMPs are installed. Updates also occur when U-M acquires new properties.

P2/GH -4. Street Sweeping, Leaf, and Litter Collection

**Measurable Goal:** Street sweeping, leaf and litter collection will be performed periodically throughout the permit term. The cost for disposal and estimated quantity of debris, trash, dirt, etc. disposed from the maintenance and cleaning/sweeping of numerous parking structures, surface lots and roadways throughout the University will be tracked for subsequent reporting.

**Actions during the reporting period:**
Approximately 456 cubic yards of waste was sent for disposal from the cleaning of parking lots and structures throughout the UMA2 campus. The combined estimated cost for disposal and labor is over $1,070,500.

UMD personnel spent a total of 3,500 hours collecting litter on the main campus, removing about 1,260 yards of debris. Fairlane Center personnel collect litter weekly from April through November and monthly from December to March. During this reporting period approximately 1 yard was removed from the Fairlane Center. Approximately $56,214 was spent on litter collection and disposal throughout the UMD campus.

At UMF, 148.5 hours of labor at a cost of 1,506 was sent for street sweeping, 209 hours of labor at the cost of $7,443 for sweeping/cleaning parking lots and structures. Total labor associated with street, parking sweeping and cleaning of ramps is logged at more than 357 hours. Daily litter pickup involved more than 2,529 hours over the reporting period. The total of all sweeping and litter waste yielded an estimated 1 cubic yard of waste. Disposal costs are estimated at $3,700.

P2/GH -5. Total Suspended Solids (TSS) Runoff Reduction from Paved Surfaces

**Measurable Goal:** A strategy to reduce the runoff of TSS from paved surfaces to the maximum extent practicable, with a goal of reducing the annual TSS loading by 25% as compared to annual loading with no suspended solids controls will be developed (2010-2012) and implemented (2013) at the University. An estimate of the TSS loading reduction achieved through this strategy.

**No updates during this reporting period:**
This information will be kept on file. Note that the reduction of TSS loading is primarily achieved through street sweeping practices. As of December, 2013, over 100% of the TSS generated from parking, sidewalks, and roads was removed via street sweeping. The percent of TSS removed will likely always be higher than that produced in this scenario, since not just roads, parking lots, and sidewalks produce TSS. Yet, TSS is removed via street sweeping and catch basin cleaning regardless of source.

P2/GH -6. Unpaved Road and Parking Lot Best Management Practices

**Measurable Goal:** Develop BMPs to control dust and suspended solids in runoff from unpaved roads and parking lots. A list of unpaved roads and parking lots will be created (2010-2011).

The above goal was completed during a previous reporting period:
As previously reported, this information will be kept on file for UMA2. There are no unpaved roads or parking lots on the UMD and UMF campuses.
P2/GH -7. Prohibition of Coal Tar use as Asphalt Sealant

**Measurable Goal:** The use of coal tar emulsions to seal asphalt surfaces will be prohibited, as required in the permit. Plan reviews for construction and renovation projects involving asphalt will include comments from OSEH/EHSEM/EHS prohibiting the use of coal tar emulsions for U-M projects. Comments on construction and renovation projects are kept on file at the OSEH/EHSEM/EHS offices.

**Actions during the reporting period:**
- Approximately 162 plan reviews were performed during this reporting period.

University projects that involve sealing parking lot surfaces incorporate the NPDES permit language prohibiting coal tar emulsions to seal asphalt surfaces.

Coal Tar Asphalt sealants are not used on U-M campuses.

P2/GH -8. Snow and Ice Removal – Reduction in Salt Use

**Measurable Goal:** Incremental annual reduction in the use of salt for de-icing to reach 50% reduction based on an average annual use of 2600 tons per year at UMA2 from 1989 to 1999. The quantity of salt used for deicing will be tracked on an annual basis.

**Actions during the reporting period:**
- Approximately 3,150 tons of treated and untreated rock salt was used by UMA2 during this reporting period which is an increase of 21% from the average annual use amount of 2,600 tons per year from 1989 to 1999. The increase is attributed to record snowfall and cold in Ann Arbor.

UMD used 678 tons of sodium chloride, 500 gallons of Caliber M 1000 and 31,550 pounds of Ice Trax on the main campus to clear 97.1” of snow. The Fairlane Center used 12,462 pounds of bagged ice melter, 4,300 NAAC – sodium acetate, and 657,892 pounds of bulk salt.

UMF - approximately 200 tons of salt was used during this reporting period, an increase of 49 tons from the previous year. This was attributed to the record snow fall for Flint, and the region. The University continues to try to decrease usage and increase replacement with other effective alternatives.


**Measurable Goal:** Increase the use of alternative de-icers annually to replace/supplement salt use. The quantity of alternative de-icers will be tracked on an annual basis.

**Actions during the reporting period:**
- In the 2012-13 season, the following alternative de-icers were used at UMA2:
  - Magnesium Chloride at 56,250 pounds;
  - Safer Than Salt (Mag., Cal & Sodium Chloride blend) at 262,250 pounds
  - Caliber M-1000 at 18,600 gallons; and
  - Treated Sand at 167,400 gallons
  - Calcium Chloride was not used during this reporting period.

In the 2013-14 season, the following alternative de-icers were used at UMA2:
- Magnesium Chloride at 62,550 pounds;
- Safer Than Salt (Mag, Cal & Sodium Chloride blend) at 614,750 pounds
- Caliber M-1000 at 30,800 gallons
- Calcium Chloride at 55,500 pounds; and
Treated Sand at 100 tons

In the 2012-13 season, the following de-icers were used at UMD:
- Ice Trax – 31,800 pounds
- Caliber M 1000 – 670 gallons
- NAAC/CMA de-icer – 1,615 pounds (Fairlane Center campus)
- Bagged Ice Melter – 6,038 pounds (Fairlane Center campus)

In the 2013-14 season, the following de-icers were used at UMD:
- Ice Trax de-icer – 31,550 pounds
- SynTech liquid de-icer – 500 gallons
- NAAC/CMA de-icer – 4,300 pounds (Fairlane Center campus)
- Bagged Ice Melter – 12,462 pounds (Fairlane Center campus)

In the 2013-14 season, the following de-icers were used at UMF:
- Caliber M-1000 – 4,400 gallons
- Bagged Ice Melter – 57 tons
- Magnesium Chloride – 22.4 tons
- Calcium Chloride – 5.5 tons

P2/GH -10.  Pesticide and Fertilizer Technician Training

**Measurable Goal:** All applicators (technicians) will be trained in pesticide and fertilizer use. The number of pesticide and fertilizer technicians will be tracked on an annual basis.

**Actions during the reporting period:**
- The UMA2 currently employs approximately 100 certified technicians.
- UMD has six (6) certified pesticide applicators.
- UMD has a contract with TruGreen to conduct large treatments/spraying. TruGreen has a non-phosphorus policy.
- UMF employs seven (7) certified technicians.

P2/GH -11.  Roadside Vegetative Replacement

**Measurable Goal:** Eliminate the need for vegetative replacement due to salt damage to the maximum extent practicable. The need for replacement vegetation will be tracked for subsequent reporting.

**Actions during the reporting period:**
- At UMA2, approximately 380,000 sq-ft of vegetative replacement was necessary due to the extreme winter during the 2013-2014 fiscal year. Replacement costs totaled $27,089.

- At UMD, approximately 200 pounds of grass seed, 150 pounds of Penn Mulch, and two rolls of erosion control mat, and 20 yards of topsoil was ordered to replace a total of 2,000 square feet of damaged turf.
- No vegetation replacement was needed at UMF during the reporting period.
P2/GH -12. Storm Sewer Labeling

**Measurable Goal:** All U-M storm drains will be marked with the message "Dump No Waste - Drains to Waterways", "Keep our Michigan Waters Blue: Dump No Waste - Flows to River" (or similar message) during the permit cycle. The number of storm drains marked will be tracked annually for subsequent reporting.

**Actions during the reporting period:**
Approximately 87 storm drain markers were installed/ replaced at UMA2 during the reporting period on catch basins, storm drain inlets, and trench drains draining to the stormwater network throughout campus. Special attention is given to areas near the annual Art Fair, the Football Stadium and associated parking, as well as higher use walkways. Existing storm drain markers are replaced, as needed, due to general wear and fading or loss.

UMD designed, produced, and installed 304 storm drain markers which read “Keep Our Michigan Waters Blue. Dump No Waste! Drains to Rouge River. To report a spill/illicit discharge call 313.593.5333” in the summer of 2011. In August of 2013, EHSEM replaced those that were damaged or missing.

UMF uses interns and students to label the catch basins and drain inlets on the Flint Campus. More than 75% have been labeled in previous reporting years; however, some labels become damaged or unreadable due to repairs made to the drain or nearby concrete and replacement labels/stencils are necessary. Drain marker replacements were made during the 2014 fiscal year. The 2014-15 season will again utilize student volunteers and EHS staff to assess the labels in place and install new labels or a stencil adjacent to the drain if one is missing or damaged.


**Measurable Goal:** In 2010-2011, Develop an education program for U-M staff involved in fertilization of turfgrass at U-M. Also include a strategy to disseminate the requirements to contractors at U-M.

The above goal was completed during a previous reporting period:
As previously reported, this information will be kept on file.

UMA2 has not used phosphorus in turf-fertilizers for approximately five years.

UMF EHS and Facilities & Operations worked together to implement a revised safe application distance from the Flint River during the summer of 2010. Facilities & Operations continues to maintain a buffer of 20 to 40 feet from the river that may only be spot treated as necessary.

**Measurable Goal:** In 2011-2012, implement a turfgrass fertilization education program for appropriate U-M staff and contractors. Identify educational information available/developed for each target audience applicable at U-M.

The above goal was completed during a previous reporting period:
As previously reported, this information will be kept on file.

Information about the Michigan restrictions on the use of phosphorus-containing fertilizer on turf grass was provided to Facilities & Operations staff responsible for managing grounds/landscapes. Additionally, select Facilities employees attended stormwater management employee training where this information would be covered. Lastly, U-M employees certified in IPM routinely
attend workshops/seminars to maintain their certification and stay up on new information/technologies as it relates to turf and landscape management.

UMD has a contract with TruGreen to conduct large treatments/spraying. TruGreen has a non-phosphorus policy.

P2/GH -14. Stormwater Pollution Prevention Plans (SWPPP)s for Fleet Maintenance & Storage Yards

**Measurable Goal:** In 2010-2012, Develop SWPPP for all fleet maintenance and storage yards/facilities at U-M.

The above goal was completed during a previous reporting period:

As previously reported, UMA2 developed SWPPPs for all fleet maintenance and storage yard facilities on the UMA2 campus. The plans are kept on file.

UMD developed a SWPPP for the Grounds department in late 2011/early 2012.

UMF developed a SWPPP for one fleet maintenance and storage yard/facility located at the Hubbard and Central Energy Plant parking area. The plan was finalized in December 2013.

**Measurable Goal:** In 2013, implement all SWPPP for fleet maintenance & storage yards at U-M.

**Actions during the reporting period:**

As previously reported, SWPPPs for all fleet maintenance and storage yard facilities on the UMA2 campus have been implemented. Completed (signed) SWPPP(s) are kept at each facility. Additionally, quarterly SWPPP inspections are completed at each fleet maintenance & storage yard at U-M and an annual inspection and training will be completed during the next reporting period.

UMD developed and implemented their SWPPP for the Grounds Department on March 7, 2012. Two (2) employees received training on the SWPPP on July 27, 2012.

UMF developed a SWPPP for the fleet maintenance and storage yard/facility located at the Hubbard and Central Energy Plant parking area. The plan was finalized in Dec 2013. EHS met with individuals to discuss the SWPPP and conducted the quarterly inspection.

**Additional measures taken to achieve goals:**

- The UMA2 campus launched a bike rental program on campus, Blue Bikes, in the fall of 2012. The program is operated by Outdoor Adventures within Recreational Sports; the program was developed in collaboration with Parking & Transportation Services, the Office of Campus Sustainability and the University Planner’s Office.

- The U-M received a 2013 Tree Campus USA recognition from the Tree Campus USA program, sponsored by the Arbor Day Foundation and Toyota. According to Tree Campus USA, there are five requirements to receive this recognition, including: “establishment of a tree advisory committee, evidence of a campus tree-care plan, dedicated annual expenditures for this campus tree program, an Arbor Day observance and the sponsorship of student service-learning projects.”
The U-M Radrick Farms Golf Course was awarded the 2014 Clean Corporate Citizen (C3) designation from the MDEQ. According to Jim Sygo of the DEQ, “Michigan’s C3 program is one of the most rigorous and long-standing environmental stewardship programs in the nation, requiring facilities to have an active Environmental Management System; a strong environmental compliance history; and pollution prevention goals and measures in place.” While the Radrick Farms Golf Course is outside of the urban area boundary, U-M still considered this prestigious award worth mentioning.

2. **Environmental Impacts** –

*Provide an assessment of the pollution reduction and probable receiving water quality impacts associated with program implementation. Include any negative water quality impacts that may have occurred as a result of any illicit discharges or accidental spills during the past year.*

Stormwater management is recognized as a significant issue for the campus and control options are given careful consideration. A major goal of the many BMPs identified and implemented at the University is to reduce the discharge of sediment and associated pollutants to the receiving waters. The control program begins in the project design phase, by providing guidelines for stormwater management and soil erosion and sedimentation control on campus and continues through the construction phase of the many projects on campus. The BMPs below have been implemented at the University. Probable impacts to water quality from these BMPs are taken from the MDEQ’s *Index of Best Management Practices/Individual Best Management Practices.*

- **Catch Basins / Cleanout Procedures**: These procedures are reasonably effective in protecting sewers from receiving loads of coarse solids.
- **Oil/Grit Separators**: These devices remove coarse sediment and oils from stormwater prior to delivery to a storm drain network, the ground, or other treatment.
- **Stormwater Management Basins**: Although the primary function of these basins is to provide first-flush holding capacity for stormwater, the design also provides for sediment deposition within the basin structure which can significantly reduce fine sediment and the pollutants (e.g., phosphorus) associated with them. Detention basins can be effective at removing sediment, non-soluble metals, organic matter and nutrients through settling. Up to 90% of particulates may be removed if the stormwater is held for 24 hours or more. Sediment basins can be very effective in preventing sedimentation of downstream areas. Coarse and medium size particles and associated pollutants will settle out in the basin. Suspended solids, attached nutrients, and absorbed non-persistent pesticides may break down before proceeding downstream. Because sediment basins also retain water, they may increase recharge to ground water.
- **Street Sweeping**: This practice removes 50-90% of street pollutants that potentially can enter surface water through storm sewers. Street sweepers will also make road surfaces less slippery in light rains, improve aesthetics by removing litter, and control pollutants which can be captured by the equipment.
- **Illicit Discharges** – No illicit discharges were identified during the 2013-14 reporting period.
- **Spills**: Minimal adverse impacts to water quality are anticipated, as the U-M’s 24-hour emergency response teams were able to prevent a majority of outdoor spills (55) from reaching the stormwater system and surface waters of the State. Five (5) reportable events occurred during this reporting period. Discharges included sediment from a water main break, unauthorized dye, propylene glycol, sewage, and fuel and hydraulic oil. Portions of the reportable spilled material were cleaned up by U-M’s emergency response teams, a vacuum truck and a U-M sweeper truck, as appropriate.
3. **Water Quality Assessment** – *Provide an assessment of the water quality conditions within the jurisdiction.*

**Huron River** - The following information was compiled from the HRWC. Note that this discusses issues with the watershed as a whole and is not exclusive to UMA2.

Permittees within the Middle Huron River Watershed agreed to work with the HRWC to develop and conduct a water quality monitoring program to collect data and assess the water quality within the river and tributaries. There are five storm water related TMDLs in the middle Huron River watershed. While the permit does not specifically require reporting on TMDLs, the U-M and watershed partners have funded monitoring to determine progress toward meeting each TMDL. This monitoring program is also used to determine status and trends of water quality within the middle Huron River watershed affected by stormwater discharges. HRWC submitted a plan for this monitoring as an appendix to SWPPIs submitted by permittees within the watershed. That plan was titled “Middle Huron Stormwater Plan for Addressing Total Maximum Daily Loads (TMDLs).”

Subsequently, HRWC had conducted water quality monitoring each year between April and September. HRWC will report the results of this monitoring following the inclusion of results through September. Reports are available for 2001 through 2013 via the Stormwater Advisory Group (SAG) website at [http://www.hrwc.org/middle-huron-sag/](http://www.hrwc.org/middle-huron-sag/).

Much of this data analysis was also included in the evaluation of four water quality impairments within the watershed. Based on this analysis and discussion with the SAG, implementation plans were developed and submitted to MDEQ for each of the following four TMDLs:

- Ford Lake and Belleville Lake – impaired for excessive phosphorus
- The Huron River between Argo and Geddes Dams – impaired for pathogens
- Malletts Creek – impaired for aquatic life and habitat
- Swift Run -- impaired for aquatic life and habitat

Those four plans were finalized at the end of October 2011. All plans are posted on the SAG website at [http://www.hrwc.org/middle-huron-sag/](http://www.hrwc.org/middle-huron-sag/).

In addition to those four impairments, a TMDL was also developed for Honey Creek (pathogens) in 2009. HRWC received funding, with support from the Middle Huron SAG to monitor and develop an implementation plan for that impairment in 2011-14. A report on the monitoring results was completed and a Watershed Management Plan was submitted and approved by MDEQ and the U.S. EPA. Details and products from that project can be found at [http://www.hrwc.org/honey-creek/](http://www.hrwc.org/honey-creek/). No additional watershed stressors beyond those listed above and others originally listed in the WMP have been identified.

**Rouge River**

The Rouge River does not meet state and federal water quality standards due to excess nutrient concentrations E. coli pathogen levels, and fish consumption advisory for polychlorinated biphenyls that exceed state levels. The following benthic monitoring information was compiled from the FOTR for the watershed, not exclusive to UMD.

The FOTR Spring 2014 Report covers benthic macro-invertebrate monitoring at 59 sites on the Rouge River, tributaries and branches. The majority of sites, 58%, had fair stream quality index (SQI); one site had an
excellent SQI; 14 sites had a good SQI, and ten sites had poor SQI scores. A trend analysis was conducted by sub-watershed and on a site-by-site basis, when there was enough data. In comparison with past data, two of the sub-watersheds had a positive trend indicating improved benthic communities. No other watersheds had significant trends.

Flint River
No new data are available for this reporting period. As previously reported, the Flint River does not meet state and federal water quality standards due to fish consumption advisory for polychlorinated biphenyls and/or mercury that exceed state levels. The FRWC publication “Flint River GREEN Report 2013” provided updated information on water quality for the watershed not exclusive to UMF.

The Flint River GREEN Annual Report 2013 provided water quality index (WQI) ratings for eleven testing locations within the Flint River watershed. The WQI ratings (0-100) were based on the following field tests/parameters: dissolved oxygen, fecal coliform, BOD, pH, nitrates, turbidity, total solids, temperature, and total phosphate. Of the eleven sampling locations eight (8) sites received “good” WQI ratings (89-70) and three (3) received “average” WQI ratings (69-50).

Benthic macro-invertebrate monitoring was conducted twice during the reporting timeframe by the FRWC. At the time of this report the results of the monitoring events were not available.

4. Data & Results –
Provide a summary of all information collected and analyzed, including monitoring data, if any, during the annual reporting cycle.

UMA2 partners with the HRWC for monitoring data collection and analysis. Updated monitoring data is described in the Water Quality Assessment Section, above.

5. Upcoming Activities –
Provide a summary of the stormwater activities to be implemented during the next annual reporting cycle. Include schedules for elimination of any illicit connections identified but not disconnected prior to annual report submittal.
The U-M shall continue its on-going programs including:

Public Education and Outreach:
- Continue to develop/add additional brochures (print or electronic) to fill any gaps in the topics needed to meet the permit requirements.
- Distribute stormwater educational materials (brochures and bookmarks) to members of the campus community and new employees.
- Continue to update the UMA2, UMD, and UMF stormwater websites.
- Continue to review website information dissemination and coordination strategy (all campuses) so that it can reach the target audiences.
- Install additional stormwater curb markers, with the dump no waste, flows to river slogan.
- Continue to provide information on household hazardous waste disposal options in the area via the U-M website.
- Continue OSEH sanitarian work with kitchen and food vendors on campus to ensure proper waste management and disposal methods are used.
- Continue work with U-M staff to improve waste handling procedures.
• Work with Athletics to request continued stormwater educational announcements at the U-M home football games and to request use of the stadium display boards.
• Continue to evaluate opportunities to contribute articles to newsletters including the OSEH Update Newsletter.
• UMD includes stormwater education as a topic in monthly new hire training, and will be implementing a new notification program that provides all new hires with information on the required stormwater training and a link to the UMD stormwater website.
• UMF distributes stormwater bookmarks to individuals at the UMF bookstore, library, and information desks. Additionally, UMF distributes stormwater educational mouse pads to computer labs on UMF campus.
• UMF coordinates with the other local colleges and hosts the 2014 Recycle Challenge as well as the annual Earth Day Celebration for the campus and surrounding communities that occurs each April.
• UMF EHS has increased the number of scheduled laboratory inspections for 2014-15.
• SWPPP training for key employees is planned for the fall of 2014.
• UMF is planning to inspect drain labels/stickers and install/replace label or stencil storm drains with “Dump No Waste” stickers, as needed.

Public Involvement/Participation:
• Continue to work with the Millers Creek Action Team, Malletts Creek Coordinating Committee, Middle Huron Initiative/Partners and other local watershed/ creek groups to identify opportunities for joint activities and outcomes in support of permit requirements.
• Continue to participate in the E.coli TMDL implementation plan.
• Continue to offer opportunities for environmental stewardship on campus.
• Continue to update the OSEH website which contains the U-M Stormwater Management Program Plan as well as information for use by students, faculty, staff and the surrounding community.
• Continue to post the U-M NPDES reports on the U-M OSEH website to heighten community awareness of stormwater management activities on campus.
• UMD will continue to be active partners with FOTR and the ARC.
• UMD will continue to update the EHSEM website which contains the U-M Stormwater Management Program Plan as well as information for use by students, faculty, staff and the surrounding community.
• UMA2 will continue to post the U-M NPDES reports on the U-M OSEH website to heighten community awareness of stormwater management activities on campus.

Illicit Discharge Elimination Program:
• Perform/continue dry weather field screening of outfalls at least once every 5 years (to be completed by February 1, 2015) to determine the existence, location and extent of potential illicit discharges.
• Follow-up on potential illicit discharges to the stormwater system and make repairs as required.
• Items for further investigation will be researched, as weather permits. Identified illicit discharges will be prioritized for correction according to their potential impacts to water quality. Cross connections will take priority; cooling tower discharges will be prioritized based on the frequency of discharge and will be redirected to the sanitary sewer as building improvements and renovations are undertaken.
• Continue to encourage the campus community to report illicit discharges and spills to OSEH/EHSEM/EHM and the UMPD so appropriate measures can be taken by the 24-hour Emergency Response Team to correct issues that may impact stormwater quality.

Post Construction Stormwater Management:
• Review stormwater management plans for new construction.
• Review targeted sites for flood control projects, as new construction or renovation projects are identified.
Work on implementation of stormwater management basin improvement and maintenance projects to improve detention capacity, retention/infiltration, and additional Best Management Practice usage.

Construction Stormwater Runoff Control:
- Continue construction site stormwater protection BMPs.
- Training of key personnel to maintain certification as construction site stormwater operators.
- Training of key personnel to maintain certification as soil erosion and sedimentation control operators.
- Continue OSEH review of site plans. Continue to make recommendations to improve stormwater runoff quality in and around construction projects.
- Notify the Department/Agency, as required, for sediment discharges to surface waters.

Pollution Prevention/Good Housekeeping for University Operations:
- Continue to implement BMPs to control dust and suspended solids in runoff from paved roads and parking lots.
- Continue cleaning of stormwater inlets, lines, and detention basins, as required.
- Continue tracking the TSS reduction strategy for paved surfaces with a goal of reducing TSS loading by 25% as compared to annual loading with no suspended solids controls.
- Continue salt use reduction and alternative product usage to improve stormwater runoff quality.
- Continue to implement BMPs to improve stormwater discharge quality.
- Continue to update Plant Employee training to reinforce good housekeeping procedures and proper waste management.
- Continue to have pesticide and fertilizer applicators on campus trained and certified in appropriate application amounts and techniques.
- Develop annual SWPPP training for all fleet maintenance and storage yards/facilities at U-M and provide training to applicable stormwater management teams at the facilities either in person or electronically.
- Continue the education program and dissemination strategy for U-M staff involved in fertilization of turfgrass at U-M. Continue providing turfgrass fertilization education for appropriate U-M staff and contractors.
- Develop/add additional topics, web links, brochures, posters, etc. to fill any gaps in the topics needed to meet the permit requirements and continue the training plan.

6. **Best Management Practice Changes** –
*Describe any planned changes in identified Best Management Practices or Measurable Goals for any of the minimum measures.*

No revisions are proposed at this time.

7. **Notice of Changes in Reliance on Permitted Drainage System Operators** –
*Describe any changes in the need to rely on other permitted drainage system operators to satisfy the terms and conditions of this permit, as defined in Part I.C.1.d.*

No revisions are proposed at this time.

8. **Drainage System Changes** –
*Provide an update on areas added to the drainage system due to annexation or other statutory processes (if applicable).*

In the spring of 2014, U-M acquired the Edwards Brothers Malloy property at 2500 and 2550 S. State St. Investigations are ongoing to determine any potential additions to the drainage system.
9. **Revised Fiscal Analysis** –

*Provide a summary of revisions, if necessary, to the fiscal analysis reported during the previous permit, pursuant to permit application requirements at 40 CFR 122.26(d)(2)(vi).*

No revisions are proposed at this time.
10. **Annual Budget** –

Provide the previous fiscal year’s annual expenditures and proposed budget for the fiscal year following the report.

The expenditures and budget are shown in the following table.

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<td>$103,868</td>
<td>$431,000</td>
</tr>
<tr>
<td>Street sweeping program⁴</td>
<td>$155,945</td>
<td>$2,130</td>
<td>$163,800</td>
</tr>
<tr>
<td>Waste Management-Litter collection &amp; disposal</td>
<td>$905,358</td>
<td>$65,450</td>
<td>$1,610,000</td>
</tr>
<tr>
<td>Parking structure and lot cleaning program</td>
<td>$1,379,029</td>
<td>$177,125</td>
<td>$1,673,356</td>
</tr>
<tr>
<td>Stormwater utility charges paid</td>
<td>$838,423</td>
<td>$214,000</td>
<td>$1,026,930</td>
</tr>
<tr>
<td>OSEH spill response activity</td>
<td>--- ²</td>
<td>--- ²</td>
<td>--- ²</td>
</tr>
<tr>
<td>Plant Extension Division</td>
<td>--- ²</td>
<td>--- ²</td>
<td>--- ²</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$4,368,131</strong></td>
<td><strong>$1,191,539</strong></td>
<td><strong>$6,032,111</strong></td>
</tr>
</tbody>
</table>

Footnotes: * - Many construction and renovation projects do not have separate tracking of SESC costs, stormwater management basins or BMPs as they are built in to the contract as a whole. Therefore, the expenditures for these line items are higher than shown. ¹ - University labor costs include estimated base salary, 28% for benefits, and 52% for indirect cost recovery charges. ² - These departments and divisions have moderate stormwater costs and are not tracked separately by the University budget system. ³ – The street sweeping program for UMD includes parking lot and structure cleaning. ⁴ – Approximately 25% of street sweeping costs are associated with active construction site sweeping (SESC control).