

STORMWATER MANAGEMENT PROGRAM PLAN OAKLAND COMMUNITY COLLEGE

Auburn Hills Campus
Bee Administrative Center (District Office)
Highland Lakes Campus
Orchard Ridge Campus
Southfield Campus

NPDES PERMIT #TBD
NPDES CERTIFICATE OF COVERAGE #TBD
Oakland Comm Coll MS4-Oakland
Reference ACO-SW11-006

PREPARED BY:
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1. INTRODUCTION AND GENERAL REQUIREMENTS

This Storm Water Management Program Plan (SWMP) is prepared in compliance with the Michigan National Pollutant Discharge Elimination System (NPDES) Storm Water Certificate of Coverage (COC) Number MIS040097 for coverage under General Permit Number jMIS049000, issued by the Michigan Department of Environmental Quality (MDEQ) to Oakland Community College (OCC), effective October 27, 2009 (see Appendix A for a copy of the Permit).

In accordance with conditions in Part I.A.3 of the Permit, OCC is required to submit a SWMP to the MDEQ on or before September 1, 2010 as specified in the COC. The SWMP will address the following:

- Total Maximum Daily Loads
- A public education and outreach program on storm water impacts
- Public involvement and participation
- An illicit discharge elimination program
- A post-construction storm water management program for new development and redevelopment projects
- Construction storm water runoff control
- Pollution prevention and good housekeeping practices

1.1. Contact Person

The following individual is the contact person for OCC regarding this Permit:

Michael Schmidt
Manager of Environmental Health and Safety
Oakland Community College
17 S. Saginaw
Pontiac, MI 48342
Phone: 248-232-4633
Fax: 248-232-4654
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1.2. Discharge Points/Receiving Waters

The permit issued to OCC authorizes the discharge of storm water listed in *Part I, Section A.1* of the permit to waters of the State from all existing outfalls associated with OCC's storm water drainage system. Any new outfalls will be installed and operated in accordance with the requirements of *Part I, Section A.2*.

OCC has identified outfalls from its storm water drainage system in Appendix B. The outfalls indicated discharge either directly into surface waters of the State, to drainage systems operated by the city in which the campus or facility is located, or to drainage systems operated by the Michigan Department of Transportation (MDOT). Storm water outfalls from OCC campuses and facilities discharge directly or indirectly to the following water bodies:

- Clinton River
- Rouge River
- Tributaries of the Rouge River
- Union Lake
- Minnow Drain

Appendix B identifies the outfall identification number, location of discharge and the name of the receiving water for each campus or facility. If any changes should be identified for this list, the changes will be provided to the DNRE.

1.3. Administrative Requirements of Permit

1.3.1. Legal Authority

OCC's campuses and facilities are served by separate and/or municipal stormwater systems to manage stormwater runoff. In addition, OCC conducts many operations that could impact the quality of stormwater runoff from its facilities.

OCC has been granted by the State of Michigan the authority to implement and enforce rules governing the management and operation of college property. This authority is exercised through the OCC Board of Trustees (the Board). Pursuant to the provisions of the Community College Act No. 331 of the Public Acts of 1966, the Board of Trustees has the authority to promulgate rules for the proper establishment, maintenance, management and administration of the community college. In addition, the Board must adopt bylaws, rules and regulations for its own government, and for the control and government of the College District.

OCC Board of Trustees Policy 0.0.6. *Safe Work Environment* states:

In accordance with ACT 26 of the Public Acts of 1970, Oakland Community College Board of Trustees adopts a policy prohibiting ALL PERSONS from engaging or participating in unlawful, uncivilized, unsafe, or unacceptable behavior while in

buildings or on grounds owned and/or controlled by Oakland Community College.

All persons shall be prohibited from acts endangering students, staff, faculty and the public. These acts shall include but not be limited to: disruption, physical abuse, theft, unauthorized entry, obscene or disorderly conduct, illegal use and/or possession of alcohol, drugs, or other contraband, failure to comply with college policy or public safety, obstruction of traffic, illegal use of or possession of firearms, explosives or other weapons, etc. The Board of Trustees directs the college administration to formulate appropriate rules and regulations to enact this policy and to ensure Oakland Community College students, staff, faculty and visitors that Oakland Community College places a high value on a safe and healthy environment.

This policy provides the authority to promulgate rules and procedures associated with storm water management, and to ensure that there is an appropriate response where deficiencies are discovered.

1.3.1.1. Application of Authority under State Constitution

Article VIII, Section 7, of the Michigan Constitution of 1963, states that the legislature shall provide by law for the establishment of public community colleges which shall be supervised and controlled by locally elected boards. Through amendments of Act 188 of the Public Acts of 1955, the legislature provided for the establishment of community colleges. On June 8, 1964, the voters approved the establishment of Oakland Community College and selected the Board of Trustees.

1.3.1.2. Control through Ordinance

Compliance with stormwater-related and other environmental regulations, and internal OCC policies, is the responsibility of all OCC employees. The OCC Environmental Health and Safety Department (EHS) is responsible for assisting the college community in these matters. The EHS Department provides specific compliance guidelines based on regulations and best management practices through the development of programs and procedures. These programs and procedures describe the college's obligations and expectations of employee performance. All programs and procedures are reviewed by the Chancellor's Cabinet and other affected committees prior to approval and implementation. As such, violation of the requirements and procedures described in the applicable programs and procedures bears the effect of internal regulation by the college, with said violations being enforceable and correctable through interdepartmental and administrative channels.

Financial resources for stormwater system maintenance and corrective action are budgeted by the Physical Facilities Department for each campus or facility. If budgeted funds should be inadequate for necessary services, additional funding will be allocated from general funds available through the Vice Chancellor of Administrative Services office.

The EHS Department will be responsible for monitoring permit compliance for OCC campuses and facilities.

1.3.1.3. Compliance and Surveillance

OCC has developed and implemented programs to provide instructions to employees and contractors on how to meet the college's obligations under applicable regulations. The following employees have the authority to inspect, monitor, and conduct surveillance of OCC operations on property owned or controlled by OCC to ensure compliance with permit conditions:

- Manager of Environmental Health and Safety – College Wide
- Director of Physical Facilities – College Wide
- Chief Engineer – Campus
- Superintendent – Campus

1.3.2. Storm Water Management Program Resources

The storm sewer systems at OCC campuses and facilities are managed by the Physical Facilities Department. Physical Facilities is responsible for maintenance, repair, and operational issues associated with the system and permit compliance.

The Environmental Health and Safety (EHS) Department is responsible for assisting the college community with permit compliance and other regulatory issues affecting storm water management. In addition, the EHS Department is responsible for management of the SWMPP and updates. The EHS Department is a division of the OCC Department of Public Safety (DPS).

Financial resources will be drawn from campus or college wide facility management budgets, or both.

Releases of potentially polluting materials will be dealt with by campus Physical Facilities Department personnel and outside contractors, as necessary. OCC maintains a contractual arrangement for spill response and remediation services with Marine Pollution Control and U.S. Industrial Technologies. These firms will assist primarily with larger spills or releases.

1.3.3. Contact Person

1.3.3.1. Storm Water Program Manager

Michael Schmidt
Manager of Environmental Health and Safety
17 S. Saginaw
Pontiac, MI 48342
Phone: 248-232-4633
Fax: 248-232-4654
maschmid@oaklandcc.edu

1.3.3.2. Campus Contacts

The campus Superintendents are responsible for the maintenance of the storm sewer systems at

each campus and will assist the Storm Water Program Manager in maintaining compliance with the permit.

- Auburn Hills Campus
Frank Zechmeister
Chief Engineer
2900 Featherstone Rd.
Auburn Hills, MI 48326
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Bee Administrative Center (District Office)
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1.3.4. Storm Water Management Program Modification

Any modifications required for this Storm Water Management Program, once approved by the Southeast Michigan District Supervisor, will be made following the requirements of *Part I, Section B.4 of the Permit*. Modification will be made in the following ways:

1. The addition of (but not subtracting or replacing) components, controls, or requirements to the approved storm water management program may be made at any time upon written notification to the Southeast Michigan District Supervisor. Such notification will contain

a description of the modification.

2. The replacement of ineffective or unfeasible BMPs specifically identified in the Storm Water Management Program with an alternative BMP may be requested at any time by written notification to the Department. Unless denied by the Department, the modification shall be deemed approved and may be implemented by the college 60 days from submittal of the request. Such requests will include the following:
 - a. An analysis of why the BMPs are ineffective or unfeasible (including cost prohibitive),
 - b. Expectations on the effectiveness of the replacement BMPs, and
 - c. An analysis of why the replacement BMPs are expected to achieve the goals of the BMPs to be replaced.

In addition, per the requirements of *Part I, Section B.4.b*, the DNRE may require OCC to modify the Storm Water Management Program to:

1. Address contributions by the drainage system discharges which impair receiving water quality,
2. Include more stringent requirements necessary to comply with new state or federal statutory or regulatory requirements, or
3. Include such other conditions deemed necessary by the Department to comply with the goals and requirements of the Federal Act or the Michigan Act, including the requirement to reduce the discharge of pollutants from the MS4 to the maximum extent practicable.

1.4. Assessment of Storm Water Management Program Effectiveness

The compliance status information will be compiled and presented in the Progress Reports, as required by Part I, Section B.1.b.1 of the Permit.

1.5. Reporting Requirements

The reporting requirements under this Permit are described in *Part I, Section B*, and are divided into two distinct types of reports:

1. Progress Report
2. Phase I Annual Report

The subsections below describe the reporting details for each.

1.5.1. Progress Report

The progress reports must be submitted to the Department twice during the permit period: on or before September 1, 2011 & September 1, 2013 per the Certificate of Coverage (COC). Each

report is required to describe the status of compliance with the standard permit requirements in Part I.A. of the permit, and will contain the following elements:

- **Compliance Assessment:** The report must include descriptions of the progress made towards achieving the identified measurable goals for each of the BMPs, and specific evaluation criteria for the PEP, IDEP and TSS reduction.
- **PEP:** provide a summary of the evaluation of the PEP's overall effectiveness, using the evaluation methods prescribed in the PEP.
- **IDEP:** evaluate the progress made toward the measurable goals; provide documentation of the actions taken to eliminate illicit discharges. For identified illicit discharges, summarize the total estimated volume & pollutant loading eliminated for the main pollutant(s) of concern, and the location(s) of the discharge(s) into both the permittee's MS4 and the receiving water.
- **Assess TSS reduction** in accordance with Part I.A.10.c.2 of this permit. Include descriptions of the current level of control related to TSS discharges from paved surfaces and estimate the load reduction from existing controls. In the second report, identify needs to achieve the goal of 25% TSS load reduction.
- **Water Quality Assessment:** An updated assessment of the water quality conditions within its jurisdiction. Show any obvious changes in the receiving waters since the previous progress report.
- **Water Quality Stress Update:** Describe any water quality stresses identified since the previous progress report.
- **Discharge Point Location:** Provide updated information, in accordance with Part I.A.2.a of this permit that was not previously submitted for newly identified, constructed, or installed MS4 discharge points. Provide an update on areas added to or removed from the MS4.
- **Data and Results:** Provide a summary of all of the information collected and analyzed, including monitoring data, if any, during the reporting cycle.
- **Upcoming Activities:** The first year report must include a summary of the storm water activities to be implemented during the next annual reporting cycle.
- **BMP:** Describe any planned changes in identified BMPs or measurable goals for any of the standard permit requirements.
- **Notice of Changes in Nested Jurisdiction Agreements or Reliance on Permitted MS4 Operators:** Identify any nested jurisdictions that enter into or terminate permit agreements with the permittee which were not identified in the SWMPP. Describe any changes in the need to rely on other permitted MS4 operators to satisfy the terms and conditions of this permit, as described in Part I.B.1.a.7.

1.5.2. Submittals

Copies of the Phase I Annual Report, Progress Reports, SWMPP, outfall additions, Permit modifications, or other requests will be submitted to the Southeast Michigan District

Supervisor of the Water Bureau at:

Michigan Department of Natural Resources and Environment
Southeast District Office
27700 Donald Ct.
Warren, MI 48092-2793
Phone: 586-753-3700
Fax: 586-751-4690

1.5.3. Retention of Records

The latest version of the SWMP plan developed in accordance with this permit will be retained by the EHS Department and will be made available for inspection in accordance with Part II.D.9. of this permit. All records and information resulting from the preparation of previous SWMP plans or the progress reports, including all records of analyses performed, calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation, and recordings from continuous monitoring instrumentation, will be retained for a minimum of three years or as described in Part II.B.5. of this permit.

1.6. Notification Requirements

In accordance with *Part I, Section B.2 of the Permit*, OCC will make notification to the Southeast Michigan District Supervisor of the Water Bureau under the following circumstances:

1.6.1. Discharges which may Endanger Public Health or the Environment

OCC will verbally notify the Department within 24 hours of becoming aware of any discharges to or from the MS4 that the college suspects may endanger public health or the environment. After regular working hours, the PEAS line will be called at 1-800-292-4706. The notification will include the following information:

- Name of the person responsible for the discharge (if known),
- Location of the discharge,
- Location where the MS4 discharges to the surface waters of the state,
- Nature of the discharge,
- Pollutants,
- Clean-up and recovery measures taken or planned.

1.6.2. Non-Compliance Notification

Per Part II.C.5. of the permit, any non-compliance will be reported to the Southeast Michigan District Supervisor of the Water Bureau as follows:

- 24-Hour Reporting – Any noncompliance which may endanger health or the environment

(including maximum daily concentration discharge limitation exceedances) shall be reported, verbally, within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission shall also be provided within five (5) days.

- Other Reporting – The permittee shall report, in writing, all other instances of noncompliance not described above, at the time monitoring reports are submitted; or, in the case of self-monitoring, within five (5) days from the time the permittee becomes aware of the noncompliance.

The written documentation will include the following information:

- A description of the circumstances, including the type of noncompliance, and description of the discharge (if applicable), and
- The period of noncompliance (if known), including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

1.6.3. Additional Notification and Authorization Requirements

In addition to the *Part I, Section A.11.* notification requirements, the permit requires the following notifications and authorizations:

- Tracer Dye Discharges: Per the requirements of *Part I, Section A.11.a*, OCC must receive authorization from DNRE for the discharge of tracer dyes.
- Water Treatment Additives: Per the requirements of *Part I, Section A.11.b*, OCC must receive authorization from DNRE for the discharge of any water additives.
- Identification of Additional Point Source Discharges of Storm Water: Per the requirements of *Part I, Section A.2* if any additional points are identified in the system that are not listed in Table 1-1, OCC will submit an updated map clearly showing the location of the discharge point, unique identification code or number, the latitude and longitude of the discharge point, and the receiving waters of the state to the Chief of the Permit Section, Water Bureau, Michigan Department of Environmental Quality, P.O. Box 30273, Lansing, MI 48909-7773.
- Expiration and Reissuance: Per the requirements of *Part I, Section B.5*, if OCC wishes to continue a discharge authorized under the permit beyond the permit's expiration date, OCC will submit a written request to the Southeast Michigan District Supervisor of the Water Bureau on or before October 4, 2012.

1.7. Management Requirements

OCC has incorporated the general management requirements specified in *Part II, Section D of the Permit* into the appropriate parts of this SWMPP. The management requirements include:

- A duty to comply,

- Proper operation and maintenance of the system,
- Provide containment facilities,
- Recording of results, reporting of additional results,
- Minimizing adverse impacts, and
- Proper handling and disposal of removed substances.

2. TOTAL MAXIMUM DAILY LOADS (TMDL)

In accordance with *Part I, Section A.4 of the Permit*, the following TMDLs have been identified:

<u>Name of TMDL</u>	<u>Pollutant of Concern</u>
Rouge River	Sedimentation/Siltation, Flow (Biota)
Rouge River	<i>E. coli</i>

OCC will participate in TMDL reduction efforts for each of the pollutants of concern indicated. Measurable goals associated with these reduction efforts are as follows:

Measurable Goal: *Identify outfalls classified as major discharge points (≥ 36 -inches at widest cross-section). The list will be created by June 30, 2011, and will be maintained by the EHS Department, with on-going updates provided by the Physical Facilities Department, as necessary.*

Measureable Goal: *Samples will be collected from at least 50% of the identified major discharge points by **October 27, 2012**. These samples will be analyzed for the TMDL pollutants of concern indicated above. The sampling results will be reported on the second progress report.*

Measureable Goal: *A review of the above-referenced sampling results will be conducted by September 1, 2013, and a plan developed to reduce the discharge of the above-referenced pollutants of concern. The plan will be implemented during the permit cycle and will be reported in the second progress report.*

3. PUBLIC EDUCATION PROGRAM (PEP)

The OCC Public Education Program (PEP) has been developed as a tool to make the general public and college community more aware of how their activities can impact the quality of storm water that ultimately enters the waters of the state. Elements of the program include:

- Hazards associated with illicit discharges
- Water bodies potentially impacted by improper actions
- Waste management

- Proper pesticide, herbicide, and fertilizer application
- Preferred vehicle cleaning agents and procedures
- Riparian land management
- Use of native versus non-native vegetation

The PEP will utilize a number of media to share information with the public, including printed materials and a dedicated website. Additional media may be utilized in an effort to increase the size of the audience or effectiveness of the message, as needed.

The effectiveness of the PEP will be determined annually by the following:

1. Collecting a running tally of the number of people accessing the OCC storm water web page
2. Reducing the incidence of improper vehicle maintenance
3. Reducing the incidence of improper pesticide, herbicide, and fertilizer application
4. Reducing the number of illicit connections and discharges, if any are discovered
5. Determining whether there has been a measurable reduction in the levels of pollutants

3.1. Printed Materials

The EHS Department will work with the Graphic Services Department to develop posters and brochures highlighting the elements of the PEP, how it affects those using and working at the college facilities, and how the individuals can help keep the state's waterways clean.

Printed materials will focus on the PEP as a whole, as well as individual or related topics. In addition, each will target different demographic groups including (but not limited to):

- Maintenance / Buildings and Grounds employees
- General employees
- Students
- Contractors
- Visitors

Measurable Goal: Create posters and brochures highlighting PEP elements and distribute to campuses by September 1, 2011. The materials will be evaluated periodically and updated as necessary to improve their effectiveness and to ensure that they reach the target audiences.

3.2. Web Sites

The EHS Department will work with the OCC IT Department to develop a storm water web site targeting the general public, students, and employees. The web site will provide information

including:

- The purpose and function of storm water systems
- OCC's efforts to minimize pollution entering these systems
- How individuals can help keep rivers and other bodies of water clean

Measurable Goal: *The number of hits to the OCC storm water website will be recorded annually. The number of hits will be evaluated annually beginning after September 1, 2011, to assess whether the site is reaching the target audience.*

3.3. Employee Education

The EHS Department will work with the OCC Professional Development and Training Center (PDTC) to develop, distribute, and monitor an employee training program addressing storm water management at the college. Elements of the training session will include (among other things):

- Campus storm water system design and function
- Regulatory obligations and compliance strategies
- Potential adverse impacts to storm water runoff due to college operations and activities
- Requirements prohibiting employees from contributing to storm water pollution
- How to avoid contaminating storm water runoff, including spill prevention and response

Training requirements will vary depending upon job duties. A separate program will be developed to address storm water issues affecting Maintenance and Buildings and Grounds employees; with another being developed for the general college community who has only limited potential impact on the storm water system. Programs will be classroom, on-line, or both, depending upon the target audience.

Training sessions will be scheduled at each campus for each target audience. Participation will be mandatory during the first year of the program. Refresher courses will be administered at intervals that will depend on the target group's compliance record and understanding of the topic. New employees will be required to participate in the appropriate training session based upon their job assignments as determined by the Manager of Environmental Health and Safety. All training records will be maintained by the PDTC.

Measurable Goal: *A minimum of two (2) classroom storm water training sessions will be conducted at each affected campus by September 1, 2011. Participation by affected personnel will be mandatory. Records of initial training will be maintained by the PDTC and included in subsequent reporting.*

Measurable Goal: *All affected employees will be required to take on-line refresher training every three years, or more frequently if there is evidence of non-compliance, or there are*

significant changes in the overall SWMP, or as determined by the EHS Department. Records of employee training will be maintained by the PDTC and included in subsequent reporting.

4. PUBLIC INVOLVEMENT AND PARTICIPATION

Public participation and input is an important element to storm water management. The primary conduit for informing the general public and college community of storm water management activities at the college is the storm water web site. This site will be a central location for providing information on planning and projects at the college, and will be a means for concerned parties to contact the college.

Local watershed and community groups will be encouraged to work with the college to help ensure more effective management of storm water and meeting the TMDL goals through combined effort. **These groups will include the Oakland County Drain Commission and the Friends of the Rouge, as well as the Oakland County Water Resource Commissioner.**

Measurable Goal: *The SWMP and subsequent reports will be posted to the OCC storm water website. This website is available to the general public. The date of incorporation into the website will be documented for subsequent reporting.*

Measurable Goal: *The cities within which the affected campuses reside, as well as Oakland County, will be notified of the availability of the OCC SWMP and associated reports on the OCC storm water website. Review and comment will be solicited of interested parties and their input incorporated into the SWMP reviews and update process. All comments and suggestions received will be documented and maintained on file by the EHS Department.*

5. ILLICIT DISCHARGE ELIMINATION PROGRAM

Illicit discharges are to be considered any discharge to the storm sewer system other than that resulting from normal precipitation or specifically permitted activities. Illicit discharges of any kind are not allowed at Oakland Community College. Illicit connections are to be considered any permanent or temporary conveyance that directs anything other than normal precipitation run-off or specific materials resulting from permitted activities. All illicit connections and discharges are prohibited at Oakland Community College campuses and facilities, and will be eliminated as soon as possible after discovery.

It is the responsibility to the Manager of Environmental Health and Safety and the campus Superintendent to investigate potential illicit connections or discharges. It is the responsibility of the campus Superintendent to eliminate any illicit connections or discharges discovered.

5.1. Storm Sewer Map

A storm sewer system map has been prepared for each affected campus or facility as required in Part I.A.7.b.1 of the Permit. Discharge points are identified as well as receiving surface waters.

Measurable Goal: *The list of discharge points will be maintained by the EHS Department based on input from the Physical Facilities Department to take into account new construction and renovations. The dates of modification of the list will be documented and kept on file.*

5.2. Survey of Facility Discharge Points into the System

A survey will be conducted to identify all discharge points into the storm sewer system. This survey will be used to help monitor potential illicit discharges.

Measurable Goal: *A survey of all inlets to the storm sewer system will be conducted and a list generated and maintained by the EHS Department based on information provided by the Physical Facilities Department. This list will be developed by September 1, 2011.*

5.3. Dry Weather Screening

Dry weather screening will be conducted at each affected campus or facility in accordance with Part I, Section A.7.b. of the Permit. Dry weather screening will be used to help identify potential illicit discharges or connections. Designated stormwater outfalls will be inspected for evidence of illicit discharges or connections at least every 5-years. Evidence collected will include:

- Water clarity
- Color
- Odor
- Presence of suds
- Oil sheen
- Sewage
- Floatable materials
- Bacterial sheens
- Algae
- Slimes
- Staining of banks/conduits
- Unusual or impacted vegetation

Dry weather screening of outfalls will be prioritized based on the following criteria:

1. Evidence of on-going flow
2. Size of conduit (larger have higher priority)
3. History of illicit discharges

Thus outfalls where there is known dry weather flow will be screened first, followed by the other outfalls scheduled based upon the size of conduit, and then those outfalls with a history of illicit discharges.

If the source of an illicit connection cannot be ascertained by inspecting the upstream portions of the system, then testing may be conducted. This testing may include dye or smoke testing. All required notifications and authorizations will be completed prior to commencement of such testing.

Upon discovery, dry weather flows will be sampled and analyzed for:

- pH
- Ammonia
- Surfactants
- Temperature

The ultimate goal of the IDEP is to eliminate all illicit connections and discharges from the college's storm sewer system, thus the effectiveness of the IDEP will be determined based upon the elimination of illicit connections that are discovered through the inspection process, or by maintaining the situation where there are no illicit discharges.

Measurable Goal: Each discharge point will be evaluated at least once every 5-years beginning February 1, 2011, to determine whether there are potential illicit connections or discharges into the storm sewer system. Any issues will be documented and further investigation conducted until the existence of the illicit connection or discharge can be confirmed or refuted. Any illicit connections or discharges will be corrected. The number of illicit connections or discharges will be recorded and maintained on file for subsequent reporting.

5.4. Public Reporting of Illicit Discharges

In conjunction with the PEP activities previously described, the general public and college community will be encouraged to help the college in its efforts to prevent the pollution of storm water runoff by reporting any possible illicit discharges observed. Any information provided by the general public or college community regarding illicit discharges or connections will be investigated and remedial action taken, if necessary.

Reporting can be done via the OCC storm water web site, or by contacting the Department of Public Safety by dialing 911 for emergencies, or 248-858-4911 for non-emergencies. The latter number routes the caller through the Oakland County Sheriff's Department dispatcher, ensuring that additional emergency resources will be available should the need arise. In addition, the EHS Department can be contacted directly by dialing 248-232-4633. The Department of Public Safety will contact the EHS Department immediately in the event of notification of a potential release of polluting materials to the storm sewer system or surrounding waterways.

Measurable Goal: *The nature and number of calls received by the DPS or EHS Department will be documented, as well as subsequent investigation findings and remedial action, if necessary. This information will be kept on file for subsequent reporting.*

5.5. Follow-Up Corrective Action

If there is evidence of a potential illicit discharge or connection and the source can be identified, the discharge will be discontinued and the connection removed. A corrective action plan for removal of illicit connections will be developed with input from the Manager of Environmental Health and Safety, campus Superintendent, and campus Chief Engineer. If necessary, the Director of Physical Facilities will be consulted to expedite the corrective action plan. A timetable for removal of the illicit connection will be determined on a case by case basis, based upon the nature of the connection.

If there is evidence of a potential illicit discharge or connection and the source cannot be identified, additional stormwater sewer testing may be conducted to help ascertain the source. Outside contractors may be used in the investigation to conduct the chosen testing. Test methods to be used may include one or more of the following:

- Chemical/biological indicator sampling
- Dye testing
- Smoke testing
- Documented visual observations
- Physical indicators
- Drainage area investigations

If testing reveals the source of the illicit discharge or connection, then a corrective action plan will be developed to correct the situation as described above. If the source still cannot be determined, then the outfall and associated stormsewer system will continue to be monitored for additional evidence that might help to identify the source.

All IDEP investigations will be coordinated through the office of the Manager of Environmental Health and Safety, and will include the campus Maintenance and Buildings and Grounds management and personnel, as needed. All illicit discharges or suspected illicit discharges will be documented, along with remedial actions undertaken and results.

Illicit discharges that are the result of a spill or release of a polluting material will be dealt with in accordance with the current OCC Spill Response Plan (see attached).

5.6. Recordkeeping

All illicit discharges or suspected illicit discharges will be documented, along with remedial actions undertaken and results. Documentation will include the date of discovery, a chronology

of investigative and remedial actions, outfalls affected, source of the illicit discharge, and date of cessation of the illicit discharge.

Measurable Goal: *All records pertaining to the identification, investigation, and correction of illicit discharges will be maintained by the Department of Environmental Health and Safety. Summaries of illicit discharge elimination activities will be posted to the OCC storm water web site. The number of such investigations will be tallied annually for subsequent reporting.*

5.7. Employee Training

All employees with job duties that might result in the release of permitted or unpermitted materials to the storm sewer system will receive training as soon as possible within six months of approval of the college's Stormwater Management Plan (SWMP). Refresher training will be conducted every three years. Affected employees will be identified by the Manager of Environmental Health and Safety (MEHS). In addition, the MEHS will develop training materials appropriate to the subject and provide said materials to the Professional Development and Training Center (PDTC). Training sessions will be scheduled at each campus by the PDTC.

Training materials will cover:

- Definitions
 - Illicit discharge
 - Illicit connection
 - Sanitary seepage
- Techniques for locating illicit discharges
 - Field screening
 - Source identification
 - Recognizing illicit discharges and connections
- Methods for eliminating illicit discharges and the proper enforcement response
- Spill and emergency procedures

The PDTC will be responsible for maintaining all pertinent training records.

6. POST-CONSTRUCTION STORM WATER MANAGEMENT PROGRAM FOR NEW DEVELOPMENT AND REDEVELOPMENT PROJECTS

The goal of the program is to ensure adequate review of projects and that controls are in place that will minimize or prevent impact to water quality from new development or redevelopment projects.

Development projects on Oakland Community College properties necessitate multiple reviews and approvals, both internal and external, during the planning and design phase. The existing review procedures and the proposed guidelines, Oakland Community College will demonstrate that requirements of the MS4 permit application addressing the storm water runoff quality and quantity are satisfied.

6.1. External Development Project Review

All development projects require the approval of local agency site plan reviews to ensure the project are compliant with ordinances, codes, regulations and consistent with local development criteria, including storm water controls. Projects involving earth disturbances require the review and approval of a Soil Erosion Control Plan. The review authority with jurisdiction is summarized below, although other review authorities may have jurisdiction (MDOT, etc.) for various aspects of development projects depending on the location. All of the review authorities responsible for review of the storm water runoff controls from developments on Oakland Community College properties are currently covered under other MS4 Storm Water Discharge Permits and the conditions thereof.

Campus Soil Erosion Permit Review Authority Site Plan Review Authority

Campus	Review Authority	Jurisdiction
Auburn Hills	Oakland County Water Resource Commissioner	City of Auburn Hills
Highland Lakes	Oakland County Water Resource Commissioner	Waterford Township
Orchard Ridge	Oakland County Water Resource Commissioner	City of Farmington Hills
Southfield	City of Southfield	City of Southfield
Bee Administrative Center (District Office)	Oakland County Water Resource Commissioner	City of Bloomfield Hills

Compliance with the external permit and review approvals ensures that all development projects meet a minimum standard of review and planning prior to construction. Authorization for the Soil Erosion Control Plan and Site Plan reviews address the stated goals of the Post Construction Storm Water Controls program, as listed below:

1. Treatment of a standard minimum volume to address water quality impact
2. Channel protection criteria to address impairment resulting from flow volumes and rates.

6.2. Site Plan and Storm Water Control Review

During the planning and design phase of development projects, the impact on storm water runoff will be considered. Generally this consists of preparing a pre- and post-development hydrologic analysis and identifying potential control treatment and/or control measures. In order to receive

approval from review agencies, development projects are required to address storm water runoff quantity and quality. Oakland Community College realizes the goals of the review processes and works with the corresponding review agencies to ensure development projects are designed with storm water runoff in mind and do not adversely impact the surrounding hydrological regime. Special emphasis is made to start the internal reviews early on in the process. Specific planning and design criteria necessary for approval are detailed in the application documents for the respective agency.

6.3. Soil Erosion Plan Review

Most development and redevelopment projects also require the approval of a Soil Erosion Plan prior to commencement of construction. The plan is required to consider the impact of storm water runoff pre-construction, during construction and post-construction. In terms of post-construction storm water controls, the Soil Erosion Plan needs to ensure stabilized surfaces and downstream channel protection in post-construction conditions. Soil Erosion Plans are also required to identify and protect sensitive areas close to the location of developments. Specific requirements for Soil Erosion Plans are detailed in the application documents from the respective review agency.

The standards required for local approval of development projects at Oakland Community College provide the protection necessary for storm water runoff quality and quantity. A variety of storm water Best Management Practices (BMPs) are necessary to achieve approval of the Soil Erosion Plan, Site Plan and Storm Water Control Plan. The reviews and approvals come from agencies with current NPDES-MS4 permits, and therefore meet the objective of the post-construction storm water controls from developments. OCC's planning objectives described in the next section will compliment the external review processes of an effective Post-Construction Storm Water Control Program.

6.4. Development Planning Objectives

Oakland Community College will provide storm water controls with the objective of protecting receiving waters from impaired storm water quality and limit storm water runoff quantity to pre-development levels. OCC believes it can achieve its development goals with minimal impact to storm water quality and quantity if a few core principles are followed. In order to achieve the stated goals of the Post-Construction Storm Water Control Program, multiple planning and design objectives will be employed during project planning. These practices will include the following:

- Include buffers along sensitive water boundaries in new and redevelopment projects
- Minimize areas of disturbance for new development and redevelopment projects
- Encourage more effective soil erosion and sedimentation control measures and ensure long term maintenance
- Emphasis on preservation of natural areas, where applicable

- Educating staff and contractors/developers about water quality and water quantity issues and impacts and the required maintenance to ensure continued protections as designed
- Minimize impervious surfaces
- Low Impact Design principles will be encouraged
- Minimize accelerated soil erosion and control stormwater runoff resulting from earth changes, both during and after construction.
- Assure that the volume and rate of stormwater runoff originating from development area is a rate so that surface water and groundwater quality is protected, soil erosion minimized, and flooding potential reduced.
- Preserve and use the natural drainage system for receiving and conveying stormwater runoff and to minimize the need to construct enclosed, below-grade storm drain systems.
- Restrict stormwater runoff entering and leaving development sites to non-erosive velocities by requiring temporary and permanent soil erosion control measures.
- Assure that soil erosion control and stormwater runoff control systems are incorporated into site planning at an early stage in the planning and design process.
- Prevent unnecessary stripping of vegetation and loss of soils, especially adjacent to lakes, streams, watercourses, and wetlands.
- Prevent construction activity that may cause mass movement, slumping, or erosion of land surfaces.
- Encourage the design and construction of stormwater control systems which serve multiple purposes, including but not limited to flood prevention, water quality protection, wildlife habitat preservation, and wetlands protection.
- Reduce the detrimental impacts of stormwater flows on downstream communities.

There is varying potential for future developments, depending on campus location. As in the past, future planning that considers the impact of storm water runoff from development projects will be the key for a successful program. Campus development project will place an emphasis on maintaining existing open space and protecting sensitive areas, such as wetlands, streams, and ponds during construction. Site plan reviews by the college and local governmental agencies assure developments meet established criteria for storm water controls. Soil Erosion and Sedimentation Control Plans associated with development projects also help make certain established practices are being implemented and maintained to prevent harmful impacts from storm water runoff.

6.5. Non-Structural and Structural BMPs

Structural and non-structural BMPs will be utilized where necessary to help prevent the degradation of runoff water quality. Non-structural BMPs may include, but are not limited to the following, where appropriate:

- Buffer areas near wetlands and open waters

- Design reviews to ensure that project designs do not have unnecessary negative impacts upon stormwater runoff quantity and quality
- Maintaining or reducing the current footprint for impervious surfaces
- Adopt general principles of ecologic preservation

Structural controls may be used separately or in conjunction with non-structural controls to prevent the degradation of runoff water quality and quantity. Structural BMPs may include, but are not limited to the following, where appropriate:

- Detention ponds
- Infiltration basins and trenches
- Grassed swale, sand, and strip filter areas

Measurable Goal: *All construction and renovation project plans will be reviewed by the EHS Department, Physical Facilities Department, and the general contractor (if required) to ensure that appropriate structural and non-structural controls are implemented as part of the final project to minimize the rate of discharge of storm water (to pre-development levels), and to ensure that the storm water quality is not degraded. Structural and non-structural controls utilized will be documented for subsequent reporting.*

6.5.1. Operation and Maintenance

The use of non-structural BMPs will be periodically reviewed as to their effectiveness and improved as necessary. Structural controls will be inspected annually or more frequently should there be evidence of malfunction or runoff water quality degradation. Any deficiencies in the storm sewer system will be addressed. Oversight for the review of construction activities at OCC campuses and facilities to ensure the consideration and incorporation of structural and non-structural controls will be the responsibility of the Physical Facilities Department and the EHS Department.

Measurable Goal: *Non-structural controls will be reviewed periodically for effectiveness, and updated as needed. This review will be triggered by evidence of failure or by recommendations for improvement from internal or external sources.*

Measurable Goal: *Structural controls will be inspected annually by the EHS Department in conjunction with the Physical Facilities Department. The results of the inspections will be documented. Documentation will include the date of inspection, inspection findings, and recommendations for corrective action, if needed. The progress of corrective actions will be documented by the Physical Facilities Department.*

6.6. Enforcement Mechanisms and Recordkeeping Procedures

Any activity determined to be potentially detrimental to storm water runoff quality will be terminated as soon as possible after discovery. The EHS Department and the Department of

Public Safety have the authority to halt actions by individuals on OCC campuses or facilities that are deemed a threat to college property or public health.

Records of all responses to potential storm water runoff quality issues will be maintained by the EHS Department.

Measurable Goal: *All responses to allegations of negative impacts on storm water flow or quality will be documented by the EHS Department and/or the Department of Public Safety. These records will be kept on file for subsequent reporting.*

6.7. Commercial Operations

All commercial operations at OCC campuses are incorporated into OCC structures. As such, they are subject to the same project review OCC construction and renovation projects receive. In addition, these same commercial operations are bound by OCC policies and procedures, and as such are subject to enforcement and corrective action should these policies or procedures be violated.

7. CONSTRUCTION STORM WATER RUNOFF CONTROL

OCC will employ a variety of means to prevent storm water runoff and control erosion from construction areas at its campuses and facilities.

7.1. Best Management Practices

One or more of the following BMPs will be utilized in construction areas that equal or exceed 1-acre, or are less than 1-acre if part of a larger project:

- Filter fencing
- Storm drain inlet fabric filters
- Isolated access roads
- Construction barriers
- Tree protection
- Street sweeping

Measurable Goal: *The use of BMPs for runoff and soil erosion control will be documented for construction projects meeting the above criteria. This documentation will be maintained on file by the EHS Department for subsequent reporting.*

7.2. Site Inspections

Construction sites will be inspected at least weekly by the Construction Supervisor or his or her designee. In addition, the EHS Department will conduct an inspection at the beginning of construction projects and within 24-hours of significant rain events to verify that all appropriate erosion and sedimentation controls have been put into place based upon pre-project site plan reviews.

Deficiencies will be reported to the Construction Supervisor for correction. Corrective action will be taken within 24-hours if there is evidence of impact to waters of the state. All other corrective actions will be completed within 5-days. If the deficiency cannot be corrected within 5-days, the Construction Supervisor will notify the EHS Department and a remedial action plan will be developed. Inspection findings will be documented and records retained by the EHS Department.

Measurable Goal: *Construction sites will be inspected weekly and after rain events by the Project Supervisor. The number of inspections will be tallied annually for subsequent reporting.*

Measurable Goal: *The EHS Department will inspect new construction sites within one week of commencement of the project, and at least once after a rain event for a given project. The findings of the inspection will be documented, as well as corrective actions for deficiencies noted. The number of such inspections will be tallied annually for subsequent reporting.*

7.3. Notice of Prohibited Discharge

OCC will provide notification to the DNRE whenever pollutants are discharged due to construction activities at OCC campuses or facilities as stipulated in Part I, Section A.9. of the permit, and Part I, Section B.2.a., as appropriate.

Should a discharge occur that might endanger the public health, the DNRE will be notified via the Pollution Emergency Alerting System (PEAS) at 1-800-292-4706. Notification to the PEAS hotline will include the following information, as available:

- Name of person responsible
- Location of discharge
- Location where MS4 discharges to surface waters
- Nature of the discharge and pollutants
- Clean-up/recovery measures taken/planned

If pollutants are discharged during construction activities in violation of Part 91, corrective action will be initiated upon discovery. In addition, the Oakland County Water Resource Committee, or in the case of the Southfield Campus the City of Southfield, and the OCC Manager of Environmental Health and Safety will be notified by phone within 24-hours by the Project Supervisor.

7.4. Soil Erosion and Sedimentation Control Procedures

All construction projects will be reviewed to ensure that site plans allow space for future soil erosion and sedimentation controls, as applicable. The EHS Department and the Physical Facilities Department will work with design contractors in reviewing the site plans.

Measurable Goal: *A Soil Erosion and Sedimentation Control (SESC) Plan will be developed for all construction projects involving one or more acres, or for those within 500-feet of waters of the state. The Project Supervisor will be responsible for developing the SESC Plan for each such project. The EHS Department will tally the number of SESC Plans developed for subsequent reporting.*

7.5. Sedimentation Control during Maintenance Activities

General maintenance activities that are necessary for maintaining OCC properties may be conducted by the Buildings and Grounds Department at each campus or facility. These projects are typically small in scale. The Superintendent or Project Supervisor will be responsible for ensuring that the necessary soil erosion and sedimentation controls are put in place prior to and during the project.

The Superintendent or Project Supervisor will perform the following procedures (in addition to previously described BMPs) on any project that will disturb soils to the extent that sediment transport could occur.

- Determine the location of the nearest inlet to the storm water drainage system
- Remove any unused soil from the site as soon as maintenance activities are completed
- Grade and re-vegetate the work area, if necessary
- Remove all erosion and sedimentation control devices from the site once final site stabilization has been completed
- Evaluate the need to have nearby catch basins cleaned and initiate appropriate actions
- Evaluate the need to have the street or surface parking area cleaned following completion of the work and initiate the appropriate actions
- Report any sediment releases into the storm water drainage system to the EHS Department during all stages of the project

Measurable Goal: *The Superintendent or Project Supervisor will ensure that soil erosion and sedimentation controls are implemented for all projects involving earth work. The number of such projects will be tallied annually by the EHS Department for subsequent reporting.*

7.6. Public Input

The general public and college community are encouraged to contact the college with complaints or other information pertaining to construction, or other, activities impacting storm water runoff quality or quantity at OCC campuses or facilities. All such input will be documented, and follow-up inspections/investigations conducted, as needed. Complaints or concerns from the general public regarding storm water runoff from construction activities will be treated in the same fashion as those covered under the IDEP. All records related to public input and subsequent follow-up will be maintained by the EHS Department.

8. POLLUTION PREVENTION/GOOD HOUSEKEEPING

OCC has developed a program to ensure compliance with a program for the operation and maintenance of pollution prevention BMPs. This program addresses the following:

- Employee/contractor training
- Structural storm water control effectiveness
- Roadways, parking lots, and bridges
- Fleet maintenance and storage yards/facilities
- Managing vegetated properties

The following sections describe the BMPs associated with each program area.

8.1. Employee/Contractor Training

Employees and contractors will receive training that focuses on preventing pollution of storm sewer systems due to their activities. This training will cover:

- Park and open space maintenance
- Fleet and building maintenance
- New construction and land disturbances
- Stormwater system maintenance
- Other activities

Affected employees will be determined by the EHS Department in conjunction with the Physical Facilities Department and academic disciplines whose activities might impact storm water quality or quantity. The training program will be developed by the EHS Department in conjunction with the PDTC and will be administered in a classroom or on-line format, or some combination of the two. The mix of classroom or on-line training will be determined based on which is more effective at reaching the broadest audience and ensuring comprehension of the

materials.

Current employees will receive training at least once prior to the expiration of the permit. New employees will receive training during their first year of employment. Contractors will receive training prior to conducting work that might impact storm water runoff quality or quantity.

8.2. Structural Storm Water Control Effectiveness

Structural storm water controls will be inspected annually to ensure they are in good repair and functioning as designed. Inspections will be conducted by the campus or facility Buildings and Grounds Department. Any evidence of damage or malfunction will be documented and reported to the EHS Department. Damaged or malfunctioning structures or devices will be repaired and replaced as soon as possible. Responsibility for maintaining structural storm water controls lies with the Physical Facilities Department.

Wastes generated due to the repair and maintenance of structural storm water controls will be collected and disposed of in accordance with local, state, and federal regulations. Disposal procedures are addressed in the OCC Regulated Waste Management Program.

Specific wastes anticipated to be encountered include:

- Dredge spoil
- Accumulated sediments
- Floatables
- Other debris removed
- Catch basin debris

Most inlets to the storm water system on each campus are designed with a catch basin to collect solids in the rainwater runoff. Catch basins are cleaned using outside contractors on an as-needed basis. Clean-outs are conducted during dry weather. The clear water portion is removed and applied to adjacent ground (maximum 250-gal/acre/year, evenly distributed) or discharged to a sanitary sewer system. The remaining water and debris is transported off-site for disposal in compliance with Part 121 as a Liquid Industrial Waste.

Storm sewer manhole covers are predominantly embossed with verbiage warning not to allow polluting materials to enter the storm sewer system as they lead to waterways. Those inlets not so embossed will be identified and similarly marked with durable paint.

Measurable Goal: *Storm sewer inlets will be identified by the EHS Department in conjunction with the Physical Facilities Department, and all those that are not embossed or otherwise marked with warnings to prevent the release of polluting materials to the storm sewer will be reported to the Physical Facilities Department for marking. Similarly, all new storm sewer inlets will be so marked. The identification and marking of storm sewers will be completed by September 1, 2011.*

Measurable Goal: All storm sewer inlets and catch basins will be inspected annually. The number of inspections will be documented for subsequent reporting.

Measurable Goal: Catch basins will be cleaned as needed to maintain the proper functioning of the storm sewer system. It is the responsibility of the Physical Facilities Department to ensure that the catch basins are cleaned. The number of catch basin cleanings will be tallied annually for subsequent reporting.

Measurable Goal: A list of structural storm water controls will be developed by September 1, 2011. The list will include the type and location of the control, and will be maintained on file by the EHS Department.

8.3. Roadways and Parking Structures

The college maintains a system of public roads, parking lots, parking structures, and/or access roads at each of its campuses and facilities. These roadways and parking areas are operated and maintained so as to minimize the release of pollutants to the storm sewer system. The responsibility for maintaining these roadways and parking areas lies with the Buildings and Grounds Department at each campus.

8.3.1. Snow and Ice Removal

The college primarily uses rock salt to prevent ice formation on paved road surfaces during winter months. Sidewalks are treated with a proprietary commercial blend of salts that include sodium chloride, potassium chloride, calcium chloride, and magnesium chloride coated in calcium magnesium acetate. Prior to applying any salt products, as much snow as possible is mechanically removed from the surface. This reduces the amount of salt necessary to prevent ice formation, and also significantly reduces the amount of snow and ice melt contacting the salt product, thus increasing the product dwell time and reducing the amount of contamination of runoff.

Bulk salt is stored in specially constructed salt sheds at the Auburn Hills, Highland Lakes, and Orchard Ridge campuses. Salt used at the District Office is provided by the Auburn Hills campus. The Southfield campus uses bagged salt. The salt sheds are designed to prevent precipitation from contacting the salt piles while allowing application equipment to be filled within the shed or immediately adjacent to it. This reduces amount of salt that could contact precipitation runoff prior to application. Stray salt granules are swept back into the shed, as needed.

In addition, low-traffic areas are closed off after significant snowfall (typically >2-inches accumulation), reducing the number of areas where snow removal and salt application may be necessary.

8.3.2. Unpaved Road Maintenance

There are no unpaved roadways or parking areas at the District Office or Southfield campus. The Auburn Hills, Highland Lakes, and Orchard Ridge campuses have short, unpaved service drives that are typically used only intermittently to access remote campus areas. These unpaved service drives are not considered a significant source of dust or debris contamination in storm water runoff as traveling speeds are by necessity very slow (reducing airborne dust) and the unpaved sections are relatively short (50 to 200 yards, approximately). The college will continue to assess the potential impact of these unpaved surfaces on storm water runoff quality and will implement appropriate BMP controls as necessary.

8.3.3. Asphalt and Pavement Repair and Maintenance

It is the general intent and practice of OCC to schedule road work during summer months and during dry weather periods. This practice helps to reduce potential storm water runoff contamination from construction and repair activities.

The use of coal tar emulsions to seal asphalt surfaces are prohibited. In addition, runoff from pavement and sidewalk repairs involving cutting, grinding, drilling, or hydrodemolition of concrete is prohibited from being discharged to the storm sewer system. All storm water inlets that could receive runoff from paving and concrete projects will be covered with appropriate screening to prevent contamination due to process residues, spills, or releases. All paving contractors contracted by the college or its representatives will be informed of these requirements during the project planning period. Enforcement of these requirements is primarily the responsibility of the Physical Facilities Department and Project Supervisor. The EHS Department will periodically inspect paving projects to verify compliance.

8.3.4. Sweeping, Leaf Removal, and Litter Removal

Sweeping and leaf removal on paved surfaces are typically conducted only on an as-needed basis, with the work primarily being performed by contractors. Litter receptacles are emptied daily. Litter removal from the campus grounds, parking, and sidewalk areas is done weekly, or more frequently, if necessary (such as after an event). The Physical Facilities Department is responsible for litter removal.

Leaf cleanup occurs primarily in the fall. Accumulated leaves are either discarded in the general trash (Southfield campus and District Office), or placed into compost piles (Auburn Hills campus, Highland Lakes campus, and Orchard Ridge campus). Compost piles are located in areas located away from storm water system inlets.

Measurable Goal: *A plan to reduce the runoff of Total Suspended Solids (TSS) from paved surfaces will be developed by September 1, 2012. The goal is to reduce TSS runoff by at least 25% as compared to annual loading from uncontrolled runoff (excluding construction track-out).*

8.4. Fleet Maintenance and Storage Facilities

Each campus maintains a small fleet of vehicles used for groundskeeping, deliveries, and personnel transportation. Maintenance of these vehicles is the responsibility of the department

using them. Vehicles intended to be driven on public roads are typically serviced off-site by outside contractors. An exception would be service necessary due to circumstances that would render the vehicle undriveable. In such cases the vehicle would be serviced on campus. Vehicles that are intended to be operated off road (i.e., front end loaders, back hoes, riding mowers, etc.) are serviced on campus, primarily by outside contractors.

Facilities are available at each campus to allow for the maintenance or repair of equipment indoors to prevent the incidental release of potentially polluting materials to the storm sewer system. This location is typically the Grounds Garage at each campus.

8.4.1. Equipment and Vehicle Washing

Equipment and vehicle washing is conducted only in areas where the wash water can be directed immediately to the sanitary sewer system or can be contained for proper disposal. The floor drains in the Grounds Garages flow directly to an oil/water separator to remove most contaminants that might enter the sanitary sewer system. Vehicles intended for use on public roads are taken to off-site washing facilities for cleaning (i.e., carwash).

8.4.2. Storm Water Pollution Prevention Plan (SWPPP)

A SWPPP will be developed for all OCC facilities affected by permit Part I.A.10.d. and the pertinent regulations. SWPPPs will be developed for affected facilities and incorporated into updated Spill Prevention Control and Countermeasures (SPCC) Plans where applicable.

Measurable Goal: *A SWPPP will be developed for all fleet maintenance and storage facilities that are required to have such plans. The plans will be completed by September 1, 2011.*

8.5. Managing Vegetated Properties

In an effort to minimize the discharge of pollutants related to vegetation management, OCC will develop a program to minimize storm water impacts from vegetated properties. This program will address, among other things:

- Employee and contractor training on the proper storage, handling, and use of pesticides, herbicides, and fertilizers
- The use of only phosphorous-free fertilizers on turf grass (unless low phosphorous is detected during 4-year testing)

In addition, the application of pesticides and herbicides will be limited to Buildings and Grounds employees who have completed state-mandated training and examination (and have been so certified), and contractors with equivalent training and credentials. Contractors will be advised by the campus Superintendent of preferred methods of pest control and pesticide application prior to commencing work.

Measurable Goal: *All applicators will be trained in pesticide and fertilizer use. The number*



of pesticide and fertilizer applicators will be tracked on an annual basis.



APPENDIX A

CERTIFICATE OF COVERAGE MIS040097

PERMIT NO. MIS049000



APPENDIX B

OUTFALLS



APPENDIX C

INVENTORY OF STRUCTURAL POLLUTION CONTROL DEVICES

Structural Storm Water Control Inventory

Campus	Structural Control	Number	Location
Auburn Hills	Detention Pond	1	Squirrel Road
	Detention Pond	1	CREST
	Retention Pond	1	CREST
Highland Lakes			
Orchard Ridge	Catch Basins	77	Parking Lots and Roadways
Southfield	Catch Basins	13	Parking Lots and Roadways



APPENDIX D

RECEIVING WATER QUALITY STATUS AND STRESSES

Overview Description of Watershed Management for the Rouge River

Taken from the Rouge River Project website at <http://www.rougeriver.com/watershed/overview.html>

Background

The early focus of the Rouge Project was on the control of CSOs in the older urban core portion of the downstream areas of the Rouge Watershed. As a finite number of point source CSO discharges could be identified and responsibility for each defined, the traditional regulatory approach of issuing NPDES permits mandating corrective action worked relatively well. Additional monitoring of the river showed that the other sources of pollution such as industrial and municipal point sources, storm water runoff, discharges from illicit connections, discharges from failed on-site septic systems, and resuspension of contaminated sediment, needed to be controlled before full restoration of the river would be achieved throughout the watershed.

Based upon what was learned, the focus of the Rouge Project became more holistic to consider the impacts from all sources of pollution and use impairments in receiving waters. The historic implementation of water quality management programs in the United States at the federal and state levels has been to focus on point sources, which are the most obvious sources of pollution to waterbodies. This program has worked well to control pollution from most point sources but has also left a patchwork of regulated and unregulated discharges of storm water and nonpoint source pollution to surface waters. This patchwork is especially true in most urbanized areas where multiple local jurisdictions are located in the same watershed. The challenge for the Rouge Project became to develop innovative solutions to achieve water quality objectives that may be: 1) more cost-effective, 2) implemented in a more timely fashion and 3) better able meet local needs. It has also become clear that water resources management must have the support of the general public in order to be effective and to become self-sustaining. The Rouge Project has provided a unique opportunity for a watershed-wide approach to restoring and protecting an urban river system by using a cooperative, locally based approach to pollution control. The Project has learned that the use of the watershed approach has emerged as the most cost-effective and logical approach to water resource management. There is a clear interrelationship of the pollution sources within a watershed that demands an interrelated approach to a solution. Volumes have been written on watershed approach and its strengths and weaknesses. That information will not be summarized here. Suffice it to say, use of the watershed approach has several major benefits.

Watershed Management and the Michigan NPDES General Permit

At the heart of the watershed management approach being used in the Rouge Watershed is the Michigan General Storm Water Permit. This voluntary permit established the process for developing watershed management plans to address the control of storm water and other sources of pollution. This permit evolved from what was being learned by the Rouge Project. In the mid 1990s, State water quality limits for bacteria and dissolved oxygen were regularly exceeded even in dry weather periods in the upper Rouge River watershed and highly variable flows caused flooding, exacerbated bank erosion and increased sedimentation that affected the lower river. [Click here to learn more about stream flow issues in the Rouge Watershed.](#) This information confirmed the suspicions of many that the discharges from separated storm systems in heavily urbanized areas can be significant sources of pollution including fecal coliform. Based upon the information that was being generated from the various programs underway, the focus of the Rouge Project shifted from a center of attention on controlling CSOs to becoming more holistic to consider the impacts from all sources of pollution and use impairments in receiving waters by using the watershed management approach.

One of the first efforts of the Rouge Project was an independent study of financial and institutional arrangements for funding and implementing water pollution controls in the Rouge River. Various institutional and financial arrangements throughout the United States were evaluated for their potential application to the problems and issues in the Rouge River watershed. Completed in July of 1994, the study concluded that an in-depth analysis of alternatives for watershed-wide storm water management needed to be completed before institutional mechanisms for water pollution control in the Rouge River basin could be finalized. (*Study of Institutional and Financing Options*. Apogee Research in consultation with Miller Canfield Paddock and Stone, Rouge Project Report. July 1994).

In March of 1995, a storm water management strategy based on the application of watershed-wide management approaches for the Rouge River was developed and implemented. The storm water strategy had six major elements

- develop a baseline monitoring program
- target investigations in identified problem areas
- fund demonstration and pilot projects to remediate pollution sources and reduce flow variability
- document institutional options and legal impediments to watershed-wide approaches
- propose incentives to encourage voluntary participation by communities and other public agencies and,
- adopt a plan for short term actions and iterative steps leading to comprehensive, watershed-wide storm water management.

In April of 1996, a supplemental report was published. It outlined the legal options under Michigan law that could be used to manage storm water based on hydrologic or watershed boundaries rather than by political boundaries (*A Municipal Storm Water Discharge Regulation Strategy*. Miller Canfield Paddock and Stone, Rouge Project Report. April 1996). The supplemental report concluded that using a General Permit or Permit by Rule concept to regulate municipal storm water on a watershed-wide or subwatershed approach would provide flexibility to the municipalities within the Rouge River watershed and support the creation of a locally managed storm water remediation control mechanism. Further, the report concluded that if the local agencies were agreeable to a voluntary mechanism to collectively remediate and control storm water discharges, current Michigan law offers a number of alternatives. Three demonstration subwatersheds were selected to examine how a storm water management plan might differ between various areas within the watershed. The three subwatersheds selected represented

- older, fully developed, suburban areas with both separated and combined sewers
- rapidly developing areas in the headwaters of the Rouge River, with separated sewers and on-site septic systems and
- an area that was still undergoing development, but was primarily urbanized

However before the strategy could be fully implemented, the federal District Court overseeing the cleanup of the Rouge River pushed the issue of the creation of an independent watershed-wide institutional structure to fund and manage water quality in the entire watershed. The communities, without exception, expressed grave reservations about establishing such an institutional arrangement.

The Wayne County and the Rouge watershed communities proposed an alternative regulatory framework through a watershed-based general storm water permit issued under the National Pollutant Discharge Elimination System (NPDES). The communities then asked the court for the opportunity to develop a draft permit acceptable to the communities as well as the state and federal regulatory agencies. The court agreed.

Beginning in 1995, the Michigan Department of Environmental Quality (MDEQ), the Rouge Project and the communities in the Rouge Watershed jointly developed an innovative, watershed-based [NPDES general permit \("General Permit"\)](#) for municipal storm water discharges. For a more extensive discussion of the steps that lead to the development of this permit see "[Adapting Regulatory Framework to Accommodate Watershed Approaches to Storm Water Management](#)" by Robert Fredericks, et al. [The General Permit](#) was issued on July 31, 1997. The General Permit incorporates the following elements:

- Coverage will be voluntary until the permits under the USEPA Phase II storm water are required (note that USEPA has endorsed Michigan's proposal to use the Voluntary General Storm Water Permit in lieu of permits that would otherwise be required by the Phase II regulations)
- Only public agencies who own, operate, or control storm water are provided the opportunity for coverage;
- Subwatershed size is established by the potential permittees during the application process;
- Application and permit process have limited required actions, the focus is to establish desired outcomes.

The General Permit requires permittee to develop:

- *Watershed Management Plan* developed in cooperation with others, to resolve water quality concerns. The Plan would include: short and long-term goals for the watershed, delineation of actions needed to achieve the goals, estimated benefits and costs of management options, an opportunity for all stakeholders to participate in the process. The Watershed Management Plan is due two years after the certificate of coverage is issued to the applicant.
- *Illicit Discharge Elimination Plan (IDEP)* that has the goal of eliminating raw sewage discharges and includes addressing failing septic systems and improper connections of sanitary sewers to storm drains and open waterways. The IDEP is due at the time of permit application.
- *Public Education Plan (PEP)* designed to inform residents and businesses what actions they should take to protect the river. The PEP is due at the time of permit application.
- *Storm Water Pollution Prevention Initiative (SWPPI)* which includes evaluation and implementation of pollution prevention and good housekeeping practices and the evaluation and implementation of BMPs to minimize impacts of new development and redevelopment. The SWPPI is a subset of the Watershed Management Plan and is due 2.5 years after the certificate of coverage is issued to the applicant.
- *Monitoring and Reporting Plan* including schedule for revisions to the Watershed Management Plan.

Communities and agencies in over 95 percent of the watershed have applied for coverage under this innovative, watershed-based permit program.

General Permit Guidance Documents

MDEQ developed four basic guidance documents for use by any community in applying for and then implementing the General Permit. Those documents are available by clicking on the following:

[State of Michigan Guidance \(Part I\)](#)

[Subwatershed Management Plan Guidance \(Part II\)](#)

[Public Education/Information Plan Guidance \(Part III\)](#)

[Illicit Discharge Elimination Plan Guidance \(Part IV\)](#)

[Pollution Prevention Initiative Guidance \(Part V\)](#)

The Rouge Project conducted three workshops in 1997 for the communities in the Watershed to assist them in complying with the requirements of the General Permit. Several guidance documents were prepared for use in those workshops. Those documents are available by clicking on the following:

[General Storm Water Permit: Why Volunteer to be Regulated?](#)

[Community Project Guide to Managing Grants](#)

[Improving Community Storm Water Management: A Summary Guide of Ordinances](#)

Several other guidance documents were prepared for the workshops. Those documents are listed below. These documents are now somewhat out of date because of the advances the communities have made in implementing the requirements of the General Permit. Copies of the guidance documents listed below can be obtained by contacting the Rouge Program Office.

Guidance for Preparing Management Plan

Guidance for Preparing a Public Education Plan

Criteria for Review of Public Education Plans

Setting the Stage (Public Education)

Existing Efforts/Opportunities for Addressing General Permit Requirements

Elimination Illicit Discharges

On-Site Sewage Disposal Systems

Financing Alternatives to Replace OSDA

On-Site Sewage Disposal System Management Flow Chart

[Guidance for Preparing a Storm Water Pollution Prevention Initiative](#)

Subwatershed Advisory Groups

Between January of 1996 and November of 1997, the Rouge Program Office (RPO) together with representatives from the Middle One Subwatershed communities and agencies convened in a series of meetings to produce the Middle One Subwatershed Management Study funded as a pilot study for the Rouge Project. Members of this cooperative group created this study to identify concerns about water quality and quantity within the Middle One subwatershed and develop ideas for management alternatives for the future. This management study was completed and the final report can be viewed at [Middle 1 Subwatershed Management Study \(NPS-TM23.00\)](#)

The cooperative group evolved over time because of a common interest in the MDEQ Voluntary General Storm Water Permit. With the goal of applying for this Voluntary Storm Water Permit, members of the original Middle One group reassembled in 1998 and extended invitations to all public agencies that were eligible for coverage under the MDEQ Permit. This group is now referred to as the Middle One Subwatershed Advisory Group (SWAG).

With its expanded membership, the Middle One SWAG began discussions on the requirements of the Permit, and by the middle of 1999, all the SWAG membership received Certificates of Coverage for the Permit. All of the Middle One SWAG communities and agencies are then began to implement their Storm Water Permits to restore and protect the Rouge River.

As stated earlier, three demonstration subwatersheds were selected to examine how a storm water management plan might differ between various areas within the watershed. In addition to the Middle 1 Subwatershed Management Study, a management study was completed for each of the other two demonstration subwatersheds. To view these other two documents see:

- [Management Study for the Middle 3 Subwatershed \(NPS-TPM50.00\)](#)
- [Management Study for the Bell Branch and Tarabusi Creek Subwatershed \(NPS-TPM55.00\)](#)

The Rouge River Watershed contains a total of seven subwatersheds that range in size between 19 and 89 square miles. Almost all of the Rouge communities worked together to develop the required subwatershed management plans. All of the subwatershed followed the pattern discussed above on the Middle 1 in the formation of the individual SWAGs for the various subwatersheds. There are now a total of seven SWAGS in the Rouge Watershed as follows:

Main 1-2 Subwatershed Advisory Group

Main 3-4 Subwatershed Advisory Group

Upper Subwatershed Advisory Group

Middle 1 Subwatershed Advisory Group

Middle 3 Subwatershed Advisory Group

Lower 1 Subwatershed Advisory Group

Lower 2 Subwatershed Advisory Group

The SWAGS developed their subwatershed management plans in accordance with the requirements of the General Permit and submitted them to MDEQ on May 31, 2001. The SWAGs worked collaboratively with the local units of government and County agencies that have Certificates of Coverage under the General Storm Water Permit to:

- Develop and implement public participation plans,
- Establish short-term and long-term goals for protecting and/or restoring the River,
- Compile information on the nature and status of the subwatershed,
- Identify and agree on actions to be taken to achieve the short-term and long-term goals, and
- Assess management alternatives.

The subwatershed management plans are now being implemented by the communities and agencies.

Overcoming Institutional/Regulatory Barriers.

Local agencies and communities in urbanized areas have a long history of cooperative efforts to address the delivery of common public services. Recent trends in Michigan, and elsewhere in the country, to reduce the size and cost of government and limit local taxing power have accelerated efforts at the local level to integrate or share the cost of a broad range of government services. Local agencies are increasingly seeking ways with their neighboring jurisdictions to reduce the cost of police and fire protection, solid waste disposal, libraries, recreational facilities, infrastructure maintenance and repairs, public transit, water supplies, and sewage disposal. Unfortunately, except in a few isolated instances where a single authority has been created to oversee all aspects of water management, the legal responsibility for storm water is widely dispersed between local communities, county health and drain agencies, road agencies, private developers and autonomous school districts and public colleges. The creation of a new level of government in the form of a water management authority with broad powers has been resoundingly rejected in the Rouge River watershed by local agencies and is likely to receive the same reception in many other urban areas of the country.

State and federal water quality regulatory programs have traditionally focused on large point sources where responsibility for obtaining and complying with specific permit limits is easy to establish. The regulatory framework to control water pollution has generally discouraged rather than encouraged cooperative solutions among communities and has relied upon command and control to achieve results. The complexities involved in addressing wet weather pollution problems in urban areas and the widely dispersed accountability for managing storm water demands a new regulatory framework that will encourage cooperation among the locally responsible public agencies to design integrated, holistic solutions. The watershed approach to storm water regulation developed in Michigan offers an opportunity to overcome the institutional and regulatory impediments that have discouraged cooperative local approaches to restoring urban watersheds.

Institutional arrangements and financing options necessary to restore the Rouge are one of the many elements that the local communities in the Rouge Watershed are addressing in their working groups. The framework for institutional arrangements in the Rouge watershed is based on the Michigan General Storm Water Permit, and has evolved into a "bottom up" approach with 3 Levels of Activity:

- Local
- Subwatershed Advisory Groups
- Watershed-wide Rouge Project Steering Committee

Citizens and individual communities are doing much of the work of the Rouge restoration effort at the local level. This flexible framework has allowed communities to experiment with various approaches that recognize local constraints and seize upon unique opportunities to meet the desired outcomes defined in the subwatershed management plan.

As part of the subwatershed planning process, communities and agencies are also identifying and implementing more cost effective and efficient methods to meet the requirements of the General Storm Water Permit and other programs through cooperatively developed projects. Evaluating the sources of water quality problems and/or the threats to existing uses of the river at the subwatershed level by local agencies is leading to a better understanding of local constraints, opportunities for innovative solutions, ownership of the long term river restoration effort and interagency cooperation.

Rouge Project Steering Committee

Issues which cross subwatershed boundaries are identified by the Subwatershed Advisory Groups and referred to those coordinating watershed-wide issues. The Rouge Project Steering

Committee is currently providing coordination of the individual subwatershed efforts and is assisting subwatersheds in developing a comprehensive strategy for addressing watershed-wide issues. See the following documents for information on the Steering Committee: [Rouge Watershed Steering Committee Summary](#); [Rouge Project Steering Committee Purposes; Membership and Operating Procedures](#); and [Rouge Project Steering Committee Membership List](#). Minutes from the Steering Committee are available by [clicking here](#).

The subwatershed communities are also identifying those activities such as public education and water quality monitoring which may be most cost-effectively performed throughout the entire watershed by a single entity. Other agencies provide watershed-wide support, including the Rouge RAP Advisory Council and the well-established non-profit Friends of the Rouge organization.

Evolving Institutional Arrangements

A major item of focus in 2001 was discussion on the direction of the Rouge River restoration for 2002 and 2003. A planning retreat for communities with NPDES permits in the Rouge watershed was held on October 4, 2001 to explore options associated with institutional arrangements for the Rouge Watershed. Representatives from approximately 35 communities attended this all-day retreat to discuss Rouge Project activities and processes for the next several years. The principle conclusion was that a new watershed-wide organization was needed to further the continued efforts in the Rouge River restoration. It was decided that a new "Drafting Committee" would be established to work in parallel with the Steering Committee for a period of time to develop recommendations on a number of issues including the following:

- Planning for water quality and water quantity issues in the watershed;
- Establishing priorities for projects that relate to goals, targets and schedules;
- Providing advocacy for the members at the federal/state/regional and local level;
- Coordinating the activities and management plans for the Subwatershed Advisory Groups;
- Coordinating and perhaps managing watershed-wide sampling/monitoring; and
- Addressing regional concerns including providing a forum for coordination of issues with the Detroit Water and Sewer Department.

In May 2002 the Drafting Committee completed a Draft Agreement for the Rouge River Watershed Local Management Assembly and presented it to the communities at the Rouge Retreat 2. [Click here to view the Executive Summary Proposed Rouge River Watershed Local Management Assembly](#). The Drafting Committee solicited comments from affected communities and agencies through August 1, 2002. On September 11, 2002 the Drafting

Committee issued its final draft document saying that "It is the Drafting Committee's considered opinion that the September 11, 2002 Draft Agreement provides the best opportunity to initiate a watershed organization that can enhance communication and build trust among local agencies responsible for water management in the Rouge River Watershed." [Click here to view the Draft Agreement.](#) [Click here to view the transmittal letter](#) to the communities from James D.

Anulewicz, Chair, Rouge River Watershed Drafting Committee which summarizes the proposed schedule of events for implementing the agreement. A December 6, 2002 Workshop will be held to finalize the Agreement and its implementation schedule.

View the [Assembly of Rouge Communities](#) Web page.

Achieving Multiple Objectives through a Single Watershed Management Plan

The subwatershed management plans form the basis for implementing watershed goals and objectives that will result in improved water quality and pollution control. The Rouge communities will also use these watershed management plans to achieve other program objectives, such as those under the federal TMDL program, the state Clean Michigan Initiative, the water quality trading program and others as appropriate.

As discussed above, the Rouge communities have developed the required subwatershed management plans. While the basic requirements for what must be in a watershed plan for the Rouge Watershed are detailed in the General Permit, the permittees within a hydrologic or subwatershed unit are allowed considerable freedom in deciding upon their own priorities, remedial actions and schedules.

The State of Michigan has incorporated watershed planning components into a number of water resource management programs. Four such programs are summarized below.

- **TMDL Program:** Various segments of the Rouge River are listed on the federal Clean Water Act Section 303(d) list for various parameters. The Total Maximum Daily Loads (TMDLs) for these segments are not scheduled for completion until approximately 2005. The river will require multiple TMDLs that may result in conflicting implementation strategies in the watershed as a whole. Under the USEPA's TMDL regulations use of the watershed approach is encouraged, an approach already being implemented in the Rouge Project.
- **Storm Water General Permit:** Almost all of the communities within the Rouge River Watershed have obtained their Certificates of Coverage (CoC) under Michigan's NPDES General Permit for municipal storm water discharges. One requirement of the storm water General Permit is for each CoC holder to participate in the development of a long-term, comprehensive watershed management plan for a self-determined hydrologic unit. Among other programmatic elements, this plan must identify specific activities each

community or agency will undertake during the first permit term toward meeting the goals of the watershed management plan.

- **Clean Michigan Initiative:** In July 1998, the State of Michigan passed and began implementing its Clean Michigan Initiative (CMI), a \$675 million general obligation bond dedicated to fund projects for "Clean Water, Clean Parks, and Clean Communities." Funding awards under two categories of grants, the Nonpoint Source Pollution Control Grants and the Clean Water Fund, are based on an "approved" watershed management plan.
- **Water Quality Trading Program:** The State of Michigan is in the process of completing its Water Quality Trading Program rules. Through this program, the trading of nutrients in impaired water bodies (for which TMDLs have not yet been developed) can only occur where an approved watershed management plan has been developed. Unlike other "approvable" watershed plans, the watershed management plan for the trading program must include a "cap" and allocations. [Click here to learn more about the state's water quality trading program.](#)

As described above, the seven subwatershed advisory groups in the Rouge Watershed have developed subwatershed management plans as required under the Michigan storm water General Permit. Obviously it is desirable to develop only one "comprehensive watershed management plan" that will meet stakeholder goals and objectives as well as all applicable program requirements for the above listed four programs and any other programs that emerge. Therefore, the Rouge Project subwatershed management plans have a goal of being comprehensive watershed management plans that will meet objectives of multiple programs. By doing so, both the watershed communities and regulatory agencies will save time, money and effort by having one plan that fulfills multiple objectives. In addition, these comprehensive plans will provide much needed certainty to the communities, counties and other stakeholders in planning for watershed management activities and expenditures.

Summary of Rouge Project Accomplishments To Date

The Rouge Project is designed to identify the most efficient and cost effective controls of wet weather pollution, while assuring maximum use of the resource. A great deal has been accomplished along these lines. The following summarizes some of those accomplishments.

The CSO control program has made major advances. For a summary of those, see [Overview Description of the CSO Control Program](#).

Innovative storm water control and watershed management technologies are also being evaluated under the Rouge Project. Twenty-five (25) different communities and agencies throughout the watershed are implementing over [100 pilot projects](#). Categories of pilot management projects

currently underway include wetlands creation and restoration, structural storm water practices such as grassed swales and detention ponds, erosion controls, streambank stabilization and habitat restoration, to name a few.

The Rouge Project has learned that [illicit connections](#) and [failing septic systems](#) are major sources of pollution problems in the Detroit urban area. Creative ways to deal with these sources of pollution have been initiated.

USEPA's Office of Inspector General Report on CSO Control

During the latter part of 2001, USEPA's Office of Inspector General (OIG) conducted a nationwide audit of the national CSO control program. They interviewed EPA headquarters personnel, three EPA Regions, eight states, 22 communities and some others. The MDEQ, the Rouge Project and several Michigan cities were interviewed as part of the study. The OIG issued their final Evaluation Report on "[Wastewater Management - Controlling and Abating Combined Sewer Overflows](#)" in August 2002.

The report cites a number of examples of the successes of the Rouge Project's CSO control program. The following is a quote from the report about the program and the watershed approach being utilized:

"Rouge River Project a Blueprint for Success

The Rouge River National Wet Weather Demonstration in Michigan is an excellent example of how utilizing a watershed approach can help to achieve water quality goals more efficiently. We have previously described in this report some of the successful results that have been achieved by this project."

Environmental Results To Date

The Long-Term Monitoring Network of the Rouge Project includes continuous measurement of Rouge River dissolved oxygen (DO) content at five key locations. Adequate dissolved oxygen content is one key element of a healthy river ecosystem. The DO measurements are made from mid-April through mid-November each year, and most sites have been monitored since 1994. Since the measurements are continuous, they show the combined effect of dry and wet weather conditions in the river. A review of the preliminary 2001 data from these long-term monitoring locations is summarized below.

The water quality in the Rouge River continued to show the very encouraging trend of continuous improvement because of these efforts and others. The MDEQ water quality standard

for DO is 5 mg/l. The mean DO in the lower reaches of the Rouge River has increased from 4.5 mg/l in 1994 to almost 7.0 mg/l in 2001. The percent of DO readings that violated the DO standard of 5 mg/l dropped from 61 percent in 1994 to less than 4 percent in 2001. Similar improvements occurred at all stations in the watershed where those stations met the standard 100% of the time. The water quality improvements that are occurring clearly reflect the benefits of the watershed management strategies that have been implemented to address and control both dry and wet weather pollution sources in the watershed.

Because of these efforts and others, the water quality in the Rouge River continues to show significant improvement. For example, during the year 2000 at the lower end of the River the mean dissolved oxygen (DO) increased from 4.5 mg/l in 1994 to almost 7.0 mg/l in 2000. The percent of DO readings that violated the State water quality standard of 5 mg/l dropped from 61 percent in 1994 to less than 4 percent in 2000. Similar improvements occurred at all stations in the watershed where those stations met the standard 100% of the time. It is important to note that these figures are for the entire year, during both wet and dry periods. The water quality has not been at these levels in decades.

Coupled with the water quality improvements, the ecosystem health continues to improve as well. This improvement is demonstrated by the results of the [4th Annual Friends of the Rouge Frog and Toad Survey](#). Over 400 volunteers listened for the mating calls of nine different species of frogs and toads in the areas of Wayne, Oakland and Washtenaw Counties within the Rouge River Watershed. They heard a greater number of green frogs and northern leopard frogs during the 2001 survey than they did in the previous year.

Another indicator that the ecosystem health of the Rouge River is improving is by the presence of insects and other invertebrates. Friends of the Rouge Bug Hunt Days are an opportunity to see the amazing variety of aquatic insects, crayfish, snails and clams that make up the bottom of the river food chain. Twice a year, teams of volunteers visit sites throughout the headwaters of the watershed and search for mayflies, stoneflies and other aquatic invertebrates. The presence or absence of these streambed creatures reflects the quality of the water and habitat. [May 2002 Spring Bug Hunt Results](#)

Conclusions

The Rouge Project is a working demonstration of a watershed-wide approach to restoring and protecting an urban river system by using a cooperative, locally based approach to pollution control. The watershed management tools developed by the Rouge Project has aided decision-makers and the general public in evaluating options for preventing, reducing and minimizing pollution loading impacts on the Rouge River. The Rouge watershed management tools

facilitate the prioritization and tailoring of pollution control and ecosystem restoration solutions to specific river reaches while coordinating efforts throughout the watershed.

The Rouge Project approach demonstrates that a watershed can be "managed." When water quality objectives can only be reached through the control of CSO, storm water and non-point sources-then watershed management must involve the active participation of local units of government.

Project staff feels an overwhelming success with the project. The improvements in water quality are outstanding, and the demonstration techniques have resulted not only in concrete and steel structures, but also in real institutional changes that integrate the work of storm water and watershed improvement into the basic institutions of government.

Taken from the Rouge River Project website at <http://www.rougeriver.com/watershed/overview.html>



APPENDIX E

TOTAL MAXIMUM DAILY LOAD ACTIVITIES AND PRIORITIES

TMDL Activities and Priorities – All Campuses – Rouge River

TMDL	Priority*	Description	Purpose	Activity	Frequency
Biota E. coli	1	Housekeeping	To prevent chemicals, trash, silt, sediment, or other debris from entering the storm sewer system.	Provide periodic trash removal from receptacles based on Buildings & Grounds schedule. Conduct litter pick-up from campus grounds at least once per week, as needed. Respond to chemical releases (e.g., motor oil, antifreeze, etc.) upon discovery.	On-Going
Biota E. coli	1	IDEP	To eliminate non-storm water discharges to storm sewers and illicit connections to the storm sewer system.	Locate and eliminate illicit connections and discharges to the storm sewer system in order to prevent pollutants from entering the waters of the state (e.g. Rouge River).	On-Going
Biota E. coli	1	PEP	To increase public awareness on pollution prevention activities impacting storm water runoff at OCC.	Distribute information regarding water quality and the potentially deleterious effects of illicit discharges, including pet wastes, chemical spills, and pesticide/fertilizer misuse. Information will be in electronic format on the OCC Storm Water web page and via e-mail, and in the form of pamphlets and posters.	On-Going
Biota E. coli	1	Structural Control Maintenance	Ensure that structural controls are functioning as intended to remove or reduce the concentration of pollutants from storm water runoff.	Inspect structural controls for damage, malfunction, or contamination (chemical or debris). Repair damaged or malfunctioning structures, and remove contaminants as needed to maintain proper function. All debris or other contaminants resulting from structural maintenance activities will be disposed of according to OCC programs and procedures.	On-Going
Biota E. coli	1	Storm Drain Marking	Provide warning to prevent pollutants from entering storm drains since they flow to open waters.	Paint warnings adjacent to each storm drain that states “Dump No Waste. Drains to Rouge River.” where appropriate or where an equivalent warning is not embossed on the drain cover.	Initially in 2011. Maintenance on-going.
Biota	1	Groundskeeping	Minimize the discharge of pollutants associated with groundskeeping activities.	Reduce the potential for release of pollutants of concern including, among others, pesticides, herbicides, fertilizers, and lawn/grounds maintenance by-products (e.g., lawn trimmings, landscape materials) through a program of as-needed application, the selection of shorter half-life pesticides, and the use of more ecologically friendly alternatives. Additional activities will be initiated as opportunities present themselves.	On-Going
Biota	2	Street Sweeping	To prevent debris, sediment, or other potentially contaminating materials from entering the storm sewer system.	Clean streets, drives, parking lots, parking structures, and other paved areas utilized by vehicles as needed, but at least once annually.	On-Going.

* 1 to 3 (Higher to Lower)