MUNICIPAL STORM WATER NPDES PERMIT MI0053902
FISCAL YEAR 2016-2017 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 STORM WATER TO SURFACE WATERS FROM A MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)

PREPARED BY:

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October 1, 2017
For clarification purposes, the following acronyms/definitions are used throughout this report:

- **AEC**: UMAA Architecture, Engineering and Construction
- **ARC**: Alliance of Rouge Communities
- **BMPs**: Best Management Practices
- **CCRB**: Central Campus Recreation Building located on the UMAA campus
- **CGS**: Custodial & Grounds Services
- **City**: The City of Ann Arbor, Dearborn or Flint, as appropriate
- **CSEP**: Computer Science, Engineering, and Physics Department on UMF campus
- **CSW**: Construction Storm Water Runoff Control
- **DPS**: Department of Public Safety on the UMD and UMF campuses
- **DPSS**: Division of Public Safety & Security on the UMAA campus (formerly known as Department of Public Safety)
- **EAAMC**: East Ann Arbor Medical Campus
- **EIC**: The Environmental Interpretive Center on UMD campus
- **EHS-AA**: Environment, Health & Safety Department – Ann Arbor
- **EHS-D**: Environmental Health and Safety Department – Dearborn
- **EHS-F**: Environment, Health, and Safety Department – Flint
- **EP3**: Environmental Protection & Permitting Program within EHS-AA
- **F&O**: Facilities and Operations
- **FOTR**: Friends of the Rouge River
- **FRWC**: Flint River Watershed Coalition
- **FUEL**: Future Urban and Environmental Leaders
- **GIS**: Geographical Information System
- **G&WM**: Plant Operations Grounds and Waste Management Department (In 2016, the Plant Operations Division was restructured. Grounds Services is now part of Custodial & Grounds Services and Waste Management is part of Logistics Transportation & Parking.)
- **HAZWOPER**: Hazardous Waste Operations and Emergency Response
- **HMM**: Hazardous Materials Management within EHS-AA
- **HRWC**: The Huron River Watershed Council
- **HSMS**: Hospital Safety Management Services
- **HHW**: Household Hazardous Waste
- **HVAC**: Heating, Ventilation, and Air Conditioning
- **IDEP**: Illicit Discharge Elimination Program
- **Illicit Connection**: A physical connection to the drainage system that 1) primarily conveys illicit discharges into the drainage system or 2) is not authorized or permitted by the local authority (where a local authority requires such authorization or permit).
- **Illicit Discharge**: Any discharge or seepage that is not composed entirely of storm water 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-storm water waste into the drainage system.
- **LTP**: Logistics, Transportation & Parking
**Definitions**

- **MGP**: Manufactured Gas Plant
- **MDEQ**: Michigan Department of Environmental Quality
- **MHI**: Middle Huron Initiative
- **MS4**: Municipal Separate Storm Sewer System
- **NPDES**: National Pollutant Discharge Elimination System
- **NREPA**: State of Michigan Natural Resources Environmental Protection Act, Act 451
- **OCS**: Office of Campus Sustainability (OCS) associated with UMAA
- **OSEH**: Occupational Safety and Environmental Health associated with UMAA (In 2016, this department’s name was changed to Environment, Health & Safety)
- **Outfall**: A discharge point from an MS4 directly to surface waters of the state
- **P2**: Pollution Prevention
- **P2/GH**: Pollution Prevention/Good Housekeeping for Municipal Operations
- **PCSW**: Post-Construction Storm Water Control
- **PEP**: Public Education Program
- **Permit**: The NPDES Storm Water Permit Number MI0053902 issued by MDEQ to the U-M, effective October 1, 2001
- **PIP**: Public Involvement and Participation
- **PIPP**: Pollution Incident Prevention Plan
- **Plant Extension**: This division was dissolved in 2016. At the time the SWMPP was written the division included architects, engineers, construction managers, and the planner involved in facilities design activities.
- **Plant Operations**: This division was restructured in 2016. At the time the SWMPP was written the division included G&WM, Utilities, Parking Services, Maintenance Services and other activities associated with maintenance.
- **PPE**: Personal Protective Equipment
- **PSA**: Public Service Announcement
- **RCRA**: Resources Conservation and Recovery Act
- **SEMCOG**: Southeast Michigan Council of Governments
- **SESC**: Soil Erosion and Sedimentation Control
- **SPCC**: Spill Prevention and Countermeasure Control
- **SWMPP**: Storm Water Management Program Plan prepared for the Permit and approved by MDEQ
- **SWPPP**: Storm Water Pollution Prevention Plan
- **TMDL**: Total Maximum Daily Load
- **TSS**: Total Suspended Solids
- **U-M**: The University of Michigan, Ann Arbor, Dearborn & Flint
- **UMAA**: The University of Michigan Ann Arbor Campus
- **UMD**: The University of Michigan Dearborn Campus
- **UMF**: The University of Michigan Flint Campus
- **UMMHHC**: The University of Michigan Hospital and Health Centers
- **UMPD**: U-M Police Department, within the U-M DPSS
- **University**: The University of Michigan, Ann Arbor, Dearborn & Flint
- **UM SNRE**: University of Michigan School of Natural Resources and Environment
- **US EPA**: The United States Environmental Protection Agency
In accordance with Part I, Section C.1.e. of National Pollutant Discharge Elimination System (NPDES) Permit MI0053902, the University of Michigan (University/U-M) is required to submit an annual report of activities associated with the storm water 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, 2016 through June 30, 2017 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 Storm Water 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 storm water management requirements outlined in the Storm Water Management – Post-Construction Requirements Guideline (EP3-001) located on the Environment, Health & Safety Department in Ann Arbor (EHS-AA) web site. 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 EHS-AA is associated with UMAA, the Environmental Health and Safety Department in Dearborn (EHS-D) is associated with UMD, and the Environment, Health, and Safety Department in Flint (EHS-F) is associated with UMF.

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

There were no new cross connections and there were seven illicit discharges identified during this reporting period:

Illicit Discharges:

U-M Ann Arbor – Hydraulic Oil on Fuller Road
On August 17, 2016, EHS-AA received a call from U-M Waste Management staff regarding a blown hydraulic line that released hydraulic fluid (~10 gallons) on several roads along the U-M-owned street sweeper’s route on the U-M’s North Campus. Waste Management and EHS-AA Hazardous Materials Management (HMM) staff immediately responded to the spill, and began applying oil-dri to the affected pavement. During the response, some hydraulic oil was observed in a storm water catch basin (~ 1 quart) on Fuller Road, triggering additional response from EHS-AA EP3 staff.

It appeared that the oil that entered the storm water system was contained in a catch basin (water level appeared slightly below the outlet pipe invert), however due to the catch basin being nearly full of water, it is possible that during clean-up activities that some of the water with oily sheen made it to the main storm sewer line that had flow to the Huron River (outlet south of Fuller Road bridge, east bank of the river), as a light sheen was observed at the outlet during clean-up.

EP3 staff utilized oil absorbent booms and pads to absorb the oil film from the water surface within the catch basin. The oil-dri that was placed on the road surfaces, and the sorbent booms/pads used to clean the catch basin were collected for proper disposal. EHS-AA staff evaluated the outfall approximately 1.5 hours after the initial observation of sheen, and noted that the sheen was no longer discharging or present at the outfall.
Post-incident follow-up by the U-M Waste Management foreman has resulted in a requirement that all Waste Management vehicles carry a bag of oil-dri, and has reiterated to staff to make all efforts (when safe to do so) to berm off storm drains from potential impacts. EHS-AA staff reviewed the incident and determined that applicable best management practices and response procedures to protect the storm water system and waters of the State were utilized by U-M staff.

In accordance with our permit requirements, verbal notification to the MDEQ was provided on August 17, 2016 followed by a written communication on August 18, 2016.

**U-M Ann Arbor – Propylene Glycol Discharge at East Ann Arbor Medical Campus**

On September 14, U-M HSMS received a call from maintenance staff at the EAAMC regarding a discharge of a propylene glycol solution (~100 gallons of 40% propylene glycol/60% water) into a storm drain on the southeast side of EAAMC by an HVAC service contractor. U-M HSMS immediately responded to the site and contacted EHS-AA HMM for additional support. Because there was a discharge to the storm water drainage system, EHS-AA EP3 was called to determine if there was a discharge to the adjacent constructed wetland.

An outside HVAC vendor was on-site to disconnect a temporary cooling unit. During this process, the propylene glycol solution discharged to the pavement, which then flowed into an adjacent storm water catch basin. This catch basin flows through a second catch basin, and ultimately has a discharge to a constructed wetland approximately 260 feet from the discharge location. Upon investigation at the outfall, there was a slight color noted, indicating that some glycol solution reached the wetland. Because the outlet pipe in the wetland is a submerged pipe, the storm line is surcharged with water. Because of this, only a minor amount of glycol solution made its way to the wetland (<10 gallons).

Immediately after becoming aware of the discharge to the wetland, EHS-AA contacted Young’s Environmental Cleanup to vacuum and clean the impacted lines, and to vacuum impacted water from the wetland. When vacuuming commenced on the middle catch basin, because of the storm system design, water back-flowed from the wetland to the catch basin. This reverse flow enabled Young’s to capture the visibly impacted water in the wetland (no colored water was observed in the wetland after clean-up). The remaining catch basin and associated piping was vacuumed and rinsed to remove residual glycol.

U-M HSMS has reached out to the vendor that caused the discharge to both reiterate the seriousness of this incident and to ensure that their employees are properly trained to prevent a future discharge.

In accordance with our permit requirements, verbal notification to the MDEQ was provided on September 14, 2016 followed by a written communication on September 16, 2016.

**U-M Ann Arbor – Gasoline Spill to Millers Creek**

On September 29, 2016, EHS-AA received a call from U-M Property Disposition staff regarding a sheen and odor in the parking lot of the facility. EHS-AA HMM staff immediately responded to the scene and deployed oil dry and sorbent pads to capture the sheen and prevent discharge to the storm sewer system. Because of the potential discharge to the storm sewer system, EHS-AA staff from EP3 also responded to the spill.

EP3 staff proceeded to the outfall from the storm system (outlet from the outfall is to a drainage ditch which flows to Millers Creek) and noted a sheen and odor on the surface of the discharging storm water. EP3 staff deployed oil sorbent booms across the flow path to capture the sheen. Note, on the day of this spill, there were significant rainfall events, and it was raining throughout the entire response.
The small pickup truck responsible for the discharge had been staged in the same location for approximately three weeks. The location of the vehicle was such that staff would have noted any significant leaks, none of which were noted prior to this event. It is thought that there may have been a small drip from de minimis fuel remaining in the fuel system which was contained under the vehicle. The heavy rains that fell prior to the incident caused storm water to flow under the vehicle where it washed over the leaked fuel and formed the sheen that was observed and reported. The vehicle responsible for the release was sent to an off-site recycling facility the same afternoon as the incident and response, and all remaining spill response materials were cleaned up for proper disposal. EHS-AA staff reviewed the incident and determined that applicable best management practices and response procedures to protect the storm water system and waters of the State were utilized by U-M staff.

In accordance with our permit requirements, verbal notification to the MDEQ was provided on September 29, 2016 followed by a written communication on October 5, 2016.

U-M Ann Arbor – Discharge to Huron River

On November 8, 2016, a white plume was observed discharging from a U-M-owned outfall SE of the Fuller Road bridge deck (O-30R). EHS-AA staff received notice of the discharge on November 9, 2016 and responded by first checking the outfall for evidence of the plume. There was still a white plume observed but not as concentrated as the photo taken on November 8, 2016. Signs of a sanitary discharge were not observed (i.e. no floatables, paper, solids, etc.). EHS-AA staff drove and walked around the tributary drainage area (approximately 120 acres) looking for evidence of a spill or dumping. Nothing was found. Construction managers operating within the drainage area of the outfall were notified of the plume and asked to inquire with contractors about newly installed storm or sanitary sewer taps or interior plumbing connections and use of materials that may cause a white plume. The investigation did not reveal any evidence of a possible spill, dumping, or cross-connection. The MDEQ, Washtenaw County, and the City of Ann Arbor were all made aware of the discharge.

On November 14, 2016, a white plume was witnessed again from Outfall O-30R. EHS-AA staff were notified on November 16, 2016 and made efforts to track the plume upstream. Signs of a sanitary discharge were not observed at the outfall (i.e. no floatables, paper, solids, etc.). Due to the delay in notification, staff were unable to find the source after searching the entire drainage area for signs of a spill or dumping. As done the previous week, construction managers were contacted. In addition, building managers within the drainage area were contacted to see if any work was recently done within their respective buildings. No evidence was found. The MDEQ, Washtenaw County, and the City of Ann Arbor were all made aware of the discharge.

EHS-AA staff frequently observed the outfall over several weeks, and no additional discharges were noted. This incident has been closed.

U-M Ann Arbor – Hydraulic Oil Discharge to Millers Creek

On April 11, 2017, at approximately 11:00pm, EHS-AA HMM was contacted for assistance regarding an oil leak from a parked U-M bus in Parking Lot NC62 on the north side of Baxter Road and adjacent to North Campus Facility Services. The leak was discovered by a U-M mechanic who immediately applied Oil-Dri to the affected area. Based on the capacity of the hydraulic system in the bus, no more than five gallons of 10w50 oil was leaked and less than a quart is estimated to have made it to a catch basin.

EHS-HMM arrived on scene at approximately 11:30pm. Oil was observed on the walls of the catch basin and was wiped up. The used Oil-Dri was swept up and disposed of properly. The catch basin had continuous low flow from local underdrains presumably draining the adjacent landscaped slope. No oil was observed in the flow. The outfall to Millers Creek [NC_OF-011 (O-83)], which is approximately 370 feet downstream, was investigated and no oil was observed at the outfall nor intermediate manholes. The incident was reported to EHS-AA EP3 staff at 12:30am on April 12, 2017.
EP3 staff revisited the site at approximately 7:00am on April 12, 2017. No oil was observed in the catch basin nor the outfall. EHS-AA staff reviewed the incident and determined that applicable best management practices and response procedures to protect the storm water system and waters of the State were utilized by U-M staff. In accordance with our permit requirements, verbal notification to the MDEQ was provided on April 12, 2017 followed by a written communication on April 14, 2017.

U-M Ann Arbor – White Foam Discharge to Huron River
EHS-AA EP3 staff received a call at 1:00pm on May 3, 2017 from the U-M Utility Department concerning an unknown white foam that was seen discharging from Outfall MC_OF-004 (O-26) for 5 to 10 minutes at approximately noon. The U-M Utility Department had been notified by a utility contractor working in the area. When Utility staff arrived on site at approximately 12:30pm, the discharge was no longer evident. EP3 staff arrived on site at approximately 1:30pm and also observed no evidence of the discharge at that time. Signs of a sanitary discharge were not observed (i.e. no floatables, paper, solids, etc.). Facility staff for the hospital and parking garage (facilities within the tributary drainage area) were contacted about any incidents in the area that might have caused the discharge. Staff were not aware of any related incidents. EP3 staff also investigated a surface parking lot within the drainage area, but found no evidence of a discharge. The discharge is believed to be unrelated to the utility contractor’s work. EHS-AA staff reviewed the incident and determined that applicable best management practices and response procedures to protect the storm water system and waters of the State were utilized by U-M staff.

In accordance with our permit requirements, verbal notification to the MDEQ was provided on May 4, 2017 followed by a written communication on May 5, 2017.

U-M Flint – Manufactured Gas Plant (MGP) While not an illicit discharge from the U-M storm system, it is 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. In Spring 2017, Consumers Energy began its river sediment remediation project at the Flint River East Boulevard former MGP site. The project is expected to be complete by Spring 2018. The remediation project will address Flint River sediment and riverbank soils impacted by their historical MGP operations. Consumer’s objectives for this project are among other things, to:
- remove and cap MGP-related impacted sediments and riverbank soil upstream of the Hamilton Dam meeting MDEQ requirements;
- meet MDEQ compliance criteria for groundwater entering the river;
- restore the riverbanks, landscaping, affected upland areas and infrastructure; and
- minimize secondary impacts (e.g., odor, noise and traffic) during implementation of their activities.

Cross-Connections:

Dye testing was completed to detect sewer cross-connections by UMAA at (1) the Ross School of Business on August 1, 2016, (2) the Glen Avenue Parking Structure on October 10, 2016, (3) U-M North Campus Research Complex (NCRC) at 2800 Plymouth Road on March 21, 2017, and (4) Kraus Building on March 2, 2017 and March 22, 2017. No cross connections from a sanitary source to a storm drainage system were identified.
The following potential and existing illicit connections, as listed in previous reports, are under further investigation.

- **Central Campus Recreation Building (CCRB):** It was determined through dye testing conducted in August 2012 that the swimming pool and pool area drains are connected to the storm sewer system. Backwash water was previously redirected to the sanitary sewer in 2012. The deck drains discharge de minimis amounts of chlorinated splash water while the pool drain only discharges once the water has been de-chlorinated. Based on the characteristics of the expected discharge water and the travel distance from CCRB to the Huron River outfall at Glen Ct., it is estimated that little to no chlorine will reach the river.

- **Modern Languages Building (MH-14):** MH-14 is located in North Ingalls Mall. Prior dry weather screening showed evidence of dry weather flow. In 2015, an underground storm water infiltration system was installed immediately downstream of MH-14 essentially directing flows to the infiltration area and not the storm sewer system. During construction, no flow was observed at MH-14. Follow-up investigations were conducted in August 2016 and dry weather flow was again observed with no visual or olfactory indicators of pollution. Televising was conducted in September 2016 confirming that the flow was coming from the Ingalls Mall display fountain. The fountain has a crack in the base, which prompts the addition of water to compensate for the leak. The leak and any excess compensation water drain to the underground storm water infiltration system. The fountain does not run through the winter months. Repair is scheduled to happen within the next two to five years.

c) **Assess Best Management Practice Appropriateness and Progress toward Goals Identified in the SWMPP.**

This section presents the progress made this reporting period toward meeting the measurable goals which were written in the SWMPP to support the program elements (e.g. Total Maximum Daily Loads, Public Education Program, Public Involvement and Participation, etc.). Each subsection below is prefaced with excerpted language from the SWMPP (*italicized*) followed by a table of measureable goals and the U-M activities, which help to meet the measureable goals. The table also indicates in which fiscal year actions were initiated to support a particular measureable goal and whether U-M is in compliance with that goal. Compliance presents in the form of a discrete set of activities that have previously been completed and reported or an on-going effort with activities that are updated in each report. Additional activities supporting a program element are also noted at the end of each subsection.

i. **Total Maximum Daily Loads (TMDL)**

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

Table 1 presents the status of each TMDL activity, associated measureable goals as written in the SWMPP, and current or past activities supporting the measurable goals.
Table 1 Total Maximum Daily Load Activities

<table>
<thead>
<tr>
<th>TMDL Activities</th>
<th>Measurable Goals</th>
<th>Current Status</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Initial Action Reported in:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In Compliance</td>
</tr>
<tr>
<td>Review existing outfalls to identify major discharge points (≥ 36-inch conveyance) discharging directly to surface waters of the state within the portion of the TMDL.</td>
<td>FY 2011-2012 (Annual)</td>
<td>✓</td>
</tr>
<tr>
<td>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.</td>
<td>FY 2011-2012 (Annual)</td>
<td>✓</td>
</tr>
<tr>
<td>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 as of the date of this report, U-M is still operating under the 2010 SWMPP.</td>
<td>FY 2012-2013 (Annual)</td>
<td>✓</td>
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</tbody>
</table>

TMDL Activities

U-M Ann Arbor – Previously Reported

- As previously reported, outfalls have been evaluated to determine if they are “major” discharge points (greater than 36 inches in diameter). A list of major outfalls is kept on file. UMAA has identified four major discharge points within TMDL reaches. O-47R (NC_OF-005) and O-41 discharge directly into Millers Creek. O-30R (NC_OF-001) and O-88R (NC_OF-003) discharge directly to the Huron River. Outfall O-41, previously reported, is no longer assessed by U-M as it is a City-owned outfall discharging to Millers Creek. Outfall O-41 is located south of Baxter Road and northwest of the Waste Management Facility and discharges to Millers Creek.

- 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.

- As previously reported, based on the sampling results and an overall review of the SWMPP, the U-M has developed a plan to reduce the discharges of the applicable TMDL parameters. In an effort to maximize resources and minimize duplicate efforts, U-M is addressing TMDLs in a consistent manner as the HRWC and other area MS4s. HRWC has written a TMDL Implementation Plan for the Huron River Watershed MS4s in Washtenaw County. Aspects of that Implementation Plan are incorporated in the updated SWMPP as part of the NPDES Application for discharge of storm water to surface waters from an MS4. Management activities addressing the specific TMDLs have been identified and prioritized in Appendix I of the updated SWMPP.

U-M Dearborn – Previously Reported

- 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.

- 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.
ii. Public Education Program (PEP) – Education and Outreach on Storm Water Impacts

Recognizing the need for public involvement in the effort to reduce storm water pollutants, the U-M has developed a broad and aggressive storm water 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 storm water 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 storm water 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 storm water issues to 70% of the University community by the end of 2013. Levels of storm water awareness are anticipated to vary widely among the different community groups, with more emphasis given to key staff having greater potential to impact storm water 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 storm water impacts. (At a minimum, commercial food services shall be educated to prevent grease and litter discharges to the MS4).

Table 2 presents the status of each public education program activity, associated measurable goals as written in the SWMPP, and current activities supporting the measurable goals. Table 3 includes activities that go beyond the expectations of the original measurable goals.

### Table 2 Public Education Program Activities

#### PEP-1 Storm Water Education Brochures

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

Over the years, the storm water public education program has evolved and grown. The program has largely converted the educational content from paper brochure format to digital posters in an effort to reduce paper waste and align with the University’s sustainability goals. The digital posters use the messages and content from the original brochures. The target audience remains students, faculty, staff, and visitors.

<table>
<thead>
<tr>
<th>PEP Activity Measurable Goals</th>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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<tbody>
<tr>
<td>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.</td>
<td>FY 2009-2010 (annual)</td>
<td>✓ ✓ ✓</td>
</tr>
<tr>
<td>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.</td>
<td>FY 2011-2012 (mid-year)</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>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.</td>
<td>FY 2011-2012 (annual)</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>In 2012-2013, implement the new dissemination strategy/plan for educational brochures. Tally the number of brochures distributed and provide in the annual reports.</td>
<td>FY 2012-2013 (annual)</td>
<td>✓ ✓</td>
</tr>
</tbody>
</table>

#### PEP-1 Activities

**U-M Ann Arbor**

- EHS-AA continues to post the storm water digital display; titled “Keep our Michigan Waters BLUE!” which explains what storm water runoff is and why it can pose a threat to surface waters. The digital display was exhibited on flat screen televisions located within the Shapiro Undergraduate Library and the
Hatcher Graduate Library from June 23, 2016 through September 30, 2016 and from March 27, 2017 through April 23, 2017. The Shapiro Library displays are located in the first floor lobby next to Bert’s Cafe and the third floor lobby entrance to the Science Library. The digital display was also posted in the lobbies of 18 residence halls from September 6, 2016 to May 2017. The digital display is scheduled to be posted again at the libraries and the residence halls this coming fiscal year.

- In October 2016, EHS-AA posted “Never Dump Anything Down a Drain” laminated posters in 45 locations across campus targeting offices and break rooms of building services staff. A digital version of this poster was also posted in the EHS-AA lobby on a digital kiosk from September 7, 2016 through September 30, 2016 and March 23, 2017 through May 1, 2017.

- UMAA was a listed community partner in the 2016 Huron River Watershed Community Calendar and supported its distribution. The 2016 Calendar is a collaborative effort to educate communities about the importance of water stewardship and nonpoint source pollution prevention. In all, the HRWC and its partners distributed 37,000 2016 Calendars to residents, staff, volunteers, constituents, and members of the watershed community. U-M distributed 273 calendars to staff, faculty, and students and are planning to collaborate on the 2018 Huron River Watershed Community Calendar.

- Over the reporting period, EHS-AA developed a storm water poster targeting those who use loading docks around campus. The primary message is to never dump or hose down anything into a storm drain. The poster was distributed campus-wide in June 2017 to facility managers to post at loading docks.

- In an effort to reach the U-M digital audience, U-M launched a series of storm water-related Twitter and Facebook posts. Within this reporting period, one Facebook post was made on the EHS-AA Facebook page on June 7, 2017 and three postings were made on Planet Blue Twitter on May 31, 2017, June 13, 2017, and June 26, 2017. See Figure 1 for a copy of the June 26, 2017 Twitter post. The messages were as follows:

  May 31, 2017- Keep our Michigan Waters Blue! Pollutants wash into storm drains & flow into rivers. Do your part & don't dump waste [myumi.ch/6x75E](myumi.ch/6x75E)

  June 7, 2017 - Storm drains lead straight to rivers, lakes and streams. When contaminants enter storm drains, they pollute our water resources. Do your part and don't dump waste. Thanks for your help in keeping our Michigan Waters Blue! [http://ehs.umich.edu/environmental/water/stormwater/](http://ehs.umich.edu/environmental/water/stormwater/)

  June 13, 2017 - #UMich & @A2Gov have separate pipes for storm water & sanitary sewagemyumi.ch/6x75E
  Storm drains= outside
  Sanitary drains= indoors

  June 26, 2017 - Keep our Michigan Waters Blue! Use a mop sink or other interior sanitary drain to dispose of nonhazardous wash water [myumi.ch/6x75E](myumi.ch/6x75E)
U-M’s Graham Institute continues to distribute the 2014-2015 Sustainability Guide electronically on their website. Approximately 8,000 guides were distributed in Fall 2016. 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/storm water), and community awareness. A copy of the guide is located at the following website:


U-M Dearborn

EHS-D continues to pass out six 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. One of the pamphlets 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. A total of 1,250 storm water brochures and bookmarks were distributed during the reporting period.

U-M Flint

EHS-D continues to distribute the two-sided “Only Rain in the Drain” bookmark that provides campus specific storm water educational information, including information on the Flint River, and specific BMPs that students, faculty & staff could do to protect drains and the quality of surface waters. More than 500 bookmarks are distributed via the Campus Bookstore, the University Library and are available at UMF Information Centers in several campus buildings. Approximately 100 more bookmarks were distributed in the Spring of 2017 during the annual Earth Day Celebration, and another 50-100 bookmarks were distributed at the annual M-Gagement event (Fall term) and the annual Fit Fair at UM-Flint.

EHS-F provided storm water 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 2,000-3,000 students, staff and faculty attended the Welcome Back Picnic. Additional materials were distributed during the Work Study Job Fair, the Annual Fit Fair located in the Recreation Center, and the annual Earth Day Celebration, in which more than 500 people including students, community partners, and families attended.
- EHS-F continues to promote storm water awareness, watershed management, BMP’s, and spill prevention and response using a few bulletin boards on campus; some boards focusing solely on F&O employee responsibilities (Hubbard Building) while another board focus on the broader campus community (Harrison Parking Ramp).

- EHS-F continues to utilize several different flyers and posters to promote storm water management and related best environmental practices for the UMF campus community. Flyers include our “Top Ten Storm Water BMP’s” flyer 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 storm water management website for further information. Additionally, 2-sided, 11”x17” training guides served as visual aids for this past year’s annual employee storm water management training. A flyer that specifies BMP’s for food vendors was distributed to aid with annual storm water and spill prevention training.

- Over 100 EHS-F storm water mousepads which identify the ‘Top 10 Storm water Tips’ are currently located across campus in numerous computer labs and public computer stations to further help reinforce the importance of storm water management and the protection of the Flint River watershed.

- EHS-F continues to use a Storm Water Reference Sheet for Contractors that is posted on the EHS website as a tool to educate contractors and project managers about storm water management and protection of drains and surface water.

- 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.

### PEP-2 EHS/SNRE Websites

*Developed in cooperation with the U-M SNRE and maintained by EHS-AA, the Storm Water 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 storm water system operates, various legal requirements, and what individuals can do to reduce contamination in the storm water system from surface runoff. As viewers move through the site they learn about storm water, 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 storm water.*

*Storm water website content is updated on a regular basis to include pertinent information related to storm water management and pollution prevention.*

Current material on the websites can be viewed via the following links:

**UMAA:** [http://ehs.umich.edu/](http://ehs.umich.edu/) (UPDATED WEBSITE AND URL)

**UMD:** [www.umd.umich.edu/691923/](http://www.umd.umich.edu/691923/)


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

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<thead>
<tr>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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<tbody>
<tr>
<td></td>
<td>In Compliance</td>
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<tr>
<td>FY 2004-2005 (annual)</td>
<td>✓</td>
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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 storm water system operates, various legal requirements, and what individuals can do to reduce contamination in the storm water system from surface runoff. This website tally may also serve as an indication of the community seeking additional storm water information from the link provided in the brochures, as detailed above.

| FY 2009-2010 (annual)       | ✓             | ✓                              | ✓                           |

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.

| FY 2011-2012 (mid-year)     | ✓             | ✓                              | ✓                           |

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.

| FY 2011-2012 (annual)       | ✓             | ✓                              | ✓                           |

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.

| FY 2012-2013 (annual)       | ✓             | ✓                              | ✓                           |

In 2012-2013, implement the new dissemination strategy/plan for the storm water education website. The number of website hits will be tracked for reporting (above).

### PEP-2 Activities

#### U-M Ann Arbor
- A QR code is provided on printed materials and digital posters which can be scanned by smart phones to direct viewers to the EHS-AA storm water website.
- A new EHS-AA website including revised storm water pages went live in September 2016. On September 1, 2016 there were a cumulative 28,248 hits (since Nov 2003) to the old storm water web page. This equates to 552 hits from July 1, 2016 to September 1, 2016. From the September 30, 2016 launch of the new website to June 30, 2017 there were 630 unique hits to the storm water web page. In the transition to the new web page, we now have the ability to track unique hits, which is why there is a significant difference between the hits on the old web page and the new web page. Going forward, we will track unique hits to the web page. Note that the measurable goal of 2,000 hits annually is based on non-unique hits and cannot be directly correlated to tracking of unique hits.
New EHS-AA Storm Water Web Pages:
http://ehs.umich.edu/environmental/water/stormwater/  (391 cumulative unique hits)
http://ehs.umich.edu/construction-projects/environmental-considerations/storm-water-management/ (239 cumulative unique hits)

- The 2016 and 2017 mid-year storm water NPDES reports and the 2016 annual storm water NPDES report were added to the EHS-AA website.

**U-M Dearborn**

- The UMD storm water website received 34 views during this reporting period. The website provides the UMD campus community with information on how the storm water system operates, what the laws require, and what can be done to reduce contamination in our storm system and ultimately, the Rouge River. The website offers links to various external organizations such as Friends of the Rouge River (FOTR), Alliance of Rouge Communities (ARC), the Department of Environmental Quality (DEQ), Southeast Michigan Council of Governments (SEMCOG), and Earth 911. The storm water webpage also provides links to two storm water awareness videos. (http://www.umd.umich.edu/691923/)

Note that previous reports tracked the number of views to the entire EHS website rather than just the storm water page. Now that it is possible to track just the storm water page, we will continue to do that in future reports.

**U-M Flint**

- The UMF storm water website is available at the following link: http://www.umflint.edu/ehs/flint-river-storm-water-management-university-michigan-flint. UMF EHS posts 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 storm water resources are also provided at this website. There were approximately 7,017 page views from 3,325 sessions and 2,294 users to the EHS website for the current reporting period. Note: tracked visits are not specific to only the storm water webpage; visits are tracked for the entire EHS-F website.

- UMF Facilities and Operations maintain a website, located at: 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. Website topics include: storm water management, spill prevention, response and mitigation, SESC, and environmental due care requirements, all of which are critical in ensuring contractors clearly understand and comply with the University’s storm water management program and University expectations when working on University property. The web links for the U-M construction safety requirements, storm water management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents. Additionally, a fact sheet is available specifically for contractors working on UMF campus continues to be posted/available for contractors working at UMF.

**PEP-3 Video & Public Service Announcements**

*The video ‘Storm Water Management at the University of Michigan’ provides viewers with an overview of storm water issues as they pertain to University operations and activities. The video begins with an overview of the UMAA’s storm water 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 storm water management program. The remainder of the video focuses on how storm water can become polluted because of human activities. It proceeds to inform viewers of the University’s actions to protect storm water 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.*
The ‘Storm Water Management at the University of Michigan’ video or other storm water video content is offered for viewing on an as-needed basis for inclusion in faculty and staff presentations, classes, workshops, etc.

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<th>PEP Activity</th>
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<td>FY 2009-2010 (annual)</td>
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The number of offerings of storm water videos will be tracked annually for subsequent reporting in the progress reports. A listing of available storm water videos will be kept on file.

| Storm water, 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 storm water 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. | FY 2009-2010 (annual) | ✓ | ✓ | ✓ |

PEP-3 Activities

U-M Ann Arbor

- Public Service Announcements (PSAs) were made at seven U-M football home games during the 2015 football season, reaching an audience in excess of 770,000 people. PSAs were played at football entrance gates approximately 15 times per game. Additionally, an educational storm water message was posted on the stadium video boards (typically once per game) and on the 27-ft x 48-ft football stadium marquee (up to 20 times per game). EHS-AA continues to work with the Athletics Department for additional opportunities.

- Storm water video content is offered for viewing on the EHS-AA website. The videos are also used on an as-needed basis for inclusion in faculty and staff presentations, classes, workshops, etc. The videos are located here: http://ehs.umich.edu/environmental/water/stormwater/ [ALSO PART OF PEP-4 BELOW]

- A digital message was posted on the 27-ft x 48-ft football stadium marquee located outside the stadium during eight home football games from September 2016 through November 2016 (up to 20 times per game). See Figure 2. Attendance at each game is approximately 110,000 reaching an audience of approximately 880,000 over the 2016 football season. The message was also posted on the in-stadium
digital boards approximately one hour before the game with one accompanying public service announcement (PSA) as noted below. This PSA was also played at football entrance gates approximately 15 times per game. EHS-AA continues to work with the Athletics Department for additional opportunities.

“Michigan fans help keep our Michigan waters BLUE by properly disposing of trash and recyclables! Did you know that outdoor drains found in parking lots and along roadways are directly connected to rivers, ponds, and lakes? Nothing but storm water should ever be discharged into these storm drains. So do your part and help keep our Michigan waters BLUE!”

![Figure 2 Digital Message for Stadium Marquee](image)

- The digital message shown in Figure 2 was also posted on the 27-ft x 48-ft football stadium marquee during off-game times from October 14, 2016 to October 28, 2016 and March 27, 2017 to May 8, 2017. The message was shown six times per hour reaching pedestrian and vehicular traffic on Stadium Blvd.

Through the Planet Blue Ambassador program, students, faculty, and staff can complete the online training modules on different relevant topics (e.g., water). Individuals from every major school and unit on the Ann Arbor campuses (including most F&O units and the Health System) have participated. Approximately 3,390 students, faculty, and staff have been certified as Planet Blue Ambassadors since the January 2013 inception of the program. Four hundred and thirty-nine (439) people completed the Planet Blue Ambassador program during this reporting period. 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. [ALSO PART OF PEP-4 BELOW]

The videos may be viewed on YouTube at the following link:
[https://www.youtube.com/playlist?list=PLkpBjHVzRvypfLn_ahL0_TQ7f4E12tFxN](https://www.youtube.com/playlist?list=PLkpBjHVzRvypfLn_ahL0_TQ7f4E12tFxN)
• All new employees are sent a welcome email directing them to an on-line U-M storm water management training video. The videos are available for viewing here: http://ehs.umich.edu/environmental/water/stormwater/

There were approximately 1,282 new employees during the reporting period. [ALSO PART OF PEP-4 BELOW]

• UMAA implements campus wide recycling in all buildings and encourages proper management of waste whether one is on campus or at home. UMAA promotes and provides support with various ‘Zero Waste’ events to further promote the proper disposal of waste.

**U-M Dearborn**

• EHS-D 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 28 people completed the training. http://www.umd.umich.edu/696586/ [ALSO PART OF PEP-4 BELOW]

• The exhibit area at the UM-Dearborn’s Environmental Interpretive Center (EIC) is 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 our formal education programs and university courses. The exhibits begin with an overview of the concept of a watershed and aerial photo of the Rouge River so visitors can get a perspective of the entire area of southeastern Michigan. The multimedia 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.

• Due to the fact that the UM-Dearborn Fieldhouse is not equipped with an announcement system, EHS-D 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.

**UM-Flint**

• UMF implements campus wide recycling in all buildings and encourages proper management of waste whether one is on campus or at home. EHS-F partnered with the environmental student club to promote and support various ‘Zero Waste’ events. UMF also provides educational e-mails promoting community household hazardous waste collection days in October and May of each year. These are sent to all faculty, staff and students (> 9,000 individuals).

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**PEP-4 Presentations (training sessions, workshops, etc.)**

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

Storm water education is provided during new employee orientation sessions (all employees at the U-M), new laboratory employee training classes and at new Facilities & Operations employee training classes. In addition, presentations including storm water topics are provided on an annual basis to UMAA Facilities & Operations staff, which includes the following sub-groups:

- Architecture, Engineering and Construction,
- Custodial & Grounds Services,
- Environment, Health, & Safety,
- Logistics, Transportation & Parking,
- Maintenance Auxiliaries & Central Shops,
- Maintenance Regions,
- Office of Campus Sustainability,
- Operational Support,
- Real Estate Office, and
- Utilities

### PEP Activity

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<tr>
<th>Measurable Goals</th>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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<tbody>
<tr>
<td>Storm water topics will be included in a minimum of 50 classes, workshops or presentations annually. The number of sessions including training on storm water issues will be tracked for subsequent reporting.</td>
<td>FY 2009-2010 (annual)</td>
<td>✓</td>
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<tr>
<td>A minimum of 500 laboratories will be inspected annually. The inspections will include a review of issues impacting storm water quality, chemical storage, waste management and disposal. These inspections may also serve as an indicator of the effectiveness of storm water education received, or the need for additional education. The number of inspections performed annually will be tracked for subsequent reporting.</td>
<td>FY 2009-2010 (annual)</td>
<td>✓</td>
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<tr>
<td>All outdoor food vendors will receive training/education including related storm water issues annually. Food establishment inspections will include items to ensure storm water BMPs are being followed. These inspections may also serve as an indicator of the effectiveness of storm water education received, or the need for additional education. The number of inspections performed will be tracked for subsequent reporting.</td>
<td>FY 2009-2010 (annual)</td>
<td>✓</td>
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### PEP-4 Activities

**U-M Ann Arbor**

- Contractors are trained on construction site storm water-related issues at the kick-off meetings and then throughout the construction phase by the Part 91 SESC inspectors. The presentations cover storm water regulations and SESC procedures and practices.
- EHS-AA developed an online Storm Water Pollution Prevention Plan (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 December 31, 2016, 64 U-M staff members from over 18 different facilities have successfully completed the online training. Over this reporting period, July 1, 2016 to June 30, 2017, 17 U-M staff members completed the training. EHS-AA continues to use the online training module for refresher training of U-M staff members associated with SWPPP facilities.
- EHS-AA developed a storm water presentation to be included as part of the U-M Annual HAZWOPER Refresher training. The information was presented in two parts. The first focused on identifying illicit discharges to the storm water and sanitary sewer systems. The second part was a refresher training in the field about how to prevent a spill from reaching the storm sewer system and what needs to be done if it
does. Trainings took place on October 3, October 7, October 10, October 11, and October 14. Sixty-nine staff, faculty, and students completed the annual HAZWOPER Refresher training.

- EHS-AA held an 8-hour Emergency Response Technician Refresher training in October 2016 to train applicable facility staff and on-call Environment Health and Safety staff on emergency response. The training includes outdoor spill response and appropriate protocol to protect waterways. Sixty-nine U-M staff attended the training.

- EHS-AA held a 32-hour Emergency Response Technician training in May 2017 to train applicable facility staff and on-call Environment Health and Safety staff on emergency response. The training includes outdoor spill response and appropriate protocol to protect waterways. Ten U-M staff attended the training.

- Storm water topics were included in classes, workshops or presentations that reached over 11,700 people during the reporting period. Examples of classes include: SWPPP training, Spill Prevention Control and Countermeasure training, Storm Water/SESC Awareness training, Bloodborne Pathogens training, Asbestos Awareness Refresher training, HAZWOPER Refresher training, and lead awareness training. Participants include staff from EHS-AA, Facilities & Operations, Athletics Department, researchers, and other groups.

- A total of 3,920 laboratory rooms (1,456,197 ft² of lab space) and 173 shop rooms (150,703 ft² of shop space) were inspected during the reporting period at UMAA.

- A total of 143 inspections were performed by EHS-AA sanitarians on temporary food establishments during the reporting period. Additionally, 54 food selling locations were inspected at each of eight home football games to ensure the appropriate food safety signage/poster was conspicuously displayed at each location. This equates to 432 total signage verification checks. The posters indicate proper grease disposal and wastewater management tips.

- EHS-AA continues to work with U-M football stadium vendors/concession stands to prevent potential discharges into the storm water system. Concession stands were posted with signage detailing procedures for proper grease and wastewater management for these operations during the 2016 football season to reinforce proper waste management for these temporary operations. At least 40 signs were posted. EHS plans to replace any missing signs ahead of the next football season (2017).

**U-M Dearborn**

- In addition to the on-line storm water training noted in PEP-3, UMD held six training sessions for faculty, staff, students and contractors in which a total of 223 people were trained. These classes included new hire orientation classes and lab safety training classes, in which storm water was one of the topics discussed.

- UMD conducted a total of 241 lab inspections during this reporting period.

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

**U-M Flint**

- UMF held 4 storm water training sessions for staff members where a total of 40 people were trained in 2016 including Skilled Trades, Building Maintenance, Grounds, Auto Shop, Custodial Services, Moving Services, and Project Managers, Food vendors and Event and Building Service staff. Annual training classes focused on each particular unit’s unique role/responsibilities in protecting drains and implementing BMPs in their respective areas.

- In addition to the routine area inspections related to the SWPPP and SPCC programs, EHS-F conducted 32 lab inspections and 47 Hazardous waste area inspections, however, this number does not include lab self-audits conducted by the individual departments including, Biology, Computer Science, Engineering, and Physics (CSEP) and Chemistry/Biochemistry, etc., who each complete their own regular inspections.
EHS-F training for food vendors operating on the UMF campus discusses proper management of grease and waste. EHS-F 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.

Table 3 Additional Public Education Program Activities

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<th>Activities</th>
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<tr>
<td><strong>All Campuses</strong></td>
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<tr>
<td>• U-M campuses continue to maintain recycling programs. The programs divert waste from entering landfills; reduce carbon dioxide emissions; and save gallons of water, energy, and trees. Proper disposal of potentially hazardous materials prevents contamination to the environment including surface waters.</td>
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| **U-M Ann Arbor** |
| • The U-M Board of Regents approved the creation of the new School for Environment and Sustainability on Thursday, December 8, 2016. The school is expected to launch July 1, 2017 and will focus on global sustainability challenges at the intersection of environment and society. |
| • The U-M Graham Sustainability Institute Water Center published newsletters in September 2016, December 2016, and March 2017. The U-M Water Center supports and engages in research focusing on water quality, water quantity, coastal infrastructure, water policy, and more. Collaborative research teams provide users in the region, such as community leaders, legislators, resource managers, and environmental NGOs, with usable information and practical tools to support and enhance the protection, restoration, and management of Great Lakes and its watershed. |
| • The U-M Water Center is collaborating with the City of Detroit to repurpose some of the over 80,000 vacant residential properties. This project uses the Detroit’s vacant property demolition process as an opportunity to design and assess green infrastructure (GI) innovations that aim to make rivers cleaner and neighborhoods more attractive. |
| • EHS-AA continues to work with U-M football stadium vendors/concession stands to prevent potential discharges from entering the storm water system. Concession stand signage detailing procedures for proper grease and wastewater management were reposted prior to the 2016 football season. Approximately 50 laminated posters were posted in August 2016. EHS-AA plans to replace any missing signs ahead of the next football season (2017). |
| • 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 EHS-AA/EHS-D/EHS-F and to the U-M Police Department (UMPD) so appropriate measures can be taken to correct issues which may impact storm water 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. Between July 1, 2016 and June 30, 2017, 148 staff were trained. |
| • On September 21, 2016, “2016 Earthfest” was held at the UMAA campus. This event promoted overall sustainability practices including waste prevention and healthy environments. |
Activities

- UMAA continues to work with the U-M Outdoor Events Coordinator to provide environmental guidelines for events that may impact storm water. As part of this effort, EHS-AA recommends storm water BMPs and provides requirements to event staff to ensure waters of the State are properly protected from potential impacts.

- Helping to keep waste out of our waterways and encourage waste-reducing behavior, U-M participated in the national RecycleMania competition and U-M’s Battle of the Buildings in Winter 2017. During the eight weeks of RecycleMania (national competition), we collected 1,363,940 pounds of recyclables. For Battle of the Buildings (campus building competition), we collected 647,721 pounds of recyclables.

- U-M College of Pharmacy hosts biannual Safe Medication Disposal Events. This year, the events were held on October 4, 2016 and April 4, 2017. Since the event’s inception in March 2014, U-M has collected 2,139 pounds of medication. This event helps keep medications from reaching receiving waters.

- In July 2016, U-M was one of eight institutions to receive the Sustainability Award in Facilities Management: Leadership in Educational Facilities. The award recognizes efforts to advance sustainability excellence in its buildings and on campus by integrating sustainable policies and environmentally-friendly practices throughout the organization.

U-M Dearborn

- 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. https://umdearborn.edu/facplan_recycling/

- EHS-D 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.

- 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 on their website at http://therouge.org/.

- UMD maintains three pet waste stations along the Rouge River Gateway Greenway Trail.

- All UMD safety training classes include information on our storm water program.
### Activities

- **EHS-D** 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](http://www.umd.umich.edu/fileadmin/env-health-safety/public/files/Contractor_Emergency_Flipchart.pdf).

### U-M Flint

- 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.

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

- Annual Earth Day Celebration events and activities include participation of many local environmental organizations including the Flint River Watershed Coalition. 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.

- UMF student clubs, including Future Urban Environmental Leaders (FUEL), and others partner with EHS and have organized a few (2-3) Flint River clean up volunteer days during the spring and fall. These clubs combined their efforts to coordinate the student and community volunteers, and by also coordinating the transportation and disposal of the trash and debris that is picked up & pulled from the banks of the Flint River by volunteers.

- EHS-F 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-F staff also conducts random inspections of work sites to ensure cautionary measures are in place prior to, and during, contractor work. If needed/required, SESC weekly inspections are conducted.

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

- UMF’s University Outreach continues to be an engaged and active supporter of: promoting environmental stewardship, watershed management planning, greening of the community, storm water 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](http://www.umflint.edu/outreach/land-water-people).
iii. Public Involvement and Participation

The University encourages public input in all aspects of its storm water management program. In order to facilitate public participation, this plan and information related to the storm water management program are made available on the storm water 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 storm water management program. In addition, when new storm water 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 Storm Water 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.

Table 4 presents the status of each Public Involvement and Participation activity, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals.

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<thead>
<tr>
<th>PIP Activity Measurable Goals</th>
<th>Current Status</th>
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<tr>
<td></td>
<td>Initial Action Reported in:</td>
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<tr>
<td>The SWMPP and NPDES reports will be made available on the U-M storm water web site, <a href="http://ehs.umich.edu/environmental/environmental-data-and-reports/">http://ehs.umich.edu/environmental/environmental-data-and-reports/</a></td>
<td>FY 2009-2010 (annual)</td>
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<tr>
<td>The date of addition to the website will be tracked for subsequent reporting.</td>
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<tr>
<td>• The annual report for FY 2015-2016 was added to the EHS-AA storm water website on October 10, 2016 and the mid-year report for FY 2015-2016 was added to the EHS-AA storm water website on August 22, 2016.</td>
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<tr>
<td>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 storm water issues in the community. U-M’s participation in meetings, community events, etc. with these groups will be tracked for subsequent reporting.</td>
<td>FY 2009-2010 (annual)</td>
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<tr>
<td>• At least 20 meetings were attended during the reporting period including one Mallets Creek Watershed Meeting, one Millers Creek Watershed Meeting, four Middle Huron Initiative (MHI) Watershed Meetings, one SEMCOG workshop on the DRAFT Regional Water Plan, one Friends of the Rouge Task Force Meeting, a number of Flint River Watershed Coalition (FRWC), and 12 Genesee County parks meetings.</td>
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</table>
• UMAA was a listed community partner in the 2016 Huron River Watershed Community Calendar and supported its distribution. The 2016 Calendar is a collaborative effort to educate communities about the importance of water stewardship and nonpoint source pollution prevention. In all, the HRWC and its partners distributed 37,000 2016 Calendars to residents, staff, volunteers, constituents, and members of the watershed community. U-M distributed 273 calendars to staff, faculty, and students and are planning to collaborate on the 2018 Huron River Watershed Community Calendar.

• EHS-D attended one Friends of the Rouge Task Force Meetings during this reporting period.

• EHS-D is an active member of the Alliance of Rouge Communities (ARC).

• At the UM-Dearborn’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 involved with FRWC. During the reporting period, the UMF Human Resource Director has been a FRWC board member. A UMF Environment, Health and Safety Director and other UMF staff have met at least 12 times throughout the reporting year with the Genesee County Parks regarding their proposed JPA permit application impacting the Hamilton Dam and related river restoration plans.

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<th>PIP Activity</th>
<th>Measurable Goals</th>
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<td></td>
<td></td>
<td>FY 2009-2010 (annual)</td>
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</table>

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 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.
### PIP Activity

#### Measurable Goals

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<th>Initial Action Reported in:</th>
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<td>In Compliance</td>
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</table>

| 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. | FY 2009-2010 (annual) | ✓ | ✓ | ✓ |

- U-M participated in one 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.

| 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. | FY 2009-2010 (annual) | ✓ | ✓ | ✓ |

- No meetings were held during this reporting period; however, U-M staff attends HRWC meetings and other creekshed meetings to help address regional TMDLs. The management activities are reported in other portions of this report.

| The U-M will sponsor/offer a semi-annual volunteer opportunity for participants to get involved with storm water 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. | FY 2009-2010 (annual) | ✓ | ✓ | ✓ |

### U-M Ann Arbor

- The UMAA Radrick Farms Golf Course and University of Michigan Golf Course were awarded the Clean Corporate Citizen (C3) designation from the MDEQ in 2014 and 2015, respectively. 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.

- In 2017, U-M expanded its Michigan Turfgrass Environmental Stewardship Program (MTESP) from Radrick Farms Golf Course, U-M Blue Golf Course, and the U-M Wilpon Baseball and Softball Complex to be the first Division 1 school to receive campus-wide certification. MTESP certification is designed to encourage strategies to prevent pollution and recognize environmentally sound management practices. The program includes sections dedicated to promoting fish and wildlife habitat, indigenous vegetation and water quality protection.
• The U-M was the first campus to receive a Tree Campus USA recognition in 2008 from the Tree Campus USA program, sponsored by the Arbor Day Foundation and Toyota and has continued to be part of the program annually since 2008. Some of the efforts that earned the certification include having a tree advisory committee, maintaining a campus tree-care plan, dedicating annual funding for routine tree maintenance, and hosting volunteer days to remove invasive species from the North Campus woodlots. [https://record.umich.edu/articles/ann-arbor-campus-again-recognized-tree-campus-usa](https://record.umich.edu/articles/ann-arbor-campus-again-recognized-tree-campus-usa)

• EHS-AA organized an invasive species plant pull on November 12, 2016 on north campus near a woodlot adjacent to the Art & Architecture building. Twenty-six volunteers spent 4 hours learning how to identify invasive species and subsequently removing them. The event is coordinated with Grounds staff who chip the plants as they are removed from the woodlot. The primary invasive species in this area are buckthorn and honeysuckle.

**U-M Dearborn**

• EHS-D applied and was approved by the state for a notice of intent to use rule 97 tracer dye when necessary.

• 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/](http://therouge.org/).

**U-M Flint**

• EHS-F coordinated the 2017 Earth Day Celebration Community event, where more than 30 organizations participated and approximately 30 volunteers helped with planning, setup, and moderating presentations throughout the day’s activities. An estimated 500-600 individuals attended. A portion of the attending displays and organizations participating in the event 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.

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<tr>
<th>PIP Activity Measurable Goals</th>
<th>Initial Action Reported in:</th>
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<tbody>
<tr>
<td>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.</td>
<td>FY 2011-2012 (mid-year)</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>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.</td>
<td>FY 2011-2012 (annual)</td>
<td>✓ ✓</td>
</tr>
<tr>
<td>In 2012-2013, implement the participation plan. Tally the number of meetings attended for annual reporting (as detailed in goals above).</td>
<td>FY 2012-2013 (annual)</td>
<td>✓ ✓</td>
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</tbody>
</table>
iv. Illicit Discharge Elimination Program (IDEP)

The removal of illicit discharges is an ongoing program being conducted by the U-M. As illicit discharges are identified, they are discontinued or otherwise corrected. The program described in this section will be used to determine the existence, location, and extent of possible illicit connections and discharges to the storm water 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 storm water 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 storm water system. EHS-AA, Utilities, Maintenance – Auxiliaries & Central Shops, and/or Maintenance Regions will receive reports of water quality problems and possible illicit connections and perform follow-up investigations, leading to elimination where appropriate.

Table 5 presents the status of each Illicit Discharge Elimination Program activity, associated measureable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 6 includes activities that go beyond the expectations of the original measurable goals.

**Table 5 Illicit Discharge Elimination Program Activities**

<table>
<thead>
<tr>
<th>IDEP-1 Storm Sewer Map</th>
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A storm sewer system map is required in Part IA.7.h.1 of the Permit. The map must include the location of all discharge points the permittee owns or operates, and the names and location of all surface waters of the state which receive discharges from the MS4.

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<tr>
<th>IDEP Activity Measurable Goals</th>
<th>Current Status</th>
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<td>Initial Action Reported in:</td>
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<tr>
<td>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.</td>
<td>FY 2010-2011 (Mid-year)</td>
</tr>
<tr>
<td>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.</td>
<td>FY 2010-2011 (Mid-year)</td>
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</table>

- UMAA continues to work with F&O Geographic Information System staff to review and update the storm sewer maps as changes/updates are needed.
- UMD updates campus storm water maps as needed. Updated information is sent to a vendor to provide up-to-date master copies.
- At UMF, no changes or edits occurred to the storm water drain maps during this reporting period.
EHS-AA has implemented a program to identify discharge points from facilities into either the sanitary sewer or storm water systems. The first phase of this program began several years ago and resulted in the identification of facility discharge points on the Ann Arbor Campus. Information collected included water usage rates, category of activity, and categorization of water flows as domestic or non-domestic based on the activity occurring at the facility.

The second phase of the identification of facility discharge points will be implemented as part of this SWMPP. The second phase will consist of a continual observation process performed by EHS-AA, EHS-D, EHS-F, and Department of Public Safety & Security (DPSS) personnel as they perform other activities across campus facilities. The activities associated with this program are conducted as illicit discharges are identified. They are prioritized and discontinued or otherwise corrected.

### IDEP Activity Measurable Goals

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<thead>
<tr>
<th>IDEP Activity</th>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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<tr>
<td>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.</td>
<td>FY 2011-2012 (Mid-year)</td>
<td>✓</td>
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### IDEP-3 Dry Weather Screening

In accordance with Part I, Section A.7.b of the permit, the purpose of dry weather field screening is to determine the existence, location, and extent of possible illicit discharges into the U-M storm water drainage system. The screening program has been designed to target discharge points within the storm water system that will help identify non-storm water flow. The current procedure used for dry weather screening is attached as Appendix E [of the SWMP]. This procedure will be updated periodically, and the most current copy of the procedure will be available for review in the EHS-AA, EHS-D, EHS-F, and DPSS offices.

For the purposes of dry weather screening, the U-M will be divided into five regions. The UM-D and UM-F will comprise one region for screening purposes. The remaining four regions will be comprised of UM-A2 areas determined from the outfall prioritization task in section 5.2 above. The regions are as follows:

- UM-Dearborn & UM-Flint
- UM-A2 I
- UM-A2 II
- UM-A2 III
- UM-A2 IV
## IDEP Activity Measurable Goals

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<th>Initial Action Reported in:</th>
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<td>In Compliance</td>
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<tr>
<td>FY 2009-2010 (annual)</td>
<td>✓</td>
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</table>

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 storm water 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.

### U-M Ann Arbor

- 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 three outfalls had flow that warranted follow-up sampling. The outfalls are located on the Medical Campus (O-25, O-26, O-30R). Initial visual and olfactory screening did not indicate any potential concerns from these three outfalls. 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; follow-up investigation activities will be conducted in conjunction with other construction and utility replacement projects.

### U-M Dearborn

- UMD performed dry weather screening on two major outfalls (DOF-001 and DOF-006) on May 21, 2012. As of September 2014, UMD EHS dry weather screened 186 catch basins. No additional UMD information to report for this section from July 1, 2016 to June 30, 2017.

### U-M Flint

- As previously reported, UMF completed dry weather inspections on 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. UMF is looking at conducting additional dry weather inspections during this upcoming reporting period.
I Dep-4 Public Reporting of Illicit Discharges

Public involvement in the reporting of illicit discharges to the storm water system is a voluntary program. Custodial & Grounds Services (CGS) and Logistics, Transportation & Parking (LTP) currently coordinate extensive recycling promotions with student housing and individual colleges on campus. These promotions include information regarding reporting of illicit discharges to EHS-AA, EHS-D, or EHS-F for follow-up. By means of its public education program, U-M advises the University community to report discharges for appropriate investigative and follow-up action.

The University maintains a 24-hour 911 emergency response system, which is coordinated and manned by DPSS on UMAA campus and DPS on UMD and UMF campuses. Any calls reporting dumping, accidental spills, etc. are dispatched from DPSS or DPS to EHS-AA, EHS-D, or EHS-F, respectively, for emergency response, containment, and control. In addition, calls can be made to EHS-AA, EHS-D, or EHS-F directly reporting such incidents for emergency response.

<table>
<thead>
<tr>
<th>IDEP Activity</th>
<th>Measurable Goals</th>
<th>Initial Action Reported in:</th>
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<tr>
<td></td>
<td></td>
<td>In Compliance</td>
<td>Completed as Previously Reported</td>
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<td></td>
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<td>FY 2009-2010 (annual)</td>
<td>✓</td>
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The emergency response system on campus will be maintained by the University of Michigan Division of Public Safety & Security (DPSS) (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 DPSS/EHS emergency response call system on potential discharges to the storm water 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.

All Campuses
- A total of 47 calls of outdoor incidents were reported via the DPSS/EHS-AA/EHS-D/EHS-F emergency response systems over the reporting period. 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), paint, and blood.

U-M Ann Arbor
- During this reporting period, UMAA personnel responded to approximately 143 indoor and outdoor incidents, involving natural gas leaks, fires, improper disposal of medical equipment, and spills and leaks of materials. The majority of the spills were small, ranging from a few milliliters to five gallons. A majority of the outdoor incidents were remedied (37 of 44) prior to storm drain impact; however, seven incidents resulted in materials entering Waters of the state (Millers Creek, Huron River, wetland tributary to Fleming Creek) as described in Section 1)b).

U-M Dearborn
- There were no reported spills during the 2016-2017 reporting period that impacted the storm water system or associated waterways.
At UMF, there was three outdoor spills during the reporting period. No material entered a storm drain as a result of these spills. The first event occurred in October 2016 when a contractor spilled oil. EHS-F was immediately notified and provided absorbent materials to the contractor to clean up the spill. The second incident occurred in January 2017 when a personal vehicle leaked transmission fluid. EHS-F and Flint F&O responded and cleaned up the small amount. The third reported spill was in April 2017 at the UMF Ice Rink at the Pavilion Annex. The spill material was a 40% solution of ethylene glycol from the ice rink cooling mat, which was being decommissioned for the season. All drains were blocked/sealed for the duration of the time the mat was in use, including when the small leak was identified. The mat leak was repaired and the glycol solution was pumped/removed and placed into a container. The volume of the spill was estimated to be less than five gallons.

Table 6 Additional Illicit Discharge Elimination Program Activities

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<th>Activities</th>
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<tr>
<td><strong>All Campuses</strong></td>
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<tr>
<td>• Recycling Efforts – The U-M promotes environmental awareness by sponsoring recycling programs on campus. Educational materials have been developed that 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.</td>
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<tr>
<td>• 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.</td>
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<tr>
<td>• 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.</td>
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<tr>
<td>• Employee Training and Education – U-M personnel involved in the application of herbicides and pesticides have been trained and are licensed applicators. In addition to the courses taken through the Michigan Department of Agriculture and Rural Development, U-M trains all of its grounds employees. Training programs are also conducted to address the purpose and operation of BMP activities under this SWMPP. In addition, staff in various departments are qualified under the rules governing the certification to operate any facility listed under the classifications of Storm Water Management – Construction Site or Storm Water Management – Industrial Site and/or to perform duties under Soil Erosion &amp; Sedimentation Control Comprehensive.</td>
</tr>
<tr>
<td>• Hazardous Materials Response – EHS-AA, EHS-F &amp; EHS-D 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.</td>
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<tr>
<td>• Hazardous Waste Disposal – EHS-AA is responsible for the appropriate collection and disposal of hazardous waste and hazardous materials used and generated by the Ann Arbor campus and other off-site 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 EHS-D and EHS-F oversee the disposal of hazardous wastes on their respective campuses. EHS-D, EHS-AA, and EHS-F personnel are properly trained in the Resources Conservation and Recovery Act (RCRA) and the</td>
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## Activities

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<thead>
<tr>
<th>University utilizes qualified contractors for transport and proper disposal of waste off site.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Plan Review</strong> – EHS-AA, EHS-D, and EHS-F 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 storm water quality and the storm water drainage system.</td>
</tr>
<tr>
<td><strong>Storm Water Basins</strong> – Storm water management basins are used to reduce the impact of storm water discharges from campus locations. The basins are designed to manage peak flows and remove sediment which can significantly reduce pollutant loads in receiving waters.</td>
</tr>
</tbody>
</table>

### U-M Ann Arbor

- UMAA recycled approximately 149 tons of consumer electronics and 114,707 fluorescent lightbulbs this past fiscal year.
- EHS-AA sanitarians continue to work with kitchen and food vendors on campus to ensure proper waste management and disposal methods are used. In addition, EHS-AA continues to work with U-M football stadium vendors/concession stands to prevent potential discharges into the storm water system. Concession stands were posted with signage detailing procedures for proper grease and wastewater management for these operations during the 2016 football season to reinforce proper waste management for these temporary operations. Approximately 50 signs were posted. EHS plans to replace any missing signs ahead of the next football season (2017).
- EHS-AA requires that new building construction and building renovation projects resulting in new and/or modified internal piping be dye tested to confirm proper connection to the sanitary system. This requirement is in place for projects where more than 10 fixtures are impacted.
- EHS-AA conducts quarterly SWPPP inspections at seven fleet maintenance and storage yards. EHS-AA has also 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. Seventeen staff completed the online training between July 1, 2016 and June 30, 2017 either as new trainees or as an annual refresher. As of June 30, 2017, 68 U-M staff members from over twelve different facilities have successfully completed the online training.

### U-M Dearborn

- UMD recycled a total of 3,718 fluorescent light bulbs and 1,257 pounds of electronic equipment.
- The EHS-D Department oversees the disposal of hazardous waste. EHS-D personnel are properly trained in RCRA and the University utilizes qualified contractors for transport and disposal off site.

### U-M Flint

- UMF recycled 2823 spent lamps and other electronic waste, totaling approximately 12 tons of e-waste.
- EHS-F 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.
- EHS-F has had three student interns working during this report period, one of which played a key role in annual storm water and spill prevention training, storm water awareness and education, as well as SWPPP compliance inspections.
v. Post-Construction Storm Water Control for New Development and Redevelopment Projects

The U-M has a program to address storm water 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 storm water 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.

Table 7 presents the status of each Post-Construction Storm Water Control activity, associated measureable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 8 includes activities that go beyond the expectations of the original measurable goals.

<table>
<thead>
<tr>
<th>PCSW Activity</th>
<th>Measurable Goals</th>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCSW-1 Post-Construction Storm Water Runoff</td>
<td>The University continues to review options for regional storm water management systems at locations where current or future construction is anticipated. This regional detention would include storage for construction or renovation projects that have limited space for on-site systems. The goal of the University is to protect receiving water quality and limit the rate at which surface water runoff discharges from any specific site during and following development or redevelopment to not exceed the pre-development hydrologic regime. On previous projects where detention on site is not feasible the University has required a minimum of structural BMPs to improve the water quality leaving the site (sedimentation traps, etc.) and proposed regional containment within the runoff basin as the quantity control.</td>
<td>FY 2010-2011 (Mid-year)</td>
<td></td>
</tr>
</tbody>
</table>

By August 1, 2009, the Post-Construction Storm Water 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 EHS-AA website and in Appendix G of the SWMPP. |

| PCSW-2 Non-structural & Structural Best Management Practices | | |
| To meet the objectives, U-M may implement various non-structural and structural BMPs where appropriate. Non-structural BMPs are preventative actions that involve management and source controls. Examples of issues that are covered in non-structural BMPs used on campus include but are not limited to the following: |

- Buffers along sensitive water bodies
- Education programs for developers and the public about project designs that minimize water quality and quantity impacts
- Minimum disturbance of soils and vegetation;
- Restrictions on directly connected impervious areas;
- Preservation of the natural environment;
- Minimization of impervious surfaces; and
- Use of vegetated swales and natural storage.
Structural BMPs are physical controls, including storage practices, which improve water quality. Examples of issues covered in structural BMPs used on campus include but are not limited to the following:

- Wet ponds and extended detention outlet structures;
- Filtration practices such as grassed swales, sand filters, and filter strips; and
- Infiltration practices such as infiltration basins and infiltration trenches.

<table>
<thead>
<tr>
<th>PCSW Activity</th>
<th>Measurable Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Initial Action Reported in:</td>
</tr>
<tr>
<td></td>
<td>In Compliance</td>
</tr>
<tr>
<td>EHS-AA and/or AEC 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.</td>
<td>FY 2008-2009 (annual)</td>
</tr>
</tbody>
</table>

- 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. Storm water controls installed during this reporting period include an infiltration basin and hydrodynamic separator at Brighton Health Center, two detention basins and a hydrodynamic separator at West Ann Arbor Medical Clinic, hydrodynamic separators at the Art & Architecture Building – Taubman Wing, and underground infiltration chambers and hydrodynamic separators at Biological Sciences Building. There are over 220 structural storm water BMPs installed throughout the UMAA, UMF, and UMD campuses.

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

*Any non-structural BMPs that are implemented at a facility are incorporated into day to day activities for the operation of the facility or into maintenance schedules. Structural BMPs related to storm water detention and retention basins are subject to scheduled maintenance inspections. Non-scheduled activities are completed as they arise.*

| Storm water management basins on campus will be inspected annually, at a minimum. The number and frequency of inspections of storm water basins will be tracked for subsequent reporting. Maintenance issues identified during these inspections will be tracked until corrected. | FY 2008-2009 (annual) | ✓ | ✓ | ✓ |
**U-M Ann Arbor**
- Annual inspections were completed on the 50 surface storm water management basins on campus by U-M personnel during this reporting period during spring 2017. Storm water management basins were also maintained through mowing, invasive plant removal, and controlled burns.

**U-M Dearborn**
- UMD does not have any aboveground storm water management basins.

**U-M Flint**
- UMF Facilities & Operations conducts routine grounds area inspections, drains and areas around drains are also inspected, and if problems are observed they are reported appropriately.

### PCSW-4 Site Plan Review

The U-M has established programs to control the quality of storm water runoff from development or redevelopment activities through the review of site plans. This program is the same as that used for controlling storm water runoff on construction sites.

<table>
<thead>
<tr>
<th>PCSW Activity</th>
<th>Measurable Goals</th>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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</thead>
<tbody>
<tr>
<td></td>
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<td>In Compliance</td>
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<td></td>
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<td></td>
<td>Completed as Previously Reported</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Ongoing Effort (see below)</td>
</tr>
<tr>
<td>EHS-AA and/or AEC review all plans to ensure projects have adequate post-construction storm water management controls. The number of plan reviews will be tracked for subsequent reporting.</td>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**U-M Ann Arbor**
- Approximately 187 plan reviews were performed between July 1, 2016 and June 30, 2017 with 14 requiring a separate SESC Plan review and approval and five of the 14 requiring an MDEQ Notice of Coverage. Sites with greater than one acre of earth disturbance are evaluated as required to meet the PCSW control requirement.

**U-M Dearborn**
- UMD had one SESC project that EHS-D reviewed for appropriate soil erosion and sedimentation control best management practices such as silt fence and inlet filters.

**U-M Flint**
- UMF reviewed many project scopes/drawings to determine if SESC measures were necessary. Of those project scopes and related documents reviewed, no university projects required general monitoring/inspections throughout the duration of the projects. However, the Consumers Energy Sediment and Riverbank remediation project, which began in spring of 2017, was partially located on and adjacent to University property. EHS-F reviewed the SESC and other related documents for this project. Consumers Energy and/or their designee submitted their SESC permit to the County for review/approval and CE or designee is conducting the required SESC inspections. With that said, other small outdoor work activities are monitored to ensure soil and debris do not enter storm drains during the course of work activities.
**Table 8 Additional Post-Construction Storm water Control Activities**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Campuses</strong></td>
</tr>
<tr>
<td>• Construction sites are stabilized with the addition of permanent controls and vegetation to reduce the amount of sedimentation that could impact receiving waters.</td>
</tr>
<tr>
<td>• EHS-AA, EHS-D, and EHS-F work 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.</td>
</tr>
</tbody>
</table>

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**vi. Construction Storm Water 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.

Table 9 presents the status of each Construction Storm Water Runoff Control activity, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 10 includes activities that go beyond the expectations of the original measurable goals.

**Table 9 Construction Storm Water Runoff Control Activities**

<table>
<thead>
<tr>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CSW-1 Site Plan Reviews</strong></td>
</tr>
<tr>
<td>The U-M has established programs to control the quality of storm water runoff from development or redevelopment activities. Plans for new development are subjected to a U-M internal review process to ensure that storm water quality is adequately controlled during construction and after completion of the new development. Efforts are underway to insert storm water management controls into the front end of all projects. Examples of efforts on projects include control of sedimentation using silt screens or other measures, controlling sediment tracking from construction areas through increased street sweeping, and using hydroseeding to control runoff once construction efforts are completed. Reviews of all projects are performed by EHS-AA, EHS-D, or EHS-F.</td>
</tr>
</tbody>
</table>
CSW Activity
Measurable Goals

<table>
<thead>
<tr>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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</thead>
<tbody>
<tr>
<td>FY 2008-2009 (Annual)</td>
<td></td>
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</tbody>
</table>

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 EHS-AA, EHS-D, or EHS-F to require projects to insert storm water management controls into the front end of all projects.

U-M Ann Arbor
- During this reporting period 14 projects required a separate SESC Plan review and approval and five of the 14 required an MDEQ Notice of Coverage.

U-M Dearborn
- UMD had one project that triggered formal SESC plan review.

U-M Flint
- UMF did not have any University-sponsored projects triggering formal SESC plan review. However, the Consumers Energy Sediment and Riverbank remediation project, which began in spring of 2017, was partially located on and adjacent to University property. EHS-F reviewed the SESC and other related documents for this project. Consumers Energy and/or their designee submitted their SESC permit to the County for review/approval and CE or designee conducting the required SESC inspections.

CSW-2 Best Management Practices (for SESC on construction sites)

*Best Management Practices are used for construction projects to prevent soil erosion and sedimentation from leaving the property. The following list represents examples of erosion and sedimentation controls for which specific BMPs have been developed. Copies of the BMPs can be found in the Manual and are used, as appropriate, based on the specific needs for a construction site. Note that not all sites will need to use all of these practices.*

- Access Roads
- Construction Barriers
- Tree Protection
- Buffer and Filter Strips
- Filter Fencing
- Storm Drain Inlet Filter Fabric
- Street Sweeping
<table>
<thead>
<tr>
<th>CSW Activity</th>
<th>Measurable Goals</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Initial Action</td>
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<tr>
<td></td>
<td></td>
<td>Reported in:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>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.</td>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
</tr>
</tbody>
</table>

**U-M Ann Arbor**
- Sixty-one UMAA projects during this reporting period used a variety of SESC BMPs on their sites. Examples of BMPs included, but are not limited to, the use of vegetation, silt fences, catch basin inlet filters, check dams, temporary roof conductors, street sweeping, dewatering bags, erosion eels, anti-trackout pads (aggregate), metal anti-trackout grates, water - for suppressing dust, wheel wash station (MobyDick Wheel Wash 400c), sediment retention barrier (Double Silt Fence w/Mulch in between), sediment forebays, temporary seeding, soil pile tarps, and rip-rap.

**U-M Dearborn**
- UMD had one SESC project and utilized appropriate soil erosion and sedimentation control BMPs i.e., silt fence, inlet filters, etc.

**U-M Flint**
- UMF did not have any University sponsored projects triggering formal SESC plan review. However, the Consumers Energy Sediment and Riverbank remediation project, which began in spring of 2017, was partially located on and adjacent to University property. EHS-F reviewed the SESC and other related documents for this project. Consumers Energy and/or their designee submitted their SESC permit to the County for review/approval and CE or designee conducting the required SESC inspections.
CSW-3 SESC Inspections

Inspections of work sites are essential to controlling erosion and sedimentation concerns. Personnel from several departments have received SESC training from the MDEQ. This provides a strong base of personnel to draw upon to regularly review maintenance, renovation, and construction sites. The inspections focus on requirements of site-specific erosion and sedimentation control plans for the project. Conditions can change at maintenance, renovation, and construction sites and the inspectors should make adjustments to the erosion and sedimentation control measures, as needed.

EHS-AA, EHS-D, EHS-F or their designee, who have received a MDEQ SESC certificate of training, will inspect sites weekly during maintenance, renovation, and construction activities and following significant rain events to ensure compliance with the U-M SESC procedures and Part 91. Sites one acre and above will be inspected within 24 hours of the rain event to comply with National Pollution Discharge Elimination System (NPDES) inspection requirements.

Issues and concerns will be referred to the project/construction manager or designee for correction. The contractor will make any necessary repairs or corrections to the control measures within 24 hours, if waters of the state are being impacted. Other corrections, not impacting waters of the state will be made within 5 days. The project/construction manager will report any issues that cannot be corrected within 5 days to EHS-AA, EHS-D, or EHS-F. Additional detail as to why the correction cannot be made in that time frame will be required.

### CSW Activity Measurable Goals

<table>
<thead>
<tr>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>In Compliance</td>
</tr>
<tr>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
</tr>
</tbody>
</table>

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.

#### U-M Ann Arbor
- Approximately 1,040 weekly and after storm SESC inspections were performed between July 1, 2016 and June 30, 2017.

#### U-M Dearborn
- UMD conducted fifty-three weekly and after storm SESC inspections on one site.

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

<table>
<thead>
<tr>
<th>CSW Activity</th>
<th>Measurable Goals</th>
<th>Current Status</th>
<th>Initial Action Reported in:</th>
<th>Completed as Previously Reported</th>
<th>Ongoing Effort (see below)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Select staff from EHS-AA, EHS-D, EHS-F, and AEC 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.</td>
<td>In Compliance</td>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Seven U-M staff have received comprehensive SESC training from MDEQ and are current with the associated Certificate of Training.</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>Select U-M staff from EHS-AA, EHS-D, EHS-F and AEC will be certified in Storm Water Management for Construction Sites. The number of U-M staff who have received MDEQ certification will be tracked annually for subsequent reporting.</td>
<td></td>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>• Twelve U-M staff are Certified Storm Water Operators in the State of Michigan for Construction sites at the time of this report.</td>
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</tr>
<tr>
<td></td>
<td>• Four U-M staff have received Industrial storm water training from MDEQ and are current with the associated Certificate in Training.</td>
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</tbody>
</table>

## CSW-4 Sedimentation Control During Maintenance Activities

Some maintenance activities do not typically have a formal design or specification prepared. They are performed on a work order or emergency basis by Facilities & Operations or other U-M departments such as UMHHC or Athletics. The supervisor overseeing the maintenance activity will be responsible for ensuring appropriate sedimentation control measures are implemented during field work. These procedures will be used for routine operations; however, in emergency situations human life and the safety and operation of the facilities and infrastructure are of overall importance. In those cases, work will be performed to minimize any immediate danger and stabilize the situation, and sedimentation control actions will follow. This chain of actions may require the use of an outside contractor to clean the storm water drainage system following the maintenance activities to prevent or minimize sediment transport to the Huron River. In addition to the BMPs listed above, the following BMPs will be used by the maintenance supervisor during activities that disturb soil to the degree where sediment transport could occur.
CSW Activity Measurable Goals

<table>
<thead>
<tr>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2010-2011 (annual)</td>
<td>✓ ✓ ✓</td>
</tr>
</tbody>
</table>

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.

- During this reporting period, U-M staff performed SESC inspections, as described above in CSW-3.

Table 10 Additional Construction Storm Water Runoff Control Activities

Activities

**All Campuses**

- Contractors at U-M are required to clean/sweep construction areas and adjacent areas to prevent track-out from a work site.

- The web links for the U-M construction safety requirements, storm water management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents during the reporting year. This ensures that contractors are made aware of university policies and requirements to protect surface water while working on university property.

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

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

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

- EHS personnel from all campuses are circulating around campus daily to address reported issues as well as checking on various project areas (e.g. covering a dumpster, debris/litter, inappropriate outdoor storage by contractors, etc.).

- Street sweeping of roads and parking lots/structures is implemented regularly on all campuses at least twice per year and on an as-needed basis. At UMF, the street sweepers are used in high priority areas more frequently such as at loading docks, near compost areas, and the Hubbard Parking area.

- U-M personnel pick up litter and debris on a regular basis ranging from weekly to daily throughout the year.
vii. Pollution Prevention/Good Housekeeping for Municipal Operations

The University’s storm water 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.

Table 11 presents the status of the activities supporting Pollution Prevention/Good Housekeeping for Municipal Operations, associated measurable goals as written in the SWMPP, and current or past activities supporting the measurable goals. Table 12 includes activities that go beyond the expectations of the original measurable goals.

<table>
<thead>
<tr>
<th>Table 11 Pollution Prevention/Good Housekeeping for Municipal Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P2/GH-1 Structural Controls</strong></td>
</tr>
<tr>
<td>Structural controls are permanent physical features that control and prevent storm water pollution. Each structural control has routine scheduled maintenance and long-term inspection procedures to ensure that they remove storm water pollutants to the maximum extent practicable.</td>
</tr>
<tr>
<td>Several retention and detention basins have been identified as part of the U-M storm water system. These structures receive direct run-off from the U-M storm water system and are defined in Appendix F [of the SWMPP]. The U-M has provided a spreadsheet identifying additional structural controls with inspection and maintenance schedules in Appendix K [of the SWMPP].</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P2/GH Activity Measurable Goals</th>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic Goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storm water 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.</td>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
</tr>
</tbody>
</table>

- Annual inspections were completed on the 50 aboveground storm water management basins on campus by U-M personnel during this reporting period during spring 2017. These storm water management basins were also maintained through mowing, invasive plant removal, and controlled burns.
## P2/GH Activity Measurable Goals

<table>
<thead>
<tr>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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<tbody>
<tr>
<td></td>
<td>In Compliance</td>
</tr>
<tr>
<td>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.</td>
<td>FY 2008-2009 (annual)</td>
</tr>
</tbody>
</table>

### U-M Ann Arbor
- 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, 505 catch basins were cleaned and approximately 265 cubic yards of debris was removed from the storm lines, catch basins and manholes.
- Forty-nine underground structures including hydrodynamic separators, diversion structures, underground storage, and other water quality devices were inspected and maintained during the reporting period. This is approximately 45% of the total on campus.

### U-M Dearborn
- UMD continued implementing their 5-year cycle catch basin cleaning strategy and cleaned a total of 50 at the main campus.

### U-M Flint
- 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 2 hours of cleaning catch basins and an outside contractor assisted with additional cleaning effort totaling $1,800 during the report period. The total volume of catch basin cleanout waste was not individually recorded.
### P2/GH Activity

**Measurable Goals**

<table>
<thead>
<tr>
<th>Initial Action Reported in:</th>
<th>Current Status</th>
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<td>In Compliance</td>
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</table>

By October 1, 2011, a list of municipal properties and structural storm water 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.

#### P2/GH-2 Roadways and Parking Structures

*The University maintains numerous parking structures and surface parking lots throughout its campuses.*

Maintenance of the U-M roadways and parking structures incorporates sediment control activities. Street sweeping removes potential storm water pollutants before they are carried into receiving waters in runoff from a storm event. Street sweeping and leaf and litter collection is performed by the University in an effort to prevent large debris from entering the storm water system. Litter is disposed as normal municipal waste and leaves are composted in two locations that are well away from system catch basins or inlet structures.

Maintenance activities on these structures and surfaces include street sweeping, leaf pick-up, litter and pollution controls, snow and ice removal, and roadside vegetative maintenance. These activities are discussed in greater detail below.

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.

- Approximately 1,761 cubic yards of waste was sent for disposal from the cleaning and maintenance of parking lots and structures throughout the UMAA campus. The combined estimated cost for disposal, labor, and vehicle expenses is approximately $1,226,711. Labor costs include all maintenance related to the parking structures and surface lots including street sweeping, leaf pick-up, litter and pollution controls, snow and ice removal, and roadside vegetative maintenance.

- UMD personnel spent approximately 500 hours collecting litter campus-wide, which resulted in about 1,200 cubic yards of waste. Fairlane Center personnel collect litter weekly from April through November and monthly from December to March. A total of 36 hours were completed. Approximately, $10,000 were spent cleaning/sweeping parking surfaces and streets.

- At UMF, 8 hours of labor at a cost of $245 were spent for street sweeping. Approximately 125 hours of labor at the cost of $3,650 were conducted for sweeping/cleaning parking lots and structures. Approximately, one cubic yard of waste was disposed from the sweeping and cleaning of parking lots and streets. Daily litter pickup for the remainder of campus involved more than 3,624 hours over the reporting period. The labor cost associated with cleaning, sweeping and litter pick up on campus during the reporting period is approximately $98,000. The total of all sweeping and litter waste yielded an estimated 660 cubic yards for disposal. Disposal costs are estimated at $6170.
### P2/GH Activity

#### Measurable Goals

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<tr>
<th>Activity Description</th>
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<tr>
<td><strong>A</strong></td>
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<tr>
<td>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 will be documented.</td>
<td>FY 2012-2013 (annual)</td>
<td>✓</td>
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<tr>
<td>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).</td>
<td>FY 2011-2012 (mid-year)</td>
<td>✓</td>
</tr>
<tr>
<td>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 EHS-AA prohibiting the use of coal tar emulsions for U-M projects. Comments on construction and renovation projects are kept on file at the EHS-AA office.</td>
<td>FY 2009-2010 (annual)</td>
<td>✓</td>
</tr>
<tr>
<td>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.</td>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
</tr>
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</table>

#### U-M Ann Arbor
- UMAA used approximately 1,800 tons of treated and untreated rock salt during this reporting period which is a decrease of approximately 31% 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 pre-precipitation brine applications, and the use of rock salt alternatives.

#### U-M Dearborn
- UMD used 400 tons of sodium chloride.

#### U-M Flint
- UMF used approximately 108 tons of salt during this reporting period, which is an increase of 34 tons from the previous year. This was attributed to heavier snowfall compared to the previous reporting period. The University continues to try to decrease usage and increase replacement with other effective alternatives.

#### Increase the use of alternative deicers annually to replace/supplement salt use. The quantity of alternative de-icers will be tracked on an annual basis.
- FY 2008-2009 (annual) | ✓ | ✓ | ✓ |

In the 2016-17 season, the following alternative deicers were used at UMAA:
- Caliber M-1000: 9,200 gallons
- Cryotech CF7: 400 gallons
- Cryotech NAAC: 8.8 tons
- Ice Axe Xtra/New Deal: 50 pounds
In the 2016-17 season, the following alternative deicers were used at UMF:
Caliber M-1000: 7,000 gallons

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<td>Ongoing Effort</td>
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<td>(see below)</td>
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<tr>
<td>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.</td>
<td>FY 2008-2009 (annual)</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**U-M Ann Arbor**
- The UMAA currently employs 86 certified herbicide/pesticide applicators.

**U-M Dearborn**
- UMD has six certified pesticide technicians.
- UMD has a contract with TruGreen to conduct large treatments/spraying. TruGreen has a non-phosphorus policy.

**U-M Flint**
- UMF employs eight certified technicians.

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.

<table>
<thead>
<tr>
<th>U-M Ann Arbor</th>
<th>FY 2008-2009 (annual)</th>
<th>✓</th>
<th>✓</th>
<th>✓</th>
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</thead>
</table>

**U-M Dearborn**
- At UMD, approximately 150 pounds of grass seed, 50 pounds of starter fertilizer, 10 bales of straw, 60 yards of topsoil, and 20 yards of compost were required for vegetative replacement due to salt damage.

**U-M Flint**
- Limited vegetation replacement was needed at UMF during the reporting period involving 150 pounds of grass seed to address <5,000 square feet of damaged turf.

**P2/GH-3 Fleet Maintenance**

The U-M owns and operates a large fleet of vehicles, including buses and cars, that is maintained by Logistics, Transportation & Parking. The U-M also owns and operates a fleet of equipment, including lawn mowers and rototillers that is maintained by Custodial & Grounds Services. All vehicles and equipment are regularly maintained to ensure proper and effective operation as well as prevent impacts on storm water quality.
<table>
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<tr>
<th>P2/GH Activity</th>
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<td>In Compliance</td>
<td>Completed as Previously Reported</td>
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<tr>
<td>In 2010-2012, Develop SWPPPs for all fleet maintenance and storage yards/facilities at U-M.</td>
<td>FY 2012-2013 (mid-year)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>In 2013, implement all SWPPP for fleet maintenance and storage yards at U-M.</td>
<td>FY 2013-2014 (mid-year)</td>
<td>✓</td>
<td>✓</td>
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</table>

- On-going quarterly inspections are conducted at fleet maintenance and storage yards/facilities on all campuses. An annual review and update of each SWPPP is also conducted. Documentation is kept on file for a minimum of three years.

**P2/GH-4 Storm Sewer Labeling**

*As of March 10, 2004, any outfall structure that the U-M constructs or installs that discharges storm water directly to waters of the State will provide permanent identification (e.g. label, color coding, or other identifying characteristic).*

*The storm drains placed on campus come with the message "Dump No Waste - Drains to Waterways" engraved on it. Storm drain grates already in place will be marked with a curb marker with the message "Keep our Michigan Waters Blue: Dump No Waste - Flows to River" or similar.*

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.

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<th>FY 2008-2009 (annual)</th>
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</table>

**UM-Ann Arbor**

- Seventy-two storm drain markers were installed/replaced at UMAA during the reporting period on catch basins, storm drain inlets, and trench drains draining to the storm water 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.

**UM-Dearborn**

- UMD did not install/replace labels this past fiscal year.

**UM-Flint**

- UMF did not install/replace labels this past fiscal year.
The application of pesticides and fertilizers is controlled by several departments including Custodial & Grounds Services, Facilities Maintenance, Athletics, Matthaei Botanical Gardens, Radrick Farms and Nichols Arboretum, depending on the location. The University employs Integrated Pest Management (IPM) methodology, an ecological approach to pest management, in University buildings. All available techniques are used to reduce pest populations to acceptable levels while minimizing the potential impact of pesticides upon humans and the environment.

### P2/GH Activity Measurable Goals

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<tbody>
<tr>
<td><strong>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.</strong></td>
<td>FY 2011-2012 (mid-year)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>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.</strong></td>
<td>FY 2011-2012 (mid-year)</td>
<td>✓</td>
<td>✓</td>
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</table>

### Table 12 Additional Activities for Pollution Prevention/Good Housekeeping for Municipal Operations Activities

**U-M Ann Arbor**

- 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 was added in 2016. Each share location includes several rental bikes that are available for any bike share member.

- 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.

- The UMAA Radrick Farms Golf Course and University of Michigan Golf Course were awarded the Clean Corporate Citizen (C3) designation from the MDEQ in 2014 and 2015, respectively. 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.

- In 2017, U-M expanded its Michigan Turfgrass Environmental Stewardship Program (MTESP) from
### Activities

Radrick Farms Golf Course, U-M Blue Golf Course, and the U-M Wilpon Baseball and Softball Complex to be the first Division 1 school to receive campus-wide certification. MTESP certification is designed to encourage strategies to prevent pollution and recognize environmentally sound management practices. The program includes sections dedicated to promoting fish and wildlife habitat, indigenous vegetation and water quality protection.

- UMAA updated the snow storage guidance document in November 2015. In an effort to reduce negative impacts associated with snow storage on UMAA campus, EHS-AA developed improved general requirements for all approved snow storage sites on campus and also developed new site specific requirements. In addition, EHS-AA met with appropriate parties (e.g., Athletics, Logistics, Transportation & Parking) to review inspections of snow storage locations and discuss findings, if any.

- In September of 2011, former U-M President Mary Sue Coleman established several sustainability goals for the entire University. One such goal is to reduce synthetic land management chemicals by 40% by the year 2025, as compared to a 2006 baseline measurement. These sustainability metrics are tracked on a calendar-year basis. For the 2016 calendar year, the use of synthetic land management chemicals has been reduced by 34%, as compared to the 2006 values.

- In October 2015, current U-M President Mark Schlissel reiterated the importance of the sustainability goals and especially the need for education and community awareness programs. A committee to identify additional methods to reach our constituency was put in place.

- Helping to keep waste out of our waterways and encourage waste-reducing behavior, U-M participated in the national RecycleMania competition and U-M’s Battle of the Buildings in Winter 2017. During the eight weeks of RecycleMania (national competition), we collected 1,363,940 pounds of recyclables. For Battle of the Buildings (campus building competition), we collected 647,721 pounds of recyclables.

- U-M College of Pharmacy hosts biannual Safe Medication Disposal Events. This year, the events were held on October 4, 2016 and April 4, 2017. Since the event’s inception in March 2014, U-M has collected 2,139 pounds of medication. This event helps keep medications from reaching receiving waters.

#### U-M Dearborn

- 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.

#### U-M Flint

- EHS has had two to three student interns working during this report period that played a key role in annual storm water and spill prevention training, storm water awareness and education, as well as SWPPP compliance inspections. One intern is from UMF Geography, Planning and Environment Department and devoted their time to performing annual F&O employee training sessions, updating training and website materials, assisting F&O with quarterly inspections and Flint River clean-up activities. Another intern assisted on several projects involving the update of the campus’ Integrated Pest Management Plan, as well as storm water education and other related health/safety initiatives. The third intern focused some effort on improving environmental related communications to the campus community presented on the EHS-F website.
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.

Storm water 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 storm water 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/Water Separators and Hydrodynamic Separators:** These devices remove coarse sediment and oils from storm water prior to delivery to a storm drain network, the ground, or other treatment.
- **Storm Water Management Basins:** Although the primary function of these basins is to provide first-flush holding capacity for storm water, 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 storm water 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 Connections** – One illicit connection was identified during the 2015-16 reporting period at the Medical Science I building. Minimal adverse impacts to water quality are anticipated as the cross connection is inside a mechanical room with only condensate discharging to it. Signs are posted indicating “No Dumping – Drains to River.”
- **Illicit Discharges:** Minimal adverse impacts to water quality occurred, as the U-M’s 24-hour emergency response teams were able to prevent a majority of outdoor spills (36 of 38) from reaching the storm water system and surface waters of the State. Two (2) events occurred during this reporting period that reached surface waters of the state. Discharges included hydraulic oil from a damaged hose on a street sweeper reaching Millers Creek and an oily sheen seen in Fair Lane Lake adjacent to a 55-gallon garbage bin. MDEQ was immediately notified on both occasions and the discharges were contained and removed from the waterway.

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 current permit does not specifically require reporting on TMDLs, permittees and watershed partners have funded monitoring to determine progress toward meeting each TMDL. This monitoring program is also used to determine status and trends of water quality within the Middle Huron River Watershed affected by storm water discharges. HRWC submitted a plan for this monitoring as an appendix to Storm Water Management Plans (SWMP), and subsequent permit applications, submitted by permittees within the watershed. That plan was titled “Middle Huron Storm Water Plan for Addressing Total Maximum Daily Loads (TMDL).”

Subsequently, HRWC had conducted water quality monitoring each year between April and September. They will report the results of this monitoring following the inclusion of results through September. Reports are available for 2001 through 2014 via the SAG website at [http://www.hrwc.org/middle-huron-sag/](http://www.hrwc.org/middle-huron-sag/). Further, HRWC is in the process of developing a geographically navigable, interactive report framework that will be released with its new website in Fall 2017. That portal will include all water quality, habitat, biota and natural area information collected on the watershed, and it will be continuously updated.

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

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

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 at the end of 2013 and a Watershed Management Plan (WMP) was submitted and approved by MDEQ and the U.S. Environmental Protection Agency in 2014. HRWC and project partners subsequently received an implementation grant to carry out a portion of the WMP recommendations. That project is in process. Details and products on both planning and implementation projects can be found at [http://www.hrwc.org/honey-creek/](http://www.hrwc.org/honey-creek/).

An umbrella WMP was developed and revised for the entire Middle Huron River watershed in 2011. That plan is in the process of being revised in sections, starting with the middle (Ann Arbor-Ypsilanti) section. All plans are posted on the SAG website at [http://www.hrwc.org/middle-huron-sag/](http://www.hrwc.org/middle-huron-sag/).

No additional watershed stressors beyond those listed above and others originally listed in the Middle Huron River WMP have been identified.

Rouge River

The Rouge River does not meet state and federal water quality standards due to excess nutrient concentrations and E. coli pathogen levels. 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

A substantial sediment and riverbank remediation project is underway on the Flint river conducted by Consumers Energy and monitored by the Michigan Department of Environmental Quality to address history contamination from a manufactured gas plant (MGP) that operated in the late 1800’s and into the early 1900’s. It was eventually decommissioned in the 1940-50s. Here is the Consumers Energy project website which provides more detail: https://www.consumersenergy.com/east-boulevard-remediation

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 2015” provides information on water quality for the entire watershed, not exclusive to UMF, through the use of water quality index ratings. The FRWC also published an article with information regarding the water quality of the Flint River by testing for lead, water conductivity testing and benthic testing. This article was entitled: Flint River testing in light of Flint’s Drinking Water Crisis. Some of the findings from both of these documents are highlighted below.

The Flint River GREEN annual report for 2015 provided water quality index (WQI) ratings for eighteen 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 eighteen sampling locations, twelve (12) sites received “good” WQI ratings (89-70), five (5) received “average” WQI ratings (69-50), and one received a ‘Marginal’ WQI rating, at 49.44. Furthermore, this report indicates that the closest upstream location relative to the UMF campus, Stepping Stone Falls, received an average WQI, at 55.39, and the closest downstream location, at Mott Park Golf Course has a good WQI, at 71.69.

The article; Flint River testing in light of Flint’s Drinking Water Crisis provided water quality results from the Flushing Township Nature Park, which is downstream of the Flint Water Treatment Plant and the UM-Flint campus. Testing included benthic tests, tests for conductivity, and lead testing. Benthic macro-invertebrate monitoring was conducted for these tests, indicated that 20 of the 35 monitoring sites consistently had around 2-5 ‘pollution intolerant’ species of macro invertebrates. The article indicates that this is an indicator of good to excellent water quality conditions. Conductivity tests were also conducted as an indicator of corrosiveness. This article showed the conductivity results of 12 locations upstream of the Flint Water Treatment Plant. The average value for the twelve locations was approx. 640 micro Siemens per centimeter (µS/cm). The FRWC sampling results for lead were reported to be non-detectable at the sample locations in the river. Testing occurred in three locations, two of which were upstream of the UMF campus and the Flint Water Treatment Plant, and one downstream of Flint’s Wastewater Treatment Plant outfall.

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 storm water 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 and guidelines (print or electronic) to fill any gaps in the topics needed to meet the permit requirements.
- Distribute storm water educational materials (brochures and bookmarks) to members of the campus community and new employees.
- Continue to update the UMAA, UMD, and UMF storm water websites.
- Continue to review website information dissemination and coordination strategy (all campuses) so that it can reach the target audiences.
- Install additional storm water 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 UMAA, UMD, and UMF storm water websites.
- Continue EHS-AA sanitary 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 storm water 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 EHS-AA Update Newsletter.
- UMD includes storm water 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 storm water training and a link to the UMD storm water website.
- UMF storm water bookmarks are distributed to individuals at the UMF bookstore, library, and information desks. Additionally, UMF has placed storm water educational mouse pads in computer labs on UMF campus.
- UMF coordinates with the other local colleges and hosts the annual Earth Day Celebration for the campus and surrounding communities that occurs each April. EHS-F also led a zero waste effort to recycle and compost the leftover food and materials from the annual Lula M. Hurse Food Giveaway.
- EHS-F conducts Storm water and Spill Prevention training for key employees annually. Training sessions are being coordinated for 2017. Previous training sessions occurred in summer of 2016.
- EHS-F 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 EHS-AA website which contains the U-M Storm Water 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 EHS-AA website to heighten community awareness of storm water management activities on campus.

- UMD will continue to be active partners with FOTR and the ARC.

- UMD will continue to update the EHS-D website which contains the U-M Storm Water Management Program Plan as well as information for use by students, faculty, staff and the surrounding community.

Illicit Discharge Elimination Program:

- Perform/continue dry weather field screening of outfalls per the MDEQ-approved, modified IDEP Dry Weather Screening Procedure and per the SWMPP as needed. Initial dry weather screening of the U-M outfalls which discharge to surface Waters of the State or that have a direct discharge to retention/detention basins was conducted within the required timeline.

- Follow-up on potential illicit discharges to the storm water system and make repairs as required.

- 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 EHS and the DPSS so appropriate measures can be taken by the 24-hour Emergency Response Team to correct issues that may impact storm water quality.

Post Construction Storm Water Management:

- Review storm water management plans for new construction and large renovation projects to ensure compliance with applicable post-construction storm water management requirements.

- Continue to work with the DEQ for approval of project post-construction storm water management plans that seek to utilize detention in lieu, when infiltration is not possible.

- Work on implementation of storm water management basin improvement and maintenance projects to improve detention capacity, retention/infiltration, and additional Best Management Practice usage.

Construction Storm Water Runoff Control:

- Continue construction site storm water protection BMPs.

- Training of key personnel to maintain certification as construction site storm water operators.

- Training of key personnel to maintain certification as soil erosion and sedimentation control operators.

- Continue EHS review of site plans. Continue to make recommendations to improve storm water 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 storm water 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 storm water runoff quality.
• Continue to implement BMPs to improve storm water 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 storm water 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, guidelines, 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).

On June 2, 2016, UMAA acquired 5728 Whitmore Lake Road, Brighton, MI. The site sheet flows off site to a regional retention basin easement owned by others or to the public road right-of-way. There are no storm water structures on site and therefore is not a U-M MS4.
On March 31, 2016, UMF acquired the following properties:
- North Tower; 328 S. Saginaw Street, Flint, MI
- Riverfront Center; One West Riverfront, Flint, MI

UMF is in the process of updating drainage maps.

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 Table 13.

**Table 13 Annual Expenditures and Proposed Budget**

<table>
<thead>
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<tr>
<td>Permit Administration</td>
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<td><strong>TOTALS</strong></td>
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</table>

Footnotes: 1 - Many construction and renovation projects do not have separate tracking of SESC costs as they are built in to the contract as a whole. Therefore, the expenditures for these line items are higher than shown. Post-construction BMP installation costs are included. 2 - These departments and divisions have moderate storm water costs and are not tracked separately by the University budget system.