

**Storm Water
Pollution Prevention Initiative
For
Lower Grand River Watershed
City of Grand Rapids**

**National Pollutant Discharge Elimination
System
Municipal Storm Water Program
General Permit No. MIG610000**

**April 2012
Project No. F99511SW**



Fishbeck, Thompson, Carr & Huber
engineers • scientists • architects • constructors

STORM WATER POLLUTION PREVENTION INITIATIVE
LOWER GRAND RIVER WATERSHED
CITY OF GRAND RAPIDS

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
MUNICIPAL STORM WATER PROGRAM

GENERAL PERMIT NO. MIG610000

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TABLE OF CONTENTS



1.0	STORM WATER POLLUTION PREVENTION INITIATIVE (SWPPI) SUBMISSION	1
1.1	Coverage	1
1.2	Watershed Permit	1
1.3	Committees.....	2
2.0	WMP	3
2.1	LGRW	3
3.0	POLLUTION PREVENTION AND GOOD HOUSEKEEPING ACTIVITIES FOR MUNICIPAL OPERATIONS.....	6
3.1	Community-Specific Activities	6
3.2	Employee/Contractor Training Related to Storm Water Management Activities.....	6
4.0	CONSTRUCTION STORM WATER RUNOFF CONTROL.....	7
5.0	POST-CONSTRUCTION STORM WATER CONTROL FOR NEW DEVELOPMENTS AND REDEVELOPMENT PROJECTS.....	8
5.1	Existing Regulatory Mechanisms	8
6.0	IDEP	10
6.1	IDEP Ordinance.....	10
7.0	PROGRAM ASSESSMENT	12
8.0	SWPPI REVISIONS	13
9.0	SPECIAL REPORTING REQUIREMENTS.....	14
9.1	Environmental Impacts	14
9.2	Data and Results	14
9.3	BMP Changes.....	14
9.4	Revised Fiscal Analysis.....	14
9.5	Annual Budget	14

LIST OF TABLES

- Table 1 Communities Participating in the LGRW SWPPI
- Table 2 TMDLs within the LGRW
- Table 3 Identified WMP Objectives and Measurable Milestones
- Table 4 LGRW SESC Qualifying Local Programs
- Table 5 List of Existing Regulatory Mechanisms for Post-Construction Storm Water Controls
- Table 6 Participating Communities with an IDEP Ordinance

LIST OF FIGURES

- Figure 1 MS4 Permittees Participating in the Lower Grand River Watershed SWPPI

LIST OF APPENDICES

- Appendix 1 Public Education Plan Excerpt from General Permit
- Appendix 2 Community Specific SWPPI Commitments

LIST OF ABBREVIATIONS/ACRONYMS

- APA Authorized Public Agency
- BMP Best Management Practice

TABLE OF CONTENTS



CEA	County Enforcing Agency
City	City of Grand Rapids
DIP	Data, Information, and Procedures
IDEP	Illicit Discharge Elimination Plan
LGROW	Lower Grand River Organization of Watersheds
LGRW	Lower Grand River Watershed
LID	Low Impact Development
MDEQ	Michigan Department of Environmental Quality
MDNR	Michigan Department of Natural Resources
MEA	Municipal Enforcing Agency
MS4	Municipal Separate Storm Sewer System
NFI	Natural Features Inventory
NPS	Nonpoint Source
O&M	Operations and Maintenance
PEP	Public Education Plan
SESC	Soil Erosion and Sedimentation Control
SSO	Sanitary Sewer Overflows
SWPPI	Storm Water Pollution Prevention Initiative
TMDL	Total Maximum Daily Load
USEPA	U.S. Environmental Protection Agency
WMP	Watershed Management Plan
WQI	Water Quality Index

1.0 STORM WATER POLLUTION PREVENTION INITIATIVE (SWPPI) SUBMISSION

1.1 COVERAGE

This SWPPI is submitted on behalf of the participating communities of the Lower Grand River Watershed (LGRW). These communities and permit numbers are listed in Table 1.

Table 1 - Communities Participating in the LGRW SWPPI

Permittee	Permit Number
Allendale Charter Township MS4-Ottawa	MIG610120
Cascade Charter Township MS4-Kent	MIG610116
East Grand Rapids MS4-Kent	MIG610126
Ferrysburg MS4-Ottawa	MIG610212
Forest Hills Public Schools MS4-Kent	MIG610377
Georgetown Charter Township MS4-Ottawa	MIG610209
Grand Haven MS4-Ottawa	MIG610208
Grand Rapids MS4	MIG610371
Grand Rapids Charter Township MS4-Kent	MIG610128
Grandville MS4-Kent	MIG610123
Hudsonville MS4-Ottawa	MIG610211
Kent County Drain Commissioner MS4	MIG610130
Kent County Road Commission MS4	MIG610129
Kentwood MS4-Kent	MIG610131
Plainfield Charter Township MS4-Kent	MIG610133
Rockford MS4-Kent	MIG610134
Sparta MS4-Kent	MIG610136
Walker MS4-Kent	MIG610137
Wyoming MS4-Kent	MIG610138

MS4 - Municipal Separate Storm Sewer System

1.2 WATERSHED PERMIT

The Michigan Department of Environmental Quality (MDEQ) strongly encourages permittees to collaborate with their watershed partners to seek innovative watershed-based solutions for meeting SWPPI requirements, where allowed in the permit. Figure 1 illustrates the urbanized areas within the LGRW and the communities participating in the watershed-based permit.

1.3 COMMITTEES

To make program implementation as efficient as possible, five committees were established to address different subject areas. Participating MS4s have a representative on at least one committee. Committee meetings have also been used to update everyone on the progress of the other committees and the program in general. The committees are as follows:

- Storm Water Education Committee
- Municipal Training Committee
- Watershed Management Plan (WMP) Update Committee
- Ordinance and Strategy Committee
- Data, Information, and Procedures (DIP) Committee

2.0 WMP

2.1 LGRW

The Lower Grand River WMP was approved by MDEQ and the U.S. Environmental Protection Agency (USEPA) in August 2011. The WMP includes objectives and actions that are relevant to the approved Total Maximum Daily Loads (TMDLs) within the watershed, listed below in Table 2.

Table 2 - TMDLs within LGRW

County	Waterbody	Parameter
Ottawa	Bass River	Biota
Ottawa	Bass River	<i>E. coli</i>
Kent	Buck Creek	<i>E. coli</i>
Kent and Ottawa	Grand River	<i>E. coli</i>
Kent	Plaster Creek	Biota
Kent	Plaster Creek	<i>E. coli</i>
Kent and Ottawa	Sand Creek	Biota
Kent	Strawberry Creek	Biota
Kent	Unnamed Tributary to Grand River	Biota
Kent	York Creek	Biota
Kent	Coldwater River	<i>E. coli</i>
Kent	Coldwater River and Bear Creek (Tyler Creek)	<i>E. coli</i>
Kent	Lincoln Lake	<i>E. coli</i>
Ottawa and Muskegon	Rio Grande Creek	<i>E. coli</i>
Kent	Bear Creek	Sediment
Ionia	Morrison Lake	Phosphorus

This SWPPI includes commitments to address the objectives from the WMP that will mitigate impacts caused by storm water runoff. These objectives are identified in Table 3 and include those that address the approved TMDLs and other water quality conditions within the LGRW that may be affected by storm water. The measurable milestones included in the WMP for 1 to 5 years are listed in Table 3 as a guide for permittees to use as measures of effectiveness for their commitments. The Public Education Categories, as described in the permit (Appendix 1), were also used to identify activities that meet the objectives and have evaluation measures that assess the effectiveness of the actions.

Each permittees' specific commitments to address the WMP objectives, timeline, and measures of effectiveness are included in Appendix 2A.

Table 3 - Identified WMP Objectives and Measurable Milestones

Objectives from the 2011 WMP	Public Education Plan (PEP) Topics Considered for SWPPI Commitments (Specific activities identified in PEP)	WMP Measurable Milestones Considered for SWPPI Measures of Effectiveness
Encourage proper septic tank management	Public Education Topic No. 3 - Public Reporting of Illicit Discharges	Number of septic systems repaired or replaced Number of septic systems inspected Number of identified and corrected illicit connections found in future Nonpoint Source (NPS) inspections Number of identified areas needing cluster septic systems
Encourage septage ordinance	N/A	Development of draft septage ordinance
Implement vegetative buffering practices and restore and protect the stream buffer and canopy	Public Education Topic No. 6 - Management of Riparian Lands	Miles of buffer/filter strips installed Number of native plantings Acres of riparian acres preserved Number of people trained on the use of native vegetation Number of people trained on reduced mowing Number of buffer ordinances adopted in LGRW counties Acres enrolled in conservation easements
Implement Michigan Department of Natural Resources (MDNR) wildlife population management practices	Public Education Topic No. 4 - Personal Actions that can Impact the Watershed	Number of problem sites identified through inventories of subwatersheds where control of geese and other wildlife populations is needed
Implement sanitary sewer maintenance practices	N/A	Miles of sanitary sewer system repaired
Implement Low Impact Development (LID) practices to reduce imperviousness and increase infiltration	Public Education Topic No. 2 - Ultimate Storm Water Discharge Location and Potential Impacts	Number of rain gardens installed Number of rain barrels installed Number of vegetated roofs installed Acres of grassed waterways installed Number of infiltration BMPs installed Number of sites using pervious pavement
Implement watershed focused land-use planning	N/A	To be determined
Implement proper soil erosion and sedimentation control techniques	N/A	Number of construction sites inspected Documentation of coordination with site manager so no Soil Erosion and Sedimentation Control (SESC) violations are issued

Table 3 - Identified WMP Objectives and Measurable Milestones

Objectives from the 2011 WMP	Public Education Plan (PEP) Topics Considered for SWPPI Commitments (Specific activities identified in PEP)	WMP Measurable Milestones Considered for SWPPI Measures of Effectiveness
Implement channel and streambank stabilization, bio-engineering, and erosion control techniques	Public Education Topic No. 6 - Management of Riparian Lands	Development of LID storm water criteria in counties where none exist Feet of streambank and shoreline protection at streambank erosion sites identified in NPS inventories Completion of hydrologic and morphologic studies for 2 watershed management units Adoption and implementation of watershed protection ordinances for communities in the watershed Feet of channel restoration needed in critical areas in the watershed Acres of buffer/filter strips installed using native plantings Acres of riparian forest buffer installed Number of people trained on the use of native vegetation Number of people trained on reduced mowing
Implement turf management and proper fertilizer application practices	Public Education Topic No. 4 - Personal Actions that can Impact the Watershed	Number of people trained on turf management practices Number of training sessions on proper storage and disposal of chemicals and other Operations and Maintenance (O&M) materials

WMP objectives that are focused on agricultural operations are not listed in Table 3, since actions to meet these objectives would not be under the authority of the permittees or are exempt from the permit. Other actions in the WMP, such as those directed to manage invasive species that do not directly relate to the operation and management of the storm sewer system are also not included in Table 3, but could be included in part of a permittees' overall storm water management program.

3.0 POLLUTION PREVENTION AND GOOD HOUSEKEEPING ACTIVITIES FOR MUNICIPAL OPERATIONS

Municipal operations cover a wide variety of activities and land uses that are potential sources of storm water pollutants. These include, roadways; parking lots; transportation and equipment garages; fueling areas; warehouses; stockpiles of salt and other raw materials; open ditches and storm sewers; turf and landscaping for all municipal properties, including parks; and waste handling and disposal areas.

3.1 COMMUNITY-SPECIFIC ACTIVITIES

All participating communities in the LGRW have developed and are implementing activities to ensure compliance with storm water control, inspection and maintenance requirements, with the ultimate goal of minimizing pollutant runoff to the maximum extent practicable from municipal operations. Specific storm water controls with inspection and maintenance schedules for each community are provided in Appendix 2B.

Communities have also developed and adopted O&M procedures for the following:

- Controls used for reducing or eliminating the discharges of water and pollutants from streets, roads and highways; parking lots, maintenance garages, and storage yards
- Procedures for the disposal of O&M waste from the MS4
- Procedures to ensure that flood management control projects, such as detention basins and dams, assess impacts on water quality of the receiving waters
- Controls used to reduce discharge of pesticides, herbicides, and fertilizers

The specific procedures adopted or commitments to adopt for each community are include in Appendix 2C.

3.2 EMPLOYEE/CONTRACTOR TRAINING RELATED TO STORM WATER MANAGEMENT ACTIVITIES

All participating communities in the LGRW ensure that training for staff and contractors associated with potential storm water pollutant sources is part of their everyday activities. The procedures use Best Management Practice (BMP) guidance and training materials that are available from federal, state, or local agencies, or other organizations. Trainings for specific employees and the training frequencies for the above activities are included in Appendix 2D. Additional training topics are included to address more than pollution prevention & good housekeeping, such as construction site storm water runoff, gravel road maintenance, LID, Illicit Discharge Elimination Plan (IDEP), and general storm water education. The Municipal Training Committee will be prioritizing the training, identifying additional training opportunities, and organizing the activities to create a more robust training program to meet permit requirements.

4.0 CONSTRUCTION STORM WATER RUNOFF CONTROL

The MDEQ has determined that Part 91 of the Michigan Act and Michigan's Permit by Rule (Rule 323.2190) programs are "qualifying local programs" for the control of wet weather discharges from construction activities that result in a land disturbance of greater than or equal to one acre, or disturb less than one acre that is part of a larger common plan of development or sale. A "qualifying local program" provides control for soil erosion, offsite sedimentation, and other construction-related wastes, consistent with Federal storm water control requirements for MS4 permittees. SESC is regulated by the approved "qualifying local programs" for the LGRW listed in Table 4:

Table 4 - LGRW SESC Qualifying Local Programs

Part 91 Permitting Entity	Name	Phone	Fax
City of Kentwood - APA	Engineering Department	616-554-0737	616-698-7118
City of Kentwood - MEA	Engineering Department	616-554-0737	616-698-7118
City of Rockford - MEA	Public Services Department	616-866-9631	616-866-6406
City of Grand Rapids - APA	Environmental Services Department	616-456-3057	616-456-4199
City of Grand Rapids - MEA	Environmental Services Department	616-456-3057	616-456-4199
Kent County Drain Commissioner - APA	Kent County Deputy Drain Commissioner	616-336-3688	616-336-3575
Kent County-DPW - APA	Department of Public Works	616-336-3694	616-336-3338
Kent County Road Commission - APA	Kent County Road Commission Engineering Department	616-242-6914	616-242-6974
Kent County Road Commission - CEA	Kent County Road Commission Engineering Department	616-242-6914	616-242-6974
Ottawa County Road Commission - APA	Engineering Department	616-842-5400	616-850-7237
Ottawa County Drain Commissioner - APA	Ottawa County Drain Commissioner	616-994-4530	616-994-4529
Ottawa County Drain Commissioner - CEA	Ottawa County Drain Commissioner	616-994-4530	616-994-4529
City of Walker - MEA	Engineering Department	616-453-6311	616-791-6808
MDOT-Grand - APA	Engineer, Grand Region Office	616-451-3091	616-451-0707

APA - Authorized Public Agency
 CEA - County Enforcing Agency
 MEA - Municipal Enforcing Agency

The "qualifying local program" for a particular municipality is the MEA for that municipality. If the municipality is not an MEA then the "qualifying local program" is the CEA for that county. Exception: if a municipal or public entity is an APA, then that entity is the "qualifying local program" for its own projects.

All participating communities in the LGRW have developed and are implementing informal communication protocols to ensure adequate protection of the MS4 from construction storm water runoff. The procedures are identified for each community in Appendix 2C. The trainings associated with an SESC program are included for each community in Appendix 2D.

The protocols ensure proper handling of complaints or other information submitted by the public regarding construction activities discharging wastes to the MS4.

5.0 POST-CONSTRUCTION STORM WATER CONTROL FOR NEW DEVELOPMENTS AND REDEVELOPMENT PROJECTS

The permittees in the LGRW address post construction storm water runoff with controls on areas of new development and significant redevelopment that disturb one (1) acre or more, including projects less than one (1) acre that are part of a larger common plan of development or sale that discharge into a drainage system. The goal of this regulatory mechanism is to protect the designated uses in the receiving water from common impacts associated with urbanization.

The post-construction storm water control measures ensure the BMPs for storm water controls are being designed in the planning stages of developments. These can be vegetative, structural, or managerial BMPs that work together with regulatory mechanisms to prevent or minimize impacts on water quality.

Other regulatory mechanisms work with the storm water controls to minimize impacts, such as Natural Features Inventories (NFI), wetlands ordinances, open space requirements, required reduction in volume of storm water discharge, and urban growth boundaries.

Long-term O&M of the post-construction storm water controls is also necessary to retain the desired level of water quality protection over time.

5.1 EXISTING REGULATORY MECHANISMS

The existing regulatory mechanisms that are part of each permittees' post-construction storm water control efforts are listed in Table 5. Further explanation specific to each community is included in Appendix 2E.

Table 5 - List of Existing Regulatory Mechanisms for Post-Construction Storm Water Controls

Permittee	Existing Regulatory Mechanisms	Date
Allendale Charter Township	Storm Water Ordinance No. 2004-8	May 10, 2004
Cascade Charter Township	Storm Water Ordinance 7 of 2002 As amended by Ordinance No. 2 of 2008	May 14, 2008
East Grand Rapids, City of	Chapter 28 of Title II of the Code of the City of East Grand Rapids	September 30, 2005
Ferrysburg, City of	Ordinance No. 233	September 5, 2006
Georgetown Charter Township	Chapter 48 of Storm Water Management Ordinance No. 2002-01, §§ 1.01--9.01	March 1, 2006
Grand Haven, City of	Resolution	July 7, 2008

Table 5 - List of Existing Regulatory Mechanisms for Post-Construction Storm Water Controls

Permittee	Existing Regulatory Mechanisms	Date
Grand Rapids, City of	Ordinance No. 2001-26, § 1 Ordinance No. 2007-13, § 1	July 31, 2001 February 20, 2007
Grand Rapids Charter Township	Storm Water Ordinance No. 426	January 6, 2004
Grandville, City of	Article IV. Storm Water Management	October 18, 2005
Hudsonville, City of	Ordinance No. 04-249	December 14, 2004
Kent County Drain Commissioner	Development Drainage Rules	January 1, 2006
Kentwood, City of	Ordinance No. 9-84	June 1, 1984
Ottawa County Drain Commissioner	Standards & Specifications	September 9, 2005
Plainfield Charter Township	Storm Water Systems Management Ordinance No. 697, Resolution 00-50	November 6, 2000
Rockford, City of	Resolution	May 2, 2009
Sparta, Village of	Ordinance No. 04-10	October 12, 2004
Walker, City of	Ordinance No. 03-500	April 28, 2003
Wyoming, City of	Ordinance No. 20-08	January 5, 2009

6.0 IDEP

All MS4 communities in the LGRW covered by the watershed-based General Permit commit to implement and enforce a program to detect and eliminate illicit connections and discharges to MS4s.

The IDEP was approved in 2003 and will be implemented until revised. The participating communities in the LGRW expect to revise the IDEP in 2012.

6.1 IDEP ORDINANCE

An ordinance (or other regulatory mechanism where an ordinance is not feasible or appropriate) to effectively prohibit illicit discharges into the MS4 has been adopted by participating communities in the LGRW. Table 6 lists the community and the adoption date of the regulatory mechanism.

Table 6 - Participating Communities with an IDEP Ordinance

Community	Illicit Discharge and Connection Ordinance Adoption Date
Allendale Charter Township	May 10, 2004
Cascade Charter Township	June 23, 2004
East Grand Rapids, City of	September 19, 2005
Ferrysburg, City of	September 7, 2004
Georgetown Charter Township	August 12, 2002
Grand Haven, City of	February 5, 2007
Grand Rapids Charter Township	January 6, 2004
Grand Rapids, City of	July 2001
Grandville, City of	September 26, 2005
Hudsonville, City of	December 14, 2004
Kentwood, City of	October 24, 2004
Plainfield Charter Township	November 6, 2000
Rockford, City of	August 8, 2005
Sparta, Village of	September 13, 2004
Walker, City of	March 28, 2003
Wyoming, City of	October 3, 2005

Each ordinance or other regulatory mechanism:

- Regulates the contribution of pollutants to the MS4, owned or operated by the permittee.
- Prohibits illicit discharges, including the direct dumping or disposal of materials, into the MS4, owned or operated by the permittee.

- Establishes the authority to investigate, inspect, and monitor suspected illicit discharges into the MS4, owned or operated by the permittee.
- Requires elimination of illicit discharges and connections into the MS4, owned or operated by the permittee.

7.0 PROGRAM ASSESSMENT

The SWPPI identifies many actions to be implemented in an effort to reduce storm water pollution to the maximum extent practicable. Evaluation of the effectiveness of these actions is made both through direct analysis of the work being performed and at the watershed level. SWPPI Logbooks will be used to log and track the actions taken and the results of those actions (where feasible). These measurements will be evaluated by providing the following information.

- A quantitative measure of the work performed
- How this quantity compares to the desired outcome for the action or actions
- A qualitative evaluation of the effectiveness of the action or actions
- If improvement is needed, the means by which implementation can be improved

Program assessment will also be undertaken at the watershed scale.

The Lower Grand River Organization of Watersheds (LGROW) is working to develop a system of accounting for the numerous activities being conducted throughout the LGRW. As part of a current grant project known as the LGROW Initiatives, multiple stakeholders, (including local governments, county health departments, county parks departments, county road commissions, conservation districts, land conservancies, and sub-basin organizations), were queried using an on-line survey system about the installation and performance of various water quality measures being instituted or installed in their respective parts of the watershed over the last six years. Stakeholder specific information was requested in a series of surveys with a wide array of reporting topics including various BMPs, illicit connection counts, enforcement actions, earth change projects, sanitary and storm system repairs, spill incidents, street sweeping, stream bank erosion measures, storm inlet stenciling, newly dedicated open lands, adopted rules related to protecting water quality, septic system manifests and records, development restrictions or riparian easements, storm water or LID ordinance adoptions, yard waste management, drainage retrofits, public education efforts, river cleanups, watershed monitoring, stakeholder outreach, grant awards, construction site, and soil and erosion permits. The survey also included open-ended questions for each of the stakeholder groups about their respective success and failures and their overall reaction to the survey itself.

Unfortunately, the process has not yet resulted in a consistent and thorough response. This is due to several factors which must be overcome with future survey design. LGROW and its DIP Committee are currently reviewing the process and considering recommendations for subsequent efforts.

8.0 SWPPI REVISIONS

The permit requires the SWPPI be reviewed every 2 years after it is submitted and revised if necessary. The SWPPI will be reviewed by April 2014 and revisions will be made, if deemed necessary.

9.0 SPECIAL REPORTING REQUIREMENTS

The permit states that the City of Grand Rapids (City) will submit the following additional information as part of their SWPPI:

9.1 ENVIRONMENTAL IMPACTS

The City will report on the Grand River Water Quality Index (WQI) results of water quality sampling in the Grand River. Information about sanitary sewer overflows (SSO) will also be reported.

9.2 DATA AND RESULTS

The City will provide a summary of all information collected and analyzed, including monitoring data from the WQI during the report cycle.

9.3 BMP CHANGES

The City will describe any planned changes in identified BMPs or measurable goals for those BMPs.

9.4 REVISED FISCAL ANALYSIS

The City will provide the fiscal analysis of the reporting period and any changes to the funding status of the permit requirements.

9.5 ANNUAL BUDGET

The City will provide the reporting periods' expenditures and proposed budget for storm sewer maintenance and storm water management.

Figure 1

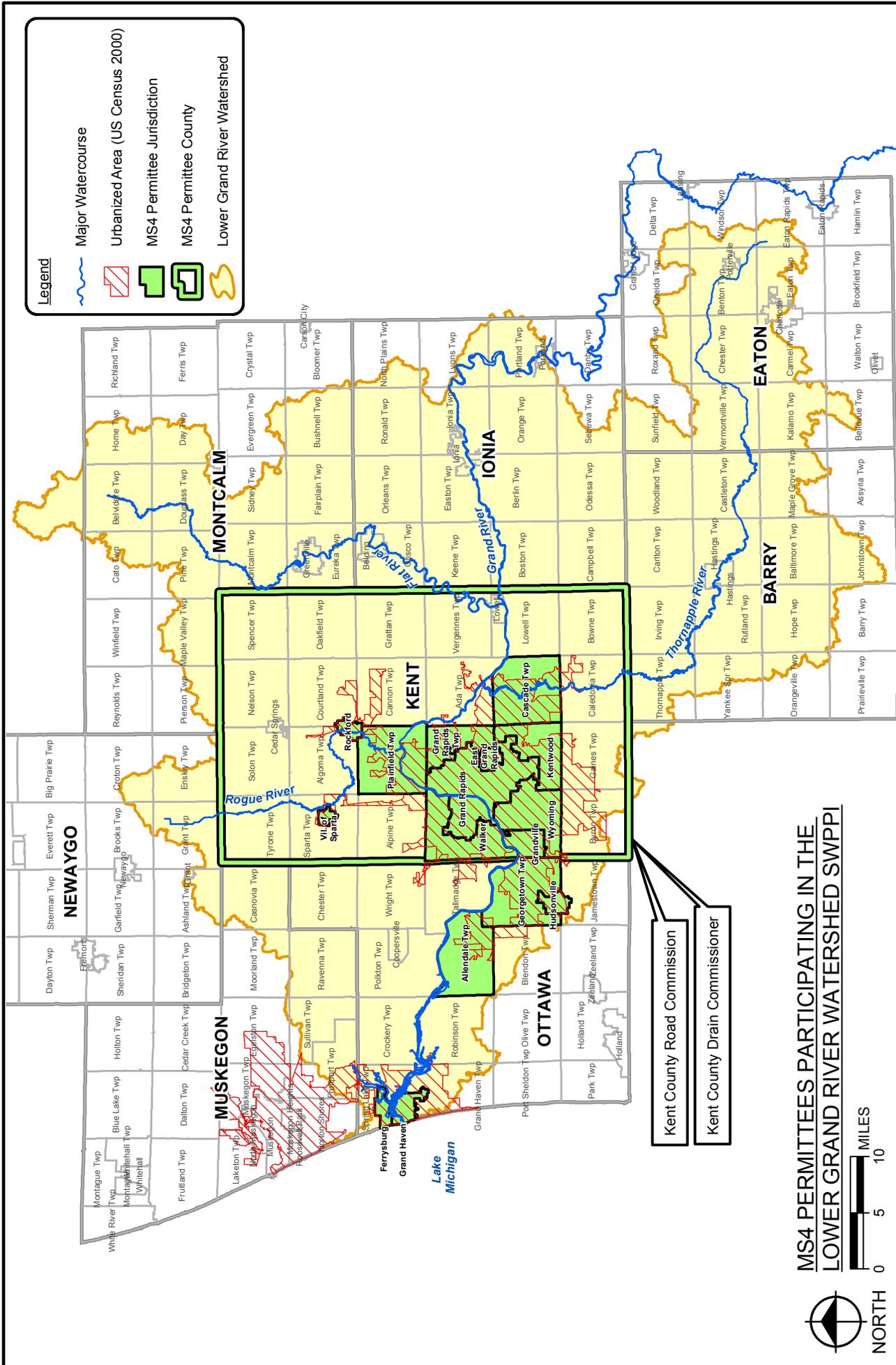
Hard copy is intended to be 8.5"x11" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

Grand Valley Metropolitan Council

NPDES Phase II Storm Water Regulations

PROJECT NO.
G99511SW

FIGURE NO.
1



Legend

- Major Watercourse
- Urbanized Area (US Census 2000)
- MS4 Permittee Jurisdiction
- MS4 Permittee County
- Lower Grand River Watershed

**MS4 PERMITTEES PARTICIPATING IN THE
LOWER GRAND RIVER WATERSHED SWPPI**



NORTH

Kent County Road Commission
Kent County Drain Commissioner

Appendix 1

Appendix 1 - PEP Section of General Permit

PERMIT NO. MIG619000

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM WASTEWATER DISCHARGE GENERAL PERMIT

Storm Water Discharges from Municipal Separate Storm Sewer Systems (MS4s) Subject to Watershed Plan Requirements

(Excerpt from pages 5-6)

Section A. Authorizations and Coverage Provisions

3. IDEP and PEP Submittal

b. Public Education Plan (PEP)

The applicant shall submit a PEP, or an update to an existing PEP. The PEP shall promote, publicize, and facilitate watershed education for the purpose of encouraging the public to reduce the discharge of pollutants in storm water to the maximum extent practicable. The PEP may involve combining with or coordinating existing programs for public stewardship of water resources. Pollution prevention shall be encouraged. The PEP shall describe a method for determining the effectiveness of the various public education activities.

"Public" shall be defined to include all persons who potentially could affect the quality of storm water discharges, including, but not limited to, residents, visitors to the area, businesses, commercial operations, and construction activities.

The PEP shall be designed to accomplish, at a minimum, the following as appropriate based on the potential impact on the watershed:

- 1) Education of the public about their responsibility and stewardship in their watershed;
- 2) Education of the public on the location of residential separate storm water drainage system catch basins, the waters of the state where the system discharges, and potential impacts from pollutants from the separate storm water drainage system;
- 3) Encouragement of public reporting of the presence of illicit discharges or improper disposal of materials into the applicant's separate storm water drainage system, 4) education of the public on the need to minimize the amount of residential, or non-commercial, wastes washed into nearby catch basins (this should include the preferred cleaning materials and procedures for car, pavement, or power washing; the acceptable application and disposal of pesticides and fertilizers; and the effects caused by grass clippings, leaf litter, and animal wastes that get flushed into the waterway),
- 5) Education of the public on the availability, location and requirements of facilities for disposal or drop-off of household hazardous wastes, travel trailer sanitary wastes, chemicals, yard wastes, and motor vehicle fluids; and
- 6) Education of the public concerning management of riparian lands to protect water quality.

Appendix 2

Appendix 2A

Commitments to WMP Objectives

Appendix 2A – Summary of Municipal Commitments

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Encourage proper septic tank management.	Provide educational brochures to all homeowners with septic systems. Currently there are 10 within the City limits, none of which have storm sewers in the area.	December 2012.	Document that all brochures were sent. Report number of septic tank failures reported.
Encourage septage ordinance.	Continue to work with the County or the Committee on septic tank issues.	Ongoing.	Number of failed septic systems connected to public sewer. Number of failed septic systems reported to Health Department and number of repairs and permits issued.
Implement vegetative buffering practices. Restore and protect the stream buffer and canopy.	Continue to enforce environmental features ordinance passed in 2012 requiring a 75-foot buffer protecting rivers, wetlands, streams, water bodies and sensitive environmental receptors. Prepare and adopt tree ordinance for the protection and restoration of the City's canopy.	Continue to implement environmental features buffer. Implement tree ordinance by June 30, 2013.	Report number of sites where buffer ordinance was applied. Adoption of tree ordinance.
Implement MDNR wildlife population management practices.	Continue to install "Don't feed the wildlife signs" where needed. Provide online training for staff.	Ongoing. Provide training by June 2013.	Number of signs – less feeding observed. Number of staff attending training.
Implement sanitary sewer maintenance practices.	Maintain compliance with CMOM (Capacity, Management, Operation & Maintenance) for sanitary sewers in order to prevent seepage to storm sewers.	Ongoing.	Refer to cmom.net. Maintenance items are tracked in an enterprise asset management system.

Permittee: **City of Grand Rapids**

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Implement Low Impact Development practices.	Continue implementing commitment to LID, as detailed in Green Grand Rapids, a 2012 addendum to our Master Plan.	Ongoing.	Number and type of LID practices utilized at City properties.
Implement watershed focused land-use planning.	Continue enforcement of the City's current floodplain ordinance to protect flood plains not regulated by MDEQ. Continue enforcement of the city's current pet waste ordinance. Continue implementing commitment to LID, as detailed in Green Grand Rapids, a 2012 addendum to our Master Plan.	Ongoing.	Number of plans reviewed. Number of offsite LID practices implemented.
Implement proper soil erosion and sedimentation control techniques.	Continue to enforce regulations as a Municipal Enforcing Agency. Train City field staff in SESC. Maintain certifications of Construction Stormwater Operators.	As projects are reviewed. Train a majority of field staff by June 30, 2013. Continue certifications.	Maintain MEA status. Percent of field employees trained. Number of Construction Stormwater Operators.
Implement channel streambank stabilization, bio engineering and erosion control techniques.	Compliance with DEQ permit conditions for any work that occurs within a stream. Flow restriction ordinance for all streams and reduced flow for impaired streams.	Continue to obtain DEQ permits for construction in a stream or channel. Continue to implement flow controls per stormwater ordinance.	Number of projects needing permits and permits obtained. Number of sites limited to reduced discharge.

Permittee: **City of Grand Rapids**

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
<p>Implement turf management and proper fertilizer application practices.</p>	<p>Continue to be in compliance with the State of Michigan Public Act 299 of 2010.</p> <p>Staff is trained in proper use of pesticides, herbicides and fertilizers.</p> <p>Contracts for these services contain language requiring proper usage.</p> <p>a. "No clippings of grass or weeds may be left in the street, on the curb, parkways, or sidewalk, but must be properly disposed of by the contractor."</p> <p>b. "All chemicals and materials which are spilled or misapplied to areas other than turf shall be cleaned up immediately. The contractor shall not allow chemicals & other materials to enter storm sewers, catch basins and/or water ways."</p> <p>c. "No chemical of any kind may be discharged into the gutters or sewer system. If granular(s) are used they must be swept or blown clean off all impermeable surfaces."</p>	<p>Ongoing.</p>	<p>Number of staff trained.</p> <p>Number of contracts issued.</p>

Appendix 2B

Storm Water Controls

Appendix 2B – Structural Controls

Good Housekeeping and Pollution Prevention

(1) maintenance activities, maintenance schedules, and inspection procedures for storm water structural controls to reduce pollutants (including floatables) in discharges from the permittee's separate storm water drainage system;

Structure	Complaint Based	Maintenance Goals
Stormwater Manholes	X	
Stormwater Catch basins	X	Clean 2500 annually
Discharge Points	X	
Stormwater Laterals	X	
Stormwater Pressurized Mains	X	Bi-weekly Inspection visit
Stormwater Lift Stations	X	Bi-weekly Inspection visit
Stormwater Gravity Mains	X	
Infiltration Basins (underground)	X	10 yr. Inspection cycle
Detention Basins	X	Maintain & Inspect three times annually
Hydro Separators	X	Clean twice year
Siphons	X	Clean annually
Creek gates	X	Clean annually
Open Ditches	X	

Appendix 2C

Procedures for Inspection and Maintenance of Storm Water Controls

Permittee: **City of Grand Rapids**

Appendix 2-C – Procedures – Good Housekeeping and Pollution Prevention by Type of Property – Part 1

Types of Properties	O&M Procedure	Location on
PW, S, T, W, WW	Concrete Waste Management	http://mygrcity.us/collaboration/swppp
A, C, D, F, G, L, M, Pk, Po, PW, R, T, V, W, WD, WW	Dumpster Management	BMP Concrete Waste Management.pdf BMP Dumpster Management.pdf
Pk, PW, T, W	Erosion and Sediment Control	BMP Erosion and Sediment Control.pdf
F, G, Po, PW	Fueling Areas	BMP Fueling Areas.pdf
A, F, G, L, M, Pk, Po, PW, T, W, WD, WW	Garbage Storage	BMP Garbage Storage.pdf
D, Pk, PW, T, W, WD, WW	Material Covering	BMP Material Covering.pdf
D, Pk, PW, S, T, W, WD, WW	Outdoor Storage Areas	BMP Outdoor Storage Areas.pdf
Pk, PW, T, W, WD, WW	Outdoor Storage, Raw Materials	BMP Outdoor Storage, Raw Materials.pdf
PW/T	Paving and Grinding Operations	BMP Paving and Grinding Operations.pdf
F, M, PW, W, WW	Petroleum and Chemical Storage, Small Quantities	BMP Petroleum and Chemical Storage, Small Q.pdf
F, M, P/W, W, WW	Petroleum and Chemical Disposal	BMP Petroleum and Chemical Disposal.pdf
F, M, W, WW	Petroleum and Chemical Handling	BMP Petroleum and Chemical Handling.pdf
F, W, WW	Petroleum and Chemical storage bulk	BMP Petroleum and Chemical Storage, Bulk.pdf
F, L, M, Pk, Po, PW, T, W, WW	Salt Application	BMP Salt Application.pdf
PW	Sand and Salt Storage	BMP Sand and Salt Storage.pdf
A, D, F, G, L, M, Pk, Po, PW, T, W, WD, WW	Solid Waste Management	BMP Solid Waste Management.pdf
A, F, M, Pk, PW, T, W, WD, WW	Spill Cleanup	BMP Spill Cleanup.pdf

Property Types Legend:

A - Administration	F - Fire	M - Maintenance Grg	PW - Public Works	V - Vacant/Open Land	WW - Wastewater
C - Cemetery	G - Garage/Storage	Pk - Parking/Parks	R - Residential	W - Water Cond/Tmt	
D - Unregulated Landfill/Dump	L - Library	Po - Police	T - Transportation	WD - Waste Disposal Area	

Permittee: **City of Grand Rapids**

Types of Properties	O&M Procedure	Location on http://mygrcity.us/collaboration/swpppp
A, F, M, Pk, PW, T, W, WD, WW	Spill Prevention Control and Cleanup	BMP Spill Prevent Control.pdf
PW, S, W	Dust Control	deq-wb-nps-dc_250612_7.pdf
A, D, F, G, M, Pk, PW, T, W, WD, WW	Equipment Storage and Maintenance Areas	deq-wb-nps-ems_250618_7.pdf
F, L, Pk, Po, PW, R, T, V, W, WD, WW	Fertilizer Management	deq-wb-nps-fm_250620_7.pdf
F, L, Pk, Po, PW, R, T, V, W, WD, WW	Lawn Maintenance	deq-wb-nps-lm_250884_7.pdf
D, F, L, Pk, Po, PW, T, W, WD, WW	Organic Debris Disposal	deq-wb-nps-odd_250887_7.pdf
F, L, Pk, Po, PW, T, W, WD, WW	Pesticide Management	deq-wb-nps-pm_250893_7.pdf
WW	Stream Bank Stabilization	deq-wb-nps-sbs_250898_7.pdf
PW, T, W, WW	Soil Management	deq-wb-nps-sm_250902_7.pdf
WW	Slope, Shoreline, Stabilization	deq-wb-nps-sss_250907_7.pdf
Pk, T	Street Sweeping	deq-wb-nps-sw_250908_7.pdf
F, L, M, Pk, R, T, V, WD, WW	Trees, Shrubs and Ground Covers	deq-wb-nps-tsg_250910_7.pdf
T	Winter Road Maintenance	deq-wb-nps-wrm_250914_7.pdf
Pk	Golf Course Manual	ess-nps-Golf-Course-Manual_209682_7.pdf
Pk, T	Road Salt Application and Storage	Road Salt Application and Storage.doc

The City's goal is to review and customize these procedures by December 31, 2014.

Property Types Legend:

A - Administration	F - Fire	M - Maintenance Grg	PW - Public Works	V - Vacant/Open Land	WW - Wastewater
C - Cemetery	G - Garage/Storage	Pk - Parking/Parks	R - Residential	W - Water Cond/Tmt	
D - Unregulated Landfill/Dump	L - Library	Po - Police	T - Transportation	WD - Waste Disposal Area	

Permittee: City of Grand Rapids

Appendix 2-C – Procedures - Good Housekeeping and Pollution Prevention by Property Type – Part 2

General operations and maintenance items for Transportation, Parking , Maintenance Garages and O&M Waste Disposal.

(1) controls for reducing or eliminating the discharges of pollutants from streets, roads, highways, parking lots, and maintenance garages;

(a) Streets, roads, highways

- a. Street Sweeping – goal is once every 30 days (weather dependent).
- b. Salt Application – Drivers are trained with new equipment to utilize salt most cost effectively which minimizes the amount used on the roadways.
- c. SESC Program – tracking and construction is controlled via ordinance
- d. Vehicle Accident Spills – Fire Department has a policy for cleanup and control in place.
- e. Dust Control - See BMP sheet
- f. Snow Removal – See BMP sheet
- g. Gravel Road – See BMP sheet
- h. Roadside Vegetation – See BMP sheet

(b) Parking lots

- a. Every surface parking lot has check sheet has cleaning the curb lines as a daily activity (5 days per week). Larger pieces of trash or debris are removed daily from the lot. Finer materials of grit and gravel are allowed to accumulate until there is a sufficient volume to warrant sweeping. Sweeping the curb lines is done weekly, monthly, or bi-monthly, depending on the inspection, season or activity in the lot.
- b. During the winter months curb line cleaning activity is reduced due to snow accumulation. However, when the snow melts in the spring the curb lines are cleaned as they become accessible. During the fall, falling and blowing leaves require more attention and result in an increased frequency of cleaning curb lines.
- c. Parking lots associated with City own buildings are cleaned on an as needed basis. The department responsible for the lot inspects and schedules cleaning.

(c) Maintenance garages

- a. The maintenance garage and public works yard including salt storage has trained staff. Work has been ongoing to formalize the activities in this area. A SWPPP is being created and implemented to fully document all the procedures and ensure compliance. Implementation is expected to be complete by March 2013.

(2) procedures for the proper disposal of operation and maintenance waste from the separate storm water drainage system (dredge spoil, accumulated sediments, floatables, and other debris);

- (a) dredge spoil, accumulated sediments, floatables, and other debris from the use of City staff and equipment for these activities are dumped on a concrete slab located at the wastewater treatment plant (WWTP). The liquid is discharged to the WWTP and solids disposed of in a type II landfill. The DEQ staff was shown the facility during a June 3, 2011 MS4 Inspection.
- (b) Contractors are required as part of their contract to properly dispose of dredge spoil, accumulated sediments, floatables, and other debris in a type II landfill.

Permittee: City of Grand Rapids

(3) ways to ensure that flood management projects assess the impacts on the water quality of the receiving waters and, whenever possible, examine existing water quantity structures for incorporation of additional water quality protection devices or practices.

- (a) Green Master Plan Update establishes the baseline for these requirements and is complemented by Zoning and Planning Ordinances.
- (b) The Sustainability Plan also includes goals and targets to address water quality.
- (c) Use of Green Infrastructure and Low Impact Design is reviewed and incorporated into all public projects when affordable and appropriate.

Appendix 2D

Training Program for Staff and Contractors

Permittee: **City of Grand Rapids**

Appendix 2-D – Training Staff and Contractors on Pollution Prevention and Good Housekeeping Component

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
SWPPI Requirements			
Maintenance activities, maintenance schedules, and inspection procedures	Collection System Maintenance Group	Ongoing First 6 months of hire	Written O&M Procedures Office of Water Programs, California State University, Sacramento Operation and Maintenance of Wastewater Collection Systems, Volumes 1 & 2
Controls on streets, parking lots, maintenance garages, and storage yards	Public Services, Facilities and Fleet Management, Field Staff and Parking Services	Hire in 2 year cycle	Online training which may include Powerpoints and/or the following videos Storm Watch - Municipal Storm Water Pollution Prevention - DVD from Excal Visual, LLC Spills & Skills - Non-Emergency HazMat Spill Response - DVD from Excal Visual, LLC Keep An Eye On It! - Environmental Awareness for Gravel Road Maintenance - DVD from SEMCOG & Road Commission for Oakland County
Disposal of O&M waste	Collection System Maintenance Group Contractors	Ongoing Contract	Written O&M Procedures Written contract requirements

Permittee: **City of Grand Rapids**

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
Water quality protection in flood control projects (detention basins, dams)	Stormwater Management Personnel, Field Staff & Design Personnel	Ongoing	Training consistent with LID and other training/conferences as they become available
Controls to reduce discharge of pesticides, herbicides, and fertilizers	Contractors	Ongoing	<p>Compliance with the State of Michigan Public Act 299 of 2010</p> <p>Staff is trained in proper use of pesticides, herbicides and fertilizers</p> <p>Contracts for these services contain language requiring proper usage</p> <ol style="list-style-type: none"> a. "No clippings of grass or weeds may be left in the street, on the curb, parkways, or sidewalk, but must be properly disposed of by the contractor." b. "All chemicals and materials which are spilled or misapplied to areas other than turf shall be cleaned up immediately. The contractor shall not allow chemicals & other materials to enter storm sewers, catch basins and/or water ways." c. "No chemical of any kind may be discharged into the gutters or sewer system. If granular(s) are used they must be swept or blown clean off all impermeable surfaces."
Other Topics			
Construction site stormwater runoff	Field Staff Contractors	Preconstruction meeting	<p>Training may include one or both of the following; Ground Control - Storm Water Pollution Prevention for Construction Sites - DVD from Excal Visual, LLC LGRW_ContractorTrainingBrochure_2011-09-16.pub</p>

Permittee: **City of Grand Rapids**

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
LID	Stormwater Management Personnel, Field Staff & Design Personnel	Ongoing	<p>Provide copies of the SEMCOG Low Impact Design manual. Provide opportunities for training and attendance of webinars and other conferences. The following videos are also available for their use;</p> <p>Reduce Runoff: Slow It Down, Spread It Out, Soak It In - DVD from USEPA</p> <p>RiverSmart Homes: Getting Smart about Runoff - DVD from USEPA</p> <p>Building Green: A Success Story in Philadelphia - DVD from USEPA</p> <p>After the Storm - DVD from USEPA</p> <p>BMP Tour of GVSU Campuses – Walking Tour</p>
IDEP	All Employees	Ongoing	<p>Items will be maintained on City intranet and periodic announcements made. These items will include various brochures and include;</p> <p>WaterPollutionReportForm.doc</p> <p>Article_City_Employees.doc</p>
General Storm Water Education	Top Management	Annually	<p>“Back to Basics” Storm Water Training – Live Presentations (in 2011 the Six Minimum Control Measures were highlighted)</p>

Appendix 2E

Post-Construction Regulatory Mechanisms

Appendix 2-E – Post Construction Controls Summary

Implementation

The City of Grand Rapids Ordinances Ord. No. 2001-26, § 1 of 2001 and Ord. No. 2007-13, § 1 are the Stormwater Ordinances for the City. Post-construction controls for new development contained in the ordinance include:

- Limiting discharge rates to 0.13 cfs/acre for a 25-yr 24-hr storm.
- Limiting discharges to sensitive downstream receptors, including open channel banks susceptible to erosion, to 0.05 cubic feet per second per acre up to the two (2) year rain event.
- Treatment of the first ½" of rain for water quality.

The City of Grand Rapids Ordinances Ord. No. 2012-01, § 1 of 2012 is a zoning ordinance establishing setbacks for rivers, wetlands, streams, water bodies, or other sensitive environmental areas. Incentives for using Low Impact Development are also included in the zoning ordinances. In addition, the Green Grand Rapids Master Plan Update depicts Grand Rapids' commitment to using Low Impact Development, conserving green space and protecting our waterways.

Operation and Maintenance

In 2010, the City had a draft stormwater ordinance that included long term operation and maintenance of post-construction controls. However, when the MS4 permit was withdrawn, the ordinance was not finalized for adoption. Upon receipt of new permit which is not expired, the stormwater ordinance will be revisited.

In preparation for the draft ordinance, however, a method for tracing and inspecting the post construction controls was established. Without the ordinance for authorization, the City cannot enter private property to inspect it. However, all post construction controls are inspected, to the extent they can be, from public rights of way.

In addition, the City's nuisance ordinance can be utilized to inspect controls if a complaint is received by Code Enforcement.