

Lower Grand River Watershed

Cascade Charter Township Progress Report

**Reporting Period
August 1, 2011, through July 31, 2012**

**Progress Report Due Date:
October 1, 2013**

Project No. F99511SW/G120878

Lower Grand River Watershed Progress Report

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LIST OF ABBREVIATIONS/ACRONYMS

AWRI	Annis Water Resources Institute
BMP	Best Management Practice
CES	Center for Environmental Study
CoC	Certificate of Coverage
DIP	Data, Information, and Procedures
DPW	Department of Public Works
FTC&H	Fishbeck, Thompson, Carr & Huber, Inc.
GVMC	Grand Valley Metropolitan Council
HD	Health Department
ICMA	International City/Country Management Association
IDEP	Illicit Discharge Elimination Plan
I&E	Information and Education
KCDC	Kent County Drain Commissioner
KCRC	Kent County Road Commission
LGROW	Lower Grand River Organization of Watersheds
LGRW	Lower Grand River Watershed
LID	Low Impact Development
MDEQ	Michigan Department of Environmental Quality
MDNRE	Michigan Department of Natural Resources and Environment
MS4	Municipal Separate Storm Sewer System

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MSUE	Michigan State University Extension
NOAA	National Oceanic and Atmospheric Administration
NPS	Nonpoint Source
O&M	Operation and Maintenance
OCDC	Ottawa County Drain Commissioner
PCC	Post-Construction Controls
PEP	Public Education Plan
POS	Point-of-Sale
SEMCOG	Southeast Michigan Council of Governments
SESC	Soil Erosion and Sedimentation Control
SWPPI	Stormwater Pollution Prevention Initiative
TSS	Total Suspended Solids
USEPA	U.S. Environmental Protection Agency
WMEAC	West Michigan Environmental Action Council
WMP	Watershed Management Plan
WQI	Water Quality Index

PART 1 - Contact Information

Table 1 - Contact Information for Michigan Department of Environmental Quality (MDEQ):	
Please provide current contact information for MDEQ to use regarding stormwater issues.	
Permit Application Contact	
Name	Mr. Steve Peterson
Title	Township Planner
Address	2865 Thornhills Avenue, SE
City, State, Zip	Grand Rapids, MI 49546-7192
Telephone (with area code)	(616) 949-1500
Fax (with area code)	(616) 949-3918
E-mail	speterson@cascadetwp.com
Stormwater Program Manager	
Name	Mr. Steve Peterson
Title	Township Planner
Address	2865 Thornhills Avenue, SE
City, State, Zip	Grand Rapids, MI 49546-7192
Telephone (with area code)	(616) 949-1500
Fax (with area code)	(616) 949-3918
E-mail	speterson@cascadetwp.com
Stormwater Permit Fee Billing Address	
Name	Ms. Sandra Korhorn
Title	Assistant to the Manager
Address	2865 Thornhills Avenue, SE
City, State, Zip	Grand Rapids, MI 49546-7192
Telephone (with area code)	(616) 949-1500
Fax (with area code)	(616) 949-3918
E-mail	sotey@cascadetwp.com

PART 2 - Municipal Stormwater Pollution Prevention Initiatives (SWPPI) Commitments

SWPPI Revisions

All participating communities in the Lower Grand River Watershed (LGRW) reviewed and modified their SWPPIs to address the issues identified in the December 29, 2011, MDEQ violation notices. Fishbeck, Thompson, Carr & Huber, Inc. (FTC&H) met weekly with the communities throughout the month of March in small groups. Kent County agencies, the City of Grand Rapids, other cities and villages, and townships met separately to develop SWPPI modifications to meet the requirements in the 2003 General Permit. MDEQ staff participated in these meetings, resulting in a revised SWPPI submittal on April 4, 2012. The SWPPIs received MDEQ approval on June 8, 2012. Most of the effort during the reporting period from August 1, 2011, through July 31, 2012, was directed at resolving this issue.

MDEQ Program audits

MDEQ is expecting to perform Municipal Separate Storm Sewer System (MS4) Program Audits in all MS4 communities within 5 years. During this reporting period, MDEQ performed audits on the following LGRW communities:

May 16, 2012	Village of Sparta
June 6, 2012	City of Ferrysburg

FTC&H assisted the communities in preparing for the audits and in addressing any deficiencies identified by MDEQ.

Lower Grand River Organization of Watersheds (LGROW)

A Watershed Management Plan (WMP) for the Lower Grand River was completed in 2011 and approved by MDEQ as meeting state and federal requirements. Through this WMP, LGROW aspires to affect all potentially polluting or destructive activities conducted throughout the entire LGRW. LGROW is in a unique position to join with other large-scale initiatives throughout West Michigan and bring a greater sense of water stewardship and improved quality to the entire region. LGROW already partners with many local organizations and the MS4 communities through its diverse membership and Board of Directors structure. LGROW can play a significant part in improving the quality and availability of waters throughout the entire state and region through their continued use of the WMP in the Lower Grand River.

The complete document can be viewed as follows: [Lower Grand River Watershed Management Plan - AWRI Information Services Center - Grand Valley State University](http://www.gvsu.edu/wri/isc/lower-grand-river-watershed-management-plan-draft-312.htm) (<http://www.gvsu.edu/wri/isc/lower-grand-river-watershed-management-plan-draft-312.htm>).

Meetings

A meeting of all watershed partners was held on January 24, 2012. Much of the meeting dealt with resolving the violation notice issued by MDEQ on December 29, 2011. Meeting minutes are available at the website below:

<http://www.ftch.com/lowergrandriverwatersheddocuments>

Committees

To make program implementation as efficient as possible, five committees were established to address different subject areas. It was recommended that every participating MS4 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:

- SWPPI
- Stormwater Education Committee
- Ordinance & Strategy Committee
- Municipal Training Committee
- WMP Update Committee
- Data, Information, and Procedures (DIP) Committee

The list of committee members who have served on the committees during this reporting period is indicated in Table 2 below.

Table 2 - LGRW Committee Membership List as of July 31, 2012

Community	Representative	SWPPI	Stormwater Education	Ordinance & Strategy	Municipal Training	Watershed Management	DIP
Allendale Charter Township	Mr. Jerry Alkema	X	X				
Cascade Charter Township	Mr. Bill Cousins				X		
Cascade Charter Township	Mr. Steve Peterson	X	X				
East Grand Rapids, City of	Mr. Brian Donovan					X	
East Grand Rapids, City of	Mr. Ken Feldt	X					X
Ferrysburg, City of	Mr. Craig Bessinger	X					X
Forest Hills Public Schools	Mr. Ron Boezwinkle		X				
Georgetown Charter Township	Mr. Denny Bishop				X		
Grand Haven, City of	Mr. Bill Hunter	X			X		
Grand Haven, City of	Ms. Cheryl Davidson		X				
Grand Rapids Charter Township	Mr. Bob Versluys	X		X			
Grand Rapids, City of	Mr. Chuck Schroeder						Alt
Grand Rapids, City of	Mr. Mike Lunn		Alt	X	Alt		Alt

Table 2 - LGRW Committee Membership List as of July 31, 2012

Community	Representative	SWPPI	Stormwater Education	Ordinance & Strategy	Municipal Training	Watershed Management	DIP
Grand Rapids, City of	Ms. Carrie Rivette	X	X	X	X		X
Grand Rapids, City of	Mr. Gary DeKock					X	
Grandville, City of	Mr. Ken Krombeen			X		X	
Grandville, City of	Mr. Ron Carr	X	X		X		
GVSU	Mr. John Koches (Chair of DIP Committee)					X	X
GVSU	Ms. Betty Gajewski					X	
GVSU	Mr. Rod Denning					X	
Hudsonville, City of	Ms. Amy Robinson	X					X
KCDC	Mr. Bill Byl		X	X			
KCDC	Mr. Brad Boomstra	X		X			
KCDC	Mr. Doug Spote	X		X	X		
KCDC	Ms. Lani Brown		X				
KCDC	Ms. Angie Latvaitis	X			X	X	X
KCRC	Mr. Dave Beck	X	X				
KCRC	Mr. Dave Bennett	X			X		
KCRC	Mr. Wayne Harrell	X					
Kent County Health Department	Mr. Adam London						X
Kent Resource Recovery	Ms. Kristen Wieland		X				
Kentwood, City of	Mr. Jim Beke	X			X		X
Kentwood, City of	Mr. John Gorney		X				
MDEQ	Ms. Amanda St. Amour	X	X		X	X	X
MDEQ	Ms. Dana Strouse		X			X	
OCDC	Mr. Paul Geerlings						
OCDC	Ms. Linda Brown		X				
OCRC	Mr. Steve Van Hoven						
Plainfield Charter Township	Mr. Rick Solle	X			X		
Rockford, City of	Mr. Dennis Brinks	X					
Rockford, City of	Mr. Mike Bouwkamp	X	X		X		
Rockford, City of	Mr. Phil Vincent						
Sparta, Village of	Mr. Martin Super		X				
Sparta, Village of	Mr. Miles Ring	X			X		
Spring Lake, Village of	Ms. Chris Burns		X				
Walker, City of	Mr. Scott Conners						
Walker, City of	Ms. Bonnie Broadwater	X	X	X	X		X
WMEAC	Ms. Kristi Klomp					X	
Wyoming, City of	Mr. Aaron Vis	X		X			X

Table 2 - LGRW Committee Membership List as of July 31, 2012

Community	Representative	SWPPI	Stormwater Education	Ordinance & Strategy	Municipal Training	Watershed Management	DIP
Wyoming, City of	Mr. Bill Dooley			X			
Wyoming, City of	Mr. Myron Erickson	X		X			

Ordinance & Strategy Committee

The Ordinance & Strategy Committee did not meet during the reporting period. Meetings will continue when new post-construction stormwater control requirements become established.

WMP Update Committee

There are no plans to update the WMP. The most recent revision was prepared and approved in 2011. An electronic version of the WMP can be downloaded from the following websites:
<http://www.gvmc.org/naturalresources/index.shtml>
<http://www.lowergrandriver.org>

DIP Committee

The DIP Committee met on September 21, 2011; January 18, 2012; and May 16, 2012, during this reporting period. This is a joint committee with the LGROW. Mr. John Koches, Annis Water Resources Institute (AWRI), agreed to be the chairman of the committee and refocused efforts of collecting data, organizing monitoring information, and developing procedures of the LGRW. A new task undertaken by the DIP Committee is the revision to the Illicit Discharge Elimination Plan (IDEP). Agendas and minutes from the meetings are available as follows:

<http://www.ftch.com/lowergrandriverwatersheddocuments>

Municipal Training Committee

The Municipal Training Committee met on May 1, 2012, to prioritize needed training. The committee had an informal discussion about the types of municipal training that might be provided and what would be most beneficial. The viewpoints of both permit compliance and pollution reduction effectiveness were discussed. The high-priority training needs dealt with advanced technical topics. “Streambank Erosion: Prevention & Repair” ranked the highest with “BMPs for Municipal Streets and Parking Lots” next, and “Stormwater BMP Retro-fit Opportunities,” third. The need to provide basic training for elected officials was also recognized as an important need.

Minutes from the meeting are available as follows:

<http://www.ftch.com/lowergrandriverwatersheddocuments>

Training

Training Library

A lending library of training materials is housed at FTC&H and is available to all watershed partners to assist with the Municipal Employee Training requirements of the discharge permit. The following materials are currently available:

DVD from Excal Visual, LLC

- Storm Watch - Municipal Stormwater Pollution Prevention (20 Minutes)

DVD from Excal Visual, LLC

- Stormwater Pollution Prevention - A Drop in the Bucket (16 Minutes)

DVD from Excal Visual, LLC

- Ground Control - Stormwater Pollution Prevention for Construction Sites (14.5 Minutes)

DVD from Excal Visual, LLC

- Spills & Skills - Non-Emergency HazMat Spill Response (18.5 Minutes)

DVD from Southeast Michigan Council of Governments (SEMCOG) and the Road Commission for Oakland County

- Keep An Eye On It! - Environmental Awareness for Gravel Road Maintenance (18.5 Minutes)

DVD from the U.S. Environmental Protection Agency (USEPA) and the Weather Channel

- After the Storm (22 Minutes)

DVD from USEPA

- Reduce Runoff: Slow It Down, Spread It Out, Soak It In (includes the following videos)
 - Reduce Runoff: Slow It Down, Spread It Out, Soak It In 9 Minutes
 - RiverSmart Homes: Getting Smart about Runoff 12 Minutes
 - Building Green: A Success Story in Philadelphia 11 Minutes
 - After the Storm 22 Minutes

Book published by the Michigan Department of Natural Resources and Environment (MDNRE) and the National Oceanic and Atmospheric Administration (NOAA)

- FILLING THE GAPS: Environmental Protection Options for Local Governments, 2nd Edition, revised December 2010 (including appendices on CD) (90 Pages)

Campaign Tool Kit from the Center for Environmental Study (CES)

- Stormwater Savvy Resources (including resource CD) (67 Pages)
- A Guide to the Media Process (23 Pages)
- Getting In Step - A Guide for Conducting Watershed Outreach Campaigns (CD) (100 Pages)

All Municipal Employee Training

An “All Employee” training flyer, developed by FTC&H and the Municipal Training Committee, is available to watershed partners to assist with the Municipal Employee Training requirements of the discharge permit. The subject is illicit discharges and the flyer makes municipal employees aware of their special role in protecting the watershed. A template of the flyer, “How You as an Employee Can Help Reduce Pollution Entering the Grand River” is available on the LGRW FTC&H website: <http://www.ftch.com/lowergrandriverwatersheddocuments#MunicipalEmployeeTraining>. This flyer is intended to be provided to municipal employees by each of the watershed partners within the year.

Municipal Contractor Training

The Municipal Training Committee previously identified the topic of earthwork contractor education as the number one priority for developing training materials. A brochure was developed by FTC&H and the Municipal Training Committee and is available to watershed partners hiring contractors for earthwork. The target audience of the brochure was broadened to make it applicable to earthwork contractors working for private entities. The “What Every Contractor Must Know” brochure informs contractors they must be familiar with the potential stormwater pollution sources that may be encountered during the course of their work. Methods and tools are described in the brochure that can be utilized to prevent the release of polluting substances. If prevention is not possible, other means to treat the polluting substances to reduce the impact of the release are identified. If polluting substances are released in harmful quantities, the release must be reported to the proper authority. A template of the flyer, “What Every Earth Work Contractor Must Know About Stormwater” is available on the LGRW FTC&H website: <http://www.ftch.com/lowergrandriverwatersheddocuments#MunicipalEmployeeTraining>. This brochure is intended to be provided to private contractors hired by the Permittee to do earthwork on behalf of the Permittee or to municipal employees doing similar work.

The Municipal Training Committee also previously identified the topic of landscaping contractor education as a high-priority for developing training materials. A brochure was developed by FTC&H and the Municipal Training Committee and is available to watershed partners hiring contractors for landscaping. The “What Every Landscaper Must Know” brochure informs landscapers they must be familiar with the potential stormwater pollution sources that may be encountered during the course of their work. Methods and tools are described that can be utilized to prevent the release of polluting substances. Several BMPs for lawn care are discussed. If prevention is not possible, other means to treat the polluting substances to reduce the impact of the release are identified. If polluting substances are released in harmful quantities,

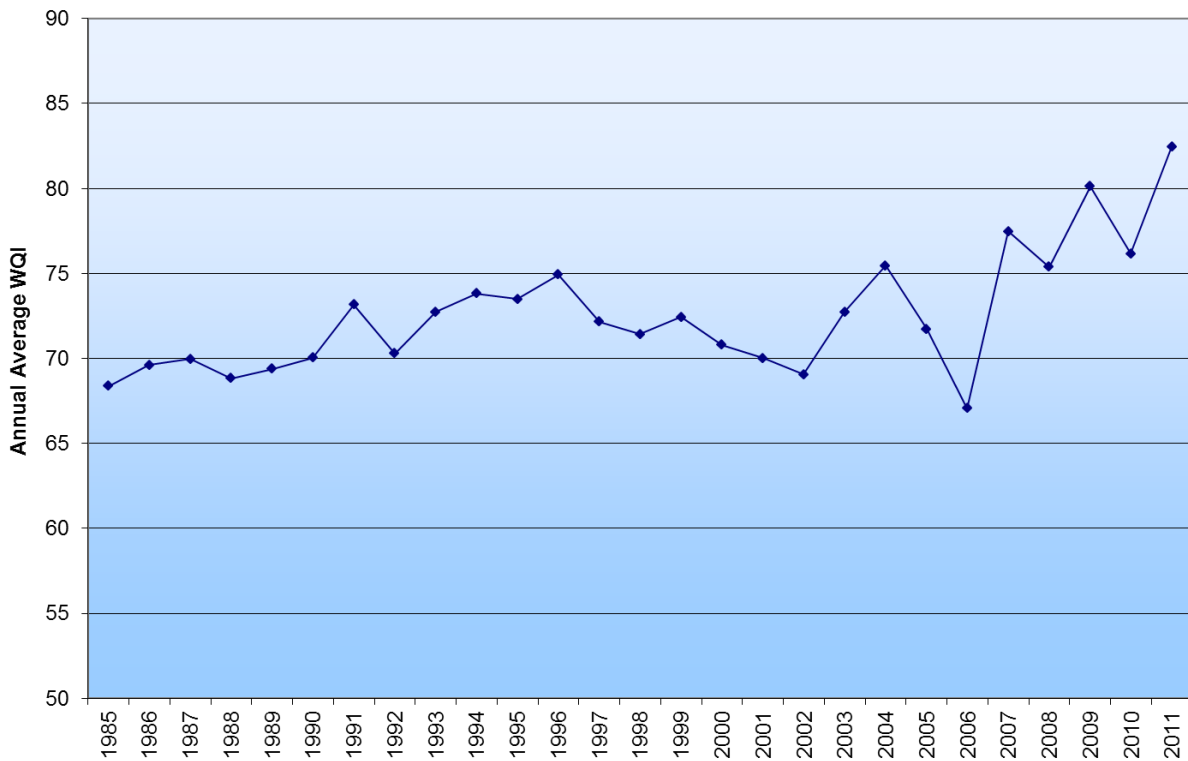
the release must be reported to the proper authority. A template of the flyer, "What Every Landscaper Must Know About Stormwater" is available on the LGRW FTC&H website: <http://www.ftch.com/lowergrandriverwatersheddocuments#MunicipalEmployeeTraining>. This brochure is intended to be provided to private contractors hired by the Permittee to perform landscaping on municipal property or to municipal employees doing similar work. The target audience of the brochure was broadened to make it applicable to landscapers working for private entities.

Monitoring

The Grand River Water Quality Index (WQI) shows the Grand River water quality continues to improve downstream of Grand Rapids. A WQI of 71-90 indicates good water quality with high diversity of aquatic life and very few limits for recreational use. Grand Rapids has been monitoring the Grand River for forty years and all of the data is available upon request. A graph of the WQI for Railroad Bridge North is provided as an example of improving water quality in the Grand River. An interactive map and data from recent sampling events can be viewed as follows:

<http://grcity.us/enterprise-services/Environment-Services/Pages/Water-Quality-Index2.aspx>

Railroad Bridge North, Water Quality Index



PART 2A - SUMMARY OF MUNICIPAL COMMITMENTS

LGRW Prioritized Objectives for Permittees from 2011 WMP	Extent of Activity	Commitment	Timeline	Measures of Effectiveness
Encourage proper septic tank management	Township area within the LGRW	Materials provided will be distributed according to plan Maintenance flyers at the township office Maintenance information on the township website	Ongoing Annually, when materials are provided Annually, when materials are provided	Public Education Plan (PEP) Evaluation Forms Number of flyers handed out Hits on stormwater section of website
Actions completed:		PEP materials distributed according to the commitments above	See PEP questionnaire	No phone calls regarding failures. 17 septic system brochures distributed
Encourage septage ordinance	Applicable to entire township	Township will consider a resolution to support a county-wide Point-of-Sale (POS) ordinance Enforce existing ordinance: Failed septic systems must connect to public sewer if available. If not, Health Department (HD) is contacted	Dec 2013 Ongoing	Documentation that resolution was discussed and decision made to approve or deny Number of connections to public sewer
Actions completed:		HD sends notice. Township will make sure HD follows the township ordinance when responding to complaints or requests for permits Residents must hook into the sanitary sewer if within 300 feet	Ongoing	No connections to sewer to evaluate

LGRW Prioritized Objectives for Permittees from 2011 WMP	Extent of Activity	Commitment	Timeline	Measures of Effectiveness
Implement vegetative buffering practices and restore and protect the stream buffer and canopy	Township-owned properties	All waterways within Township properties will be assessed for condition of buffer Follow procedures in place that require maintenance to protect streams Native plantings will be considered and provisions for restoring buffers	Ongoing Ongoing	Miles or feet of buffer assessed, % needing improvement Adherence to procedure for managing vegetation on township-owned property Reduction of mowing areas, areas of native vegetation planted
Actions completed:		Maintained buffer at park between parking lot and river, and buffer around pond	Ongoing	All buffers functioning well. Mowing areas reduced
Implement MDNR wildlife population management practices	Township-owned properties	Monitor problems created by wildfowl along waterways	Ongoing	Observations of wildfowl and actions taken
Actions completed:		Monitored	Ongoing	No problems
Implement sanitary sewer maintenance practices	Township-owned properties	Televise sanitary laterals on regular schedule	Every 5 years starting in 2013	Number of laterals televised and number of repairs identified and completed
Actions completed:		No actions. Three laterals identified	None this year	No problems
Implement Low Impact Development (LID) practices	Township-owned properties	Consider use of porous pavement, infiltration, reduction of impervious surfaces in all development of township-owned properties	Ongoing	Number of LID practices installed or considered

LGRW Prioritized Objectives for Permittees from 2011 WMP	Extent of Activity	Commitment	Timeline	Measures of Effectiveness
Actions completed:		Practices were considered for library parking lot, but were too expensive	Ongoing	A parking lot was considered, but none were installed
Implement watershed focused land-use planning	Applicable to entire township	Review development standards for water quality and LID Continue to implement stormwater zone detention requirements from the stormwater ordinance	Coordinate with LGROW Initiative effort Ongoing	Approval of site plans by township engineer for compliance with stormwater ordinance Number of plans reviewed
Actions completed:		All adhered to for stormwater ordinance	Ongoing	20 plans reviewed. AKA Rick's rain garden to comply with ordinance
Implement proper soil erosion and sedimentation control techniques	Township-owned properties	Defer to county for Soil Erosion and Sedimentation Control (SESC) inspections and enforcement	Ongoing	Number of projects referred to county and violations issued
Actions completed:		Inspections and enforcement conducted by county	Ongoing	All developments include SESC if they meet criteria. Education initiatives are working and everyone knows it's needed
Implement channel and streambank stabilization, bio-engineering, and erosion control techniques	Township-owned properties	Compliance with MDEQ permit conditions for any work that occurs within a stream	Ongoing	Number of projects needing permit and practices
Actions completed:	3770 Buttrick - Quiggle Lake District	FTC&H assisted the township and landowner with MDEQ permit to stabilize eroding streambank	Project completed May 2012	Stabilization of streambank prevented additional sediment from entering tributary to Thornapple River. Before and after pictures available at township office

LGRW Prioritized Objectives for Permittees from 2011 WMP	Extent of Activity	Commitment	Timeline	Measures of Effectiveness
Implement turf management and proper fertilizer application practices	Township-owned properties	<p>Building and grounds crew are trained in proper practices</p> <p>Follow procedures including turf management (mower height, clippings) and reference to state law regarding phosphorus use</p> <p>All fertilizer applied is by licensed and certified applicators and applied in accordance to township and county regulations</p> <p>Landscaping waste (yard, tree, and grass clippings) disposal site offered for residents of the community</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>	<p>Training Schedule</p> <p>Follow procedures for phosphorus use</p> <p>Documentation of contractor training or requirement in bid documents</p> <p>Number of residents using the site or volume of waste received</p>
Actions completed:		A copy of the contract was signed by landscaping company	May 16, 2012	<p>Township provides a dumpster (with no drain hole) for fall drop off at township hall as advertised in newspaper. This activity continues to be popular with the community and keeps the leaves out of the streets and catch basins</p> <p>There are no problems with compliance or acceptance of procedures</p>

PART 2B - STORMWATER CONTROLS INSPECTION, MAINTENANCE AND EFFECTIVENESS

BMPs on Township Administration and Fire Station Properties				
Structural Stormwater Control	Inspection Frequency	Maintenance Schedule	Inspection and Maintenance Conducted and Location of Log (if applicable)	Effectiveness of Control and Support Documentation
Catch basin & storm sewer	Every 5 years	Every 5 years	Inspected in 2011 and cleaned out. Log maintained in Buildings and Grounds office	Baseline conditions have recently been established. 166 inches of sludge was removed in 2011
Grassy Swales	Twice yearly	Twice yearly	Mowed	
Curb & Gutter	Yearly	Yearly	Swept	
Detention Pond	Yearly	Yearly	Completed	
Vegetated Swales	Yearly	Yearly	Completed	
Township Parks (1)				
Structural Stormwater Control	Inspection Frequency	Maintenance Schedule	Inspection and Maintenance Conducted and Location of Log (if applicable)	Effectiveness of Control and Support Documentation
Detention Pond	Yearly	Yearly	Inspection completed	
Catch Basin & Storm Sewer	Every 5 years	Every 5 years	Inspected 2011, and cleaned out. Log maintained in Buildings and Grounds office	Baseline conditions have recently been established. 44 inches of sludge was removed in 2011

PART 2C - PROCEDURES STATUS

The following Pollution Prevention and Good Housekeeping procedures were adopted by Cascade Charter Township. Dates of revised procedures are listed and revisions attached.

Procedure	Date Adopted	Date Revised (if needed)
Procedure to Dispose of Storm Sewer System Operation and Maintenance Waste	June 22, 2011	N/A
Procedures to Construct, Operate, and Maintain Streets, Roads, Highways, and Parking Lots	June 22, 2011	N/A
Procedure to Reduce Runoff of Total Suspended Solids (TSS)	June 22, 2011	N/A
Procedure to Prevent Salt and Sand from Entering Receiving Streams	June 22, 2011	N/A
Procedure to Control Dust and Suspended Solids in Runoff	June 22, 2011	N/A
Procedure for Managing Vegetation on Municipal Property	March 29, 2012	N/A
Procedure for Using Fertilizers on Municipal Property	March 29, 2012	N/A
Procedure for Mowing on Municipal Properties (attached)	May 16, 2012	N/A

PART 2D - STAFF AND CONTRACTORS TRAINING ON POLLUTION PREVENTION AND GOOD HOUSEKEEPING

Training Topic Area	Employee Group to Receive Training	Training Frequency	Potential Training Type
Required Topics			
Maintenance activities, maintenance schedules, and inspection procedures	Buildings and Grounds	Annual	Stormwater Pollution Prevention - A Drop in the Bucket - DVD from Excal Visual, LLC “Best Management Practices for Municipal Operations” Training Session - Live Presentation
Training completed:	Ms. Amy Waugh, Buildings and Grounds Director and 4 employees	February 1, 2012	Watched A Drop in the Bucket DVD - took a quiz before and after the DVD
Controls on streets, parking lots, maintenance garages, and storage yards	Buildings and Grounds Fire Department	Annual	Storm Watch - Municipal Stormwater Pollution Prevention - DVD from Excal Visual, LLC Spills & Skills - Non-Emergency HazMat Spill Response - DVD from Excal Visual, LLC
Training completed:	Mr. Steve Peterson, Planning Director Ms. Sandra Korhorn, Mr. John Sigg	January 25, 2012, and February 13, 2012	Storm Watch - Municipal Stormwater Pollution Prevention - DVD from Excal Visual, LLC
Disposal of O&M waste	Buildings and Grounds	Annual	Regulatory Requirements for Waste Disposal - Live Presentation
Training completed:	Ms. Amy Waugh, Buildings and Grounds Director and 4 employees	February 1, 2012	Watched A Drop in the Bucket DVD - took a quiz before and after the DVD
Water quality protection in flood control projects (detention basins, dams)	Planning Department Township Engineer	Annual	Retrofitting Detention Ponds for Water Quality - Live Presentation

Training Topic Area	Employee Group to Receive Training	Training Frequency	Potential Training Type
Training completed:	Cascade uses FTC&H for these types of engineering services.	Winter/Summer 2012	Presentations at Michigan Association of County Drain Commissioners' Annual Convention
Controls to reduce discharge of pesticides, herbicides, and fertilizers	Buildings and Grounds	Annual	LGRW_LandscapingContractorTrainingBrochure_2011-08-01.pub
Training completed:	Ms. Amy Waugh, Buildings and Grounds Director and 4 employees	June 2012	Read through brochure at staff meeting
Other Topics			
Construction site stormwater runoff	Planning Department Township Engineer	Annual	Ground Control - Stormwater Pollution Prevention for Construction Sites - DVD from Excal Visual, LLC LGRW_ContractorTrainingBrochure_2011-09-16.pub
Training completed:	Cascade defers to county for SESC permitting and inspection	Ongoing	County staff is trained in SESC through certification classes and testing
Gravel Road Maintenance	Buildings and Grounds	Annual	Keep An Eye On It! - Environmental Awareness for Gravel Road Maintenance - DVD from SEMCOG & Road Commission for Oakland County
Training completed:	N/A	N/A	N/A

Training Topic Area	Employee Group to Receive Training	Training Frequency	Potential Training Type
LID	Planning Department Township Engineer	Annual	Reduce Runoff: Slow It Down, Spread It Out, Soak It In - DVD from USEPA RiverSmart Homes: Getting Smart about Runoff - DVD from USEPA Building Green: A Success Story in Philadelphia - DVD from USEPA After the Storm - DVD from USEPA BMP Tour of GVSU Campuses - Walking Tour
<p style="text-align: center;">Training completed:</p>	Ms. Amy Waugh, Buildings and Grounds Director Mr. William Cousins, Township Manager	March 15, 2012	Advanced Local Sustainability Initiatives through Improved Stormwater Management - Interactive webinar from International City/County Management Association (ICMA) Presenters: Mr. John Tinger, MS4 Auditor, USEPA Region 9 Ms. Joanne Throwe, Director, UMD (Maryland) Environmental Finance Center Mr. Daryl Braithwaite, Director of Public Works, City of Takoma Park, Maryland (1 hour, 15 minutes)
IDEP	Buildings and Grounds	Annual	WaterPollutionReportForm.doc Article_City_Employees.doc
<p style="text-align: center;">Training completed:</p>	All employees	June, 2012	Water pollution report form with pictures of examples “How you as an employee can help reduce pollution enter the Grand River” These materials were attached to everyone’s paycheck
General Stormwater Education	Municipal Officials	Annual	“Back to Basics” Stormwater Training - Live Presentations

Training Topic Area	Employee Group to Receive Training	Training Frequency	Potential Training Type
Training completed:	Mr. William Cousins, Township Manager Mr. William Cousins	February 10, 2012 March 15, 2012	Storm Watch - Municipal Stormwater Pollution Prevention - DVD from Excal Visual, LLC GVMC Stormwater Management for Municipal Managers

PART 2E - POST CONSTRUCTION CONTROLS ACTIVITIES

Cascade Charter Township adopted a Stormwater Ordinance (Ordinance 7 of 2002, as amended by Ordinance No. 2 of 2008; 05/14/2008), controlling stormwater in areas of new development and significant redevelopment. The ordinance describes various levels of control depending on zones established based on the sensitivity of the receiving waters.

Article VIII describes the stormwater management zones and the Best Management Practices (BMPs) required in those zones to protect water quality and streambank erosion (Zone A), alleviate downstream impacts (Zone B), and control and prevention of sedimentation (Zone C).

The Stormwater Ordinance includes regulations adhering to the Floodplain Ordinance and the SESC program for the township.

The township requires LID practices through its stormwater management standards at sites of new development and significant redevelopment if located in Zone A of the township.

The ordinance ensures the owners of facilities constructed to meet stormwater requirements properly operate and maintain the facilities. The owner of the stormwater system is responsible for maintaining the integrity of the stormwater system. Any concerns that Cascade Charter Township receives are typically sent to the Planning Department and/or Building Department for review to inspect the situation and determine whose responsibility it is to correct any issues. This may include other governmental bodies such as the Drain Commissioner, Road Commission, State of Michigan or private developments. To ensure the private developments are maintained correctly, Cascade Charter Township maintains its approval records of each development to determine if the storm system is operating correctly as designed. If any issues are found, the property owner is informed of the corrective actions needed to comply with the approved plan.

Explain the enforcement activities of your comprehensive stormwater management program for post-construction controls completed during this reporting period:

All site plans submitted to the township are referred to the Kent County Drain Commissioner for review. The plans therefore must follow the county's stormwater design standards, which allow the county to enforce certain design criteria to minimize stormwater pollutants.

How many developments were approved with stormwater controls according to Post-Construction Controls (PCC)?

Twenty developments were reviewed; copies of plans are maintained at the township office.

Have any long-term operation and maintenance (O&M) agreements been signed?

Twenty agreements were signed for O&M on approved developments. Copies are maintained in the township office.

How many inspections or enforcement/compliance of O&M agreements were conducted?

One development/owner was identified through the O&M agreement requiring them to maintain a detention pond to improve drainage.

Explain how the Post Construction Controls have addressed other issues, such as protecting sensitive areas, directing growth to identified areas, encouraging infill development in higher density urban areas and areas with existing infrastructure, and/or maintaining or increase open spaces.

The Stormwater Ordinance has these incentives to encourage smart growth, which decreased pollutants in stormwater runoff. By following the county's standards, resources are protected and growth is directed toward areas that will have minimum impacts.

PART 3 - PEP

REGIONAL PEP

The purpose of the PEP is to promote, publicize, and facilitate education for the purpose of encouraging the public to reduce the discharge of pollutants in stormwater to the maximum extent practicable. The PEP was developed by the Permittees in the LGRW and submitted to the MDEQ with the stormwater permit application in March 2003. The MDEQ approved the PEP and issued a Certificate of Coverage (CoC), which included a directive to begin implementation of the PEP by January 1, 2004. The PEP was later updated by the LGRW Stormwater Committee and FTC&H and submitted to the MDEQ on September 1, 2010. Public education activities have been reported to the MDEQ on an annual basis since October 1, 2004, to August 1, 2011. This section provides a report of public education activities implemented between August 1, 2011, and July 31, 2012.

A. PUBLIC EDUCATION COMMITTEE

A LGRW Stormwater Education Committee was formed in 1999 to begin development and implementation of the PEP. Since that time, the committee has met on a regular basis to discuss and plan activities scheduled for implementation in the PEP. The 2011/2012 committee included the following participants:

- Mr. Dave Beck - Kent County Road Commission (KCRC)
- Ms. Amanda St. Amour - MDEQ
- Ms. Bonnie Broadwater - City of Walker
- Ms. Linda Brown - Ottawa County Drain Commissioner's Office (OCDC)
- Mr. Mike Bouwkamp - City of Rockford
- Mr. Ron Carr - City of Grandville
- Mr. John Gorney - City of Kentwood
- Ms. Amy Klapko - Kent County Drain Commissioner's Office (KCDC)
- Ms. Carrie Rivette - City of Grand Rapids
- Ms. Nicole Pasch - City of Grand Rapids
- Ms. Kristen Wieland - Kent County Resource Recovery
- Ms. Cheryl Davidson - City of Grand Haven
- Mr. Ryan Cotton - Village of Spring Lake
- Mr. John Stuparits - Village of Spring Lake
- Mr. Jerry Alkema - Allendale Charter Township
- Mr. Steve Peterson - Cascade Charter Township
- Ms. E. Wendy Ogilvie - FTC&H
- Ms. Laurie Beth Nederveld - FTC&H

- Mr. Kevin Lignell - Grand Valley Metropolitan Council (GVMC)

B. PEP IMPLEMENTATION IN YEAR 9

This section describes the public education activities implemented by the Permittees in the ninth year of PEP implementation, August 1, 2011, and July 31, 2012. The following report is according to the proposed updated PEP, which meets the requirements of the 2004 approved PEP. Target audiences, messages, and delivery mechanisms are described for each Public Education Topic. Public Education Topics were defined in the Updated PEP (2010 to 2014) and were identified based on the MDEQ's PEP guidance document dated April 12, 2010.

Public Education Topic 1 - Personal Watershed Stewardship

PEP Objective 1: Educate the public about their responsibility and stewardship in their watershed.

Target Audience: Watershed residents, community groups, business associations, and city and township officials.

Content of Message: You live in the Grand River Watershed, which flows into Lake Michigan. Water quality in lakes and streams is greatly affected by our everyday activities. By taking water quality protection personally, you will help improve our community's water resources.

Delivery Method:

- A link from the Permittees' websites to the LGRW's website, www.lowergrandriver.org, was maintained or was established. The watershed website provides information on nonpoint source (NPS) pollution, local watershed issues, water science education, and watershed management.
- Permittees featured the LGRW stormwater display at local libraries or municipal, township, or county offices. The display provides tips to homeowners on how to reduce stormwater pollution in their own backyards. Several Permittees have purchased their own display boards for permanent display.
- Permittees distributed 963 *Catch a Ride* coloring books to residents in the LGRW.
- Permittees displayed their lamppost banners purchased in 2011 to advertise the presence of the Grand River and Plaster Creek Watersheds. The banners featured the LGRW logo and the message "Yours to Protect."

Public Education Topic 2 - Ultimate Stormwater Discharge Location and Potential Impacts

Target Audience: Residents, Visitors, Riparian Landowners, Local Units of Government, Teachers, Schools, Businesses, and Girl/Boy Scouts.

Content of Message: 1) Storm drains connect to your local lakes and streams, not a water treatment plant. 2) Prevent pollution from entering your storm drains and protect the health of your family, your community, and the Grand River.

Delivery Method:

- For new construction, Permittees installed storm catch basin backs/grates with a fish symbol and the message "No Dumping - Drains to Lake or Stream."
- Eleven Permittees ordered a total of 214 storm drain markers from East Jordan Iron Works. Markers advertise the message "Dump No Waste. Drains to Waterway" or "Dump No Waste. Drains to Lake." Permittees installed these markers near catch basins to discourage illicit dumping.

Public Education Topic 3 - Public Reporting of Illicit Discharges

Target Audience: Residents, Visitors, Riparian Landowners, Local Units of Government, and Businesses.

Content of Message: Report illicit discharges to your city or township to prevent pollution from entering your storm drains and protect the health of your family, your community, and the Grand River.

Delivery Method:

- Permittees distributed copies of the "*Citizen Report Form*" to their residents. This form included information on how to report illicit discharges and connections to one's community. Permittees individually customized these brochures for their residents.
- A reporting sheet, developed in 2005, was used by the Permittees to track resident calls concerning illicit discharges and connections.
- Permittees distributed the article "*How you as an Employee Can Help Reduce Pollution Entering the Grand River*" to their employees. This article encourages employees to report stormwater discharges to their community's stormwater coordinator.

Public Education Topic 4 - Personal Actions that can Impact the Watershed

Target Audience: Residents, Visitors, Riparian Landowners, Local Units of Government, Teachers, Students, Landscaping/Lawn Care Companies, Commercial Power Washers, Carpet Cleaning Companies, and Golf Courses.

Content of Message: 1) Avoid scorching your lawn. Use slow-release fertilizers only 2 to 3 times per year. Non-phosphorus types are best for the environment. 2) Lower your water bill. Install a rain barrel to capture and reuse your stormwater. 3) Wash your car at a commercial car wash or on your lawn.

Otherwise, dirty, oily water on your driveway will flow to your storm drain and eventually your local lake or stream. 4) Pick up your pet waste and dispose of it properly; otherwise, it could end up in the Grand River and on your favorite Lake Michigan beach.

Delivery Method:

- Permittees distributed the newsletter article “*New Michigan Law Restricts Phosphorus Fertilizers*” to their residents via their webpage or community newsletter. This article describes the new Michigan fertilizer law and encourages homeowners to use phosphorus-free fertilizer.
- Permittees distributed the newsletter article “*What is a Rain Garden?*” to their residents via their webpage or community newsletter. This article discusses the benefits of rain gardens and how you can plant one.
- Permittees distributed 1,000 copies of *Go Green Lawn Care Tips* card, developed by Michigan State University Extension (MSUE), to their residents. These cards provide tips on weed and insect control and give recommendations on when to fertilize and the types of fertilizers to use on your lawn.
- Permittees distributed 1,075 copies of the “*Use Phosphorus Free Fertilizer*” flyers, developed by Michigan Department of Agriculture and Rural Development, to their residents. These flyers provide information on soil testing, the fertilizer law and how to apply it, and protecting water quality.
- Permittees distributed 1,075 copies of the “*Get the Most out of Rain*” flyer, developed by Mid-America Regional Council, Kansas City, Missouri, to their residents. The flyer provides ideas for a rain friendly yard including information on how to save and reuse rain water, how to build a rain garden and how to disconnect downspouts.
- Permittees distributed the newsletter article “*How You Can Help Reduce Pollution Entering the Grand River*” to their residents via their webpage or community newsletter. This article encourages residents to dispose of pet waste, paints, motor oil, etc., in the appropriate locations, not in the storm drains.

Public Education Topic 5 - Waste Management Assistance

Target Audience: Residents, Visitors, Riparian Landowners, Local Units of Government, and Auto Repair Shops.

Content of Message: 1) Protect your family's health, dispose of unwanted paints, solvents, and cleaners at your county collection center. 2) Recycle used oil and automotive fluids. Just one gallon of used motor oil dumped down a catch basin can contaminate one million gallons of your drinking water.

Delivery Method:

- Permittees distributed 755 copies of their county's household hazardous waste guide or flyer.
- Permittees distributed the newsletter article "*Guide To Household Hazardous Waste Disposal*" to their residents via their webpage or community newsletter. This article defines household hazardous water and lists common wastes, along with providing information on where to dispose of these wastes.
- Permittees distributed the newsletter article "*How You Can Help Reduce Pollution Entering The Grand River*" to their residents via their webpage or community newsletter. This article encourages residents to dispose of pet waste, paints, motor oil, etc., in the appropriate locations, not in the storm drains.
- Permittees distributed 1,075 copies of the pamphlet "West Michigan, Take Back Meds," to their residents. The pamphlet encourages the proper disposal of unused/unwanted/expired medications and lists locations for disposal.

Public Education Topic 6 - Septic System Maintenance

Target Audience: Septic System Owners and Local Units of Government.

Content of Message: 1) If you have a septic system, have it pumped out every 3 to 5 years to avoid a costly septic system failure. Failing septic systems can leak bacteria into your local stream, the Grand River, and eventually Lake Michigan, causing beach closures.

Delivery Method:

- Permittees distributed the newsletter article "*Maintaining Your Septic System*" to their residents via their webpage or community newsletter. This article encourages residents to maintain their septic system.
- Permittees distributed 460 copies of the "*Do you know where your septic system is?*" flyer, developed by the Michigan Groundwater Stewardship Program, to their residents. The flyer provides information on what a septic system and septic take are and what a septic tank and drain field do.

Public Education Topics 7 and 8 - Benefits of Native Vegetation and Management of Riparian Lands

Target Audience: Residents, Visitors, Riparian Landowners, Local Units of Government (e.g. Parks Departments), Teachers, Students, and Faith-based Organizations.

Content of Message: Plant native plants in your yard or garden. Natives naturally need less water, fertilizers, and pesticides saving you time and money.

Delivery Method:

- Permittees distributed 1,000 copies of *Go Green Lawn Care Tips* card, developed by Michigan State University Extension (MSUE), to their residents. These cards provide tips on weed and insect control and give recommendations on when to fertilize and the types of fertilizers to use on your lawn.
- Permittees distributed 1,075 copies of the “*Use Phosphorus Free Fertilizer*” flyers, developed by Michigan Department of Agriculture and Rural Development, to their residents. These flyers provide information on soil testing, the fertilizer law and how to apply it, and protection water quality.
- Permittees distributed 1,075 copies of the “*Get the Most Out of Rain*” flyer, developed by Mid-America Regional Council, Kansas City, Missouri, to their residents. The flyer provides ideas for a rain friendly yard.
- Permittees distributed the newsletter article “*Meijer Stores Encourage Non-invasive Plant*” to their residents via their webpage or community newsletter. This article encourages residents to purchase and use non-invasive plants.

Public Education Topic 9 - Entity of Specific Pollutants

Target Audience: Local Units of Government (e.g. County Road Commissions, Department of Public Works [DPW]), and Restaurants.

Content of Message: Prevent pollution from entering your storm drains and protect the health of your family, your community, and the Grand River.

Delivery Method:

- Permittees distributed 1,075 copies of the pamphlet “West Michigan, Take Back Meds,” to their residents. The pamphlet encourages the proper disposal of unused/unwanted/expired medications and lists locations for disposal.
- Permittees distributed the newsletter article “How You Can Help Reduce Pollution Entering the Grand River,” to their employees at department meetings. This article encourages residents to dispose of pet waste, paints, motor oil, etc., in the appropriate locations, not in the storm drains.

C. EVALUATION MEASURES

This section includes a description of the quantitative and qualitative evaluation measures of PEP effectiveness implemented between August 1, 2011, and July 31, 2012.

Community Quantitative and Qualitative Evaluation Measures of Effectiveness

Permittees completed *PEP Questionnaires* to provide a quantitative and qualitative evaluation of their individual stormwater education efforts. Based on the input provided by the Permittees, the most popular brochure topics were those covering native vegetation/rain garden/riparian buffers, proper use of pesticides/fertilizers/herbicides and household hazardous waste management.

Updated 2013 PEP

An updated PEP was developed describing a new five-year strategy designed to promote, publicize, and facilitate watershed education for encouraging the public to reduce the discharge of pollutants in stormwater. As required, the PEP defines target audiences, develops specific messages, and selects delivery mechanisms to promote the goals and objectives of reducing stormwater runoff. The PEP includes mechanisms for evaluating the success and effectiveness of the plan. The measurable goals include realistic data collection and milestones to be quantified and compared. A schedule was also prepared for the implementation of the various components of the PEP, indicating the dates for distribution of educational materials and the completion of activities. The PEP also builds on the Information and Education (I&E) Strategy developed for the LGRW as part of the LGRW Management Plan (FTC&H, 2011).

2012 Stormwater Public Education Plan (PEP) Questionnaire

Reporting Period of August 1, 2011, to July 31, 2012

Please complete this questionnaire to provide an evaluation of the stormwater education activities you have implemented between **August 1, 2011, and July 31, 2012**. FTC&H will include this information, along with watershed-wide measures of effectiveness, in your 2012 Progress Report.

Please return this form to FTC&H by August 31, 2012.

Community Name: Cascade Charter Township

Brochures, Flyers, and Give-a-ways (distributed to Permittees in April 2012)

1. What percentage of brochures, flyers, and give-a-ways have been distributed?

- "West Michigan Take Back Meds" brochure 0% 25% 50% 75% 100% distributed
- Household Hazardous Waste guidebook/flyer 0% 25% 50% 75% 100% distributed
- "Do You Know Where Your Septic System Is?" brochure 0% 25% 50% 75% 100% distributed
- "Get The Most Out Of Rain" flyer 0% 25% 50% 75% 100% distributed
- "Use Phosphorus Free Fertilizer" brochure 0% 25% 50% 75% 100% distributed
- "Catch A Ride On The Water Cycle" coloring book 0% 25% 50% 75% 100% distributed
- Lunch bag give-a-ways 0% 25% 50% 75% 100% distributed

2. Where did you distribute your brochures, flyers, and give-a-ways?

- Government office Library Community event Other _____

3. Describe any interest, comments, or discussion generated from the brochures, flyers, and give-a-ways: Lunch bags were a hit and we could have given away more.

4. What brochure topics have historically been in the highest demand in your community?

- How to report stormwater pollution
- Stormwater discharge locations/impacts
- Native vegetation/rain gardens/riparian buffers
- Proper vehicle care/motor oil disposal
- Proper use of pesticides/fertilizers/herbicides
- Proper yard waste disposal
- Proper pet waste disposal
- Proper septic system maintenance
- Household hazardous waste management

Illicit Discharge Reporting (brochure available at www.ftch.com/lowergrandriverwatersheddocuments)

5. How many "Citizens Reporting Brochures" were customized and distributed to your residents? Brochure was placed on website on June 4, 2012.

Please describe any interest, comments, or discussion generated from the brochure: None

Lamppost Banners

6. Did you display your lamppost banners provided to you in 2009, 2011, or 2012?

- Yes, at _____ (streets) on _____ (dates). Please describe any public feedback generated _____
- No, but we will display our banners at _____ (streets) on _____ (dates)
- We did not order lamppost banners in 2009, 2011, or 2012

Newsletter Articles (available at www.ftch.com/lowergrandriverwatersheddocuments)

7. Did you distribute these newsletter articles to your residents?

- “New Michigan Law Restricts Phosphorus Fertilizers” article Yes, on June 4, 2012 (date);
 No, but we will on _____ (date); No
- “Guide To Household Hazardous Waste Disposal” article Yes, on June 4, 2012 (date);
 No, but we will on _____ (date); No
- “What Is A Rain Garden?” article Yes, on June 4, 2012 (date);
 No, but we will on _____ (date); No
- “Maintaining Your Septic System” article Yes, on June 4, 2012 (date);
 No, but we will on _____ (date); No
- “How You Can Help Reduce Pollution Entering The Grand River” article Yes, on June 4, 2012 (date);
 No, but we will on _____ (date); No

8. Please describe any interest, comments, or discussion generated from the articles: None

9. If applicable, list the newsletter name or webpage address used to distribute the articles: cascadetwp.com

10. If applicable, how many residents received your community newsletter? N/A

11. If applicable, how many total website hits did you receive for your online newsletter articles? Unknown

Website

12. Is there a web link to www.lowergrandriver.org on your community’s website?

- Yes, please describe any interest, comments, or discussion generated from the website: None
- No, but we have a web link to _____
- No

13. If you have developed your own stormwater webpage, please list the web address:

<http://www.cascadetwp.com/ReferenceDesk/StormwaterOverview.asp>

Stormwater Poster Board and EnviroScape

14. Did you set up your stormwater poster board display?

- Yes, on _____ (dates) at library (location). Please describe any feedback generated None
- No, but we will set up our display on _____ (dates) at _____ (location)
- No

15. Did you use an EnviroScape interactive stormwater model to educate the public on stormwater pollution?

- Yes, on _____ (dates) at _____ (location); No

Storm Drain Awareness Activities

16. Did you implement a storm drain awareness activity between August 1, 2011, and July 31, 2012?
- Yes, we installed 20 (no.) storm drain markers on several public streets, evenly distributed in township (streets) on August 3, 2012 (dates)
 - Yes, we held a storm drain stenciling event on _____ (dates) and stenciled _____ (streets)
 - Yes, we have approximately _____ (no.) pre-marked catch basin backs/grates with the message "No dumping, drains to waterway"
 - Yes, we hung door knob flyers on _____ (streets) on _____ (dates)
 - No, but we plan to implement _____ (activities) on _____ (dates)
17. Please describe any interest, comments, or discussion generated from the activities above: None
18. Have you noticed a reduction in storm drain dumping?
- Yes, if so, please describe no calls; No, if so, please describe _____

Car Wash Letters (A letter template is available at www.ftch.com/lowergrandriverwatersheddocuments)

19. Did you mail any letters on environmentally-friendly car wash fundraisers to schools/charities?
- Yes, we sent letters to _____ (schools/charities). Please describe any feedback generated _____
 - No, but we will send letters to _____ (schools/charities) on _____ (date)
 - No

Additional Efforts

20. If applicable, please describe any other stormwater public education activities your community implemented beyond the requirements described above. (Submit any relevant documentation.) We advertised for the Plaster Creek rain garden workshop on March 31, 2012 at Calvin College. We will hold a "Rivers and Rain Barrel" workshop at our library on September 9, 2012, in coordination with West Michigan Environmental Action Committee (WMEAC). We expect 80 people to build and install a rain barrel at their residence.

PART 4 - IDEP

Regional IDEP Activities

IDEP activities continued to be conducted throughout the reporting period. Permittees have used the previously developed training and educational materials for preventing illicit discharges and have developed procedures for eliminating illicit discharges. Several Permittees have updated their training materials based on the documents available in the LGRW FTC&H website:

<http://www.ftch.com/lowergrandriverwatersheddocuments#MunicipalEmployeeTraining>.

A detailed description of the IDEP activities undertaken on an individual basis is included below. The IDEP activities include dry-weather screening of discharge points, locating possible sources of contamination, responding to reported incidents, correcting the problems, and preventing new illicit connections.

Modifications to the current IDEP were drafted and submitted to MDEQ and the Permittees for preliminary review in August 2011. Comments from MDEQ were received on November 10, 2011. Modifications were made to address the comments and discussed in detail with MDEQ at the September 19, 2012, DIP Committee meeting. In response to discussion, several Permittees sent letters to MDEQ requesting approval of an alternative to MS4 to MS4 dry-weather screening. The final revised IDEP will be submitted to MDEQ for approval when this last remaining issue is resolved.

Please describe any dry-weather screening conducted during the reporting period and the findings of that screening.

None

Please list any other known and/or resolved illicit discharges identified during the reporting period and status of elimination. For significant discharges, also list the pollutants involved with an estimate of the volume and loading.

Examples of illicit discharges include: malfunctioning septic systems; sanitary sewer leaks, overflows, or cross-connections; laundry water discharges; leaking fluids from vehicles, barrels, dumpsters, or tanks; concrete truck wash water; polluted runoff from temporary or permanent storage areas; improper fire hydrant flushing; spills from auto accidents; power washing wastewater; industrial/commercial wastewater, dumping; and any other violation of the IDEP ordinance.

None

Please list the status and schedule for elimination for any illicit discharges identified but not eliminated during this reporting period. Also, report the status of any illicit discharges identified but not eliminated during previous reporting periods.

None

Please describe actions taken when indications of illicit discharges have been identified, if any.

None

Please provide:

- An estimated quantification of the number of discharges eliminated, and
- An estimated quantification of the volume of illicit flow eliminated.

N/A

Describe the effectiveness of the program to prevent illicit discharges and the method used to assess effectiveness.

No events or activities have occurred by which to evaluate the methods for effectiveness, but the training of employees has raised awareness as evidenced by the increased documentation of MS4 inspections and results.

PART 5 - New Point Source Discharges of Stormwater

Do you own or operate any NEW or previously unidentified stormwater discharges?

Yes No *If "yes," please indicate which discharge points are new on your outfall map or list.*

Is your stormwater discharge point map attached or provided electronically?

Map is attached Map is provided electronically Other. *Please explain in comments section.*

Is your stormwater discharge point list attached or provided electronically?

List is attached List is provided electronically Other. *Please explain in comments section.*

Comments: Maps and list are being compiled and will be submitted with revised IDEP in spring 2013.

PART 6 - Nested Drainage System Agreements

Please list all nested jurisdictions with whom you have a cooperative agreement:		
Name of Nested Jurisdiction	Agreement previously provided to MDEQ	Agreement attached
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments: No Nested Jurisdictions.		

PART 7 - Other Actions

Please list any extra efforts your community has conducted above and beyond your commitments recorded above (e.g., stream buffer ordinance adoption, new management techniques, invasive species control, habitat enhancement/protection, logjam removal, stream/beach clean-ups, etc.) that have helped implement the **Lower Grand River Watershed Management Plan**:

The township has worked with FTC&H to implement activities identified in the township's Stormwater Management Plan. A meeting was held for residents in the Quiggle Lake Drainage District to identify sites where stormwater issues were causing a concern. Several sites were visited, and one site was determined to be in need of a streambank stabilization project. The project was completed in 2012. The Cascade Road Drainage District will be the next area to be targeted.

Please list any other actions your community has conducted to reduce stormwater pollution

Cascade Road District - meeting scheduled 09/20/2012.
Rain barrel workshop - scheduled 09/09/2012.

PART 8 - Revisions to the SWPPI

Based on your evaluation of the effectiveness of your stormwater BMPs, are there any commitments that should be added to or removed from the SWPPI?

- No, the SWPPI does not need any revisions
- The following revisions to the SWPPI could be considered:

Original SWPPI Section/Subsection	Revision
2A 2B 2D	Septage ordinance Delete grassy or vegetated swale Change some from "Yearly" to "Every 5 years"

ACTUAL CATCH BASIN DEPTHS

(Depths were measured the day after Plummer's Environmental cleaned out the basins)

DATE	INSPECTOR	LOCATION	CATCH BASIN ID	TOTAL DEPTH OF CATCH BASIN	DISTANCE FROM DRAIN TUBE TO BOTTOM OF CATCH BASIN
7-12-11	Jim MacDonald	Rec Park	RP1	4' 10"	23"
7-12-11	Jim MacDonald	Rec Park	RP2	5' 7"	22"
7-12-11	Jim MacDonald	Tassell Park	TP1	7' 7"	19"
7-12-11	Jim MacDonald	Tassell Park	TP2	5' 1"	23"
7-12-11	Jim MacDonald	Tassell Park	TP3	4' 8"	14"
7-12-11	Jim MacDonald	Tassell Park	TP4	12' 3"	48"
7-12-11	Jim MacDonald	Tassell Park	TP5	2' 3"	13"
7-12-11	Jim MacDonald	Township Office	TO1	6' 10"	42"
7-12-11	Jim MacDonald	Township Office	TO2	5' 0"	22"
7-12-11	Jim MacDonald	Township Office	TO3	5' 6"	8"
7-12-11	Jim MacDonald	Township Office	TO4	1' 9"	NA
7-12-11	Jim MacDonald	Buttrick Fire Sta.	BF1	5' 7"	23"
7-12-11	Jim MacDonald	Buttrick Fire Sta.	BF2	6' 11"	22"
7-12-11	Jim MacDonald	Library	L1	7' 2"	28"
7-12-11	Jim MacDonald	Library	L2	6' 10"	34"
7-12-11	Jim MacDonald	Library	L3	9' 4"	20"
7-12-11	Jim MacDonald	Library	L4	8' 2"	21"
7-12-11	Jim MacDonald	Library	L5	6' 3"	10"

CB #	Rim to sludge in Inches	Rim to Bottom in Inches	Sludge Depth in Inches
L1	71	83	12
L2	61	79	18
L3	106	109	3
L4	71	73	2
TP1	78	88	10
TP2	46	59	13
TP3	50	59	9
TP4	140	147	7
TP5	19	24	5
RP1	56	88	32
RP2	66	88	22
TO1	38	80	42
TO2	38	58	20
TO3	60	62	2
TO4	19	20	1
BF1	62	66	4
BF2	74	82	8
			Total Sludge Depth in Inches
			210

CATCH BASIN INSPECTIONS

Fall 2011

DATE	INSPECTOR	LOCATION	CATCH BASIN ID
12-5-11	JM	Rec Park	RP1
12-5-11	JM	Rec Park	RP2
12-5-11	JM	Burton Park	BP1
12-5-11	JM	Burton Park	BP2
12-5-11	JM	Tassell Park	TP1
12-5-11	JM	Tassell Park	TP2
12-5-11	JM	Tassell Park	TP3
12-5-11	JM	Tassell Park	TP4
12-5-11	JM	Tassell Park	TP5
12-5-11	JM	Township Office	TO1
12-5-11	JM	Township Office	TO2
12-5-11	JM	Township Office	TO3
12-6-11	JM	Township Office	TO4
12-6-11	JM	Buttrick Fire Sta.	BF1
12-5-11	JM	Buttrick Fire Sta.	BF2
12-5-11	JM	Library	L1
12-5-11	JM	Library	L2
12-5-11	JM	Library	L3
12-5-11	JM	Library	L4

The grates of the catch basins were cleaned of leaves & debris.



CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan 49546-7140

Date: April 17, 2012

To: Brett Boonenberg, Thornapple River Nursery

From: Amy Waugh, Supervisor, Buildings & Grounds Dept.

Subject: MDNRE Mowing Practices

Cascade Township is now required by the Michigan Department of Natural Resources & Environment (MDNRE) to implement a Storm Water Pollution Prevention Initiative (SWPPI) program. As part of this program, the Township has to ensure that the discharge of pollutants to the Municipal Separate Sewer System (MS4) is reduced as much as possible. In order to accomplish this, the following mowing practices must be abided by when mowing on Cascade Township properties:

- Grass clippings need to be picked up or blown off the street, out of gutters, and off catch basins.
- Mowers need to be cleaned on grassy areas away from drains.
- Drips and spills from oil and fuel need to be cleaned up promptly.

* * *

I have discussed the above-mentioned items with everyone on our mowing crew(s) who will be mowing on Cascade Township properties. I have verified that they all understand and will abide by the above-mentioned items.


Brett Boonenberg

5-16-12
Date