

**THE UNIVERSITY OF MICHIGAN  
MUNICIPAL STORM WATER NPDES PERMIT MI0053902  
FISCAL YEAR 2007-2008 ANNUAL REPORT**

In accordance with Part I, Section C.1.e. of NPDES Permit MI0053902, the University of Michigan (University) is required to submit an annual report of activities associated with the storm water management program. This program is a requirement of the National Pollutant Discharge Elimination System (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, 2007 through June 30, 2008 and follows the format identified in the permit.

***1. Compliance Assessment –***

***a. Describe the status of compliance with permit conditions.***

The University of Michigan (U-M) is in compliance with the permit conditions. In accordance with Part I, Section B, the University is implementing the storm water management program plan (SWMPP) revised June 2005 and approved by MDEQ on June 16, 2005.

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

Dry weather screening is performed in 4 distinct areas based on geographical separation - South Campus, Central Campus, Medical Campus, and North/East Campus. Dye testing is performed to determine the existence, location, and extent of possible illicit discharges into the UM storm water drainage system. Non-storm water flow will be backtracked and investigated to identify the source of the discharge and to determine if it is an authorized flow as described in Part I.A.1 of the permit. In the event that the flow is not authorized, repairs will be made to redirect the flow to the sanitary sewer. The Medical Campus area will be targeted for the next dry weather screening event in 2008-9.

The following potential illicit discharges were identified during this reporting period:

Dry weather screening was performed in the Central Campus for 2007-8. Flow was identified in the following screening manholes: #1(Cook Law Library), #3 (East Quad), #5 (LSA/SAB), #7 (East Hall), #8 (News & Information Services), #11 (West Hall), #14 (MLB) and #20 (BSRB). Further backtracking investigation of these areas to identify potential source(s) of the flow continued through the reporting period.

The following illicit connections are under further investigation.

- Dry Weather Screening 2005-6: Follow-up activities by the U-M Plumbing Shop are underway and estimated to be completed in 2008 for

the following dry weather screening location manholes: Tennis Center, Wolverine Tower, Briarwood, and M-Stores. These follow up investigations by the UM Plumbing Shop were delayed due to a heavy work load and valve replacement projects. Investigations of the other 2005-6 locations have been completed and are described in the illicit connections “addressed” section of this report.

- North Campus Areas: Dry weather screening 2004-5 identified flow in the following screening location manholes: #4 (Northwood III), #8 (Northwood II) and #9 (Electrical Engineering & Computer Science.) Follow-up investigation activities by the UM Plumbing Shop were delayed due to a heavy work load and valve replacement projects. Follow-up is estimated to be completed in 2008.

Remediation is underway for the following illicit connections:

- The following projects were included in the *Draft* Plumbing Cross-Connection Correction Study by U-M Architecture, Engineering and Construction (AEC) which was completed December 16, 2005. Work to complete the preliminary report with recommendations for correction, and design documents was completed in July 2006. Additional reviews of the building and plans were performed during this reporting period in an effort to confirm the proposed work and tie-ins identified by this report are properly routed. Individual projects will be prioritized for correction work, with completion estimated in 2008-9.
  - Mary Markley Hall: Dry weather screening identified flow in this area. The source of the flow was identified as non-contact cooling water discharging into floor drains. An additional source has been identified from a hand washing sink. This project is being coordinated by UM- OSEH and has been reviewed by Utilities staff. Construction cost proposals are being sought in Fall 2008.
  - Natural History Museum: Dry weather screening identified flow in this area. The source of the flow was identified as non-contact cooling water discharging into a floor drain.
  - Kresge Medical Research III Building: Dry weather screening identified flow in this area. The source of the flow was identified as non-contact cooling water discharging into floor drains. No additional work on this building is planned, as the building is scheduled to be demolished in its entirety.
  - Burton Tower: Floor drains in the basement level were identified for further investigation to confirm whether they discharge to storm or to sanitary. Dye testing will occur in 2008.

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- Chemistry Building: Floor drains in room 408-B were identified for further investigation to confirm whether they discharge to storm or to sanitary. Dye testing will occur in 2008.
- Kraus Natural Science Building: Floor drains in the basement level of room 1015-B were identified for further investigation to confirm whether they discharge to storm or to sanitary. Dye testing will occur in 2008.

The following illicit connections have been completed:

- West Hall: OSEH staff identified clear water flow in the north-west storm manhole in the West Hall courtyard during this reporting period. Additional investigation in 2007 did not show flow in this manhole over 5 different dates. No additional investigation is planned at this time.
- Buhr: Dry weather screening in 2005-6 identified flow in the screening location manhole. The U-M Plumbing Shop reviewed the backtracking reports, investigated the building and confirmed no sanitary cross-connections are present.
- Swimming & Diving: Dry weather screening in 2005-6 identified flow in the screening location manhole. The U-M Plumbing Shop reviewed the backtracking reports, investigated the building and confirmed no sanitary cross-connections are present.
- Yost: Dry weather screening in 2005-6 identified flow in the screening location manhole. The U-M Plumbing Shop reviewed the backtracking reports, investigated the building and confirmed no sanitary cross-connections are present.
- Sports Services: Dry weather screening in 2005-6 identified flow in the screening location manhole. The U-M Plumbing Shop reviewed the backtracking reports, investigated the building and confirmed no sanitary cross-connections are present.
- Practice Fields: Dry weather screening in 2005-6 identified flow in the screening location manhole. Additional backtracking investigation of these areas to identify potential source(s) of the flow continued through the reporting period. The U-M Plumbing Shop reviewed the backtracking reports, investigated the practice field area and confirmed no sanitary cross-connections are present.
- Shapiro Library (UGLI): Floor drains (via a sump/pump system) in room B006 were routed to the sanitary sewer in 2007 during completion of an adjacent construction project.

- Cooling Towers – Past dry weather screening identified flow from a few cooling towers occurring when overflow valves are tripped overflowing to the storm system via existing roof drains. Daily maintenance inspections of cooling towers are performed to identify and correct any overflow conditions. The following sites have been corrected:
  - Victor Vaughn – periodic overflow conditions had been reported at this location. The cooling tower replacement project was completed in 2007.
  - School of Education - periodic overflow conditions have been reported at this location. The piping replacement project was completed in 2007.
  
- Unit for Laboratory Animal Medicine: Dry weather screening identified flow in this area. The source of the flow was tracked back to the Medical Science II building, mechanical room where a backflow preventer was leaking potable water which was discharging into a floor drain. The leak has been repaired.

During this reporting period OSEH personnel responded to approximately 54 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 OSEH's on-call emergency response team. Response activities involved leaks and spills of materials such as automotive fluids (gasoline, hydraulic oil, glycol, transmission fluid, grease, diesel, fuel), concrete wash water/saw-cutting, paint, soil/sediment (from water main breaks), soap/detergent/chemicals and bodily fluids/materials like blood/sewage, etc. A few examples of such releases and the corresponding response actions are provided below.

- Approximately 500 milliliters of anti-freeze leaked from an auto while in the circle driveway at the Cardiovascular Center on the Medical Campus. A valet identified the leak and contacted UM-OSEH to provide emergency response. Oil dri was applied to the impacted area and collected for proper disposal. No storm drains were impacted.
  
- A hydraulic line on a UM truck leaked approximately 1 gallon of oil onto the parking lot where it was working. The driver utilized the spill kit from the truck to block nearby storm drains with oil dri to prevent discharge into the storm water system. OSEH responded to the scene and collected the hydraulic oil for proper disposal, utilizing absorbent pads and oil dri.

- Approximately 1 pint of diesel fuel leaked from a pick-up truck onto the pavement and was washed into the storm water system by a concurrent rain storm. UM personnel responded to the scene and blocked the storm drains with oil dri and absorbent booms to prevent any additional discharge and to aid in collection of the remaining material. All waste materials were collected for proper disposal. The owner of the truck was notified of the leak, which was repaired on site, prior to departure from the scene.

**c. Assess BMP appropriateness and progress toward goals identified in the SWMPP.**

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

**Education and Outreach on Storm Water Impacts – Public Education Program (PEP)**

*Recognizing the need for public involvement in the effort to reduce storm water pollutants, the U-M has developed a broad and aggressive storm water education and outreach program. This multi-faceted program is closely connected to the U-M's pollution prevention (P2) program and its many initiatives. Specifically, the storm water education curriculum is designed to promote, publicize, and facilitate watershed education while encouraging the P2 practices developed under the U-M's environmental stewardship agenda. The intended audience for the program is all persons associated with the University who could potentially affect the quality of storm water discharges, including, but not limited to, campus residents; University faculty, staff, and students; visitors to the campus; contractors and vendors working on the campus; and commercial and industrial operations on campus. Below is a description of each of the program's components.*

*The overall PEP program accomplishes the following goals:*

- *Educate the public of hazards associated with illicit discharges and improper discharges. Part of this education is to encourage public reporting of the presence of illicit discharges or improper disposal of materials into the U-M drainage system.*
- *Educate the public regarding acceptable application and disposal of pesticides, herbicides, and fertilizers.*
- *Educate the public concerning the ultimate discharge point and potential impacts of pollutants from the drainage system serving their places of residence.*
- *Educate the public about their responsibilities and stewardship of their watershed.*
- *Educate commercial and institutional entities likely to have significant storm water impacts.*

The following BMPs 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 U-M School of Natural Resources and Environment (SNRE), the U-M 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. OSEH produces and distributes storm water pollution prevention brochures specifically for Students; Faculty and Staff; and Contractors, to provide each group with appropriate information on user responsibilities, best management practices and procedures for reporting spills and illicit discharges to the storm water system.

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 reporting. Additional brochures will be created/revised as new needs are identified. The number of new brochures, flyers or other educational media created will be tracked on an annual basis for subsequent reporting.

Actions during the reporting period:

An estimated 3,100 brochures were distributed at over 200 training, orientation or workshop sessions throughout the reporting period.

**PEP -2. OSEH/SNRE Storm Water Education Web Site**

Developed in cooperation with the U-M 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 U-M community understand how the University's storm water system operates, various legal requirements, and what individuals can do to reduce contamination in the storm water system from surface runoff. As viewers move through the site they learn about storm water, what they can do to help protect it, how regulations impact the University's operation, and various safe practices.

The website is updated on a regular basis to include pertinent information related to storm water management and pollution prevention. Current material on the web site can be viewed by visiting [www.oseh.umich.edu/stormwater/](http://www.oseh.umich.edu/stormwater/).

Measurable Goal: The number of visitors to the website will be tracked semi-annually for subsequent reporting. The goal is to have at least 2,000 website hits annually. This website is intended to help students, employees, and visitors in the U-M community understand how the University's storm water system operates, various legal requirements, and what individuals can do to reduce contamination in the storm water system from surface runoff. This website tally may also serve as an indication of the community

seeking additional storm water information from the link provided in the brochures, as detailed above.

Actions during the reporting period:

11,868 website hits were registered as of this report. This is an increase of 2,900 hits over the reported 2007 total. The website is continually being redesigned to create a more user-friendly environment. Although the reason for the increased use of the website is not known, efforts were made to increase website usage through the creation and placement of posters on bulletin boards throughout campus.

The North Campus Woods Conservation and Invasive Plant Species webpage(s) continue to be revised and updated with new topics, photos, etc.

**PEP -3. Storm Water Management at U-M Video**

*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 University's storm water drainage system and its receiving bodies followed by a synopsis of the legal requirements that mandate the NPDES permit and the development of a storm water management program. The remainder of the video focuses on how storm water can become polluted because of human activities. It proceeds to inform viewers of the University's actions to protect storm water quality in the following areas: salt use and deicing activities, waste management and spill response, campus planning and expansion, cleaning outdoor equipment and vehicles, chemical disposal practices, and food vendor training.*

*This video is shown every semester on the cable system. In addition, separately offered video viewings, on an as needed basis, are provided in faculty and staff presentations.*

Measurable Goal: The video will be aired a minimum of 50 times annually for viewing on the U-M local cable TV station. The number of offerings of the video will be tracked semi-annually for subsequent reporting. Additional viewing of the video during presentations, classes, workshops, etc. will also be tracked.

Actions during the reporting period:

The Storm Water Management video at the University of Michigan was not aired during the reporting period. The viewing schedule was modified by the cable station without OSEH's knowledge for the 2006-7 year. A consistent viewing schedule could not be secured for the 2007-8 viewing season. The video was shown during a few training events held during this reporting period. In addition, storm water public service announcements from the "Stormwater Savvy – Don't Let a Good Drop Go Bad" series, as provided by the MDEQ via the Center for Environmental Study, were shown at various training sessions throughout the

reporting period. U-M is reviewing the need to replace this goal with other public education efforts, to reach a more wide-spread audience on a consistent basis.

**PEP -4. Storm Water Public Service Announcements (PSAs)**

Measurable Goal: Storm water, waste disposal, and recycling related Public Service Announcements will be distributed annually for use during the seven football season home games. These short educational messages will provide storm water information to visitors, students, staff and contractors attending the U-M football games. The total anticipated audience for these messages is over 107,000 per game.

Actions during the reporting period:

Public Service Announcements were made at the seven UM football home games during the 2007 season, potentially reaching an audience of 882,115 people.

Examples of the announcements made include:

Protect our environment! Dump no drinks on the pavement or down the storm drains. They drain directly to the river without any treatment. Help keep our Michigan waters BLUE!

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

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

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

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

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

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

**PEP -5. Presentations, Training Sessions, Workshops, etc.**

Measurable Goals: Storm water topics will be included in a minimum of 50 classes, workshops or presentations sponsored annually by OSEH. 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 200 classes, workshops or presentations during the reporting period. Examples of classes include: OSEH New Hire Training for Laboratory Personnel, Foundations of Supervision, Safety Supervisor's Workshop, Spill Prevention Control & Countermeasure and Plant Academy-Law and Policy.

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 501 laboratory rooms were inspected by OSEH personnel during the reporting period.

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

Actions during the reporting period:

All outdoor food vendors are required to attend training / orientation sessions prior to seasonal work at the U-M. A total of 164 inspections were performed by OSEH sanitarians on temporary food establishments during the reporting period.

Additional measures taken to achieve goals:

- U-M participated with stakeholders and SEMCOG in creation of the Low Impact Development manual. The manual provides technical information on the design and implementation of low impact storm water management techniques to aid in promotion of their use.
- OSEH continues to work with U-M football stadium vendors/concession stands to prevent potential discharges into the storm water system. Concession stands were posted with signage detailing procedures for proper grease and wastewater management for these operations during the 2008 football season to reinforce proper waste management for these temporary operations.
- Presentations are provided to students and staff by OSEH personnel 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 and pollution prevention brochures, to report illicit discharges and spills to OSEH and the Department of Public Safety so appropriate measures can be taken to correct issues which may impact storm water quality.

**Public Involvement and Participation (PIP):**

*The University encourages public input in all aspects of its storm water management program. In order to facilitate public participation, information related to the storm water management program, including the Storm Water Management Program Plan (SWMPP), is made available on the storm water web site at [www.oseh.umich.edu/stormwater](http://www.oseh.umich.edu/stormwater). 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, Ann Arbor Public Schools and interested local stream and watershed protection organizations are allowed to review and comment on them. A website feedback link will be provided to facilitate feedback on the SWMPP from the community.*

*The overall PIP program accomplishes the following goals:*

- *Provide information to the public on the Storm Water Management Plan and related information.*
- *Provide public access to make them aware of activities the University carries out under its storm water management program by viewing Annual Reports.*

- *Encourage local stream and watershed protection organizations to review and comment on new storm water management program plans.*

The following BMPs are used to meet the requirements of *Part I, Section B.1 of the University of Michigan's NPDES Permit* for Public Involvement and Participation (PIP):

**PIP -1. Storm Water Annual and Semi-Annual Reports**

Measurable Goal: The SWMPP and NPDES annual and semi-annual reports will be made available on the U-M 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 2008 was added to the U-M OSEH storm water website in September 2008.

**PIP -2. Community Meeting Participation**

Measurable Goal: The U-M will attend a minimum of ten (10) meetings annually with the Huron River Watershed Council (HRWC), Washtenaw County Drain Commission, City of Ann Arbor (A2), the Millers Creek Action Team (MCAT) or other local stream protection organizations for collaboration on storm water issues in the community. U-M's participation in meetings, community events, etc. with these groups will be tracked for subsequent reporting.

Actions during the reporting period:

Ten meetings were attended during the reporting period including Miller's Creek Action Team, Mallett's Creek Coordinating Committee, Huron River Watershed Management Plan committee, Middle Huron Initiative, and Low Impact Development.

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

Measurable Goal: The U-M SWMPP (and subsequent revisions) will be provided to the City, County, Ann Arbor Public Schools and other interested parties for review and comment on the same frequency the information is provided to the MDEQ. The SWMPP will be accessible on the U-M website for review and suggestions. Any comments received will be reviewed and evaluated for inclusion in the SWMPP by U-M OSEH. A reply to the comments submitted will be provided documenting the outcome.

Actions during the reporting period:

The revised SWMPP was provided to interested parties above when it was revised. The SWMPP is also available for review on the OSEH website.

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

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

Actions during the reporting period:

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

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

Measurable Goal: The U-M will participate in the 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 U-M will sponsor/offer a semi-annual volunteer opportunity for participants to get involved with storm water improvement and education programs. Examples of opportunities include storm drain stenciling/marketing 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 3 volunteer events were sponsored by OSEH during this reporting period. Volunteer invasive species removal events were held on October 20, 2007; November 3, 2007; and March 29, 2008. Semi-annual events are planned for the 2008-2009 reporting period.

Additional measures taken to achieve goals:

- OSEH staff members continue to create, improve, and revise project/contract specifications for inclusion of Best Management Practices (BMPs) during construction and renovation projects on campus.
- The University of Michigan continues to work with the City of Ann Arbor on improving storm water quality. This is accomplished through sharing information and resources.

### **Illicit Discharge Elimination Program (IDEP)**

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

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

*The overall IDEP program accomplishes the following goals:*

- *Identification and removal of Illicit Discharges on campus.*
- *Encourage reporting of water quality problems and possible illicit connections and discharges.*

The following BMPs are used to meet the requirements of *Part I, Section B.1 of the University of Michigan's NPDES Permit* for the Illicit Discharge Elimination Program (IDEP):

#### **IDEP -1. Dry Weather Screening**

**Measurable Goal:** The U-M will perform dry weather screening on the entire campus over the 5-year permit cycle to determine the existence, location, and extent of possible illicit discharges into the U-M storm water drainage system. 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 annually for subsequent reporting.

##### **Actions during the reporting period:**

Dry weather screening was performed in the Central Campus area for 2007-8. A report of the findings was provided as an attachment to the Semi-annual report (April, 2008). Flow was identified in the following screening manholes: #1(Cook Law Library), #3 (East Quad), #5 (LSA/SAB), #7 (East Hall), #8 (News & Information Services), #11 (West Hall), #14 (MLB) and #20 (BSRB). Further backtracking investigation of these areas to identify potential source(s) of the flow continued through the reporting period. Additional investigation activities will follow in 2008-2009.

#### **IDEP -2. 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 54 calls of outdoor incidents were reported via the DPS/OSEH emergency response system. A majority of these outdoor incidents were remedied (47), while 7 incidents resulted in discharges to surface waters which were reported to the appropriate agencies.

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 U-M football stadium vendors/concession stands to prevent potential discharges into the storm water system. Concession stands were posted with signage detailing procedures for proper grease and wastewater management for these operations during the 2007-2008 football season to reinforce proper waste management for these temporary operations.
- The Department of Occupational Safety and Environmental Health (OSEH) continues to review University owned/managed 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 2007 the University of Michigan participated in a 10-week nationwide collegiate recycling and waste reduction competition in 4 different recycling categories. UM ranked: 8<sup>th</sup> out of 77 with a recycling rate of 43.42%; 59<sup>th</sup> out of 175 with 21.41 lbs recyclables/person; 6<sup>th</sup> out of 66 with 49.31 lbs of trash and recycling per person; and, 6<sup>th</sup> out of 178 with 1,014,196 total lbs. recycling over the 10-week period.

**Post Construction Storm Water Management Program for New Development and Redevelopment Projects (PCSW)**

*The U-M has a program to address storm water runoff from new development and redevelopment projects. As part of this program, the U-M manages, reviews, and continually updates campus-wide planning to address storm water runoff from each new 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.*

*The overall PCSW program accomplishes the following goal:*

- *Provide and implement controls to minimize or prevent impacts on water quality from new development and redevelopment projects.*

The following BMPs are used to meet the requirements of *Part I, Section B.1 of the University of Michigan's NPDES Permit for Post Construction Storm Water (PCSW)*:

**PCSW -1. Formal SESC Plans**

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 to require projects to include storm water management controls in the design of all projects. The SESC plan also required final site stabilization and the maintenance program for permanent SESCOs.

Actions during the reporting period:

Thirteen (13) U-M sites required formal SESCO plans which were reviewed and approved by OSEH-EP3 (Environmental Protection & Permitting Program) during the reporting period.

**PCSW -2. SESCO Plan Review for Permanent Storm Water BMPs**

Measurable Goal: OSEH and the University Planner's Office department will review all construction and renovation plans for use of structural and non-structural BMPs to prevent receiving water quality from the impacts of development and limit the rate at which surface water runoff discharges from any specific site to not exceed the pre-development hydrologic regime. The number of sites implementing various non-structural and structural BMPs will be tracked annually for subsequent reporting. Examples of BMPs to be tracked for reporting may include but are not limited to those identified above.

Actions during the reporting period:

Approximately 13 U-M projects during this reporting period used a variety of BMPs. Examples of BMPs included the use of hydrodynamic separators, in-ground detention systems, storm water basins (detention and retention), bioretention islands, and connection to regional storm water management systems (detention or retention.)

**PCSW -3. Operation & Maintenance of BMPs**

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

Actions during the reporting period:

Annual inspections of the storm water management basins on campus were completed by UM personnel during this reporting period. Assistance in coordination of the work was provided by OSEH to Grounds & Waste Management staff to aid in preparation for current and future annual inspections.

During this reporting period, maintenance dredging was performed on the golf course basin along with improvements to the outlet structure and weir, and creation of a sediment forebay. Maintenance activities and improvements are in process for the storm water management basins at the State Street Commuter Lot, UM Hospital and the North Campus Administrative Complex. Maintenance is also planned to begin on two basins at the Matthaei Botanical Gardens in 2008-2009.

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

Measurable Goal: OSEH and 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 141 plan reviews were performed during this reporting period.

Additional measures taken to achieve goals:

- U-M OSEH is working with the Southeast Michigan Council of Governments (SEMCOG) in the creation of a Low Impact Development (LID) guidance document.
- 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.
- Flood control and soil erosion and sedimentation control projects continue to be researched and implemented. 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 are also under construction at the Ross School of Business and are being considered for other construction/renovation locations on campus. 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.

### **Construction Storm Water Runoff Control (CSW)**

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

*The overall CSW program accomplishes the following goal:*

- *Provide and implement controls to minimize or prevent impacts on water quality from construction activity.*

The following BMPs are used to meet the requirements of *Part I, Section B.1 of the University of Michigan's NPDES Permit for Construction Storm Water (CSW)*:

#### **CSW -1. Formal SESC Plans**

**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 to require projects to insert storm water management controls into the front end of all projects.

##### **Actions during the reporting period:**

Thirteen (13) U-M sites required formal SESC plans which were reviewed and approved by OSEH-EP3 during the reporting period. Four sites were 5 acres or greater in size, and have individually filed a construction NPDES Notice of Coverage.

#### **CSW -2. SESC Plan Review for BMPs**

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

##### **Actions during the reporting period:**

A total of 81 U-M projects during this reporting period used a variety of BMPs on their sites. Examples of BMPs included the use of vegetative buffers, silt fences, catch basin filters, water diversions, and anti-tracking pads.

**CSW -3. SESC Inspections**

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

Actions during the reporting period:

Approximately 1,972 weekly and after storm SESC inspections were performed during this reporting period.

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

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

Actions during the reporting period:

Twelve (12) U-M 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 U-M staff from OSEH University Planner's Office and Construction Management will be certified in Storm Water Management for Construction Sites. The number of U-M staff who have received MDEQ certification will be tracked annually for subsequent reporting.

Actions during the reporting period:

Eighteen (18) U-M staff are Certified Storm Water Operators in the State of Michigan for Construction sites as of this reporting period.

Additional measures taken to achieve goals:

- A street sweeper is in operation at construction sites to reduce the amount of sediment that could potentially reach receiving waters.
- The storm water drainage system is vacuumed semi-annually to remove sediment buildup within the system and to lessen potential sediment impacts to receiving waters.

**Pollution Prevention/Good Housekeeping for University Operations**

*The University's storm water pollution prevention and good housekeeping initiatives are divided into the following six areas:*

- *Structural Controls - permanent physical features that control and prevent storm water pollution. Each structural control has routine scheduled maintenance and long-term inspection procedures to ensure that they remove storm water pollutants to the maximum extent practicable.*

- *Roadways - The University maintains numerous parking structures and surface parking lots throughout the Ann Arbor campus. Maintenance of the U-M roadways and parking structures incorporates sediment control activities. Street sweeping removes potential storm water pollutants before they are carried into receiving waters in runoff from a storm event. Maintenance activities on these structures and surfaces include street sweeping, leaf pick-up, litter and pollution controls, snow and ice removal, and roadside vegetative maintenance.*
  
- *Fleet Maintenance - The U-M owns and operates a large fleet of vehicles, including buses and cars, which is maintained by the Transportation Department. The U-M also owns and operates a fleet of equipment, including lawn mowers and rototillers that is maintained by Plant Building & Grounds Services. All vehicles and equipment are regularly maintained to ensure proper and effective operation as well as prevent impacts on storm water quality.*
  
- *Storm Sewer Labeling - As of March 10, 2004, any outfall structure that the U-M constructs or installs that discharges storm water to waters of the State will include permanent identification (e.g. label, color coding, or other identifying characteristic).*

*The storm drains placed on campus come with the message "Dump No Waste - Drains to Waterways" engraved on it. Storm drain grates already in place have 4 inch plastic circle curb markers with the message "Keep our Michigan Waters Blue: Dump No Waste - Flows to River."*

- *Flood Control Projects - As construction, renovation or utility improvement projects are undertaken, the buildings identified as candidates for improvements are reviewed for potential flood control projects. Modeling is performed prior to new construction projects in areas identified with flooding issues or concerns to ensure opportunities to alleviate or prevent new flooding issues are appropriately addressed.*

*Whenever the U-M conducts new flood management projects, the impacts on water quality of the receiving water are taken into consideration. As appropriate, new flood management project include a storm water modeling component to understand the potential impacts to regional detention needs prior to decision-making on design.*

*In addition, as appropriate, the U-M incorporates flood management considerations into its existing projects to assess the potential for incorporation of additional water quality protection opportunities, as well as regional detention opportunities.*

- *Pesticides and Fertilizers* - The application of pesticides and fertilizers is controlled by several departments including Plant Building & Grounds Services, Athletics, Matthaei Botanical Gardens, Radrick Farms and Nichols Arboretum, depending on the location. The University employs Integrated Pest Management (IPM) methodology, an ecological approach to pest management, in University buildings. All available techniques are used to reduce pest populations to acceptable levels while minimizing the potential impact of pesticides upon humans and the environment.

*Each area has operation and maintenance BMPs with the ultimate goal of reducing and in some cases preventing pollutant runoff from University operations to the maximum extent practicable.*

*The overall P2/GH program accomplishes the following goal:*

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

The following BMPs are used to meet the requirements of *Part I, Section B.1 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 U-M 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. Assistance in coordination of the work was provided by OSEH to Grounds & Waste Management staff to aid in preparation for current and future annual inspections.

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

Measurable Goal: Maintenance cleaning of the catch basins and storm sewer system piping will be performed semi-annually. The number of catch basins maintained will be tracked for subsequent reporting.

Actions during the reporting period:

Storm sewer cleaning activities occur on a semi-annual basis. Maintenance cleaning was performed on approximately 1,600 catch basins/manholes during this reporting period. Catch basins across the 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, the University of Michigan 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.

**P2/GH -3. Street Sweeping, Leaf, and Litter Collection**

Measurable Goal: Street sweeping, leaf and litter collection will be performed continually 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 Ann Arbor campus will be tracked annually for subsequent reporting.

Actions during the reporting period:

An estimated 1,440 cubic yards of waste was sent for disposal from cleaning of parking lots and structures throughout campus. Street sweeping operations disposed of approximately 305 tons of waste. Litter pickup and disposal yielded an estimated 615 cubic yards of waste.

**P2/GH -4. 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 2,600 tons per year from 1989 to 1999. The quantity of salt used for deicing will be tracked on an annual basis.

Actions during the reporting period:

Approximately 2,693 tons of salt was used during this reporting period which is an increase of 3.5% from the average annual use amount of 2,600 tons per year from 1989 to 1999. This increase can be attributed to record snowfall this season at over 85” of snow versus our normal of 52.9” of snow. In 2 separate articles in the Ann Arbor News during the month of March, they reported this winter as the snowiest on record (since 1880).

**P2/GH -5. Snow and Ice Removal – Use of Alternative De-icers**

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 2007-8 season, the following alternative de-icers were used:

- Magnesium Chloride at 388,800 pounds;
- Calcium Chloride at 6,300 pounds
- Caliber M-1000 at 18,069 gallons
- Treated Sand at 198 tons

**P2/GH -6. Pesticide and Fertilizer Technician Training**

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

Actions during the reporting period:

The U-M currently employs approximately 67 certified technicians.

**P2/GH -7. Roadside Vegetative Replacement**

Measurable Goal: Eliminate the need for vegetative replacement due to salt damage. Annual tracking of the need for replacement vegetation will 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. Less than \$10,000 in turf/plant replacement was done during this reporting period is estimated to be spent due to salt damage.

**P2/GH -8. Storm Sewer Labeling**

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

Actions during the reporting period:

Approximately 100 storm drain markers were installed during the reporting period on catch basins throughout campus. Special attention is given to areas near the annual Art Fair, the Football Stadium and associated parking, as well as higher use walkways.

**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 BMPs identified and implemented at the University is to reduce the discharge of sediment and associated pollutants to the receiving waters. The control program begins in the project design phase, by providing guidelines for storm water management and soil erosion and sedimentation control on campus and continues through the construction phase of the many projects on

campus. The BMPs below have been implemented at the University. Probable impacts to water quality from these BMPs are taken from the MDEQ's *Index of BMPs/Individual BMPs*.

- Catch Basins / Cleanout Procedures – reasonably effective in protecting sewers from receiving loads of coarse solids.
- Oil/Grit Separators – remove coarse sediment and oils from storm water prior to delivery to a storm drain network, the ground, or other treatment.
- Salt Reduction – reduced application rates of salt may result in an improvement of surface water quality by reducing chloride and sodium concentrations. Reductions in salt application will also help protect ground water supplies used for drinking water. Other benefits that may occur by reducing salt application rates and encouraging proper salt storage include reducing density stratification in ponds and lakes; reducing corrosion of vehicles and bridges; reducing damage to roadside vegetation; and reducing the deterioration of soil structure.
- Storm Water Management Basins – Although the primary function of these basins is to provide first-flush holding capacity for storm water, the design also provides for sediment deposition within the basin structure which can significantly reduce fine sediment and the pollutants (e.g., phosphorus) associated with them. Detention basins can be effective at removing sediment, non-soluble metals, organic matter and nutrients through settling. Up to 90% of particulates may be removed if the storm water is held for 24 hours or more. Sediment basins can be very effective in preventing sedimentation of downstream areas. Coarse and medium size particles and associated pollutants will settle out in the basin. Suspended solids, attached nutrients, and absorbed non-persistent pesticides may break down before proceeding downstream. Because sediment basins also retain water, they may increase recharge to ground water.
- Street Sweeping – can remove 50-90% of street pollutants that potentially can enter surface water through storm sewers. Street sweepers will also make road surfaces less slippery in light rains, improve aesthetics by removing litter, and control pollutants which can be captured by the equipment.
- Illicit Discharges – minimal adverse impacts to water quality are anticipated from the currently identified illicit discharges. Priority is given to correction of illicit discharges containing constituents of concern to the Huron River. Water quality is improved as illicit discharges continue to be identified and corrected as a result of the dry weather screening program.
- Spills – minimal adverse impacts to water quality are anticipated, as a majority of outdoor spills (47) were contained and removed from the storm water system using OSEH's 24-hour emergency response team. Seven reportable events occurred during this reporting period. Discharges included sediment (2), wash water, grout, pool water, diesel fuel and hydraulic oil. A portion of the reportable spilled material was cleaned up by OSEH'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.***

The following information was compiled from the Huron River Watershed Council:

The Huron River is considered the cleanest urban river in Michigan. The river is used for recreation, drinking water and power generation by roughly ½ million residents of the watershed, and the watershed contains two-thirds of southeast Michigan's public recreational lands. More than 37 miles of the river and three tributaries have been designated Country Scenic River by the Department of Natural Resources under the State's Natural Rivers Act, the only such designation for a river in southeast Michigan.

However, the stretch of the Huron River known as 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 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. As of the September 2004, the stakeholder representatives were soliciting formal support for the plan from their respective communities and organizations,

in preparation for submitting the plan to the MDEQ. This plan will serve as an example for E. coli TMDLs across the country since few, if any, have been completed in other areas.

Ecological conditions of the Huron River have been compiled from 1999 to 2008 by Adopt-A-Stream groups, coordinated by the Huron River Watershed Council. Ecological Condition is determined by the biological and physical conditions of the site. The biological conditions include the diversity of insect families, EPT families and sensitive families. The physical conditions are determined by conductivity results and "measuring and mapping" assessments of habitat. These assessments involve examining characteristics such as the stream banks, stream widths and depths, and the types of material (such as sand and gravel) on the stream bottom. When interpreting the biological and physical conditions, more diversity is expected at a larger site or one with cooler summer stream temperatures. The Huron River watershed as a whole is comprised of predominantly "fair" to "good" conditions with 3 areas receiving "excellent" condition rankings. Urban areas and downstream sites in the watershed are more likely to show a "poor" condition ranking.

The Huron River Watershed Council recently reviewed the data from 1999 to 2008 and concluded that the quality of the Huron River (and its tributaries) has not substantially changed during over the past decade. The ecological condition decreased at 4 sites; improved at 5 sites; and 48 sites remained stable. The river's ecological condition appears stable, but conditions could be improved.

#### ***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

- Continue to update the OSEH web page.
- Distribute storm water brochures to members of the campus community and new employees.
- Install additional storm water curb markers, with the dump no waste, flows to river slogan.

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- 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.

Public Involvement/Participation

- Continue to work with the Millers Creek Action Team.
- 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 annual and semi-annual NPDES reports on the U-M OSEH website to heighten community awareness of storm water management activities on campus.

Illicit Discharge Elimination Program

- Continue dry weather field screening of the entire campus within the permit cycle to locate 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.
- Continue to perform post construction site closure, per the DEQ construction site storm water operator guide.
- 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 BMP usage. Opportunities for enhancement of the basins will be reviewed and prioritized.

Construction Storm Water Runoff Control

- Continue construction site storm water protection BMPs.
- Training of key personnel to maintain certification as construction site storm water operators.
- Training of key personnel to maintain certification as soil erosion and sedimentation control operators.
- Continue OSEH review of site plans. Continue to make recommendations to improve runoff water quality in and around construction projects.

Pollution Prevention/Good Housekeeping for University Operations

- Continued cleaning of storm water inlets, lines, and detention basins on a regular basis.
- Continue salt use reduction and alternative product usage to improve storm water runoff quality.
- Continue to implement BMPs to improve storm water discharge quality.
- Continue to update Plant Employee training to reinforce good housekeeping procedures and proper waste management.
- Continue to have pesticide and fertilizer applicators on campus trained and certified in appropriate application amounts and techniques.

**6. *BMP Changes –***

***Describe any planned changes in identified BMPs 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).***

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No revisions/additions at this time, as the U-M outfalls are being reviewed to determine if updates are needed for the NPDES permit application/renewal estimated for submission to the MDEQ in October 2008.

**9. *Revised Fiscal Analysis –***

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

No revisions are proposed at this time.

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**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.

<b>ACTIVITY</b>	<b>2007-2008 U-M LABOR AND MATERIALS<sup>1</sup></b>	<b>2007-2008 CONTRACTOR COST OR DIRECT PAYMENTS</b>	<b>2008-2009 BUDGET ESTIMATE</b>
Permit administration	\$105,600		\$105,600
Storm and sanitary repair	\$308,195		\$304,100
Construction site soil erosion control	\$257,550		\$150,000
Storm water management basin construction & maintenance	\$392,837		\$492,100
Storm water education program		\$500	\$500
Catch basin maintenance and cleaning program	\$65,775		\$64,900
Street sweeping program	\$90,757	\$14,250	\$91,600
Waste Management-Litter collection & disposal	\$821,231	\$11,875	\$837,700
Parking structure and lot cleaning program	\$1,209,041	\$206,318	\$1,539,000
Storm water utility charges paid to Ann Arbor		\$351,300	\$368,900
OSEH spill response activity		Footnote 2	
Plant Extension Division		Footnote 2	
<b>TOTALS</b>	<b>\$3,250,986</b>	<b>\$584,243</b>	<b>\$3,954,400</b>

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