MUNICIPAL STORMWATER NPDES PERMIT MI0053902
FISCAL YEAR 2014-2015 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

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Ann Arbor, Michigan 48109-1010

September 29, 2015
For clarification purposes, the following acronyms/definitions are used throughout this report:

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td>AEC</td>
<td>UMAA Architecture, Engineering and Construction</td>
</tr>
<tr>
<td>ARC</td>
<td>Alliance of Rouge Communities</td>
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<tr>
<td>BMPs</td>
<td>Best Management Practices</td>
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<tr>
<td>CAER</td>
<td>Center for Applied Environmental Research associated with UMF</td>
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<tr>
<td>CCRB</td>
<td>Central Campus Recreation Building located on the UMAA campus</td>
</tr>
<tr>
<td>City</td>
<td>The City of Ann Arbor, Dearborn or Flint, as appropriate</td>
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<tr>
<td>DPSS</td>
<td>UMAA Division of Public Safety &amp; Security</td>
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<tr>
<td>EIC</td>
<td>The Environmental Interpretive Center on UMD campus</td>
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<tr>
<td>EHS</td>
<td>UMF Environment, Health and Safety Department</td>
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<tr>
<td>EHSEM</td>
<td>UMD Environmental, Health, Safety and Emergency Management Department</td>
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<tr>
<td>F&amp;O</td>
<td>UMF Facilities and Operations</td>
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<tr>
<td>FOTR</td>
<td>Friends of the Rouge River</td>
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<td>FRWC</td>
<td>Flint River Watershed Coalition</td>
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<tr>
<td>GIS</td>
<td>Geographical Information System</td>
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<tr>
<td>G&amp;WM</td>
<td>Plant Operations Grounds and Waste Management Department</td>
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<td>HRWC</td>
<td>The Huron River Watershed Council</td>
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<tr>
<td>HVAC</td>
<td>Heating, Ventilation, and Air Conditioning</td>
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<tr>
<td>IDEP</td>
<td>Illicit Discharge Elimination Program</td>
</tr>
<tr>
<td>Illicit Connection</td>
<td>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).</td>
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<tr>
<td>Illicit Discharge</td>
<td>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.</td>
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<tr>
<td>MGP</td>
<td>Manufactured Gas Plant</td>
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<tr>
<td>MDEQ</td>
<td>Michigan Department of Environmental Quality</td>
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<td>MHI</td>
<td>Middle Huron Initiative</td>
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<tr>
<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>NREPA</td>
<td>State of Michigan Natural Resources Environmental Protection Act, Act 451</td>
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<tr>
<td>OCS</td>
<td>Office of Campus Sustainability (OCS) associated with UMAA</td>
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<tr>
<td>OSEH</td>
<td>U-M Department of Occupational Safety and Environmental Health</td>
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<tr>
<td>Outfall</td>
<td>A discharge point from an MS4 directly to surface waters of the state</td>
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<tr>
<td>P2</td>
<td>Pollution Prevention</td>
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<tr>
<td>PEP</td>
<td>Public Education Program</td>
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<tr>
<td>Permit</td>
<td>The NPDES Stormwater Permit Number MI0053902 issued by MDEQ to the U-M, effective October 1, 2001</td>
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<tr>
<td>PIPP</td>
<td>Pollution Incident Prevention Plan</td>
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<tr>
<td><strong>Plant Extension</strong></td>
<td>This division includes architects, engineers, construction managers, and the planner involved in facilities design activities.</td>
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<tr>
<td><strong>Plant Operations</strong></td>
<td>This division includes G&amp;WM, Utilities, Parking Services, Maintenance Services and other activities associated with maintenance of the facilities.</td>
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<td><strong>PPE</strong></td>
<td>Personal Protective Equipment</td>
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<td><strong>PSA</strong></td>
<td>Public Service Announcement</td>
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<td><strong>RCRA</strong></td>
<td>Resources Conservation and Recovery Act</td>
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<td><strong>SEMCOG</strong></td>
<td>Southeast Council of Governments</td>
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<td><strong>SESC</strong></td>
<td>Soil Erosion and Sedimentation Control</td>
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<tr>
<td><strong>SPCC</strong></td>
<td>Spill Prevention and Countermeasure Control</td>
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<tr>
<td><strong>SWMPP</strong></td>
<td>Stormwater Management Program Plan prepared for the Permit and approved by MDEQ</td>
</tr>
<tr>
<td><strong>SWPPP</strong></td>
<td>Stormwater Pollution Prevention Plan</td>
</tr>
<tr>
<td><strong>TMDL</strong></td>
<td>Total Maximum Daily Load</td>
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<tr>
<td><strong>TSS</strong></td>
<td>Total Suspended Solids</td>
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<tr>
<td><strong>U-M</strong></td>
<td>The University of Michigan, Ann Arbor, Dearborn &amp; Flint</td>
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<tr>
<td><strong>UMAA</strong></td>
<td>The University of Michigan Ann Arbor Campus</td>
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<tr>
<td><strong>UMD</strong></td>
<td>The University of Michigan Dearborn Campus</td>
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<tr>
<td><strong>UMF</strong></td>
<td>The University of Michigan Flint Campus</td>
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<tr>
<td><strong>UMPD</strong></td>
<td>U-M Police Department, within the U-M DPSS</td>
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<tr>
<td><strong>University</strong></td>
<td>The University of Michigan, Ann Arbor, Dearborn &amp; Flint</td>
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<tr>
<td><strong>U-M SNRE</strong></td>
<td>University of Michigan School of Natural Resources and Environment</td>
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<tr>
<td><strong>US EPA</strong></td>
<td>The United States Environmental Protection Agency</td>
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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, 2014 through June 30, 2015 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 (UMAA), Dearborn (UMD), and Flint (UMF) campuses, as revised in May 2010 and approved by the MDEQ on June 2, 2010. The University is also continuing to implement the MDEQ approved post-construction stormwater management requirements outlined in the Stormwater Management – Post-Construction Requirements Guideline (EP3-001). On May 28, 2013, U-M submitted a Phase II permit renewal application to the MDEQ in accordance with the notification from the MDEQ dated February 5, 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 UMAA, 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.

Three new cross connections were identified during this reporting period.

South Quad Residence Hall (Grease Interceptor): As reported in the March 2015 Mid-Year Report, on September 24, 2014, an illicit discharge of wastewater was discovered emanating from a newly installed in-ground kitchen grease interceptor at the South Quad Residence Hall. The MDEQ was notified within hours of the discovery of this illicit discharge. Efforts were immediately undertaken to re-route the discharge from the storm system to the sanitary system. Over the next several weeks, testing and repairs were made to the in-ground grease interceptor to seal the interceptor and prevent further discharge to the storm system. After testing verified the integrity of the grease interceptor, it was put back into service. Periodic inspections of the storm system adjacent to the grease interceptor have shown no evidence of a recurrence of an illicit discharge. A follow-up memo was provided to the MDEQ on November 21, 2014, detailing the cause and corrective measures undertaken by the U-M to eliminate this illicit discharge.

Palmer Field: As previously reported to MDEQ in a letter report dated May 21, 2015, on Tuesday, May 12, 2015 the City of Ann Arbor notified U-M that they had discovered a potential illicit discharge of sanitary wastewater into the storm system near Palmer Field on Washtenaw Avenue. Camera work determined that the discharge was emanating from the U-M stormwater system and therefore, the investigation was taken over from the City of Ann Arbor by U-M. Further investigation found that a bell hub was cracked on one of the pipe sections, causing the connected pipe to shift and cause a misalignment in the clay tile sanitary line just east of Washtenaw Avenue. This misalignment was allowing a very low flow of sanitary water (estimated at <1gpm) to enter surrounding soils and migrate to the adjacent storm sewer pipe (also a clay tile pipe in poor
condition due to age). The section of sanitary line with the broken bell hub was replaced with a new section of PVC pipe and the clay storm pipe was replaced with new PVC pipe. Prior to backfilling, the contractor verified that there was no sanitary wastewater seepage into the storm sewer system.

**South Quad Residence Hall (Custodial Sinks):** As previously reported to the MDEQ in a letter report dated June 25, 2015, on June 10, 2015 OSEH staff noted a whitish liquid in the stormwater catch basin located just outside the dock on the south side of the South Quad Residence Hall, located on the U-M Central Campus (near Monroe Court and State Street). OSEH met with building maintenance staff to take a look at the storm ejector sump in the basement to verify that the grease interceptor was not leaking, as the catch basin with the whitish colored water was one that was previously impacted by a former grease interceptor leak. No signs of a leak were noted; however painting of interior walls with latex paint was occurring within the building, and the painters were using the sinks in the custodial closets located adjacent to the freight elevator shaft for clean-up. OSEH advised building staff to not allow the use of these sinks until dye testing could be performed to determine if cross-connection were present. The two impacted catch basins and the next downstream manhole where vacuumed out and jet cleaned. Further investigation, including dye testing, confirmed that six of the custodial closet sinks (on floors 3-8) were cross-connected to the storm system and that no toilets were cross-connected. To fix the problem piping was re-routed from the stack discharge to storm within the building basement to a known sanitary line. Follow-up dye testing was performed to confirm that the sinks were properly connected to the sanitary system.

Dye testing was completed by UMAA at the following buildings during the reporting period for pre and post construction and general due diligence typically ahead of infrastructure upgrades: Little Clarence Cook Science Building (C.C. Little), Munger Graduate Residence, West Quad, Cambridge House, Intramural Building, Nursing School Building, North Campus Transfer Facility, and Medical Science Research Building III. 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):** 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 was recommended to further evaluate the pool drain and to determine if the drain is connected to storm. Evaluations are currently ongoing. As a follow up to this finding, other pools located on campus in the Intramural Sports building, Canham Natatorium and North Campus Recreation Building were investigated and found to not be cross connected to the storm sewer system.

- **UMAA** is continuing follow-up investigations for flows identified during dry weather screening events at the following locations: Modern Languages Building (MH-14) (currently under renovation). Follow-up investigation activities by U-M are being prioritized for review in conjunction with other priority corrections of cross connections and utility 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 with oversight from the MDEQ. 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. In general, it is not uncommon in older buildings to have basement and ground level floor drains connected to the storm water system. As these connections are discovered in older buildings, follow up site visits are performed to ensure no illicit discharges are occurring and when applicable, storm drain buttons marked with the message "Dump No Waste – Flows to River" are applied. Corrective actions and repairs will occur during renovation or restoration activities. Illicit discharges identified during inspections will be resolved and report to MDEQ as required.

- **Burton Tower**: Four floor drains in the basement level were determined to connect to a backwater valve and then to the stormwater sewer system. It was noted that the only discharges to these drains are cooling condensate and potable water (both non-prohibited discharges). Storm drain buttons, marked with “Dump No Waste – Flows to River” were applied to the four floor drains in March 2014 to inform building users not to dump waste into these drains.

- **Chemistry Building**: Floor drains in room 408-B (basement mechanical room) were determined to discharge to a sump that discharges to the stormwater system. No discharges were identified regarding these floor drains. Storm drain buttons, marked with “Dump No Waste – Flows to River” were applied to the three floor drains in March 2014 to inform building users not to dump waste into these drains.

- **Engineering Programs Building/Francois-Xavier Bagnoud Building/GG Brown**: Floor drains that were determined to be cross connected and discharge to the storm sewer system were corrected in the summer of 2013 and now discharge to the sanitary sewer system.

- **Mary Markley Hall**: Non-contact cooling water and one hand washing sink were identified as being cross connected to the storm sewer system. The hand washing sink was immediately put out of service. Further investigation of the floor drains in February 2014 determined that approximately twelve floor drains only receive cooling condensate from compressors. These drains were marked with “Dump No Waste – Flows to River”.

- **UMAA** conducted follow up investigations, per the MDEQ approved revised Dry Weather Screening Program Guidelines, dated November 4, 2013, for flows identified during previous dry weather screening events at the following locations and did not observed flows that would indicate a possible illicit discharge or connection: Literature, Science, and the Arts/Student Activities Building (MH-5); News & Information Services (MH-8); Biomedical Science Research Building (MH-20); Briarwood; Northwood III (MH-4); Northwood II (MH-8); Tisch Tennis Center (MH-14).

- **UMAA** conducted an investigation of the MS4 outfalls per the MDEQ approved revised Dry Weather Screening Program Guidelines during the reporting period. Flows consistent with a possible illicit discharge or cross connection were not observed during the investigation.

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

*Note: (Excerpts from the SWMPP are shown in italics.)*
1. 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 – Mallets 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. UMAA 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, UMAA 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. Note that the new 5-year permit cycle is now anticipated to begin in 2015/2016.

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.
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.

2. 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:**

**UMAA:**

The OSEH Department reviewed the available brochures and brochure content over the reporting period. Currently UMAA has brochures targeting students, faculty & staff, vendors, and film projects. U-M 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.

UMAA includes a QR code on printed materials which can be scanned by smart phones to direct viewers to the stormwater website.

The Fall 2014 OSEH Update Newsletter included the articles “Application and Use of Waste Labels” and “How to Recycle Electronics, Batteries and Light Bulbs at Home” which discussed how to properly dispose of potentially hazardous materials. Proper disposal of potentially hazardous materials prevents contamination to the environment including surface waters.

The Summer 2015 OSEH Update Newsletter included the article “Keep our Michigan Waters BLUE!” The article covers the topics “What’s all the hype about stormwater?” and “Why do we need to manage stormwater runoff?”

UMAA 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 during the fall semester, from late-September through early-December. Additionally, the stormwater digital display was shown during football games on the stadium marquee (up to 20 times per game) and on the stadium score boards (typically once per game). See PEP-3 for additional details.
A digital kiosk for the OSEH building reception area began operation in April 2015. The stormwater educational messages are part of the display scrolling message.

UMAA OSEH created laminated posters to hang at the Art and Architecture Building after OSEH received calls from the building facility managers expressing concern because students were using art materials outdoors. These posters contained specific content for art students including how to properly manage art materials and how to prevent such materials from entering storm drains. Brochures were hung in early July, 2014.

Additionally, UMAA OSEH participated in the creation of the new U-M Graham Sustainability Institute’s training videos for the Planet Blue Ambassador online training program. One OSEH staff member was interviewed over the summer (2014) for the training video involving water resources and stormwater. All the training videos were released in January of 2015 and involved topics such Energy, Food, Waste, Water, and Community. The videos may be viewed on YouTube at the following link:

https://www.youtube.com/playlist?list=PLkpBjHzv2RryplN_ahL0_TQ7f4E12tFixN

Through the Planet Blue Ambassador program students, faculty, and staff can complete the online training modules described above 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

**UMD:**

EHSEM continues to pass out (6) pamphlets related to storm water, a bookmark, and a storm water mouse pad at all training events, orientations, and other various campus events. This packet provides general storm water 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, they revised and printed a pamphlet that is passed out to contractors titled “Storm Water: A Shared Responsibility” which provides a brief overview of how storm water 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.

**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 BMPs 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. They are also distributed during Earth Day, during the 2014 M-Gagement Fair at the beginning of the Fall term, during the 2015 Electronic Waste Collection Day located on the UMF campus as well as other University events involving the students and the surrounding community.
EHS continues to promote stormwater awareness, watershed management, BMP’s at work, and spill prevention and response using a few bulletin boards on campus; some boards focusing solely on F&O employee responsibilities (Hubbard Building) related to the new SWPPP and another outdoor display board posted over the summer of 2014 for the broader campus community (Harrison Parking Ramp).

EHS has had three student interns working during this report period that played a key role in stormwater awareness and education, as well as SWPPP compliance inspections. One intern is from UMF Earth and Resource Science Department and devoted their time to performing annual F&O employee training sessions, updating training and website materials, conducting routine inspections, assisting F&O with quarterly inspections and coordinating stormwater stenciling and Flint River clean-up activities. Another intern assisted April – August 2015 on several projects involving SWPPP inspections, stormwater education and other related health/safety initiatives. The third intern focused much of their work effort on improving stormwater and other environmental related communications to the campus community presented on the UMF EHS website.

EHS continues to utilize several different flyers and posters to promote stormwater management and related best environmental practices for the UMF campus community. Fliers include our “Top Ten Stormwater BMP’s” flier which was similar to 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. Additionally, newly created 2-sided, 11”x17” ‘placemats’ served as visual aids for this past year’s annual employee stormwater management training.

EHS Stormwater mousepads which identify the ‘Top 10 Stormwater Tips’ have been distributed across campus in numerous computer labs and public computers stations to further help reinforce the importance of Stormwater management and the protection of the Flint River watershed.

EHS developed a Stormwater Reference Sheet for Contractors in 2013 that is posted on the 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 13,330 brochures and 650 bookmarks including stormwater management and pollution prevention topics were distributed at U-M’s three campuses. Additionally, an estimated 100 stormwater mouse pads were distributed at the UMF campus. Over 11,564 employees attended training, orientation or workshop sessions including stormwater topics throughout the reporting period. As part of the training courses, during this reporting period, the online OSEH training course included stormwater information.

U-M’s Graham Institute distributed 12,000 Annual Sustainability Guides to housing facilities, Greek Life, libraries, and staff across campus. The guide provides valuable tips and information.
related to the following core areas of sustainability on campus: climate action, waste prevention, healthy environments, land and water management (including a section on water quality/stormwater), and community awareness. A copy of the brochure is located at the following website:


OSEH is continuing to make an effort to promote stormwater education through alternate forms of media such as through the stormwater website and other electronic media. For example, UMAA 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 a total of 1,330 stormwater brochures and bookmarks.

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. UMF also provided approximately 100 additional bookmarks to be distributed during the most recent Electronic Waste Collection Day and Earth Day Celebration hosted at UMF during Spring 2015, and another 50 bookmarks at the annual M-gagement event. Additionally, over 100 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:

UMAA 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). This display was displayed for the second time in the Shapiro Undergraduate Library during the fall semester from late September to early December of this reporting period (2014). Furthermore, the UMAA website was updated with a new dye testing webpage and 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 UMAA Office of Campus Sustainability (OCS) to promote online training modules and to further strengthen and expand educational resources. UMAA includes a QR code on
printed materials which can be scanned by smart phones to direct viewers to the stormwater website.

Public Service Announcements (PSAs) were made at seven U-M football home games during the 2014 football season and one 2015 spring football game, reaching an audience in excess of 790,000 people. PSAs were played at football entrance gates approximately fifteen times per game. Additionally, an educational stormwater display was posted on the stadium scoreboards once per game and on the stadium marquee approximately twenty times per game. OSEH continues to work with the Athletics Department for additional opportunities.

**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: UMAA’s website is found at: www.oseh.umich.edu/environment/storm.shtml, UMD’s website is found at www.umd.umich.edu/691923/, and the UMF’s campus website is found at http://www.umflint.edu/ehs/flint-river-storm-water-management-university-michigan-flint.

An additional website has been developed through the UMAA Office of Campus Sustainability (OCS) and Planet Blue at 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, 2015 there were 25,991 website visits registered on the UMAA stormwater website. This is an increase of 1,200 visits over the 2014-2015 reporting period.

The UMD stormwater website received 318 visits during this reporting period.

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 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, 110 people completed the training: [http://www.umd.umich.edu/696586/](http://www.umd.umich.edu/696586/)

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). UMF EHS post annual and semi-annual reports along with educational information concerning the campus and the Flint River Watershed. Links to other local and state environmental and stormwater resources are also provided at this website. There were approximately 2,200 visits to the website for the previous reporting period (2013-14) and 5,124 visits for the current reporting period (2014-15). Note: tracked visits are not specific to the stormwater webpage; visits are tracked for the entire UMF EHS website.

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, a fact sheet developed in 2013 specifically for contractors working on UMF campus continues to be posted/available for contractors working at UMF.

**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 2014-2015 fiscal year, OSEH updated several pages on the UMAA stormwater website, as outlined below:
- A new dye testing webpage was added to the website describing the basics of dye testing and providing helpful hints on how to perform a proper dye test. The new webpage also provides
helpful pictures and graphics that aid in the explanation of dye testing. The new dye testing webpage may be found online using the following link:
http://www.oseh.umich.edu/environment/dye.shtml

- A link to the updated dye testing procedure was added to the new dye testing webpage on October 13, 2014 and can be found at the following location:
  http://www.oseh.umich.edu/pdf/guideline/dye_testing_guideline.pdf

- The 2014 municipal annual stormwater NPDES report was added to the website on October 13, 2014 at the following location:
  http://www.oseh.umich.edu/environment/reports.shtml

- The 2014-2015 Semi-Annual Report was added to webpage on April 8, 2015 at the following location: http://www.oseh.umich.edu/environment/storm.shtml#reports

- The stormwater website was modified on April 8, 2015. All the individual pages are now located on a single landing page.

**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 added the 2014 annual report and 2014-2015 Semi-Annual report to the webpage. The website was modified to have individual pages on a single landing page.

**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 added the 2014 annual report and 2014-2015 Semi-Annual report to the webpage. The website was modified to have individual pages on a single landing page.

**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, 2015, 25,991 website hits were registered on the UMAA Stormwater website. This is an increase of 1,200 hits over the 2014-2015 reporting period.

UMAA includes a QR code on printed materials which can be scanned by smart phones to direct viewers to the stormwater website.

The UMD stormwater website received 318 views during this reporting period.

UMF expanded its campus stormwater education website last fiscal year (2013-2014) and is continuing to improve electronic training materials and resources. There were approximately 5,124 visits to the EHS website during the 2014-15 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 UMAA’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.

Measureable 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. 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

There were approximately 1,174 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 facing the Rouge River. The exhibit
area also houses several kiosks that encourage visitors to find ways to be a part of the solution with steps you can take at home to improve water quality.

EHS created an online storm water training course which is offered on the storm water webpage. The training consists of a video and an 8 question quiz. During this reporting period, 110 people have completed the training. [http://www.umd.umich.edu/696586/](http://www.umd.umich.edu/696586/)

UMF offered several stormwater training classes to a variety of F&O employees in August – December of 2014. 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 (PSAs) were made at seven U-M football home games during the 2014 football season and one 2015 spring football game, reaching an audience in excess of 790,000 people. PSAs were played at football entrance gates approximately fifteen times per game. Additionally, an educational stormwater display was posted on the stadium scoreboards once per game and on the stadium marquee approximately twenty times per game.

Due to the fact that the UM-Dearborn Fieldhouse is not equipped with an announcement system, EHS 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 storm water awareness.

UMF has dedicated an outdoor display case to stormwater education. The display case is located on the faculty/staff Harrison parking ramp. The display is no longer used as of Fall 2014 but it was maintained for the duration of Summer 2014.

UMF implements campus wide recycling in all buildings and encourages proper management of waste whether one is on campus or at home. UMF provides PSA’s promoting community household hazardous waste collection days in October and May of each year through e-mails and printed materials, phone calls, etc. These are sent to all faculty, staff and students (> 9,000 individuals).

UMF EHS provided stormwater education and awareness information, handouts, and encouraged volunteers to sign up for storm drain stenciling activities at the UMF Welcome Back Picnic as well as the annual M-gagement fair. An estimated 2,500-3,000 students, staff and faculty attended the Welcome Back Picnic. Additional materials were distributed during the annual Earth Day Celebration, in which more than 750 people including students, community partners, and families attended.
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 UMAA 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 59 classes, workshops or presentations that reached over 1,630 people during the reporting period. Examples of classes include: Spill Prevention Control and Countermeasure training, Stormwater Pollution Prevention Plan (SWPPP) 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, 1,174 new hires were sent a link to a stormwater education video and to the UMAA stormwater website within a month of hire.

UMAA OSEH developed an online SWPPP training module for all applicable operational staff and facility managers at fleet maintenance and storage yards involved in the U-M SWPPP program. As of January 1, 2015, 40 U-M staff members from over seven different facilities had successfully completed the online training.

UMD held 5 stormwater training sessions for faculty, staff, students and contractors where a total of 45 people were trained.

UMF updated employee annual training stormwater materials to incorporate the new SWPPP, finalized in December 2014. Training materials included updated PowerPoint slides, the use of
new 11’’X17’’ visual aid ‘placemats’ as well as new inspection forms. EHS also includes stormwater education in health & safety classroom training sessions taught by EHS such as hazard communication, HAZWOPER, 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 2,452 laboratory rooms (1,163,387 ft² of lab space) were inspected during the reporting period at UMAA.

UMD conducted a total of 20 lab inspections during this reporting period.

UMF conducted over 40 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 215 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 grease disposal and wastewater management tips, was conspicuously displayed at each location, which resulted in 357 total signage verification checks.

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

UMF EHS provided training to food vendors operating on the UMF campus. EHS routinely inspects loading dock areas that are used by food service vendors and their suppliers to ensure waste materials, such as grease, are being properly stored and managed.
Additional measures taken to achieve goals:

UMAA:
- 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 2014 football season. A total of 50 laminated brochures were posted in the fall of 2014, prior to the onset of the 2014 football season.

- Approximately 2,200 faculty, staff, and/or students have been certified as Planet Blue Ambassadors since the January 2013 inception of the program. Individuals from every major school and unit on the Ann Arbor campuses (including most F&O units and the Health System) have participated. 829 people completed the Planet Blue Ambassador program during this reporting period. 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.

- As part of the UMAA Spill Prevention Control and Countermeasure Plan (SPCC), initial and annual refresher training is provided to applicable staff. All appropriate staff are trained in the laws and regulations regarding spills, releases, and pollution control; the contents of SPCC; and the operation and maintenance of equipment to prevent discharges.

- In July, 2014 U-M faculty and students attended workshops/tours at the U-M Arboretum and/or Matthaei botanical Gardens to learn how native plants and rain gardens help treat stormwater runoff and improve water quality.

- On September 17, 2014 “2014 Earthfest” was held at the UMAA campus. This event promoted overall sustainability practices including waste prevention and healthy environments. UMAA OSEH created and staffed a stormwater poster board display describing the differences between sanitary and stormwater systems, what stormwater runoff is, why stormwater runoff can be a problem, and provided examples of stormwater best management practices (BMPs). Additionally, UMAA OSEH hosted a demonstration on porous pavement which allowed interested students and staff to pour water through a sample of porous concrete and asphalt to better understand how porous materials perform.
UMAA OSEH developed an online SWPPP training module for all applicable operational staff and facility managers at fleet maintenance and storage yards involved in the U-M SWPPP program. As of January 1, 2015, 40 U-M staff members from over seven different facilities had successfully completed the online training.

OSEH developed snow storage guidelines for snow storage practices on the UMAA campus. The guidelines were developed to ensure comprehensive environmental protection during winter snow storage months and during the snow melt season.

OSEH provided guidance to U-M Facility and Maintenance staff for stormwater BMPs during the cleaning of rooftop cooling towers.

UMAA Office of Campus Sustainability conducted two free e-waste events in April 2015 to promote responsible recycling. A public e-waste event was held April 25, 2015 and a business, non-profits and commuters e-waste event was held April 23, 2015.

A safe medication disposal event was held on April 2, 2015. Students, faculty and staff were encouraged to bring unused medications for proper disposal and learn about safe medication disposal practices to prevent dangerous exposure of drugs to the community and environment.

A volunteer invasive species removal event was held on October 4, 2014 with 24 participants.

UMD:

The Dearborn campus started their 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/singlestreamrecycling/](http://www.umd.umich.edu/singlestreamrecycling/)

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

Annually in May, the Environmental Interpretive Center (EIC) sponsors the Rouge River Water Festival. This year, an estimated 1,000 participated in the event which consists of multiple presentations by professionals from local, state, and federal agencies, natural resource groups, universities, museums, and businesses. Topics include municipal, agricultural, and industrial water use, weather, wastewater treatment, soil erosion, wetland biodiversity, and water conservation.

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.

In June, 17 Ford volunteers installed a new rain garden by the Friends of the Rouge office.

Friends of the Rouge (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/.

- UM-Dearborn maintains three (3) pet waste stations along the Rouge River Gateway Greenway Trail.

- All UM-Dearborn safety training classes include information on our storm water program.

- EHS updated the UM-Dearborn Spill Prevention Control and Countermeasure (SPCC)/Pollution Incident Prevention Plan (PIPP) in February of 2015.

- EHSEM provides storm water management training to contractors to ensure awareness of environmental and occupational safety requirements. They are provided a flip chart that provides them with a variety of topics including tornado safety, power outages, storm water, soil erosion and sedimentation control, etc. along with emergency contact information. http://www.umd.umich.edu/fileadmin/env-health-safety/public/files/Contractor_Emergency_Flipchart.pdf.

UMF:

- A bulletin board in the Hubbard Building 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.

- EHS employed three student interns in 2014. One of the interns, from the Earth and Resource Science Department, helped to update the UMF SPCC /PIPP and the SWPPP for the UMF campus. The intern also helped with spill prevention education, stormwater management education, and related environmental initiatives. The second intern devoted 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 helped to improve the organization and formatting of educational information on the EHS website.

- 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 years, but can occur more often. Training was provided during this reporting period, covering BMPs, housekeeping, protection of storm drains, reporting and responding to spills, etc.

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

- UMF distributed stormwater bookmarks at an event in which EHS partnered with the Genesee County Metropolitan Planning Commission for an Electronic Waste Collection Day in the month of April 2015.
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. Planning efforts for the 2015 UMF Earth Day Celebration (scheduled for April 11, 2015) have been underway since December 2014.

UMF Outreach and student clubs, like Future Urban Environmental Leaders and the Black Student Union, 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.

3. 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 UMAA 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 2014 was added to the U-M OSEH stormwater website on October 13, 2014 and the semi-annual report for 2014-2015 was added to the U-M OSEH stormwater website on April 8, 2015. 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/](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, 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 38 meetings were attended during the reporting period including the City of Ann Arbor’s Stormwater Modeling Presentation, Mallet’s Creek Coordinating Committee, Middle Huron Initiative (MHI), Fleming Creek, MCAT, Lawrence Tech stormwater summit, Flint River Corridor Alliance, FOTR, and ARC.

In March of 2015, several U-M staff attended the Mallets Creek Coordinating Committee meeting and presented the preliminary site plan and the associated stormwater management intentions for the proposed Athletics South Competition and Performance framework, which is planned as a redevelopment project to turn an existing printing(binding facility into a college sports complex.

UMD EHSEM attended two (2) Friends of the Rouge Task Force Meetings during this reporting period.
UMD EHSEM is an active member of the Alliance of Rouge Communities (ARC).

At the UMD’s Environmental Interpretive Center (EIC) we also support various off-campus community organizations that are involved in a variety of initiatives to improve the surrounding watershed and educate the public about the importance of being good stewards of our water resources and surrounding land. We host events, meetings and are involved in various activities involved in education and outreach with the following organizations that are directly related to water quality concerns:

- Friends of the Rouge
- Friends of the Detroit River
- Southeast Michigan Land Conservancy
- Stewardship Network: Lakeplain Cluster
- Sustainable Business Forum

UMF is involved in the local watershed 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. [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. The DEQ approved SWMPP is available for review and comment by the public at: [http://www.oseh.umich.edu/pdf/guideline/SWMP2010.pdf](http://www.oseh.umich.edu/pdf/guideline/SWMP2010.pdf)

**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 two MHI meetings during this reporting period. The MHI partnership continues to contract with the HRWC to perform monitoring of the Middle Huron tributaries for the 2015 and 2016 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 5 volunteer events were sponsored by U-M during this reporting period.

At UMAA, a volunteer invasive species removal event was held on October 4, 2014 with 24 participants. 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 2014 Tree Campus USA recognition from the Tree Campus USA program, sponsored by the Arbor Day Foundation and Toyota. This is the seventh consecutive year U-M received this recognition. 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 UMAA Radrick Farms Golf Course was awarded the Clean Corporate Citizen (C3) designation from the MDEQ on December 27, 2014, and the University of Michigan Golf Course was awarded the C3 designation on May 29, 2015. 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. This summer, the golf course also brought 10 Boer goats onsite as an environmentally conscious alternative to chemicals typically used to control invasive plant species. The goats were onsite from June 20 through July 22, 2015.
Both of the Golf Courses noted above are certified in the Michigan Turfgrass Environmental Stewardship Program (MTESP). This certification involved implementing practices which reduce pollution, limit energy consumption, and protect the surrounding watershed. The MTESP certification includes water conservation and stream protection criteria.

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 2014.

FOTR have office space on the UMD 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 2015 Earth Day Celebration Community event, where more than 50 organizations participated and approximately 40 volunteers helped with planning, setup, and moderating presentations throughout the day’s activities. An estimated 750 individuals attended. 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 through ‘Zero-Waste’ Initiatives.

UMF EHS organized and coordinated the “Flint College Recycling Challenge 2015,” a fun recycling competition between local colleges. UMF, Kettering University, Baker College and Mott Community College competed throughout March leading up to the Earth Day 2015 event. While 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.

UMF had ten individuals involved with the UMF student organization, FUEL, (Future Urban and Environmental Leaders) that participated in EHS’s stormwater stenciling activities in the summer and fall of 2014. FUEL also organized two individual Flint River Clean-up events during Fall of 2014 and Spring of 2015, and partnered with the Flint River Watershed Coalition in the Spring of 2015 for a Flint River cleanup in surrounding areas.

**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.

4. **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 UMAA 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 UMAA 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 if 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. Minor refinements to the storm drain maps were conducted as part of the revisions to the 2014 SPCC.

**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:**
UMAA 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:
UMAA’s approved modified IDEP dry weather screening procedure was utilized to screen stormwater outfalls located on the Ann Arbor campus during this reporting period.

**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:**
In conformance with the revised, MDEQ approved (November 4, 2013), dry weather screening program guideline, UMAA completed dry weather screening of all outfalls with a direct discharge to surface waters of the State. Based on the most up to date UMAA GIS data, it was
determined that there are 70 discharge points that meet the screening requirement criteria. Of these 70 outfalls screened, it was determined that four (4) outfalls had flow that warranted follow-up sampling. Initial visual and olfactory screening did not indicate any potential concerns from the four outfalls with flow. Preliminary evaluation of the sampling analytical data indicates that these flows are not a significant contributor of pollution and do not pose a threat to human health or the environment, however; the U-M will include these in an ongoing list of items for backtracking to determine the source of the flows, and to make corrections if warranted.

As previously reported, EHSEM has completed dry weather screening activities on campus outfalls.

UMF completed dry weather inspections on all 13 outfalls 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 outfalls 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 the University of Michigan Police Department (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 34 calls of outdoor incidents were reported via the UMPD/OSEH/EHSEM/EHS emergency response systems. A majority of these outdoor incidents were remedied (30) prior to storm drain impact; however, four (4) incidents resulted in materials entering storm drains. None of the incidents were determined to discharge or possibly discharge to surface waters.

During this reporting period, UMAA personnel responded to approximately 150 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, a glycol spill (approximately 15 gallons entered a storm drain), a propylene glycol spill (approximately 50 gallons) released from a heating system associated with the hospital rooftop helipad. 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.

- Between January 12, 2015 and January 19, 2015, six to eight (6-8) separate leaks to hoses connected to the rooftop helipad heating system were identified. Hoses are attached to the
bottom of an elevated landing pad for the hospital helicopter platform to provide heat to keep it free of snow and ice. The heating system utilizes a 50/50 mixture of water and propylene glycol as the heat transfer fluid. U-M Hospital Maintenance (UMHM) staff discovered the leaks through notification from the newly installed (summer 2014) Siemens monitoring system. OSEH staff inspected the storm line that receives runoff from the helipad and two potential outfalls: one to the Huron River and the other to a stormwater detention pond. Glycol was not visually noted, nor was it detected utilizing coolant test strips. The total amount of propylene glycol solution that leaked is estimated at 100 gallons. This equates to approximately 50 gallons of propylene glycol that may have been released from the heating system. The Mott Hospital roof contains a green roof, with approximately two (2) feet of growing media, which overlays a drainage course that is connected to the stormwater system. Considering that these leaks were slow, and not concentrated to one specific area, it is likely that much of the glycol solution was contained in the growing media. Per information from Agency for Toxic Substances and Disease Registry (ATSDR), it is likely that the propylene glycol will break down within several days to a week in water and soil. Approximately 250 new fittings were installed on the hoses to prevent future leaks. Timely verbal and written notifications were provided to the DEQ Water Resources Division Jackson Office.

- On September 5, 2014, a 55 gallon drum of NaturaLyte Acid Concentrate (a solution used in dialysis with the active ingredient sodium diacetate) tipped over in the dock area of UMH and rolled down the sidewalk into the first truckwell. The drum released material while it was tipped over. The material impacted two storm drains; one located within the truckwell and one in an adjacent parking lot. University of Michigan Hospitals Safety Management Services and OSEH responded to the spill and placed acid neutralizer and absorbent on the affected area. A salvage drum was used to contain and dispose of the leaking 55 gallon drum. U-M Plumbing Shop used a contractor to complete the cleaning of the storm drain system. The pH reading in the sumps before cleaning was 4 (the pH of the spilled material was 2). After cleanout the pH was 7. It was determined that none of the material discharged from the parking lot catch basin sump.

- On August 12, 2014, a generator on the roof of the Kinesiology Building leaked 4 quarts of engine oil. It was observed that less than 2 quarts of engine oil may have entered a storm drain located on the roof. OSEH was contacted to examine the affected drain. OSEH examined downstream catch basins and no sheen was observed. Absorbent pads were used to collect the engine oil.

- On July 26, 2014, OSEH received a report of a water main break in the parking lot adjacent to 1588 Cram Circle by the Northwood Housing area. The water was shut off. A few large puddles of water where observed in the parking lot. All the drains in the parking lot where inspected for turbid water, based on the flow pattern in the sand near the drain, both water and sand discharged to the stormwater drain. U-M Plumbing jet vacuumed the lines. There was no evidence that sediment made it to a water of the state, however MDEQ was contacted, informed of the situation, and that sediment was removed from the sump/line.
One May 13, 2015, a leak occurred in the heating hot water system in the ceiling of room 1696 of the School of Social Work Building. The liquid, determined to be sodium nitrite and sodium hydroxide (glycol) spread to adjacent rooms and hallway. The glycol leaked through the floor and affected room B688 and the adjacent hallway. Building Services had sent 15 gallons of the material to the storm drain and 30 gallons to the sanitary drain before being stopped by the Facility Manager. Storm drain catch basins were examined. Two catch basins were found to contain the material. It was determined that none of the material exited the second catch basin. A vac truck was contacted to collect and clean the storm drain.

Two outdoor spills were reported in December 2014 at UMF. Neither spill resulted in material entering a storm drain. One spill involved waste management vehicle leaking a small quantity (<2-3 gallons) of “dirty water” from a waste container carrying general rubbish/trash. The second spill involved <10 gallons of waste vegetable grease in the University Pavilion loading dock that was cleaned up using absorbent material.

EHSEM responded to a total of four (4) incidents involving spills and leaks that could impact the storm system, none of which were reportable:

- EHS responded to a small oil leak that occurred while some equipment was being removed from a building. The spill was cleaned with absorbent pads and oil-dri.
- A contractor vehicle’s hydraulic line failed at the Science Building construction site. The contractor used its own spill kit materials. EHS was on scene and assisted.
- A contractor’s vehicle was leaking oil. EHS reported the incident and the contractor used their own spill kit materials.
- Public Safety reported a parked vehicle leaking antifreeze. EHS responded using absorbent pads and oil-dri.

Additional measures taken to achieve goals:

- UMAA recycled more than 220 tons of electronic waste.
- UMD recycled a total of 3,832 fluorescent light bulbs and 18 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 6597 spent lamps and other electronic waste, totaling approximately 19 tons of e-waste. Additionally, UMF hosted a community E-waste recycling event in April 2015 that collected approximately 20,000 pounds of various types 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 21,500 pounds of materials as part of the March 2015 Recycling Challenge,
and the total cumulative amount recycled by all participants was 45,000 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 disposal and wastewater management for these operations during the 2014-2015 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.

- UMAA OSEH developed an online SWPPP training module for all applicable operational staff and facility managers at fleet maintenance and storage yards involved in the U-M SWPPP program. As of January 1, 2015, 40 U-M staff members from over seven different facilities had successfully completed the online training. Trained staff conduct periodic inspections in accordance with the SWPPP.

- Two OSEH staff attended IDEP training hosted by the Washtenaw County Water Resources Commissioner on July 24, 2014.

- 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 2015, UMAA completed its ninth 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. UMAA competed against 394 schools in this 10 week competition running from January 18th through March 28th. U-M finished 15th place in total pounds of recycling with 826,060 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 and construction activities to ensure that materials continue to be stored properly, secondary containment is functioning and any outdoor storage containers remain in good condition.

### 5. 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 UMAA, UMF, and UMD campuses.

Bioretention traffic islands, porous pavement, and parking lot stormwater treatment systems have been installed at various locations on campus to help remove sediment, oil, grease and trash from stormwater runoff. Additional low impact development (LID) options such as the green roof and underground infiltration system at the Munger Graduate Residence Hall have been constructed during this reporting period. Examples of additional stormwater controls installed during this reporting period include a bioswales at Spence Laboratory and Arbor Heights Parking, detention basin system and stream bank stabilization at the Mobility Transformation Facility and detention/infiltration chambers at four additional locations.


**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 48 surface stormwater management basins on campus by U-M personnel during this reporting period during spring 2015. 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.
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 186 plan reviews, with 13 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 two (2) 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. However, outdoor work activities are monitored to ensure soil and debris do not enter storm drains during the course of work activities.

**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 to confirm proper connection to the sanitary sewer system. A program for confirmation of taps to exterior pipes is already in place.

6. 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:**  
Thirteen U-M sites required formal SESC plans, which were reviewed and approved by OSEH-EP3, during the reporting period.  

UMD had two (2) projects 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 84 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 three (3) SESC projects and utilized appropriate soil erosion and sedimentation control BMPs i.e., silt fence, inlet filters, etc.  

UMF had several small minor projects with limited earth disturbance and not requiring a SESC permit i.e. sidewalk repairs, etc., requiring short term 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 1,649 weekly and after storm SESC inspections were performed during this reporting period.  

UMD conducted approximately 57 SESC inspections on one site and oversaw approximately 115 inspections on two other sites.  

There were no projects on UMF campus that required a SESC permit or weekly monitoring/inspections; however EHS wanted to ensure best management practices were in place nonetheless and performed periodic inspections regardless of SESC requirements related to very small projects i.e. sidewalk repairs, etc.  

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:
Six (6) total U-M staff have received comprehensive SESC training from MDEQ and are current with the associated Certificate of Training..

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:
Sixteen (16) U-M staff, including three 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, five (5) 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:
During this reporting period, U-M staff performed SESC inspections, as described in CSW-3 (above).

Additional measures taken to achieve goals:

- Contractors at U-M are required to clean/sweep construction areas and adjacent areas to prevent track-out 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.
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.)

7. 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 48 surface stormwater management basins on campus by U-M personnel during this reporting period during spring 2015. These 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:**
C Catch basins across the UMAA campus are cleaned and the sewer lines water jetted. 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, UMAA constructed a covered 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 UMAA has moved to a GIS-based system for catch basin cleanout which has improved tracking for reporting. During the reporting period, 1,223 catch basins were cleaned and approximately 555 cubic yards of debris was removed from the storm lines, catch basins and manholes.

UMD continued implementing their 5-year cycle catch basin cleaning strategy and cleaned a total of 84 structures; 76 at the main campus and 8 at the Fairlane Center.

At UMF catch basins are inspected and cleaned out as needed by F&O staff. This activity tends to occur more frequently in the fall when leaves and debris are more likely to accumulate near grate openings. F&O staff logged approximately 3 hours of cleaning catch basins during the report period. The catch basin cleanout activities accumulated over 1 cubic yard of waste. Ventilation pits are cleaned on an as needed basis, and did not require cleaning for this reporting period. Due to winter weather conditions experienced from December – March, a modest amount of catch basin repairs were required around the University Center, Recreation Center, and WSW Building amounting to $1,174.

**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 416 cubic yards of waste was sent for disposal from the cleaning of parking lots and structures throughout the UMAA campus. The combined estimated cost for disposal and labor is over $1,142,783.
UMD personnel spent approximately 3,500 hours collecting litter, removing about 1,200 yards of debris. Fairlane Center personnel collect litter weekly from April through November and monthly from December to March, a total of 36 hours were completed.

At UMF, 63 hours of labor at a cost of $1,983 was spent for street sweeping, 36 hours of labor at the cost of $1,307 for sweeping/cleaning parking lots and structures. Total labor associated with street, parking sweeping and cleaning of ramps is logged at approximately 100 hours. Daily litter pickup involved more than 2,526 hours over the reporting period. The total of all labor costs associated with cleaning, sweeping and litter pick up for the reporting period is approximately $70,000. The total of all sweeping and litter waste yielded an estimated 303 cubic yards for disposal. Disposal costs are estimated at $7,560.

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:
The strategy to reduce the runoff of TSS from paved surfaces and estimated TSS loading reduction will be kept by UMAA OSEH. 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, BMPs to control dust and suspended solids in runoff from unpaved surfaces and the list of unpaved roads and parking lots will be kept by OSEH for UMAA. 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 186 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 UMAA from 1989 to 1999. The quantity of salt used for deicing will be tracked on an annual basis.

**Actions during the reporting period:**
Approximately 2,227 tons of treated and untreated rock salt was used by UMAA during this reporting period which is a decrease of 14% from the average annual use amount of 2,600 tons per year from 1989 to 1999. The decrease can be attributed to typical snowfall in Ann Arbor, the use of BMP’s, and the use of rock salt alternatives.

UMD used 492 tons of sodium chloride, 80 gallons of Caliber M 1000 and 19.7 tons of Ice Trax on the main campus to clear 47.5 inches of snow accumulated over 26 events. The Fairlane Center used 2.78 tons of bagged ice melter, 1.97 tons NAAC – sodium acetate, and 203.363 tons of bulk salt.

UMF used approximately 250 tons of salt was used during this reporting period, an increase of 50 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 2014-15 season, the following alternative de-icers were used at UMAA:
- Magnesium Chloride at 178 tons;
- Caliber M-1000 at 22,455 gallons
- Calcium Chloride at 9 tons; and
- Treated Sand was not used.

In the 2014-15 season, the following de-icers were used at UMD:
- Ice Trax – 19.7 tons
- Caliber M 1000 – 80 gallons
- NAAC/CMA de-icer – 1.97 tons (Fairlane Center campus)
- Bagged Ice Melter – 2.78 tons (Fairlane Center campus)

In the 2014-15 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
- Modified Amide/Glycol Admixture – 325 lbs

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 UMAA currently employs approximately 94 certified technicians.
UMD has six (6) certified pesticide technicians.

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

UMF employs five (5) 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 UMAA, only de-minimis amounts of vegetative replacement was required during the 2014-2015 fiscal year. Replacement costs were not tracked due to the limited nature.

At UMD, approximately 250 pounds of grass seed, 200 pounds of Penn Mulch, 14 bales of straw, 30 yards of topsoil, 20 yards of compost, and repaired 63,500 square feet.

Limited vegetation replacement was needed at UMF during the reporting period involving 50 pounds of grass seed to address <1,000 square feet of damaged turf. Approximately 100 yards of mulch was also applied.

**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 85 storm drain markers were installed/replaced at UMAA 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 Football Stadium and associated parking, as well as higher use walkways on Central Campus (the Diag, North University Avenue, South University Avenue, and CC Little). 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 2014, EHSEM replaced those that were damaged or missing.

UMF utilizes 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 summer and fall of 2014. Stenciling events will occur in the fall of 2015 and 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, the educational program for U-M staff involved in fertilization of turfgrass at U-M and the strategy to disseminate the requirements to contractors at U-M will be kept by UMAA OSEH.

UMAA has not used phosphorus in turf-fertilizers since 1999.

UMF EHS and F&O 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, educational information available/developed for each target audience applicable at U-M will be kept by UMAA OSEH.

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 was 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, UMAA developed SWPPPs for all fleet maintenance and storage yard facilities on the UMAA 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, and revised in 2014. EHS and F&O conduct routine inspections of the areas to ensure compliance with the SWPPP.
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 UMAA 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 in 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 December 2014. EHS met with individuals to discuss the SWPPP and continued conducted the quarterly inspection.

Additional measures taken to achieve goals:

- The UMAA 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.

- U-M partnered with the Ann Arbor’s Clean Energy Coalition, the City of Ann Arbor, Ann Arbor Transportation Authority, and the Downtown Development Authority to launch a new bike share program called, ArborBike. ArborBike launched thirteen of fourteen bike share locations in the fall of 2014 and spring of 2015. One additional bike share location will be added this year. Each share location includes several rental bikes that are available for any bike share member.

- The U-M received a 2014 Tree Campus USA recognition from the Tree Campus USA program, sponsored by the Arbor Day Foundation and Toyota. This is the seventh consecutive year U-M has been recognized. 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 Radrick Farms and U-M Golf courses have extensive green certifications for their responsible land management practices, including the Washtenaw County Community Partners for Clean Streams, which specifically targets water quality. They also utilize expertise from the Michigan Turfgrass Environmental Stewardship Program (MTESP), the Michigan Clean Corporate Citizens Program, the ePar environmental management system and the Audubon Cooperative Sanctuary Program. To receive MTESP certification, grounds management crews must demonstrate practices that prevent pollution, reduce energy and waste, and protect water resources. The university plans to work with the State of Michigan to expand the MTESP certification to include the broader campus areas, making the Ann Arbor campus one of the first to earn the certification beyond golf course borders. The U-M Radrick Farms Golf Course has also been 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. This summer, the golf course also brought 10 Boer goats onsite as an environmentally conscious alternative to chemicals typically used to control invasive plant species. The goats were onsite from June 20 through July 22, 2015.

- In September of 2011, U-M President Emeritus Mary Sue Coleman established several sustainability goals for the University. One such goal is to reduce synthetic land management chemicals by 40% by the year 2025, as compared to a 2006 baseline measurement. As of this year (2015), the use of synthetic land management chemicals has already been reduced by 54%, as compared to the 2006 values.

- The two rain gardens on the UMD campus are located at the Environmental Interpretive Center and they demonstrate methods of keeping storm water on site. A collaboration of various organizations including Wayne County Master Gardeners, the Student Environmental Association, and individuals from the surrounding communities has helped this garden grow. They are maintained by 2 student interns and many volunteers who have put in more than 200 hours of maintaining the rain gardens and the Community Organic Garden.

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 challenge 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** – Three illicit discharges were identified during the 2014-15 reporting period. Minimal adverse impacts to water quality are anticipated due to the relatively minor quantities of water discharged and the minimal pollutants believed to be present in the water discharged. In addition, OSEH has not observed any discharges to surface waters of the state as a result of the illicit discharges.

- **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 (30) from reaching the stormwater system and surface waters of the State. Four (4) events occurred during this reporting period that entered the stormwater basins but did not impact surface waters of the state. Discharges included sediment from a water main break, glycol, 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 UMAA.

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 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 2014 via the Stormwater Advisory Group (SAG) website at [http://www.hrwc.org/middle-huron-sag/](http://www.hrwc.org/middle-huron-sag/). In 2014, 27 sites were sampled, this included 9 new sites. In addition, 9 investigative sites were part of this year’s study. Results show that total phosphorus concentrations have increased, bacteria such as *E. coli* has decreased and is overall trending down, total suspended solids are below target levels, and pH is within target parameters. Chloride (salt) has been linked to high conductivity in the watershed.
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 in the prior reporting period:

- Ford Lake and Belleville Lake – impaired for excessive phosphorus
- The Huron River between Argo and Geddes Dams – impaired for pathogens
- Mallets 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 2011-13. A report on the monitoring results was completed and a Watershed Management Plan was submitted and approved by MDEQ and the U.S. EPA in 2014. 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 a fish consumption advisory was issued 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 2015 Report covers benthic macro-invertebrate monitoring at 60 sites on the Rouge River, tributaries and branches. The majority of sites, 58%, had a fair stream quality index (SQI); three sites had an excellent SQI; 16 sites had a good SQI, and six 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, three of the sub-watersheds had significant positive trends indicating improved benthic communities. No other watersheds had significant trends.

**Flint River**

The City of Flint began using the Flint River as a water source in May of 2014. 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 2014” provided updated information on water quality for the watershed not exclusive to UMF.

The Flint River GREEN Annual Report 2014 provided water quality index (WQI) ratings for nineteen 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 nineteen sampling locations sixteen (16) 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.

UMAA 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 will 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 UMAA, 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 2015 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.

Stormwater education and training for key employees is conducted annually and sessions are planned for the upcoming fall.

UMF EHS inspects drain labels/stickers annually and will 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, Mallets 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.
- UMAA 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 in accordance with the, MDEQ approved, modified IDEP Dry Weather Screening Procedure and per the SWMPP 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 for paved surfaces with a goal of reducing TSS loading by 25% as compared to annual loading with no suspended solids controls. Update TSS reduction strategy if needed.
• 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. The property is currently under construction for a new athletic complex. Following construction, the drainage system maps will be updated.

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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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).