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 Permit #MI0053902 and the Middle Huron Cooperative Agreement for Reduction of Phosphorus Loading to the Middle Huron River Watershed (last 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.

**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/

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 2011 Annual Storm Water Report for NPDES Permit MI0053902 is provided as an attachment to this report and includes information on expenditures and best management practices for the fiscal year 2010-2011.

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.

Updated October 2006
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

**New Employee Email**
OSEH developed a new employee broadcast email which is being sent to all new employees at UM, one month after hire, which includes identification of UM’s storm water management program and links to view the online stormwater education and best management practice topics. This program is currently being implemented and provides new employees with general guidance to prevent storm water pollution, BMPs for use at work and home and contact information to report any spills or dumping on campus.

**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 (at a minimum) and after rain events until final stabilization of the project site is achieved. In FY 2010-2011 over 1,800 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 potential audience for these messages for the 2010 season was over 782,000 people. 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.
In accordance with Part I, Section C.1.c. of National Pollutant Discharge Elimination System (NPDES) Permit MI0053902, the University of Michigan (University/UM) 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, 2010 through June 30, 2011 and follows the format identified in the permit.

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

   The University of Michigan is in compliance with the Storm Water Management Program Plan (SWMPP) for the Ann Arbor (UMA2), Dearborn (UMD), and Flint (UMF) campuses, as revised in May 2010 and approved by MDEQ on June 2, 2010. The University is also continuing to implement the approved post-construction storm water management requirements outlined in the Storm Water Management – Post-Construction Requirements Guideline (EP3-001).

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

   The following potential illicit discharges were identified during this reporting period:
   - **Alice Lloyd** – During investigation of a cross connection reported by the City, UM identified flow coming from this building’s mechanical room floor drains. The correction of this condition has been referred to Architecture, Engineering & Construction (AEC) for inclusion in the upcoming building renovation estimated for 2011/12.
   - **Naval Architecture & Marine Engineering** – A potential issue was identified by AEC. Floor drains in a 1960 drawing of the building appear to be routed to the storm system. No discharge is occurring to these floor drains.
   - **School of Public Health 2** – Plumbing Shop manager reported that chiller machine discharge routed to floor drains in the basement may tie into the storm sump for the building.
   - **Yost Arena**– Several floor drains were identified as connected to the storm water system during dye testing. The correction of these floor drains to discharge to the sanitary sewer system has been referred to the design team for inclusion in the upcoming building renovation estimated for 2011/12.

   The following illicit connections are under further investigation.
   - **Burton Tower**; Floor drains in the basement level. Investigations on discharge to date have been inconclusive.
   - **Chemistry Building**; Floor drains in room 408-B. Investigations on discharge to date have been inconclusive.
   - **Engineering Programs Building /François-Xavier Bagnoud Building/GG Brown**; AEC identified the potential for some floor drains in these building to be cross-connected to storm. Additional investigation is needed, including camera work on the lines or dye testing. Dye testing has been recommended by Occupational Safety & Environmental Health (OSEH) prior to/concurrent with proposed renovations.
   - **Kraus Natural Science Building**; Floor drains in the basement level of room 1015-B. Investigations on discharge to date have been inconclusive.
   - **Non-contact cooling water** was identified as the source of flow during dry weather screening at the following locations: Mary Markley Hall (and 1 hand-washing sink); and the Natural History
Museum. The Plumbing Shop is reviewing the Markley Hall site for correction planning. Additional reviews of the building and plan sets continue in an effort to confirm the proposed work and tie-ins identified below are properly routed. Individual projects will be prioritized for correction.

- UM Plumbing Shop is continuing follow-up investigations at the following locations: Literature, Science, and the Arts/Student Activities Building (MH-5); News & Information Services (MH-8); Modern Languages Building (MH-14); Biomedical Science Research Building (MH-20); Wolverine Tower; Briarwood; M-Stores; Northwood III (MH-4); Northwood II (MH-8). Follow-up investigation activities by the UM Plumbing Shop at these locations have been delayed due to a heavy work load (including other priority corrections of cross connections) and water main replacement projects.

The following illicit connections have been addressed:

- **Kresge Medical Research III building** was demolished in 2010, thereby removing the non-contact cooling water flow previously identified.

- **Lurie Engineering Center** – UM Plumbing Shop received a request from staff to investigate an odor near the Lurie reflecting pool on North Campus (N. of Bonisteel, W. of Beal) on November 19, 2010. The investigation to find the source began immediately. Dye testing (11-22-10 to 11-30-10) and other investigation techniques revealed two (single-unit) restrooms which were improperly discharging into the storm sewer system. The correction of the cross connection was completed by November 30, 2010. [Previously referenced as MH-9.]

- **Mosher Jordan** - UM received notification from the City via email on September 29, 2010 of the identification of a cross connection of the sanitary sewer into the storm water system which was backtracked to the area near Mosher Jordan Hall. Investigations began immediately by UM staff. Dye testing identified a single staff bathroom stall in the basement was cross-connected to the storm system. This stall was placed out of service immediately following identification on October 12, 2010. The final correction of the cross connection was completed on November 3, 2010.

- **Dye testing** was completed by OSEH at various points within the following buildings: Cook Law Library (MH-1); East Quad (MH-3); and East Hall (MH-7). All discharges were confirmed to the sanitary sewer. Dye testing was also completed by UM projects and/or UM Plumbing Shop at Couzens, Pierpoint Commons, Taubman, Tennis Center, Track & Tennis, Hutchins Hall, GG Brown, Lay Auto Lab, Cook Legal Research, Crisler, N. Campus Diag area, Law School, School of Education, Thompson Parking Structure, and the N. Campus Services Building during this reporting period. No cross-connections were identified during these testing events.

- **UMD Cooling Tower Discharges**: UMD Facilities Management has confirmed that all cooling towers discharge to sanitary drains at the Mardigian Library; Science Building; Fieldhouse/Ice Arena; Engineering Laboratory Building; and the College of Arts, Sciences and Letters Building.

- **UMD Engineering Laboratory Building**: Floor drains in the boiler room were identified as discharging the boiler blow down to the storm system. Corrective action began in spring 2010 to route this discharge to the sanitary system. This corrective action was completed in October 2010.

- **UMF** - Following the discovery and immediate correction of an illicit discharge from a washing machine at the Murchie Science Building (MSB) on the Flint Campus in June 2010, UMF Facilities & Operations staff evaluated other campus building operations to determine if similar cross connections might exist with various laundry facilities. None were found to exist.

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

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

1. **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 Best Management Practices are used to meet the requirements of Part I, Section B.1 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:

Fourteen brochures, pamphlets, posters and/or other educational materials were created or revised during the reporting period.

UM-OSEH revised and updated the storm water brochure for students, faculty & staff and contractors at the UMA2 during the reporting period. A new storm water brochure was also created for distribution to Film Projects while working on UM property.

The Winter 2011 OSEH Update Newsletter included an article on the Contractor Safety Program which includes direction to contractors to: prevent discharge of soils to storm drains, have spill kits on site, respond to protect drains from receiving any spilled material, follow proper waste management procedures and prohibit discharges to storm drains.

In December 2010, the UM issued the Stormwater Best Management Practices Manual which is available in the “Special Instructions to Designers” section of the Architecture Engineering & Construction (AEC) website which outlines requirements for new construction and renovation projects on campus. This manual was created by the Planner’s Office and AEC, in association with the OSEH Department to inform and encourage designers to create site-specific strategies for storm water management to protect water quality, address flooding, etc.

At UMD, Environmental Health and Safety & Emergency Management (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.; explain 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.umd.umich.edu/stormwater/). UMD has also made available tip cards and brochures from Southeast Michigan Council of Governments (SEMCOG) seven simple steps to clean water, and others; (http://www.semcog.org/OursToProtect_TipCards.aspx). EHSEM also created Storm Water Awareness Bookmarks in September 2010 and revised them in June of 2011.

New and updated posters are currently being developed to hang on bulletin boards around the campus.

In the Science Building, (2nd floor; outside of room 220) a bulletin board has already been posted with Storm Water Awareness brochures and posters.

In addition, UMD is currently working on three pet waste stations and brochures for the Wayne County walking/bike trail that cuts through campus.

Furthermore, contractors are presented with various brochures, a UMD flip chart containing information on environmental protection of storm water SESC and safety tips and a SESC sheet at their construction bulletin board at their check in area. Each contractor is required to sign in daily and obtain a University identification badge (that is required to be worn on campus); this badge informs the contractors about storm water and how to report an illicit discharge.

At UMF, the Display Case located on the Harrison Parking Ramp has been updated during this reporting period and continues to promote awareness of storm water, watershed management, best
management practices at work and home, and who to call if a spill occurs or is observed. The Display case has been up for the entire year – informing students and staff as they walk by daily.

UMF Environment, Health and Safety (EHS) hired a work-study student employee in fall 2010 and devoted their time to storm water management education/promotion during the fall 2010 and winter 2011 terms.

UMF Environment, Health and Safety (EHS) has also maintained a large “Earth Day Every Day” display case in the University Center on campus during the first 6 months of the reporting period. Among other topics, the display encourages indoor/outdoor water conservation, sound environmental practices, organic gardening/landscaping techniques, participation in the household hazardous waste collection day...all of which collectively help to protect our storm drains and surface waters.

UMF EHS downloaded and revised the MDEQ’s “Our Actions Can Affect Michigan’s Rivers” brochure to identify the Flint River, provide specific contact information to report spills and highlighted the University’s storm water management website for further information.

An additional flyer was developed in Fall 2010 “Protect the Flint River – Only Rain in the Drain” outlining actions citizens can do at home and at work that will help to protect the Flint River and improve the water quality.

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 5,650 brochures and bookmarks on stormwater management and pollution prevention topics were distributed at UM’s three campuses. Over 135 training, orientation or workshop sessions included storm water topics throughout the reporting period.

UMD distributed Storm Water Awareness bookmarks during the reporting period. Faculty and staff are given seven different pamphlets that can also be found on our website.

At UMF “Only Rain in the Drain” bookmarks were distributed through the campus bookstore, library, information desks, and other scheduled student and staff events. In addition approximately 100 “Our Actions Can Affect Michigan’s Rivers” brochures were distributed during the reporting period.

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 UMD and UMF 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.umd.umich.edu/691923/ and http://www.oseh.umich.edu/environment/storm.shtml.

**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:**
21,060 website hits were registered at the time of this report. This is an increase of over 3,500 hits over the 2009-2010 reporting period.

The UM websites are periodically redesigned and updated with new information and/or to create a more user-friendly environment. For example, the UMF Environment, Health and Safety (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, and links to the UMA2 campus OSEH web site too; the Earth Day Celebration 2011 website was active in early 2011 announcing the collaborative event, recycling competition, workshops, etc. including website links, list of partners and photo gallery items remains up for the community to view; and links to the UMF University Outreach/Center for Applied Environmental Research (CAER) website. . .a program instrumental to storm water public education initiatives in Genesee County. See http://www.umflint.edu/outreach/ and http://www.umflint.edu/caer/.

UMF Environment, Health and Safety (EHS) & Facilities worked together to develop a web page to help contractors and project managers to quickly locate environmental health and safety information including storm water management, SESC, environmental due care requirements, etc. all of which are critical in ensuring contractors understand the University’s storm water management program and the expectations we have when they are working on our property. The website is http://www.umflint.edu/facilities/contractinfo.htm. The weblink for the UM construction safety requirements, stormwater management requirements, and SESC requirements are all incorporated into contractor bid specifications and contract documents during the reporting year.

The UMD website consists of power point presentations, word documents, PDF documents, links to various storm water videos, and information on community household hazardous waste days. It is constantly being updated with new or updated guidelines. There were 10 changes to the UMD storm water page during this reporting period with the last change made on June 14, 2011 regarding updated illicit discharges information.

OSEH updated the format and content of our website which re-launched in March 2011. Updates to the website included revisions to content and updates to much of the stormwater information webpages. Also, the UM Office of Campus Sustainability has added some examples of best management practices (Elbel Field In-ground storm water storage), links to our storm water reports and connectivity to the OSEH storm water web page in an effort to aid the Public and University community in accessing the wealth of information UM provides on sustainability efforts including
storm water management and pollution prevention issues and opportunities to get involved and/or volunteer.

PEP -3. Storm Water Management at UM - 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 UMA2’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.

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 15 presentations and training sessions during the reporting period.

UMD also has a link on our web page (www.umich.edu/691923/) to the Southeast Michigan Council of Governments (SEMCOG) “Water Quality: It’s In Our Hands” video, “Scoop your pooch’s poop,” “Easy lawn care tips,” “Household hazardous waste tips,” “Car-care solutions to water pollution,” “Protect our environment: save water,” and “Help keep pollution out of storm drains.” The website also links out to www.miearth.org where various films can be viewed, and to the “Storm Water Ducky Video”.

The exhibit area at the UMD’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.

In addition, a total of 86 contractors were trained with a video titled “Stormwater Pollution Prevention – A Drop in the Bucket.”

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 seven UM football home games during the 2010 season, potentially reaching an audience of 782,776 people.

Examples of the football PSAs follow:
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! ** 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!

UMD is also working on some Public Service Announcements regarding storm water awareness for the Hockey, Basketball and Volleyball season. Some ideas are: You wouldn’t like someone standing in your way at a hockey game, so shy would fish like garbage blocking their sight too? Do your part and keep our Michigan waters BLUE! ** Slam dunk that trash into a garbage can and not our sewer drains! Do your part and help keep our Michigan waters BLUE! ** Bump, set and spike your trash into a garbage can and not out sewer drains! Do your part and help keep our Michigan waters BLUE! ** Don’t put yourself in the penalty box! Dump no waste down our sewer drains! Do your part and 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 UMA2 Plant staff which includes the following sub-groups:

- Building Services,
- Construction Services (including the Cabinet, Sign, Glass, and Upholstery shop departments),
- Facilities Maintenance (including HVAC, Plumbing, Pumps, Steam Distribution & Insulation, Electrical, Fire Systems, Elevators, Roofing, Metal Crafts & Machine Repair shop departments),
- Grounds & Waste Management Services,
- Utilities & Plant Engineering (includes purchasing, generation, distribution, conservation, and accounting of utilities for the University), and the
- Work Control group (responsible for single point of contact for services, all estimates and preventive maintenance planning).
Measurable 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 65 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, Hazard Communication, Hazardous Waste Management, PPE, “All in One Training” for Public Safety staff and Environmental Requirements Update.

UMD conducted 40 storm water training sessions for faculty and staff where 364 people were trained. Thirteen contractor companies were trained; resulting in a total of 86 contractor employees who were trained with a video titled “Storm Water Pollution Prevention-A Drop in the Bucket,” a 34 slide PowerPoint, a brochure titled “Storm Water, A Shared Responsibility,” with a quiz administered at the end of the training session.

The Environmental Interpretive Center (EIC) has offered more than 300 programs during this reporting period on a variety of subjects. Of these programs, 83 programs have directly addressed the importance of clean water to all life and focus on activities which impact water quality. Nearly 5,200 people have attended these 83 programs. Attendance at these programs is broken down in the following categories: Our pond program was offered 68 times with 3,096 attendees; The Water Quality & Hydrologic cycle program was offered 14 times for 553 visitors; and the Annual Rouge River Water Festival, a large one-day event brought in 1,516 visitors to attend various programs.

At UMF, during Summer 2011 the Environment, Health and Safety (EHS) intern focused on refreshing training materials, slides, etc. and conducting focused storm water management/SESC employee training for select employees on campus, key Facilities & Operations employees, grounds, HVAC, Central Energy Plant, and maintenance staff. Additionally EHS covers protection of storm drains in other health & safety classes such as hazard communication, hazardous waste, Student Housing Resident Assistant Orientation, Respiratory training, etc.

UMF Environment, Health and Safety (EHS) continues to meet 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 conduct routine inspections of work sites to insure cautionary measures are in place prior to and during contractor work. SESC weekly inspections are performed as applicable/required.

UM’s Winter 2011 (Jan-Apr) Semester was designated at a “Water Theme Semester”. A team of students in course Environment 391 surveyed 100 fellow students in Fall 2010 to determine their level of “water literacy,” then developed ideas for a Water Literacy Campaign. The Campaign included “10 Facts You Should Know About Water,” and “10 Things You Can Do To Protect Water Resources.” In addition to these postings across campus and on the website http://watersemester.com/, the theme was carried into courses, events, exhibitions and also encouraged the University community to take action.

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 484 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 Best Management Practices 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 191 inspections were performed by OSEH sanitarians on temporary food establishments during the reporting period.

At UMD, a total of 25 food employees from the concession stand vendor at the Field House and the campus dining services vendor (both indoor food vendors) have been trained with a 34 slide PowerPoint presentation, bookmarks regarding tips for pesticides, dogs, fertilizers, painting and household waste. They also viewed a video titled “Stormwater Pollution Prevention-A Drop in the Bucket.” At the end of the session, the employees were given various Southeast Michigan Council of Governments (SEMCOG) handouts and administered a quiz.

UMF Environment, Health and Safety (EHS) provided training to key representatives of our food vendors and are scheduled to meet with additional vendors in the Fall 2011. EHS routinely inspects loading dock areas that are used by food service vendors and their suppliers to ensure waste materials are being properly managed.

**Additional measures taken to achieve goals:**
- 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 2010-11 football season to reinforce proper waste management for these temporary operations.

- 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.

- Annually in May, the UMD Natural Sciences’ Environmental Interpretive Center (EIC) sponsors the Rouge River Water Festival. On average, this event attracts over 1,500 students from 62 different elementary and middle 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 MDEQ; Ford Motor Co.; Cranbrook Institute of Science; EPA; Friends of the Detroit River; Friends of the Rouge; and Marine Pollution Control; to name a few. In addition, the EIC’s rain garden diverted storm water to manage storm water floods.

- UMD has organized several Rouge River clean up volunteer days. On April 23, the Garlic Mustard Pull was organized by the Stewardship Network Lake plain Cluster, the Environmental Interpretive Center, the Henry Ford Estate and the Friends of the Rouge. This event yielded 55 volunteers. On June 4, the Rouge Rescue Garlic Mustard pull was organized by the Henry Ford Estate and the Friends of the Rouge (FOTR), yielding 16 volunteers. There are also monthly Public Involvement Task Force Meetings held at the FOTR office located on the UMD campus. FOTR Board meetings are also held monthly at the Environmental Interpretive Center.

- At the UMD, the “Evergreen Team” has hosted Campus Sustainability Week on campus for five consecutive years. Several student organizations have assisted with programming including SEA (Student Environmental Association), SIFE (Students in Free Enterprise), along with the Environmental Interpretive Center (EIC). Some of the activities held were nature tours at the EIC, Environmentally Preferred Purchasing lunch (where 45 people attended), and several presentations regarding safe environmental practices.

- In Spring of 2011, a UMD staff member, (along with other professors) taught an interdisciplinary course at the College of Business which included supply chain management, Information Technology, socio economic and environmental systems. There was also a study of the central pond to invest in rain water harvesting and convert the pond to a retention basin.

- The Pilot Recycling Program is run by the Resource Recycling Systems team, along with other faculty and staff. Approximately 70% of the waste stream is being diverted to recycling in a pilot single stream recycling program at the University Center (UC). “Slim Jims” are the blue recycling bins placed in the UC hallways and offices and collect all of the recyclable items. An audit was taken for the week of 7/28 through 8/3 and the amount of trash in a dumpster was compared to the amount of recyclable items in another dumpster. During the entire week, the recyclable dumpster was at least 25-50% more full than the trash dumpster. The Pilot Recycling Program has enabled the university to recycle in a single stream program that now runs in the UC. So far, the program has helped recycle about 1.56 tons of mixed recyclables in just a month.

- At two UMD buildings several water bottle stations were installed to decrease the use of plastic water bottles. The retrofit kits averaged $200 and there is a high demand for the stations due to the significant amount of plastic recycled. The water bottle stations also conserve water rather than depending on the harvesting of water from sources for the plastic bottles.

- The UMD participates in the Rouge River Gateway Partnership. Members include the Vice Chancellor of Governmental 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 members have been meeting on nearly a monthly basis since the summer of 1999. Over 200 stakeholders have attended some 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 progress have been shared with partners when appropriate. This communication has 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.

- UMD Henry Ford Estate held a fall 2010 Eagle Scout project (about 6 volunteers) building a retaining wall near the Powerhouse Tail Race to control soil erosion. There was also a group of gardeners (about 5) that planted about 100 native wildflowers and grasses in a small area near the river.

- UMD promotes Wayne County’s Household Hazardous Waste Days. We also provided links from our storm water website to the following county’s recycling websites: Wayne, Oakland, Macomb, and Monroe.

- Friends of the Rouge (FOTR) have office space on the UMD campus. During this reporting period, FOTR educated twelve K-12 teachers for their Rouge Education Project. The project works with teachers to incorporate academic goals and objectives that directly relate to the Rouge River. FOTR also presented watershed information to 25 UMD students at one of their environmental classes on campus. Lastly, FOTR had one UMD student working as an intern.

- All UMD safety training classes include information on storm water importance and protection, defines an illicit discharge, identifies how to report spills and who to call if they observe an illicit discharge or a spill that could potentially threaten a drain, and how to protect drains.

- The UMD Spill Prevention Control and Countermeasure (SPCC) / Pollution Incident Prevention Plan (PIPP) and Storm Water Management training is provided to all employees in Facilities Management.

- 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 potentially threaten a drain.
  - Spill Prevention Control and Countermeasure (SPCC) / Pollution Incident Prevention Plan (PIPP), 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.
  - UMF 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.
UMF 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.

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.

UMF’s University Outreach/Center for Applied Environmental Research (CAER) continues to be an engaged and active supporter of promoting environmental stewardship, watershed management planning, greening of the community, stormwater intervention workshops, Flint River clean ups, endless volunteer projects throughout the City of Flint and the Genesee County area. More information about past and present University Outreach and CAER activities in the community can be found on their websites: http://www.umflint.edu/outreach/; http://www.umflint.edu/caer/; and http://www.umflint.edu/caer/project_archive.htm

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

The following Best Management Practices are used to meet the requirements of Part I, Section B.2 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 semi-annual report for April 2011 was added to the UM OSEH storm water website in July 2011.

**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 40 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, Alliance of Rouge Communities, Rouge River Gateway Partnership, and the Flint River Watershed Coalition.

UMD attended one Alliance of Rouge Communities (ARC) meeting on September 9, 2010 and one Friends of the Rouge meeting on June 1, 2011. UMD EHSEM will join as a member in FY 2011-12.

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

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

The UMD 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.

UMD 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/.

UMF 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 UMF 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 meetings throughout the year. UMF hosts 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 during 2010-11. [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 the University Outreach and Center for Applied Environmental Research (CAER) websites for more information at [http://www.umflint.edu/outreach/] and [http://www.umflint.edu/caer/].

Also, OSEH staff (2) attended the Southeast Michigan Council of Governments (SEMCOG) half-day seminar on How Municipal Actions Impact Water Quality during this reporting period.

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

**Measurable Goal:** The City, County and interested local stream and watershed protection organizations will be notified of the online availability of the 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 previously 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 Environment, Health and Safety (EHS) shared the new NPDES Permit and SWMPP with key staff on campus, particularly those in Facilities Management and Administration. The SWMPP was also shared with the City of Flint water pollution prevention/compliance team and the Flint River Watershed Coalition for comments and feedback. The program is posted on the EHS website at [http://www.umflint.edu/ehs/EHS%20prog-guide.htm] and the Facilities & Operations website [http://www.umflint.edu/facilities/contractinfo.htm] for easy access/reference.

**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:**
UM participated in three Middle Huron Initiative meetings during this reporting period. The January 2011 meeting was hosted by UM-OSEH. The MHI partnership continues to contract with the Huron River Watershed Council to perform monitoring of the Middle Huron tributaries for the 2010 and 2011 sampling seasons.

**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 9 volunteer events were sponsored by UM during this reporting period.

Volunteer invasive species removal events were held in November 2010 and March 2011 with 18 and 24 participants respectively. Semi-annual events are planned for the 2011-2012 reporting period and may also include native species planting opportunities. In addition, the UM Office of Campus Sustainability webpages include volunteer opportunities in a variety of areas including storm water/water quality to encourage the UM community to get involved.

Annually in May, the UMD Natural Sciences’ Environmental program sponsors the Rouge River Water Festival. On average this event attracts over 1,500 students and visitors. Volunteers include organizations like MDEQ, Ford Motor Company, Cranbrook Institute of Science, EPA, Friends of the Detroit River, Friends of the Rouge, and Marine Pollution Control to name a few. Volunteers have put in more than 200 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.

UMD has organized several Rouge River clean up volunteer days. On April 23, the Garlic Mustard Pull was organized by the Stewardship Netowk Lake plain Cluster, the Environmental Interpretive Center, the Henry Ford Estate and the Friends of the Rouge. This yielded 55 volunteers. On June 4, the Rouge Rescue Garlic Mustard pull was organized by the Henry Ford Estate and the Friends of the Rouge (FOTR), yielding 16 volunteers. There are also monthly Public Involvement Task Force Meetings held at the FOTR office located on the UMD campus. FOTR Board meetings are also held monthly at the Environmental Interpretive Center (EIC).
UMD Henry Ford Estate held a fall 2010 Eagle Scout project (about 6 volunteers) building a retaining wall near the Powerhouse Tail Race to control soil erosion. There was also a group of gardeners (about 5) that planted about 100 native wildflowers and grasses in a small area near the river.

UMD promoted ARC (Alliance of Rouge Communities) rain barrel sales held on June 18, 2011 in Farmington Hills; July 9, 2011 in Southfield and June 30, 2011 in Westland. A total of 1,290 rain barrels were sold at the events. UMD also promoted Wayne County Household Hazardous Waste Day (HHW) events, including a HHW collection day on June 18, 2011 at Henry Ford Community College in Dearborn. A total of 1,607 cars participated and 207,157 pounds of waste was collected. Another HHW event took place on March 26, 2011 in Belleville.

UMD’s Environmental Interpretive Center has a new initiative, a Mushroom Garden. The Garden will serve as a food source to the public, as it is a part of the sustainability effort to encourage sustainable and environmentally friendly practices to develop local sources of food for consumption. With the help of Easy Grow Mushroom, LLC and more than 50 people volunteering with more than 70 hours dedicated to the development of this garden, the Mushroom Garden will soon hold mushrooms for harvest (from decaying logs).

UMF University Outreach has coordinated several (3-4) Flint River Clean up initiatives along the banks of the Flint River in Summer 2010 – Spring 2011 where they enlisted help from various volunteers from UMF student clubs and the general public. The University supported the events by developing the media materials, training for volunteers, and providing dumpsters to place trash/debris during the event.

UMF Environment, Health and Safety (EHS) acted as the lead coordinating unit on the UM Flint campus for the Earth Day 2011 celebration where more than 50 organizations participated and over 50 volunteers helped with planning, setup, monitoring presentations, etc. throughout the day’s activities. A significant portion of the day’s activities addressed environmental stewardship, conservation, protecting natural resources, Flint River watershed management, organic gardening, composting and permaculture, alternative energy technologies, recycling/waste management, etc.

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 (Best Management Practices) 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.

- UMD EHSEM will be a member of the Alliance of Rouge Communities in the next fiscal year.

3. **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.3 of the Permit.

The UMA2 has been involved in an ongoing program for identifying and controlling non-point source pollution to the Huron River. The Huron River Pollution Abatement Project was developed from a grant from the federal Clean Water Act and used by the UMA2 to identify illicit connections to the 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 Best Management Practices are used to meet the requirements of Part I, Section B.3 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 of its discharge points and the names and locations of all the surface waters that the MS4 discharges into.

**Actions during the reporting period:**
Storm sewer maps identifying outfalls at Ann Arbor, Dearborn and Flint have been completed. GIS integration of the outfall information from each campus continues.

UMD has located 3 major discharge points. Two of the discharge points are located along the Rouge and are greater than 36 inches. There is also 1 major discharge point on Hubbard that is greater than 36 inches.

UM Flint has completed GPS points for its outfalls into the Flint River or City MS4. In addition, a labeling plan to identify catch basins to specific outfalls is underway. GIS mapping of recent flood stage around the Hamilton Dam was also conducted during this reporting period to assist in future planning.

**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:**
The UMD has created a storm water sewer map of the UMD campus with the help of a consultant. UMD investigated all 304 storm water structures on campus (catch basins, manholes and garden drains). All 304 structures have been assigned an alpha-numeric naming system. The structures are color-coordinated accordingly on the maps based on additional investigation to determine flow by using dye testing or camera.

**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. This list is scheduled for completion by the end of 2011.

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 (see IDEP section).

Actions during the reporting period:
UMD has 304 storm water structures on campus consisting of 212 catch basins, 84 manholes, and 8 garden drains. All of these structures were inspected during this reporting period. Of these 304 structures, 130 catch basins, 54 manholes and 2 garden drains were dry weather screened.

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 64 calls of outdoor incidents were reported via the DPS/OSEH/EHSEM/EHS emergency response systems. A majority of these outdoor incidents were remedied (54), while 10 incidents resulted in discharges to surface waters which were reported to the appropriate agencies.

During this reporting period UM personnel responded to approximately 64 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 were contained with spill kits; cleaned up using absorbent materials, and removed for appropriate disposal by UM’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), soil/sediment, soap/detergent/chemicals and blood. A few examples of such releases and the corresponding response actions are provided below.

- Approximately ½ gallon of peanut oil was spilled by the parking structure at UMD. The spilled material was collected using containment pads and collected for proper disposal. No storm drains were impacted.

- A hydraulic line on a UM Waste Management truck leaked approximately 3 gallons of hydraulic oil onto the parking lot where it was working. The driver utilized the spill kit from the truck to contain the spill using oil dri. OSEH responded to the scene and collected the hydraulic oil and clean up materials for proper disposal. No storm drains were impacted.
Approximately ½ gallon of gasoline leaked from a car at the UM Hospitals & Health Center parking structure. OSEH personnel responded to the scene and blocked the closest storm drain with oil dri to prevent any discharge into the storm water system. Oil dri was applied to the spill and all waste materials were collected for proper disposal.

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 2010-2011 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 2011 the University of Michigan participated in RecycleMania a 10-week nationwide collegiate recycling and waste reduction competition. UMA2 placed 6th in total pounds of recycling with 810,747 pounds of recyclables over the 10-week period. In addition, the UM Office of Campus Sustainability and the Ann Arbor Public Schools sponsored a free e-waste recycling event (May 2011; 3-days) designed to help area residents, small businesses and non-profits dispose of electronics in an earth-friendly way.

- At UMD, there were also 5,999 fluorescent lights and 23,596 pounds of electronic equipment recycled. Nearly 55 tons of cardboard was recycled at UMD.

- In June 2011, UMD began a Pilot Recycling Program. This is a single-stream program piloted at the University Center. In one month, the program has helped recycle about 1.56 tons of mixed recyclables.

- The UMD Environmental Health and Safety & Emergency Management (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.

- 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: Grounds & Waste Management (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 Best Management Practice activities under this Storm Water Management Program Plan. 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 UMD EHSEM oversees the disposal of hazardous waste. EHSEM personnel are properly trained in RCRA and the University utilizes qualified contractors for transport and disposal off site.

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 – Environment, Health and Safety (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.

4. 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 the Post-Construction Storm Water Requirements guideline which details the minimum treatment volume standard and the channel protection criteria was issued by UM. The guideline is available on the UM-OSEH website.

Actions during the reporting period:
This item was completed in 2009.

PCSW -2. SESC Plan Review for Structural & Non-Structural Best Management Practices
Measurable Goal: OSEH/EHS/EHSEM and/or the University Planner’s Office will review all construction and renovation plans for use of structural and non-structural Best Management Practices 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 Best Management Practices will be tracked annually for subsequent reporting.

Actions during the reporting period:
Approximately 24 UM projects during this reporting period used a variety of Best Management Practices. Examples of Best Management Practices 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.)

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.

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 157 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.

5. 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 Best Management Practices are used to meet the requirements of Part I, Section B.5 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-four (24) 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 Best Management Practices 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. Best Management Practices will be selected as appropriate for site conditions.

Actions during the reporting period:
Over 100 UM projects during this reporting period used a variety of Best Management Practices on their sites. Examples of Best Management Practices included the use of vegetative buffers, silt fences, catch basin filters, soil erosion eels, water diversions, street sweeping 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 1,830 weekly and after storm SESC inspections were performed during this reporting period.

CSW -4. SESC Training by MDEQ  
**Measurable Goal:** Select staff from OSEH, EHSEM, EHS and the University Planner’s Office will be SESC trained by MDEQ. The number of 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 MDEQ 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 at the time of this report.

In addition, ten (10) UM staff are Certified Storm Water Operators in the State of Michigan for Industrial sites at the time of this report.

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 1,830 weekly and after storm SESC inspections were performed 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. Contractors at UM are required to clean/sweep construction areas and adjacent areas to prevent trackout from a work site.
- At UMF street sweepers are available, if needed. In addition the sweepers are used at least once, usually twice per year in all parking ramps and main roadways. Additionally they are used in some areas more frequently, if conditions show it is needed (i.e., loading dock, near compost area, Hubbard Parking area, etc.).
- 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 Soil Erosion & Sedimentation Control /Storm Water Management related inspections are conducted by Environment, Health and Safety (EHS) staff as we tour the UMF 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.

6. **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.

The following Best Management Practices are used to meet the requirements of Part I, Section B.6 of the University of Michigan’s NPDES Permit for Pollution Prevention & Good Housekeeping (P2/GH):

**P2/GH -1. 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:**
Maintenance cleaning of catch basins was performed on a portion of the campus during this reporting period, as required. The number of catch basins maintained was not available in time for this report due to sudden medical leave by Plumbing Shop staff. UMA2 will provide the information for FY 2010-11 in the April 2012 report. It should be noted that beginning in FY 2011-12, an electronic, GIS-based preventative maintenance schedule has been established to document storm drain/catch basin
maintenance activities going forward. This system will allow retrieval of the required reporting information by several staff.

Catch basins across the UMA2 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, UMA2 constructed a storage pad for drying the solids. The solids are then loaded onto a dump truck or a roll-off container and transported to a sanitary landfill for proper disposal as non-hazardous, non-regulated waste.

UMD cleaned 28 storm structures, including the storm lift station at the Fieldhouse/Ice Arena. The liquids and solids were collected (1,500 gallons) and transported by a licensed transporter and disposed at a licensed disposal facility. A total of 33.5 hours have been spent cleaning storm drains and 13.5 hours cleaning the pump pit.

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. Ten 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 list will be kept on file.

**Actions during the reporting period:**

No activity during this reporting period.

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 have 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 gardens and the Community Organic Garden.

**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 through the UMA2 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.
A total of 520 hours was spent by UMD personnel collecting litter and trash from the campus grounds. A total of 6,800 cubic yards of waste was removed from the campus. At the UMD Fairlane Center, a total of 155 tons of trash was removed. Disposal costs are estimated at over $900.

At UMF, approximately 2 cubic yards of waste was sent for disposal from cleaning of parking lots and structures throughout campus. Street sweeping operations disposed of approximately 2 cubic yards of waste. Litter pickup and disposal yielded an estimated 150 cubic yards of waste. Disposal costs are estimated at $900.

**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 Best Management Practices**  
Measurable Goal: Develop Best Management Practices 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.

Note: The UMD campus does not utilize any unpaved roads. In addition, there are no unpaved roads or parking lots on the UMF 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 157 plan reviews were performed during this reporting period.

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

Coal Tar Asphalt sealants were not used on the UMD campus.

At UMF contractors are made aware of these requirements, and project managers and Environment, Health and Safety (EHS) staff enforce this requirement. Alternate products are identified. During this reporting period, Lot A and Lot T at UMF were repaired/resurfaced without the use of coal tar emulsions.

**P2/GH -8. Snow and Ice Removal – Reduction in Salt Use**
Measurable Goal: Incremental annual reduction in the use of salt for de-icing to reach 50% reduction based on an average annual use of 2600 tons per year at UMA2 from 1989 to 1999. The quantity of salt used for deicing will be tracked on an annual basis.

Actions during the reporting period:
Approximately 2,916 tons of salt was used by UMA2 during this reporting period which is an increase of 12% from the average annual use amount of 2,600 tons per year from 1989 to 1999. The increase is attributed to a large number of snow events this season and an increase in the surface area managed by Grounds & Waste Management for snow removal.

An estimated, 400 tons of rock salt was applied for 38.25” of snow to parking lots and roadways on the Dearborn campus. Approximately 7.6 tons of salt was applied to sidewalks and entrances. In addition, the UMD Fairlane Center used a total of 366 tons of rock salt.

UMF - approximately 155 tons of salt was used during this reporting period. The University continues to decrease usage and increase replacement with other effective alternatives.

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

Actions during the reporting period:
In the 2010-11 season, the following alternative de-icers were used at UMA2:
- Magnesium Chloride at 189,000 pounds;
- Safer Than Salt (Mag., Cal & Sodium Chloride blend) at 182,000 pounds
- Caliber M-1000 at 13,461 gallons

UMF used the following alternative de-icers during the 2010-11 season:
- Caliber M-1000 at 5,834 gallons
- Professional Ice Melt at 3,450 pounds [a mix of sodium chloride (5-95%), Potassium Chloride(5-95%), Magnesium Chloride(1-25%), Calcium Chloride(.1-10%)].

UMD used the following alternative de-icers during the 2010-11 season:
- Professional Ice Melt at 6.25 tons [a mix of sodium chloride (5-95%), Potassium Chloride(5-95%), Magnesium Chloride(1-25%), Calcium Chloride(.1-10%)]
- Evco Ice Melt at 1.35 tons
- NAAC/CMA deicer at 1.7 tons (Fairlane Center)
- Safe Step at 562 pounds (Fairlane Center)
- Sulli Brine at 1,400 gallons (first year in use on sidewalks)
- Brine Solution at 744.20 gallons

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 82 certified technicians.
UMD also has a contract 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. An estimated 600 pounds of seed was used at UMA2 to replace salt-damaged turf during this reporting period. At UMD, approximately 200 pounds of grass seed and 300 pounds of Penn Mulch was ordered for erosion control. No vegetation replacement was needed at UMF during the 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 50 storm drain markers were installed at UMA2 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.

UMD 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”. To date, 86 storm drains have been marked.

UMF-Half of the catch basins and drain inlets on the Flint Campus were labeled in the 2-3 previous years using student volunteers and Environment, Health and Safety (EHS) staff. During 2011 the remaining drains were stenciled to indicate that the drain flows to the River. The 2011-12 season will again utilize student volunteers and Environment, Health and Safety (EHS) staff to assess the labels in place, install new labels or a stencil adjacent to the drain if one is missing or damaged.

7. **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 have been evaluated to determine if they are “major” discharge points. A list of major outfalls is kept on file. UMF is not currently in the TMDL program. UMD has identified three major discharge points. Two of the discharge points are located along the Rouge River and are greater than 36 inches (outfalls D001 & D006). The third major discharge point is on Hubbard (outfall D007).

**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.

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 issue for the campus and control options are given careful consideration. A major goal of the many Best Management Practices 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 Best Management Practices below have been implemented at the University. Probable impacts to water quality from these Best Management Practices are taken from the MDEQ’s *Index of Best Management Practices/Individual Best Management Practices.*

- **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.
- **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** - Two (2) illicit connections to the storm sewer were identified during the 2010-11 reporting period. A summary of the identification and correction of these connections follows:

**Mosher Jordan Hall (Mojo)** – UM OSEH received notification from the City on September 29, 2010 of the identification of a potential cross connection of the sanitary sewer into the storm water system at Washtenaw which was backtracked to the area near Mosher Jordan Hall. OSEH dispatched staff immediately to perform a preliminary field investigation, and dye testing notifications were made for work to begin on 9/30/10. UM continued investigation on 9/30/10 and, after discovering evidence of the reported cross-connection, U-M notified MDEQ (R. Matthews). The source of the discharge was subsequently identified as 1 toilet within a staff bathroom in the new food court. The restroom was immediately tagged out of service. Final correction was completed on November 3, 2010. Dye testing was also performed to confirm the correction had been made. This Mojo dining hall was opened in September 2008. The estimated discharge for the Total Suspended Solids (TSS) and Total Phosphorus (TP) discharged as a result of this cross connection is 1,019 pounds and 38 pounds respectively. These estimates were based on the Environmental Protection Agency’s typical wastewater concentrations from the 2002 Onsite Wastewater Treatment Systems Manual. 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 total suspended solids (biota) pathogens and total phosphorus.

**Lurie Engineering Building** – UM OSEH received notification from the UM Plumbing Shop on November 19, 2010 of an odor reported near the Lurie building. The Plumbing Shop began investigation the same day. On November 24, 2010 two 1-person bathrooms were identified as cross connected into the storm water system. The restrooms were immediately tagged out of service. Final correction/repair was completed on December 2, 2010. The Lurie Engineering Building was constructed in 1996. The discharge of Total Suspended Solids (TSS) and Total Phosphorus (TP) over the estimated 14 year timeframe is 18,995 pounds and 704 pounds respectively. The illicit discharge in Ann Arbor (outfall off Fuller Road at the Huron River) was located in TMDL areas for the Huron watershed, and thus the correction should positively impact the TMDL reaches for total suspended solids (biota), pathogens and total phosphorus. These estimates were based on the Environmental Protection Agency’s typical wastewater concentrations from the 2002 Onsite Wastewater Treatment Systems Manual.

**Spills** – minimal adverse impacts to water quality are anticipated, as a majority of outdoor spills (54) were contained and removed from the storm water system using UM’s 24-hour emergency response team. Ten reportable events occurred during this reporting period. Discharges included sediment, wash water, ice paint, sewage, and an oily substance. A portion of the reportable spilled material was cleaned up by UM’s emergency response team, the U-M vacuum truck and the U-M sweeper truck, as appropriate, per site.

3. **Water Quality Assessment** -

*Provide an assessment of the water quality conditions within the jurisdiction.*
Huron River - The following information was compiled from the Huron River Watershed Council (HRWC):

The Middle Huron River does not meet state and federal water quality standards due to excess nutrification, E. coli pathogen levels, and fish consumption advisory for polychlorinated biphenyls that exceed state levels. Tributaries to the Huron River within the City of Ann Arbor also exhibit poor macro invertebrate and fish communities.

Communities in the Huron River Watershed are concerned with a number of water quality and water quantity issues including high levels of sediment entering the river system, destruction of aquatic and terrestrial habitat, river flow fluctuations, and pollutant loads of metals and other toxins, bacteria, and excess nutrients. Nutrient enrichment of the River system is of particular concern, driving annual algal blooms in the River’s impoundments, which in turn limit recreation uses protected by the federal Clean Water Act. These blooms are associated with high phosphorus levels in the river and lake waters which originate from both “point sources” (i.e. discharges out the end of a pipe from industry and municipal wastewater treatment) and from “non-point sources” (i.e. polluted runoff from our lawns, streets, agricultural fields) and from the banks of the River itself. It is thought that to reduce the problems associated with nuisance algal blooms in the impoundments it is necessary to reduce summer concentrations of phosphorus in the River at Ford Lake to 50 micrograms per liter. This concentration would ensure a reduction of the phosphorus concentration in Belleville Lake to 30 micrograms per liter, the goal set by the Michigan Water Resources Commission in 1987. To reach this goal, requires reducing current phosphorus loads by approximately 50%. These goals have been set forth by the Michigan Department of Environmental Quality (MDEQ) in Total Maximum Daily Load allocation (TMDL) for the Middle Huron.

The HRWC noted the following in a 2010 Newsletter: The voluntary partnership of communities and agencies that make up the Middle Huron Partners has invested in many infrastructure improvements, education and policy changes, and continued monitoring to determine if any of these investments are showing results. Overall, tributary phosphorus concentrations have declined 20-30% and river concentrations have declined by almost 20%. In 2009, phosphorus concentrations at the upstream entry to Ford Lake were mostly below TMDL targets – their lowest point yet.

The U. S. EPA approved the TMDL for E. coli in the Huron River submitted by the Michigan Department of Environmental Quality. Stakeholders, including the University of Michigan and the MDEQ have completed the implementation plan with the assistance of a third-party facilitator. This plan will serve as an example for E. coli TMDLs across the country since few, if any, have been completed in other areas.

The following general conclusions can be drawn from the analysis of the data collected under the Middle Huron Stream Nutrient Monitoring Program from 2002 through 2007:

- Measured values for Total Phosphorus concentration varied widely from site to site and from month to month, however, taken together, the concentrations show a decreasing trend when compared year to year. Ultimately, TP concentrations can vary widely due to many environmental variables. Total Phosphorus loading does not show the same trend. Some sites, such as Malletts Creek at Chalmers Drive, show a tight relationship with stream discharge, such that, large flow events result in a predictably higher load. Other sites, such as Mill Creek, are much less predictable. Load duration analysis provides evidence that phosphorus loading is more excessive during run-off events.
- All 10 sites had measured pH values that are within the expected range for Michigan surface waters, excepting Honey Creek in September 2005 when the value was less than 6.5.
- Six of the ten sites had average conductivity values that exceed the accepted limits. Most of these were the urban sites.
• All 10 sites had average values for Dissolved Oxygen that are within the normal range for Michigan surface waters. Only two measures at separate sites were below this standard.
• The small amount of E. coli collected thus far indicate that all but the Huron River site exceed state standards on occasion. Some sites exceed this standard regularly and greatly. More data needs to be collected however.
• As with the TP results, mean concentrations of Total Suspended Solids from the monitoring sites show a consistent decrease year to year from 2003 through 2006. Some sites show a high correlation between TSS and TP, suggesting that the phosphorus is bound to soil or due to erosive processes. Other sites do not show a strong correlation.
• Most tributaries were well below 1 mg/L for levels of Nitrate. Concentrations of Nitrite were within the normal levels of Michigan surface waters for all sites, on average.

Rouge River
The Rouge River does not meet state and federal water quality standards due to excess nutrification, E. coli pathogen levels, and fish consumption advisory for polychlorinated biphenyls that exceed state levels.

The following benthic monitoring information was compiled from the Friends of the Rouge:

The Spring 2011 report covers benthic macro invertebrate monitoring at 47 sites on the Rouge River, tributaries and branches. The majority of sites, 60%, had fair stream quality index (SQI); two sites were excellent; 11 sites were good and five sites had poor SQI scores. In comparison with past data, all of the sites showed positive, possible upward trends, but only two results were significant.

Flint River
The Middle Huron 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 following benthic monitoring information was compiled from the Flint River Watershed Coalition:

The October 2010 benthic macro invertebrate monitoring was conducted at 27 sites on the Flint River, tributaries and branches. Forty-four percent (12) of the sites had fair stream quality index scores (SQI); two sites were excellent; 11 sites were good and 2 sites had poor SQI scores.

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

No additional monitoring was performed during this reporting period.

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 University of Michigan shall continue its on-going programs including:

Public Education and Outreach

• Implement the “new employee” automatic email which is designed to provide an email one month after hire to inform the employee that storm water training is required along with a link to review the storm water education topics online at the OSEH website and to reinforce the need for the employees help to reduce pollutants discharging into storm water system. This distribution system is anticipated to be in operation by September 2011.
Develop/add additional brochures to fill any gaps in the topics needed to meet the permit requirements (2011).

Create storm water education material (brochures, bookmarks, etc.) dissemination strategy to reach the target audiences and any new audiences identified by UM (2012). Implement storm water education material dissemination plan (2013).

Distribute storm water educational materials (brochures to members of the campus community and new employees).

Continue to update the OSEH web page.

Create website information dissemination and coordination strategy (all campuses) to reach the target audiences (2011).

Develop/add additional topics, weblinks, etc. to fill any gaps in the topics needed to meet the permit requirements (2012). Implement website dissemination plan (2013).

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 UM website.

Continue OSEH sanitarian work with kitchen and food vendors on campus to ensure proper waste management and disposal methods are used.

Continue work with U-M staff to improve waste handling procedures.

Work with Athletics to request continued Storm water educational announcements at the University of Michigan home football games.

Present at the Safety Coordinator’s Conference in July 2011 on “Storm Water: Keeping It Clean”.

The Fall 2011 OSEH Update Newsletter will include an article on “Understanding Storm Water”.

Public Involvement/Participation

Continue to work with the Millers Creek Action Team, Malletts Creek Coordinating Committee, Middle Huron Initiative/Partners and other local watershed/creek groups to identify opportunities for joint activities and outcomes in support of permit requirements.


Continue to participate in the *E.coli* TMDL implementation plan.

Continue to offer opportunities for environmental stewardship on campus.

Continue to update the OSEH web page 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 OSEH website to heighten community awareness of storm water management activities on campus.

Illicit Discharge Elimination Program

Complete a prioritized listing for dry-weather screening (2011).

Perform/continue dry weather field screening at least once every 5 years (to be completed by February 1, 2015) to determine the existence, location and extent of potential illicit discharges.

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

Items for further investigation will be researched, as weather permits. Identified illicit discharges will be prioritized for correction according to their potential impacts to water quality. Cross connections will take priority; cooling tower discharges will be prioritized based on the frequency of discharge and will be redirected to the sanitary sewer as building improvements and upgrades are undertaken.

Continue to encourage the campus community to report illicit discharges and spills to OSEH and the Department of Public Safety 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.
- Review targeted sites for flood control projects, as new construction or renovation projects are identified.
- Work on implementation of storm water management basin improvement and maintenance projects to improve detention capacity, retention/infiltration, and additional Best Management Practice usage. Opportunities for enhancement of the basins will be reviewed and prioritized.

Construction Storm Water Runoff Control
- Continue construction site storm water protection Best Management Practices.
- 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 OSEH review of site plans. Continue to make recommendations to improve runoff water 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
- Complete the listing of unpaved roads and parking lots (2011).
- Develop Best Management Practices to control dust and suspended solids in runoff from paved roads and parking lots (2012-13).
- Continued cleaning of storm water inlets, lines, and detention basins, as required.
- Develop a TSS reduction strategy for paved surfaces (2012) with a goal of reducing TSS loading by 25% as compared to annual loading with no suspended solids controls, and implement the strategy (2013).
- Continue salt use reduction and alternative product usage to improve storm water runoff quality.
- Continue to implement Best Management Practices 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 SWPPP for all fleet maintenance and storage yards/facilities at UM (2012), and implement the developed SWPPPs (2013).
- Develop an education program and dissemination strategy for UM staff involved in fertilization of turfgrass at UM (2011). Implement the turfgrass fertilization education program for appropriate UM staff and contractors (2012).
- Create training/education strategy specific to employees and contractors at UM (2011).
- Develop/add additional topics, weblinks, brochures, posters, etc. to fill any gaps in the topics needed to meet the permit requirements (2012) and implement the training plan (2013).

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).

An updated list of the added or revised outfalls to be covered under the NPDES permit follows:

<table>
<thead>
<tr>
<th>ID #</th>
<th>Receiving Water or System</th>
<th>Ultimate Receiving Water</th>
<th>LONGITUDE</th>
<th>LATITUDE</th>
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<tr>
<td>O-30R</td>
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<td>O-107</td>
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<td>Wetland area/Fleming Creek trib</td>
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<td>O-116</td>
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<td>O-117</td>
<td>UM Basin to Fleming Creek trib</td>
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</tbody>
</table>
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)(vii).

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

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

The expenditures and budget are shown in the following table.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>2010-2011 U-M LABOR AND MATERIALS¹</th>
<th>2010-2011 CONTRACTOR COST OR DIRECT PAYMENTS</th>
<th>2011-2012 BUDGET ESTIMATE</th>
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<tbody>
<tr>
<td>Permit administration</td>
<td>$ 143,663</td>
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<td>$ 168,795</td>
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<tr>
<td>Storm and sanitary repair</td>
<td>$ 307,456</td>
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<td>$ 479,478</td>
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<tr>
<td>Construction site soil erosion control</td>
<td>$ 233,195</td>
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<td>$ 96,775</td>
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<tr>
<td>Storm water management basin construction &amp; maintenance</td>
<td>$ 69,633</td>
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<td>$ 39,100</td>
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<tr>
<td>Storm water education program</td>
<td>$ 3,000</td>
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<td>$ 6,000</td>
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<tr>
<td>Catch basin maintenance and cleaning program</td>
<td>$ 151,986</td>
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<tr>
<td>Street sweeping program</td>
<td>$ 117,894</td>
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<td>$ 47,250</td>
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<tr>
<td>Waste Management-Litter collection &amp; disposal</td>
<td>$ 1,034,506</td>
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<td>$ 1,107,900</td>
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<tr>
<td>Parking structure and lot cleaning program</td>
<td>$ 1,006,413</td>
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<td>$ 1,288,174</td>
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<td>Storm water utility charges paid to Ann Arbor</td>
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<td>OSEH spill response activity</td>
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<td>Plant Extension Division</td>
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<td><strong>TOTALS</strong></td>
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<td><strong>$ 1,048,202</strong></td>
<td><strong>$ 4,024,101</strong></td>
</tr>
</tbody>
</table>

Footnotes:

* - Many construction and renovation projects do not have separate tracking of SESC costs, storm water management basins or bmfs 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.