I. **Describe your community’s/agency’s strategy for non-point source phosphorus minimization.**
Consider what the long-term goal and what specific objectives will be pursued to get there.

**Objectives**

The University of Michigan (UM) works toward minimizing potential sources of phosphorus and other storm water pollutants in conjunction with the requirements of NPDES Certificate of Coverage #MIS040090 and the Middle Huron Cooperative Agreement for Reduction of Phosphorus Loading to the Middle Huron River Watershed (signed/renewed by UM on 6/05). The NPDES permit Storm Water Management Program Plan (SWMPP) includes the implementation of Best Management Practices (BMPs) to address the quality of storm water discharges into the receiving streams. Examples of phosphorous reduction BMPs at UM follow:

**Education** - The University promotes storm water education to encourage the reduction of the discharge of pollutants in storm water. Education efforts include: public reporting of the presence of illicit discharges; waste disposal information for household, garage, and garden wastes; proper application of fertilizers and pesticides; preferred cleaning agents (no/low phosphorus); procedures for residential car washing; potential impacts from pollutants entering the storm water system; management of riparian lands to protect water quality; and public responsibility and stewardship in our watershed.

**Erosion and Sediment Control** – Efforts to reduce potential phosphorus-containing sediment discharge into receiving waters through increased settling/hold time prior to discharge and/or reduction of the velocity of the discharge at UM include: the use of stormwater management structures (basins, hydrodynamic separators, porous pavement and bioretention swales); implementation of the Soil Erosion and Sedimentation Control (SESC) Program for construction, renovation and maintenance activities on campus; flood control projects; and routine roadway and catch basin cleaning activities.

**Product Use, Application, and Disposal** – The UM requires proper use, application and disposal of phosphorus-containing products for various activities on campus. For example, testing of soils prior to fertilizer application is encouraged to confirm the necessity of use. Exterior cleaning/washing projects are informed of phosphorus reduction efforts on campus and the selection and use of non-phosphorus cleaners is encouraged. UM Housing Dining Services Facilities use low phosphorus detergents for dish washing operations. Outdoor vendor operations are advised of proper disposal practices for gray water and soft drinks (phosphoric acid) to reduce errant discharges. The University is also reviewing cleaning product purchasing contracts for phosphorus content and product disposal issues.
**Middle Huron Watershed Initiative**

*Other Discharge Reduction Activities* - Additional programs in place at UM which contribute to phosphorus reduction goals include the Illicit Discharge Elimination Program (IDEP) which provides on-going dry weather screening of the storm sewers to identify and eliminate illicit discharges, and spill prevention and response activities.

Pollution prevention procedures and plans are continually under review and are improved as new controls are developed. More information is available on our website at [http://www.oseh.umich.edu/stormwater/](http://www.oseh.umich.edu/stormwater/)

II. Part I asked for a description of your strategy to reduce phosphorus, now you’re asked to describe what has been accomplished thus far. Describe and evaluate best management practices employed by your community/agency for non-point source phosphorus minimization. Include activities conducted within the past 6 months, as well as an overview of previous and planned future activities. Include all that apply: education and public outreach efforts; ordinance and policy development and enforcement; land use planning; master planning and zoning; and engineered and bio-engineered projects  
Please include the following:

a. Quantify dollars spent on best management practice design and implementation  
b. Quantify volunteer efforts resulting in phosphorus reduction and improved water quality  
c. Provide copies of materials and publications that support your strategy to meet the goals of the TMDL

*The University of Michigan 2010 Annual Report on Jurisdictional Storm Water NPDES Permit MIS040090 is provided as an attachment to this report and includes information on expenditures and best management practices for the fiscal year 2009-2010.*

III. Describe any issues that hamper your progress in meeting the expectations of the voluntary agreement

*The University of Michigan continues to face two main challenges when implementing the storm water management program: a de-centralized organizational structure and a large turnover of population each year.*

IV. Describe any technical concerns you have regarding the phosphorus TMDL for the middle Huron River Watershed (Ford and Belleville lakes)

*No new concerns.*
V. Describe any new ideas and opportunities related to reaching the goals of the TMDL that you would like to share and discuss with the other partners of the Initiative

**Storm Water Management Program Plan (SWMPP)**

The UM developed a new SWMPP to meet the requirements identified under the jurisdictional storm water permit issued to UM in April 2009. This plan was accepted by MDNRE in June 2010. The SWMPP provides updates to the construction & renovation project post-construction requirements for storm water discharge to address water quality impacts via a designed Total Suspended Solids (TSS) removal rate of 80% (compared to uncontrolled runoff) for the first flush event (a.k.a., Minimum Treatment Volume of ~0.9” rain event or 1” runoff). This TSS design removal rate should aid in the removal of sediments containing phosphorous from storm water discharges from UM. In addition, the new permit identifies phosphorous TMDL requirements (sampling, prioritization of actions, etc.) which UM and other permittees can meet by continued commitment to the activities and scope of the Middle Huron Initiative. The SWMPP is accessible on the UM-OSEH website at [http://www.oseh.umich.edu/stormwater/SWMP2010.pdf](http://www.oseh.umich.edu/stormwater/SWMP2010.pdf)

**Erosion and Sediment Control**

Efforts continue to reduce potential phosphorus-containing sediment discharge into receiving waters through implementation of the UM Soil Erosion and Sedimentation Control (SESC) Procedures for construction, renovation and maintenance activities on campus. The SESC procedures require the use of BMPs and inspection of sites weekly and after rain events until final stabilization of the project site is achieved. In FY 2009-2010 approximately 1,900 inspections were performed at UM construction sites.

**Storm Water Public Service Announcements (PSAs)**

Storm water, waste disposal, and recycling related Public Service Announcements are distributed annually for use during the football season home games. These short educational messages provide storm water information to visitors, students, staff and contractors attending the U-M football games. The total audience for these messages is over 109,900 per game. An example of the Public Service Announcements follows:

> Stop trash, food, and drink wastes from going down the storm drain and to the Huron River! Please recycle and properly dispose of your trash, food, and drink wastes. Help keep our Michigan waters BLUE!

**Stadium Vendor Posters**

OSEH continues to work with UM football stadium vendors/concession stands to prevent potential discharges into the storm water system. Concession stands continue to be posted with signage detailing procedures for proper grease and wastewater management for these operations during the football season to reinforce proper waste management for these temporary operations.
1. **Implementation Status**

   *Describe the status of implementing the components of the SWMPP.*

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

   a. **Discharge Point Requirements**

   Efforts continue to identify the location of each storm water discharge point, including the unique identification code/number, latitude and longitude, and the receiving surface waters of the state. GPS equipment has been purchased and is being used to identify existing outfalls within UM’s campuses. This project is scheduled to be completed and available to the MDNRE by the February 1, 2011 deadline identified in the COC.

   b. **Storm Water Management Program Plan (SWMPP)**

   The University of Michigan (UM) is implementing the existing Storm Water Management Program Plan (SWMPP) which was revised in May 2010 and approved by MDNRE on June 2, 2010.

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

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

   **TMDL -1. Major Discharge Points**

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

   **Actions during the reporting period:**

   Outfalls are being evaluated to determine if they are “major” discharge points. A list of major outfalls will be compiled by the end of 2010 and kept on file. UM-Flint is not currently in the TMDL program. UM-Dearborn has identified two major discharge points within the stormwater system on campus.

   **TMDL -2. Sampling Major Discharge Points**

   **Measurable Goal:** By April 15, 2012, UM 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.

**Actions during the reporting period:**
No activity during this reporting period.

**TMDL -3. Action Plan to Reduce TMDL Discharges**

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

**Actions during the reporting period:**
No activity during this reporting period.

d. **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 UM has developed a broad and aggressive storm water education and outreach program. This multi-faceted program is closely connected to the UM’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 UM’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. UM’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 UM 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).

The following BMPs are used to meet the requirements of Part I, Section A.5 of the University of Michigan’s NPDES Permit for the Public Education Program (PEP):

**PEP -1. Storm Water Education Brochures**

In cooperation with the UM School of Natural Resources and Environment (SNRE), the UM Department of Occupational Safety and Environmental Health (OSEH) 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.

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

**Actions during the reporting period:**

Ten brochures/pamphlets were created or revised during the reporting period. UM-OSEH revised and updated the storm water brochure for students, faculty and staff at the UM-Ann Arbor campus, and the Food Vendor Reminder poster for Football games during the reporting period.

UM-Dearborn EHSEM designed, printed and made available seven pamphlets and brochures to educate a variety of University members. These brochures include information on how to report an illicit discharge on campus; encourage proper vehicle maintenance and car washing alternatives; how to handle/dispose of unwanted household hazardous waste and paints; promote the use of phosphorus-free fertilizers and where to find a location to take unwanted pesticides, fertilizers, etc.; explained the importance of picking up after your dog; and a general brochure explaining how to properly manage food waste, custodial services, vehicle fluids, construction maintenance, and waste disposal (http://www.um.d.umich.edu/stormwater/). UM-Dearborn has also made available tip cards and brochures from SEMCOG seven
simple steps to clean water, and others; (http://www.semcog.org/OursToProtect_TipCards.aspx).

UMF EHS has downloaded & utilized the MDNRE’s “Our Actions can Affect Michigan’s Rivers” brochures on the Flint campus, both during a number of health and safety classes and at the large community Earth Day Celebration. The brochure was revised to identify the Flint River, provide area specific contact information to report spills and highlighted the University’s SW Management website for further information.

UMF EHS has maintained a large “Earth Day Every Day” display case in the University Center on campus during the reporting period. Among other things, the display encourage indoor/outdoor water conservation, sound environmental practices, organic gardening/landscaping techniques, participation in the household hazardous waste collection day… all which collectively help to protect our storm drains and surface waters.

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

Actions during the reporting period:
An estimated 2,600 brochures were distributed at over 124 training, orientation or workshop sessions throughout the reporting period.

**Brochures - Additional Task Implementation Timeframes**

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<th>Timeframe</th>
<th>Goal</th>
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<tr>
<td>Ongoing</td>
<td>Review &amp; update existing brochures;</td>
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<tr>
<td></td>
<td>periodic review</td>
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<tr>
<td>2010-2011</td>
<td>Develop/add additional brochures to fill</td>
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<td></td>
<td>any gaps in the topics needed to</td>
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<td>meet the permit requirements.</td>
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**PEP -2. OSEH/SNRE Storm Water Education Web Sites**

Developed in cooperation with the UM SNRE and maintained by OSEH, the Storm Water Education Web site builds upon the information contained in the brochures and disseminates it to the general University community and the public at large. This web site is intended to help students, employees, and visitors in the UM 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 UM-Dearborn and UM-Flint websites also provide topical information for practices potentially impacting storm water.
The 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 website can be viewed by visiting [www.oseh.umich.edu/stormwater/](http://www.oseh.umich.edu/stormwater/) and [www.umd.umich.edu/691923/](http://www.umd.umich.edu/691923/).

**Measurable Goal:** The number of visitors to the websites will be tracked annually for subsequent reporting. The goal is to have 2,000 website hits annually. This website is intended to help students, employees, and visitors in the UM 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.

**Actions during the reporting period:**

17,550 website hits were registered as of this report. This is an increase of 2,764 hits over the reported 2009 total. UM-Dearborn is finalizing a counter on the webpage to track website hits for inclusion in future reports.

The UM websites are periodically redesigned and updated with new information and/or to create a more user-friendly environment. For example, the UMF EHS website posted the revised 2010 Storm Water training powerpoint presentation materials to the EHS Health and Safety training page for employees and others in the community to review; added a link to the UM-A2 campus OSEH web site; posted the Earth Day Every Day 2009 website and links to the 2009 survey encouraging employees to change behaviors, including water conservation, reduced pesticide use, etc.; posted the Earth Day Celebration 2010 website in early 2010, announcing the collaborative event, recycling competition, workshops, etc.; added website links, list of partners, and photo gallery remains up for community to view; also the UMF Urban Alternative House Blog website – promotes resource/energy conservation, environmental stewardship, alternative technologies, etc. as well as sustainable management of storm water on site… [http://www.umflint.edu/outreach/uahouse/index.htm](http://www.umflint.edu/outreach/uahouse/index.htm); and links to the UMF University Outreach/CAER website. . .a program instrumental to storm water public education initiatives in Genesee County. [http://www.umflint.edu/caer/](http://www.umflint.edu/caer/).

### Websites – Additional Task Implementation Timeframe

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<th>Timeframe</th>
<th>Goal</th>
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<tbody>
<tr>
<td>Ongoing</td>
<td>Review &amp; update existing websites; periodic review</td>
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<tr>
<td>2010-2011</td>
<td>Create website information dissemination and coordination strategy (all campuses) to reach the target audiences</td>
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</table>
PEP -3. Storm Water Management at the University of Michigan - 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 UM-A2’s storm water drainage system and its 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.

This 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.

Measurable Goal: 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.

Actions during the reporting period:
Storm water video content was offered at over 40 presentations and training sessions during the reporting period.

UM-Dearborn also has a link on our web page (www.umd.umich.edu/691923/) to the SEMCOG video series.

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 multi-media videos offer three, six-minute videos about the watershed, hydrologic cycle, and the problems facing the Rouge River. The exhibit area also houses several kiosks that encourage visitors to find ways to be a part of the solution with steps you can take at home to improve water quality.

Measurable Goal: 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 UM football games. The total anticipated audience for these messages is over 107,000 per game.
Actions during the reporting period:
Public Service Announcements were made at the eight UM football home games during the 2009 season, potentially reaching an audience of 871,464 people.

UM-Dearborn will be developing announcements for the 2010-2011 hockey season.

Examples of the announcements made include:
Stop trash, food, and drink wastes from going down the storm drain and to the Huron River! Please recycle and properly dispose of your trash, food, and drink wastes. Help keep our Michigan waters BLUE!

What happens to water when it runs into a storm drain? Nothing. No filtering, no treatment. The storm drains empty directly into our creeks and rivers. And so does anything you dump on the ground - pop, food waste, cigarette butts, and litter. So keep them out of our water! Help keep our Michigan waters BLUE!

Would you pour your beverage in your fish tank? Of course not, which is why you should never pour pop, juice, coffee, or alcohol down a storm drain or on the pavement. It goes straight to the river untreated. So do your part and help keep our Michigan waters BLUE!

While the Wolverines score today, you too can score points for the environment.
Anything that enters a storm drain goes straight to the river untreated. Pop, juice, coffee, alcohol and tobacco should be disposed of properly. So do your part and help keep our Michigan waters BLUE!

Dumping pop, juice, coffee, alcohol and cigarette butts into the storm drain or on the pavement might seem like the easiest way to get rid of your trash, but it’s also the easiest way to pollute the river. Anything that enters a storm drain goes straight to the river untreated. Dispose your trash in the proper receptacles to help keep our Michigan waters BLUE!

Did you know that 70% of Washtenaw County’s drinking water comes from the Huron River? Caffeine, sugar, acids, alcohol and tobacco end up in the river when beverages and cigarettes are not disposed of properly. Never dump anything down a storm drain because it goes straight to the river untreated! So do your part and help keep our Michigan waters BLUE!

PEP – 4. Storm Water Education Presentations (includes 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 UM), new laboratory employee training classes and at new Plant employee training classes. In addition, presentations including storm water topics are provided on an annual basis to UM-A2 Plant staff which includes the following sub-groups:

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

**Measurable Goals:** 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.

**Actions during the reporting period:**

Storm water topics were included in over 124 classes, workshops or presentations during the reporting period. Examples of classes include: OSEH New Hire Training for Laboratory Personnel, Spill Prevention Control, Annual Safety Refresher training, and Environmental Requirements Update.

UM-Dearborn conducted a storm water presentation for 29 contract employees.

The EIC has offered more than 300 programs during this reporting period on a variety of subjects. Of these programs, 92 programs have directly addressed the importance of clean water to all life and focus on activities which impact water quality. Nearly 5000 people have attended these 92 programs.

**Measurable Goals:** 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.

**Actions during the reporting period:**

A total of 657 laboratory rooms were inspected during the reporting period.

**Measurable Goals:** 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.
Actions during the reporting period:
A total of 171 inspections were performed by OSEH sanitarians on temporary food establishments during the reporting period.

Additional measures taken to achieve goals:
- OSEH continues to work with UM 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 2009-10 football season to reinforce proper waste management for these temporary operations.
- UM-Dearborn will be developing announcements for the 2010-2011 hockey season.
- Presentations are provided to students and staff to inform, educate and increase awareness of storm water quality issues. Responses from attendees in the campus community include requests for brochures, consultations and additional presentations on related storm water pollution prevention issues.
- The University of Michigan has a 24-hour Emergency Response Team to quickly and efficiently respond to and mitigate releases of polluting materials on campus. The campus community is encouraged, through presentations, training, signage, and other educational materials, to report illicit discharges and spills to OSEH/EHSEM/EHS and the Department of Public Safety so appropriate measures can be taken to correct issues which may impact storm water quality. The response team is primarily comprised of UM staff as well as 24-hour emergency response vendors to efficiently respond and mitigate releases on campus.
- The UM-Dearborn Natural Sciences’ Environmental Interpretive Center (EIC) sponsors the Rouge River Water Festival annually in May. On average, this event attracts nearly 2000 students from 62 different schools in the Rouge watershed to experience over 50 presentations. The event also draws over 100 adults from 30 organizations to exhibit or present at the festival. Water Festival participants attend presentation or exhibits that address topics such as uses of water; hydrologic cycle; wastewater treatment; soil erosion; and wetlands. Volunteers include organizations like MDNRE; Ford Motor Co.; Cranbrook Institute of Science; EPA; Friends of the Detroit River; Friends of the Rouge; Marine Pollution Control; to name a few.
- The Flint campus has been engaged directly in promoting or distributing educational information or indirectly by supporting local agencies that are involved in such activities. Examples include the following:
  - Bulletin Board in Hubbard Building & on Harrison Parking Structure displays reminders and tips for employees and students in protecting storm drains and the Flint River
  - All Hazard Communication, Hazardous Waste, PPE, and other general safety training classes address the difference between sanitary and storm drains, illicit discharges, reporting spills, protection of drains, who to call if they observe an illicit discharge or a spill that could potential threaten a drain.
- SPCC/PIP, Storm Water Management and environmental due care training is provided to select employees in Facilities Management & Operations. The training is offered at least every 2-3 years. Training covers best management practices, housekeeping, protection of storm drains, reporting spills, etc.

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

- Annual Earth Day events and activities include participation of many local environmental organizations as well as the Flint River Coalition and Flint River Corridor Alliance (in which UMF is a member of both) providing educational materials about protecting the Flint River, handing out brochures, one on one discussions with university and community members about specific actions individuals can do to improve water quality, report problems, get involved, participate in river clean ups, etc. Presentations by organizations to general community.

- UM-Flint Outreach has organized several (3-4) Flint River clean up volunteer days both in the spring and fall. The University partners with the City of Flint… the University coordinate the student and community volunteers while the City of Flint coordinates the transportation and disposal of the trash and debris that is picked up & pulled from the banks of the river by volunteers.

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

- The web link for the UM construction safety requirements, SWM requirements, SESC requirements are all is incorporated into contractor bid specifications and contract documents during the reporting year.

e. 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 SWMPP from the community.
One public awareness group that UM-A2 works with on a regular basis is the Huron River Watershed Council (HRWC). Many of the HRWC’s goals are consistent with the University’s ideals for the preservation and protection of the surrounding natural water bodies. As a result, the University has established an informal partnership with the HRWC and has provided input to the HRWC on issues concerning the Total Maximum Daily Load program for water bodies that lie within the Huron River Watershed.

The following BMPs are used to meet the requirements of Part I, Section A.6 of the University of Michigan’s NPDES Permit for Public Involvement and Participation (PIP):

**PIP -1. Storm Water Reports**

**Measurable Goal:** The SWMPP and NPDES reports will be made available on the UM storm water web site. The date of addition to the website will be tracked for subsequent reporting.

**Actions during the reporting period:**
The annual report for 2009 was added to the UM OSEH storm water website in January 2010.

**PIP -2. Community Meeting Participation**

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

**Actions during the reporting period:**
Over 25 meetings were attended during the reporting period including Miller’s Creek Action Team, Mallett’s Creek Coordinating Committee, Middle Huron Initiative, Flint River Corridor Alliance, Hamilton Dam Committee, Friends of the Rouge River, and the Flint River Watershed Coalition.

At the EIC UM-Dearborn also supports 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 River
- Friends of the Detroit River
- Southeast Michigan Land Conservancy
- Lake Plain Stewardship Coalition
- Sustainable Business Forum
- Community Organic Garden
UM-Dearborn EHSEM has been exploring membership in the Alliance of Rouge Communities.

The UM-Dearborn participates in the Rouge River Gateway Partnership. Members include the Vice Chancellor of Government Relations who is one of the founders and chairs of this program. The Partnership provides a forum to build consensus to revitalize the Rouge River with the goal of making the river an amenity. The Gateway Partnership has been meeting on nearly a monthly basis since the summer of 1999. Over 200 stakeholders have attended regular Partnership meetings. The central idea of the Master Plan - a balance of environmental stewardship, cultural heritage, recreation and economic development - is the vision of the Gateway Partnership. Throughout the planning process, meetings were held with subcommittees of the larger body to understand the plans and goals of individual Partnership members. Summaries of the work sessions were regularly presented to the larger group. This communication demonstrated the shared benefits and potential connections between proposed developments. Enthusiasm to share information increased as the participants realized the magnitude of the project as a whole.

UM-Dearborn hosted Sustainability Week (week of October 16, 2009) during this reporting period. For additional information visit the website at www.umd.umich.edu/fullstory/article/Spotlight_on_sustainability/.

UM-Flint is extremely involved in the local Flint River Watershed planning and outreach related activities both by attending meetings as well as playing a leadership role on various committees. Our involvement includes the following:

- UMF is an active and committed Flint River Corridor Alliance Partner Member. Leyla Sanker, Community Outreach Coordinator with UM-Flint University Outreach is administrative contact for Flint River Corridor Alliance [http://www.frcalliance.org/] and David Lossing, UMF Government Relations Director and Renee Zientek, UMF Assistant Vice Chancellor co-chaired the Hamilton Dam Committee. Mike Lane, Manager of Environment, Health and Safety attended most monthly meeting throughout the year. UMF host the monthly meetings as well as several open forums to discuss watershed issues.

- UMF is a sponsor of the Flint River Watershed Coalition (FRWC). Brent Nickola, UMF Alumni Relations Manager has been an active board member of the Flint River Watershed Coalition (FRWC) during 2009-10. [http://www.flintriver.org/]

- UMF University Outreach has and continues to lead various watershed educational initiatives in the area including focused trainings, river clean ups, SW educational material development for County educational initiatives, and much more. See attached University Outreach and CAER Summary documents.
PIP -3. Storm Water Management Program Plan - Community Feedback
Measurable Goal: The City, County and interested local stream and watershed protection organizations will be notified of the online availability of the UM SWMPP for review and comment on the same frequency the information is provided to the Department. The SWMPP will be accessible on the UM website for review by the public. Any comments received will be reviewed by UM OSEH/EHSEM/EHS and evaluated for inclusion in the SWMPP. Comments submitted and any actions taken in response to comments will be documented and kept on file.

Actions during the reporting period:
The draft SWMPP was also shared with local watershed organizations and local government in the Ann Arbor/Huron River, Dearborn/Rouge River and Flint/Flint River areas for comments and feedback. The SWMPP is also available for review on the OSEH website.

UMF EHS also shared the new NPDES Permit and SWMPP with key staff on campus, particularly those in Facilities Management and Administration.

PIP -4. Middle Huron Initiative Participation / Phosphorus TMDL Participation
Measurable Goal: The UM will participate in meetings of the Middle Huron Initiative (typically semi-annual) to address the Ford & Belleville Lake TMDL on phosphorus reduction throughout the permit cycle. Attendance at these meetings will be tracked for subsequent reporting.

Actions during the reporting period:
Semi-annual Middle Huron Initiative meetings were attended during this reporting period.

PIP -5. E. coli TMDL Participation
Measurable Goal: The UM 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.

Actions during the reporting period:
No meetings were held during this reporting period.

PIP -6. Environmental Stewardship / Volunteer Opportunities
Measurable Goal: The UM 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.
Actions during the reporting period:
A total of 5 volunteer events were sponsored by UM during this reporting period.

Volunteer invasive species removal events were held on November 14, 2009 and April 10, 2010. Semi-annual events are planned for the 2010-2011 reporting period.

The UM-Dearborn Natural Sciences’ Environmental program sponsors the Rouge River Water Festival annually in May. On average, this event attracts nearly 2000 students from 62 different schools in the Rouge watershed to experience over 50 presentations. The event also draws over 100 adults from 30 organizations to exhibit or present at the festival. Volunteers include organizations like MDNRE; Ford Motor Co.; Cranbrook Institute of Science; EPA; Friends of the Detroit River; Friends of the Rouge; Marine Pollution Control; to name a few. Volunteers have put in more than 120 hours of volunteer time to maintain the rain gardens. These activities include such things as planting, weeding, transplanting, invasive species control, seed collection and trimming.

UMF University Outreach has coordinated several Flint River Clean up initiatives along the banks of the Flint River in fall 2009 and spring 2010 where they enlisted help from various volunteers from UMF student clubs and the general public.

UMF EHS acted as the lead coordinating unit on the UM Flint campus for the Earth Day 2010 celebration where more than 50 organizations participated and more than 40 volunteers helped with planning, setup, monitoring presentations, etc. throughout the day’s activities. A portion of the day’s activities addressed environmental stewardship, conservation, protecting natural resources, Flint River watershed management, organic gardening, composting and permaculture, alternative energy technologies, recycling/waste management, etc.

**PIP - Additional Task Implementation Timeframe**

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Goal</th>
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<tbody>
<tr>
<td>February 2010</td>
<td>Follow notification requirements to publicize updated SWMPP and locations for review</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Meet with local watershed/creek groups to identify joint activities and opportunities meet permit requirements.</td>
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Additional measures taken to achieve goals:
- OSEH/EHSEM/EHS staff members continue to create, improve, and revise project/contract specifications for inclusion of Best Management Practices (BMPs) during construction and renovation projects on campus.
- The University of Michigan continues to work with the local City governments and watershed organizations in improving storm water quality. This is accomplished through sharing information and resources.
f. **Illicit Discharge Elimination Program (IDEP)**

The removal of illicit discharges is an ongoing program being conducted by the UM. 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.7 of the Permit.

The UM-A2 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 UM-A2 to identify illicit connections to the storm water system. The project was completed in 1990.

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

The following BMPs are used to meet the requirements of Part I, Section A.7 of the University of Michigan’s NPDES Permit for the Illicit Discharge Elimination Program (IDEP):

**IDEP -1. Storm Sewer Map**

**Measurable Goal:** By February 1, 2011 the UM 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.

**Actions during the reporting period:**

This project is scheduled to be completed and available to the MDNRE by the February 1, 2011 deadline identified in the COC.

UM-Dearborn has created a storm water sewer map of the UM-Dearborn campus.

UMF EHS met with the UMF Facilities Operations Manager and Architect to begin to establish a labeling plan to identify catch basins to specific outfalls. Additional progress on this project is anticipated in the fall of 2010.

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

**Actions during the reporting period:**

No activity during this reporting period.

The UM-Dearborn has requested a bid, for fiscal year 2010-11, to map storm water sewers at the UM-Dearborn Fairlane Center campus.

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

**Measurable Goal:** UM 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.
Actions during the reporting period:
No activity during this reporting period.

IDEP -3. Dry Weather Screening
Measurable Goal: The UM 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 UM 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.

Actions during the reporting period:
No new dry weather screening activities occurred during this reporting period. Updates on illicit discharges will be provided with the progress reports, as identified in Part 1, Section B.1.b.1.b. of the COC.

IDEP -4. Public Reporting of Illicit Discharges
Measurable Goal: The emergency response system on campus will be maintained by DPS (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 DPS/OSEH 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.

Actions during the reporting period:
A total of 40 calls of outdoor incidents were reported via the DPS/OSEH/EHSEM/EHS emergency response system. A majority of these outdoor incidents were remedied (36), while 4 incidents resulted in discharges to surface waters which were reported to the appropriate agencies.

During this reporting period OSEH personnel responded to approximately 40 incidents, involving spills and leaks of materials that could have potentially impacted storm water. The majority of the spills were small, ranging from a few milliliters to a few gallons. The materials are typically contained with spill kits; cleaned up using absorbent materials, and removed for appropriate disposal by OSEH’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, and battery acid), peroxide solution, paint, fire, soil/sediment (from water main break), bulbs and bodily fluids/materials like blood/feces, etc. A few examples of such releases and the corresponding response actions are provided below.

- Three gallons of unleaded gas leaked from a hose/seal failure during vehicle fueling. Fueling immediately stopped by utilizing the emergency stop button. The spill was contained within a containment pad in the fueling area and was cleaned up with oil dri. The waste material was collected for proper disposal.
- A six-inch water main broke on North Campus – in the NC 56 parking lot located off of Draper Road, south of Hayward Avenue. The release of water caused erosion of the soil surrounding the water main. This resulted in a release of sediment to the storm water system via a catch basin, and subsequently to Millers Creek. The UM Plumbing Shop responded and quickly shut off the water main valve to isolate the break. UM-Occupational Safety & Environmental Health installed a silt sack into the storm water catch basin to prevent additional discharge of sediment into the system.
during the repair work. The water main repair was completed by the Plumbing Shop and the storm line was jetted and vacuumed to remove any residual sediment.

- A visitor’s car was reported leaking antifreeze within the M19 parking structure. Approximately 1 quart of material was found beneath the vehicle. Oil dri was used to absorb the spill, and was collected for proper disposal. No drains were impacted by this spill.

Additional measures taken to achieve goals:

- OSEH sanitarians continue to work with kitchen and food vendors on campus to ensure proper waste management and disposal methods are used. In addition, OSEH continues to work with UM 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 2009-2010 football season to reinforce proper waste management for these temporary operations.

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

- Additional campus programs which assist in maintaining or improving the quality of storm water discharges include: recycling, training and education of staff and students, designing to minimize seepage and erosion control. In 2010 the University of Michigan participated in RecycleMania a 10-week nationwide collegiate recycling and waste reduction competition. UM placed 5th in the “Gorilla Prize” category with 721,511 pounds of recyclables over the 10-week period. The gorilla prize recognizes schools that collect the highest gross tonnage of recyclables, regardless of campus population, and was created to honor schools with outstanding recycling programs that have the infrastructure in place to handle a large volume of recyclables. UM-Dearborn recycled 44.6 tons of paper products; 37,834 pounds of electronic equipment; 3,249 cubic yards of cardboard; and over 8,500 light tubes.

- Erosion Control – Part 91 of the 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 UM.

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

- Recycling Efforts – The UM promotes environmental awareness by sponsoring recycling programs on campus. Educational materials have been developed by G&WM which address student contributions to the UM 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.

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

- Hazardous Waste Disposal – OSEH is responsible for the appropriate collection and disposal of hazardous waste and hazardous materials used and generated by the UM 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 UM-Dearborn EHSEM oversees the disposal of hazardous waste. EHSEM personnel are properly trained in RCRA and the University utilizes qualified contractors for transport and disposal off site.

- Plan Review – OSEH, EHSEM & EHS review all plans for the renovation of existing structures and the construction of new facilities. The plans are reviewed to identify potential environmental concerns and the protection of storm water quality and the storm water drainage system.

- Storm Water Basins – Storm water management basins are used to reduce the impact of storm water discharges from campus locations. 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 pollutant loads in receiving waters.

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

**g. Post-Construction Storm Water Control for New Development and Redevelopment Projects**
The UM has a program to address storm water runoff from new development and redevelopment projects. As part of this program, the UM 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.

**PCSW -1. Post-Construction Storm Water Runoff**
*Measurable Goal:* By August 1, 2009 UM issued the Post-Construction Storm Water Requirements guideline which details the minimum treatment volume standard and the channel protection criteria. The guideline is provided in Appendix G of the SWMPP.

*Actions during the reporting period:*
Seventeen (17) UM sites required formal SESC plans which were reviewed and approved by OSEH-EP3 (Environmental Protection & Permitting Program) during the reporting period.

**PCSW -2. SESC Plan Review for Structural & Non-Structural BMPs**
*Measurable Goal:* OSEH/EHS/EHSEM and/or the University Planner’s Office will review all construction and renovation plans for use of structural and non-structural BMPs to prevent receiving water quality from the impacts of development and limit the rate at which surface water runoff discharges from any specific site to not exceed the pre-development hydrologic regime. The number of sites implementing various non-structural and structural BMPs will be tracked annually for subsequent reporting.
Actions during the reporting period:
Approximately 17 UM projects during this reporting period used a variety of BMPs. Examples of BMPs included the use of hydrodynamic separators, in-ground detention systems, storm water basins (detention and retention), bioretention islands, and connection to regional storm water management systems (detention or retention.)

PCSW-3. Operation & Maintenance of BMPs
Measurable Goal: Storm water management basins on campus will be inspected annually, at a minimum. The number and frequency of inspection of storm water basins will be tracked for subsequent reporting. Maintenance issues identified during these inspections will be tracked until corrected.

Actions during the reporting period:
Annual inspections of the storm water management basins on campus were completed by UM personnel during this reporting period.

The two rain gardens on the UM-Dearborn campus are annually coordinated and maintained by the EIC personnel and assisted by volunteers.

PCSW-4. SESC Plan Review for PCSW Controls
Measurable Goal: OSEH/EHSEM/EHS and/or the University Planner’s Office review all plans to ensure projects have adequate post construction storm water management controls. The number of plan reviews will be tracked for subsequent reporting.

Actions during the reporting period:
Approximately 164 plan reviews were performed during this reporting period.

Additional measures taken to achieve goals:
- Construction sites are stabilized with the addition of permanent controls and vegetation to reduce the amount of sedimentation that could impact receiving waters.
- OSEH is working with Construction Management to implement standard protocols to dye test the internal piping in new building construction to confirm proper connection to the sanitary sewer system. A program for confirmation of taps to exterior pipes is already in place.
- Bioretention traffic islands, porous pavement and a parking lot storm water treatment system to remove sediments, oil, grease and trash have been installed at various locations on campus and are being evaluated for viability in future construction projects. Additional low impact development options such as green roofs have been constructed at the Ross School of Business (completed) and are being considered for other construction/renovation locations on campus like North Quad, Children & Women’s Hospital, etc. Examples of additional storm water controls installed include a rain garden and porous pavement parking lot on Fuller Road at NC-78 (across from Mitchell Field), and a hydrodynamic separator at the Museum of Art loading dock.

h. Construction Storm Water Runoff Control
In 1982, the UM 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 UM’s APA status was received in 2004 from the Michigan Department of Environmental Quality. APA status
allows the UM to establish and manage the Soil Erosion and Sedimentation Control procedures on its properties. Construction activity at UM may involve contractor or in-house construction activities performed by Plant Operations.

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

The following BMPs are used to meet the requirements of Part I, Section A.9 of the University of Michigan’s NPDES Permit for Construction Storm Water (CSW):

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

Actions during the reporting period:
Twenty-three (23) UM sites required formal SESC plans which were reviewed and approved by OSEH-EP3 during the reporting period.

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

Actions during the reporting period:
Over 90 UM projects during this reporting period used a variety of BMPs on their sites. Examples of BMPs included the use of vegetative buffers, silt fences, catch basin filters, water diversions, and anti-tracking pads.

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

Actions during the reporting period:
Approximately 1,950 weekly and after storm SESC inspections were performed during this reporting period.

CSW -4. SESC Training by MDNRE
Measurable Goal: Select staff from OSEH, EHSEM, EHS and the University Planner’s Office will be SESC trained by MDEQ. The number of UM staff who have received MDEQ SESC training will be tracked annually for subsequent reporting.

Actions during the reporting period:
Nine (9) UM staff have received SESC training from MDNRE and are current with the associated Certificate of Training.
CSW -5. Storm Water Operator Certification for Construction Sites

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

**Actions during the reporting period:**

Fifteen (15) UM staff are Certified Storm Water Operators in the State of Michigan for Construction sites as of this reporting period.

In addition, seven (7) UM staff are Certified Storm Water Operators in the State of Michigan for Industrial sites as of this reporting period.

CSW -6. Sedimentation Control During Maintenance Activities

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

**Actions during the reporting period:**

Approximately 1,950 weekly and after storm SESC inspections were performed at UM during this reporting period.

**Additional measures taken to achieve goals:**

- A street sweeper is recommended by UM 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.
- Other unofficial SESC/SWM related inspections are conducted by EHS staff as we tour the campus, walk through project sites, and report potential problems to responsible parties for correction i.e. covering a dumpster, debris/litter, inappropriate outdoor storage by contractors, etc.

i. 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 BMPs with the ultimate goal of reducing and in some cases preventing pollutant runoff from University operations to the maximum extent practicable.

The overall P2/GH program accomplishes the following goal:

- Develop and implement a program of operational and maintenance Best Management Practices to prevent or reduce pollutant runoff from University operations.

The following BMPs are used to meet the requirements of Part I, Section A.10 of the University of Michigan’s NPDES Permit for Pollution Prevention & Good Housekeeping (P2/GH):

**P2/GH -1. Storm Water Management Basin Inspections**

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

**Actions during the reporting period:**
Annual inspections of the storm water management basins on campus were completed by UM personnel during this reporting period.

**P2/GH -2. Storm Water Catch Basin Maintenance**

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

**Actions during the reporting period:**
Storm sewer cleaning activities occur on a periodic basis. Maintenance cleaning was performed on approximately 1,600 catch basins/manholes during this reporting period.

Catch basins across the UM-A2 campus are cleaned and the sewer lines rodded out. The liquid waste is 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, UM-A2 constructed a storage pad for drying the solids. The solids are then loaded onto a dump truck or a roll-off container and transported to a sanitary landfill for proper disposal as non-hazardous, non-regulated waste.

UM-Dearborn collected 2,300 gallons of liquids and solids from catch basins cleaned during the reporting period. The waste was transported by a licensed transporter and disposed of at a licensed disposal facility.

UMF – Catch basins are inspected and cleaned out as needed by Facilities staff. This activity tends to occur more frequently in the fall when leaves and debris are more likely to accumulate near grate openings. Eighty-six hours were logged during the report period of facilities’ staff cleaning catch basins accumulating approximately 1 cubic yard of waste from inside the basins.

**P2/GH -3. Municipal Properties with Storm Water Controls**

**Measurable Goal:** By October 1, 2011 a list of municipal properties and structural storm water controls owned or operated by UM will be created, which includes the type and number of properties and structural controls. This listing will be kept on file.
Actions during the reporting period:
No activity during this reporting period.

P2/GH -4. Street Sweeping, Leaf, and Litter Collection
Measurable Goal: Street sweeping, leaf and litter collection will be performed periodically throughout the permit term. The cost for disposal and estimated quantity of debris, trash, dirt, etc. disposed from the maintenance and cleaning/sweeping of numerous parking structures, surface lots and roadways throughout the University will be tracked for subsequent reporting.

Actions during the reporting period:
Approximately 508 cubic yards of waste was sent for disposal from cleaning of parking lots and structures throughout campus. Street sweeping operations disposed of an estimated 400 cubic yards of waste. Litter pickup and disposal yielded approximately 900 cubic yards of waste. The combined estimated cost for disposal is over $11,000.

P2/GH -5. TSS Runoff Reduction from Paved Surfaces
Measurable Goal: A strategy to reduce the runoff of TSS from paved surfaces to the maximum extent practicable, with a goal of reducing the annual TSS loading by 25% as compared to annual loading with no suspended solids controls will be developed (2010-2012) and implemented (2013) at the University. An estimate of the TSS loading reduction achieved through this strategy will be provided in the progress reports.

Actions during the reporting period:
No activity during this reporting period.

P2/GH -6. Unpaved Road and Parking Lot BMPs
Measurable Goal: Develop BMPs to control dust and suspended solids in runoff from unpaved roads and parking lots. A list of unpaved roads and parking lots will be created (2010-2011).

Actions during the reporting period:
No activity during this reporting period.

The UM-Dearborn campus does not utilize any unpaved roads.

There are no unpaved roads or parking lots on the Flint campus.

P2/GH -7. Prohibition of Coal Tar use as Asphalt Sealant
Measurable Goal: The use of coal tar emulsions to seal asphalt surfaces will be prohibited, as required in the permit. Plan reviews for construction and renovation projects involving asphalt will include comments from OSEH/EHSEM/EHS prohibiting the use of coal tar emulsions for UM projects. Comments on construction and renovation projects are kept on file at the OSEH/EHSEM/EHS offices.

Actions during the reporting period:
Approximately 164 plan reviews were performed during this reporting period.

University projects that involve sealing parking lot surfaces incorporate the NPDES permit language prohibiting coal tar emulsions to seal asphalt surfaces.
P2/GH -8. Snow and Ice Removal – Reduction in Salt Use  
**Measurable Goal:** Incremental annual reduction in the use of salt for de-icing to reach 50% reduction based on an average annual use of 2600 tons per year from 1989 to 1999. The quantity of salt used for deicing will be tracked on an annual basis.

**Actions during the reporting period:**
Approximately 1,200 tons of salt was used by UM-A2 during this reporting period which is a decrease of 54% from the average annual use amount of 2,600 tons per year from 1989 to 1999.

Approximately, 200 tons of road salt was used on during this reporting period on the UM-Dearborn campus.

UMF - approximately 150 tons of salt was used during this reporting period.

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

**Actions during the reporting period:**
In the 2009-10 season, the following alternative de-icers were used at UM-A2:
- Magnesium Chloride at 163,950 pounds;
- Calcium Chloride at 0 pounds
- Caliber M-1000 at 19,200 gallons
- Treated Sand at 5 tons

UMF used the following alternative de-icers during the 2009-10 season:
- Caliber M-1000 at 4146 gallons
- Professional Ice Melt at 45000 pounds [a mix of sodium chloride (5-95%), Potassium Chloride(5-95%), Magnesium Chloride(1-25%), Calcium Chloride(.1-10%)].

Alternative liquid de-icers were tested during this reporting period and UM-Dearborn will be utilizing a liquid de-icer in the coming season.

P2/GH -10. Pesticide and Fertilizer Technician Training  
**Measurable Goal:** All applicators (technicians) will be trained in pesticide and fertilizer use. The number of pesticide and fertilizer technicians will be tracked on an annual basis.

**Actions during the reporting period:**
The UM currently employs approximately 73 certified technicians.

UM-Dearborn also contracts with a vendor to conduct the large treatments/spraying. The vendor has a non-phosphorus policy.

P2/GH -11. Roadside Vegetative Replacement  
**Measurable Goal:** Eliminate the need for vegetative replacement due to salt damage to the maximum extent practicable. The need for replacement vegetation will be tracked for subsequent reporting.
Actions during the reporting period:
Vegetative replacement due to salt damage throughout campus is minimal due to the efficient use of alternative de-icers. Approximately 600 pounds of seed was used to replace salt-damaged turf during this reporting period.

P2/GH -12. Storm Sewer Labeling
Measurable Goal: All UM storm drains will be marked with the message "Dump No Waste - Drains to Waterways", "Keep our Michigan Waters Blue: Dump No Waste - Flows to River" (or similar message) during the permit cycle. The number of storm drains marked will be tracked annually for subsequent reporting.

Actions during the reporting period:
Approximately 90 storm drain markers were installed during the reporting period on catch basins throughout campus. Special attention is given to areas near the annual Art Fair, the Football Stadium and associated parking, as well as higher use walkways. Existing storm drain markers are replaced, as needed, due to wear, etc.

UM-Dearborn designed and produced storm drain markers this reporting cycle and will be installed over the next reporting period. This marker reads: “Keep Our Michigan Waters Blue” “Dump No Waste! Drains to Rouge River” “To report a spill/illicit discharge call 313.593.5333”

UMF- plans for this upcoming reporting year are to again utilize student volunteers and EHS staff this fall and spring to assess the labels in place, install new labels or a stencil adjacent to the drain if one is missing or damaged.

<table>
<thead>
<tr>
<th>Timeframe</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010-2012</td>
<td>Develop SWPPP for all fleet maintenance and storage yards/facilities at UM.</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Develop an education program for UM staff involved in fertilization of turfgrass at UM. Also include a strategy to disseminate the requirements to contractors at UM.</td>
</tr>
<tr>
<td>Ongoing</td>
<td>Provide storm water topics in annual training for Plant and Facilities personnel. Continue to provide storm water information at new employee orientations.</td>
</tr>
<tr>
<td>2010-2011</td>
<td>Create training strategy specific to contractors at UM. Also include strategy to reach the target audiences at all campuses.</td>
</tr>
</tbody>
</table>
2. **Environmental Impacts –**

*Provide an assessment of the pollution reduction and probable receiving water quality impacts associated with the program implementation. When applicable, a statement shall be included regarding any negative water quality impacts that may have occurred as a result of any illicit discharges or accidental spills during the reporting cycle.*

**Pollution Reduction**

Storm water management is recognized as a significant issue for the campus and control options are given careful consideration. A major goal of the many BMPs identified and implemented at the University is to reduce the discharge of sediment and associated pollutants to the receiving waters. The control program begins in the project design phase, by providing guidelines for 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 various locations across the University. Probable impacts to water quality from these BMPs are taken from the MDNRE’s *Index of BMPs/Individual BMPs*.

- **Catch Basins / Cleanout Procedures** – reasonably effective in protecting sewers from receiving loads of coarse solids.
- **Oil/Grit Separators** – remove coarse sediment and oils from storm water prior to delivery to a storm drain network, the ground, or other treatment.
- **Salt Reduction** – reduced application rates of salt may result in an improvement of surface water quality by reducing chloride and sodium concentrations. Reductions in salt application will also help protect ground water supplies used for drinking water. Other benefits that may occur by reducing salt application rates and encouraging proper salt storage include reducing density stratification in ponds and lakes; reducing corrosion of vehicles and bridges; reducing damage to roadside vegetation; and reducing the deterioration of soil structure.
- **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** – can remove 50-90% of street pollutants that potentially can enter surface water through storm sewers. Street sweepers will also make road surfaces less slippery in light rains, improve aesthetics by removing litter, and control pollutants which can be captured by the equipment.

**Illicit Discharges & Spills**

Two (2) illicit connections to the storm sewer were identified during the 2009-10 reporting period. A summary of the identification and correction of these connections follows:

- **Stockwell Hall** – UM OSEH received notification from the City via email on January 5, 2010 of the identification of a cross connection of the sanitary sewer into the storm water system which was backtracked
to the area near Stockwell Hall. OSEH dispatched staff on January 5 to perform a preliminary field investigation to confirm the City’s findings. U-M contacted the City for additional location information and also met with City staff in the field on Wednesday, January 6 to confirm the exact location of the manhole. After discovering evidence of the reported cross-connection, U-M immediately began investigation of the source of the discharge and subsequently identified sumps in the basement of Stockwell Hall which serve the core/middle area of the building were incorrectly tied in to the sewer lines. A temporary diversion of the system was implemented on January 6 to eliminate discharge into the storm water system. Final correction was completed on January 13, 2010. Dye testing was also performed and the remainder of the building appears to be correctly connected. Bathrooms and laundry facilities were involved in the cross connection from approximately September 9, 2009 when the building reopened for occupancy after major renovations.

The estimated discharge (based on water usage rates) over the approximately 4 month timeframe is 714 ccf of wastewater for the ¾ of the building which discharged through the cross-connection. The illicit discharge in Ann Arbor (outfall at Fuller Road at Glen Ct.) was located in TMDL areas for the Huron watershed, and thus the correction should positively impact the TMDL reaches for pathogens and total phosphorus. An estimate of the TSS and TP discharged as a result of this event is 1,125 pounds and 42 pounds respectively. These estimates were based on the total water usage for the building and the Environmental Protection Agency’s typical residential wastewater concentrations from the 2002 Onsite Wastewater Treatment Systems Manual.

- **UMF - Murchie Science Building - washing machine:** In June 2010, it was discovered that one of the clothes washers located on the first floor of MSB discharged to the storm sewer sump in the building. Upon discovery, the washer was tagged out of service and Facilities reconnected the washer discharge to a nearby sanitary line. City and State agencies were notified. It is thought that the washer was installed approximately 8 years ago by MidWest Mechanical which has since gone out of business. The washer was used twice a week for washing mops. Although the actual frequency and volume of discharge from this washing machine cannot be precisely determined, a rough approximation could be estimated at 20-25 gallons of dilute wash/rinse water per week. Total potential estimate of discharge over 8 years is approximately 8000 gallons. No TMDLs are currently in place for the Flint River. It is unclear if the Flint River was impacted negatively by this volume of discharge over the past eight years. No obvious impact found at the FOF-004 outfall into the Flint River.

**Spills** – minimal adverse impacts to water quality are anticipated, as a majority of outdoor spills (36) were contained and removed from the storm water system using UM’s 24-hour emergency response team and contracted vendors.

3. **Revised Fiscal Analysis** –

*Provide a summary of revisions, if necessary, to the fiscal analysis reported during the previous permit.*

No revisions are proposed at this time.

4. **Data Summary** –

*Provide a summary of data, including monitoring data, that is accumulated throughout the reporting year.*

No additional monitoring was performed during this reporting period.
5. **Public Education Program Reporting & Program Enforcement** –

*Provide a summary describing the number and nature of enforcement actions, inspections and public education programs.*

See descriptions in Item 1 above.

6. **Annual Budget** –

*Provide the previous reporting cycle’s expenditures and proposed budget for the reporting cycle following the report.*

The expenditures and budget are shown in the table on the next page.
### Annual Budget

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>2009-2010 UM LABOR AND MATERIALS¹</th>
<th>2009-2010 CONTRACTOR COST OR DIRECT PAYMENTS</th>
<th>2010-2011 BUDGET ESTIMATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permit administration</td>
<td>$138,866</td>
<td></td>
<td>$197,064</td>
</tr>
<tr>
<td>Storm and sanitary repair</td>
<td>$106,546</td>
<td>$335,408</td>
<td>$531,797</td>
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<tr>
<td>Construction site soil erosion control</td>
<td>$232,095</td>
<td>$12,500</td>
<td>$251,835</td>
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<tr>
<td>Storm water management basin construction &amp; maintenance</td>
<td>$69,633</td>
<td>$5,000</td>
<td>$39,100</td>
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<tr>
<td>Storm water education program</td>
<td>$4,400</td>
<td>$2,784</td>
<td>$7,300</td>
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<tr>
<td>Catch basin maintenance and cleaning program</td>
<td>$251,055</td>
<td>$115,287</td>
<td>$221,699</td>
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<tr>
<td>Street sweeping program</td>
<td>$40,394</td>
<td>$25,943</td>
<td>$52,750</td>
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<tr>
<td>Waste Management-Litter collection &amp; disposal</td>
<td>$1,026,798</td>
<td>$43,487</td>
<td>$1,098,250</td>
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<tr>
<td>Parking structure and lot cleaning program</td>
<td>$1,554,364</td>
<td>$197,214</td>
<td>$1,781,033</td>
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<tr>
<td>Storm water utility charges paid to Ann Arbor</td>
<td>$466,425</td>
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<td>$517,731</td>
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<tr>
<td>OSEH spill response activity</td>
<td>Footnote 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plant Extension Division</td>
<td>Footnote 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$3,424,151</strong></td>
<td><strong>$1,204,048</strong></td>
<td><strong>$4,698,558</strong></td>
</tr>
</tbody>
</table>

Footnotes:  
* - Many construction and renovation projects do not have separate tracking of SESC costs, storm water management basins or bmps as they are built in to the contract as a whole. Therefore, the expenditures for these line items are higher than shown.  
¹ - University labor costs include estimated base salary, 28% for benefits, and 52% for indirect cost recovery charges.  
² - These departments and divisions have moderate storm water costs and are not tracked separately by the University budget system.