

**Public Education Plan  
for the  
Grand Valley Metropolitan Council**

**NPDES MS4  
Storm Water Regulations**

**February 1, 2013  
Project No. F99511P/G120878**



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

**PUBLIC EDUCATION PLAN**

**FOR THE**

**GRAND VALLEY METROPOLITAN COUNCIL**

**NPDES MS4 STORMWATER REGULATIONS**

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## LIST OF ABBREVIATIONS/ACRONYMS

DPW	Department of Public Works
FTC&H	Fishbeck, Thompson, Carr & Huber, Inc.
GLSI	Great Lakes Stewardship Initiative
I&E	Information and Education
LGROW	Lower Grand River Organization of Watersheds
LGRW	Lower Grand River Watershed
MDEQ	Michigan Department of Environmental Quality
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollutant Discharge Elimination System
PAM	Public Awareness and Marketing
PEP	Public Education Plan
WMEAC	West Michigan Environmental Action Council

## **INTRODUCTION**

The National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Stormwater Regulations in Michigan allow compliance through a regional watershed-based initiative. This Public Education Plan (PEP) takes advantage of the watershed permit structure by combining available resources in the Lower Grand River Watershed (LGRW) to contact a larger area about watershed education. The PEP was created for the participating communities in Kent and Ottawa Counties and is intended to educate the public about ways they can reduce stormwater pollution. Outreach activities will reach diverse audiences with a variety of viewpoints and concerns. Successful implementation of the PEP will form partnerships with agencies and organizations that have existing programs and use educational materials and strategies that are familiar and relevant to the area residents.

The unique purpose of the public education portion of the NPDES MS4 Stormwater Regulations is to increase the awareness of watershed residents that their everyday activities can contribute pollutants to their community's water resources. Most citizens recognize the recreational and aesthetic benefits they receive from water and most even recognize that water quality degradation is a serious concern in the Great Lakes Region. Most people, however, have not made the connection that significant pollution is generated from their normal everyday actions and not simply from large commercial and industrial sources.

The advantage of the regional watershed-based initiative is the cooperation and resource sharing that develops between the participating communities. Implementing a successful PEP will take funding and preparation time that one community may find impossible to do alone. However, if coordination develops between many communities in the watershed, these resources can be shared, and a larger audience can be reached at a lesser cost per contributing community. Since the overall aim is to encourage pollution prevention by coordinating a regional effort, it makes sense to pool all available resources and delegate tasks to the communities that will be the most efficient at accomplishing their responsibilities. In this manner, duplication of efforts in neighboring communities which increases cost of development will be reduced.

## **PEP OVERVIEW**

Participating communities in Kent and Ottawa Counties worked with Fishbeck, Thompson, Carr & Huber, Inc. (FTC&H) to develop the original PEP in March 2003. The Michigan Department of Environmental Quality (MDEQ) approved the PEP and issued a directive to begin implementation by January 1, 2004. A LGRW Stormwater Education Committee was formed and met quarterly to discuss and plan activities scheduled for implementation. The status and evaluation of the public education activities administered by the participating communities were reported to the MDEQ either annually or biennially, as required.

The successes and challenges encountered during the first five-year period of implementation were evaluated during a focus group session held in November 2009. The results were compiled in a Focus Group Summary Report (Appendix 1), which included recommendations for the next update of the PEP.

This updated PEP describes 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).

The LGRW Stormwater Education Committee will continue to guide the implementation of the PEP. Committee participants (Table 1) will meet quarterly to plan, discuss, and review the implementation of education activities to reduce stormwater pollution. The committee will work with the LGRW Public Awareness and Marketing (PAM) Committee to help ensure PEP implementation is coordinated with the LGRW I&E strategy whenever possible to share resources, convey similar messages, and encourage the reduction of watershed pollution. The committee will also assist in coordinating with other current programs and projects in the LGRW that involve public stewardship of water resources. Input from the public will ensure the participating communities will make environmental decisions with an understanding of the interest and concerns of affected people and entities. This type of cooperation between those making the decisions and those affected by the decisions will bring about a more effective change in public behavior.

**Table 1 - LGRW Stormwater Education Committee Participants**

Allendale Charter Township
Cascade Charter Township
City of Grand Haven
City of Grand Rapids
City of Grandville
City of Kentwood
City of Rockford
City of Walker
Fishbeck, Thompson, Carr & Huber, Inc.
Forest Hills Public Schools

**Table 1 - LGRW Stormwater Education Committee Participants**

Grand Valley Metropolitan Council
Kent County Drain Commissioner's Office
Kent County Resource Recovery
Kent County Road Commission
MDEQ
Ottawa County Drain Commissioner's Office
Ottawa County Environmental Health Services
Village of Sparta
West Michigan Environmental Action Council

## **GOALS AND OBJECTIVES**

Stewardship and responsibility in the watershed will increase as awareness increases, resulting in an overall improvement in water quality. Greater awareness and pride in local natural resources at the grass roots level will create a bottom up policy change. More understanding on the relationships between stormwater pollution and local problems will result in a public outcry for change. The following goals and objectives will direct the implementation of the PEP and produce additional public support for stormwater regulations.

### **GOALS**

1. To promote, publicize, and facilitate watershed education for the purpose of encouraging the public to reduce the discharge of pollutants in stormwater to the maximum extent practicable.
2. To encourage prevention of pollution over treatment of pollution.

### **OBJECTIVES**

To meet the stormwater education goals, a sufficient amount of education activities will be implemented to ensure target audiences are reached with the appropriate messages for the following six topic areas:

1. Education of the public about their responsibility and stewardship in their watershed.
2. Education of the public on the location of residential separate stormwater drainage system catch basins, the waters of the State where the system discharges, and potential impacts from pollutants from the separate stormwater drainage system.
3. Encouragement of public reporting of the presence of illicit discharges or improper disposal of materials into the applicant's separate stormwater 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 care, pavement, or power washing; the acceptable application and disposal of pesticides and fertilizers; and the effects cause 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.
6. Education of the public concerning management of riparian lands to protect water quality.

## PEP STRATEGY

During the development of the updated PEP, the LGRW Stormwater Education Committee discussed and reviewed the past successes and challenges in implementing the original PEP. By understanding the accomplishments and lessons learned during the first five years of implementation, a more comprehensive PEP could be developed. Available resource information was reviewed, including the Watershed General Permit guidance, *Getting Your Feet Wet with Social Marketing* (Wilbur 2006), recommendations from previous annual evaluations of effectiveness, and the Focus Group Summary Report (Appendix 1). The committee also sought input and recommendations from the LGRW PAM Committee, participating communities in Kent and Ottawa Counties, and other Michigan watershed groups focused on stormwater education.

Based on this information, the LGRW Stormwater Education Committee and FTC&H were able to identify appropriate target audiences, key messages, delivery methods, and evaluation measures that would be effective in the LGRW. These components are explained below and included in Table 2.

- **Target Audiences:** Key stakeholder groups contributing, or with the potential to contribute, to stormwater pollution.
- **Key Messages:** Messages to raise awareness, educate, or inspire action.
- **Delivery Mechanisms:** Activities to promote, publicize, and facilitate education to reduce and prevent stormwater pollution.
- **Evaluation Measures:** Methods to assess the progress of education efforts at meeting the identified goals and objectives.

Because the PEP strategy is designed to raise awareness, educate, and inspire action among target audiences, the delivery mechanisms were selected to move target audiences through three outreach stages: awareness, education, and action. These components are explained below and included in Table 2.

- **Awareness:** Target audiences will become aware of how day-to-day activities affect the quality of water resources.
- **Education:** Target audiences will learn the link between urban development, land use management, and water quality impacts.
- **Action:** Target audiences will adopt and implement practices and support other actions resulting in water quality improvements.

The complete PEP strategy (as outlined in Table 2) is organized by six stormwater education categories: 1) personal watershed stewardship, 2) ultimate stormwater discharge location and potential impacts, 3) public reporting of illicit discharges, 4) personal actions that can impact the watershed, 5) waste management assistance, and 6) management of riparian lands. These six categories are based on the six categories outlined in the 2003 General Watershed Permit. Target audiences, key messages, delivery methods, and evaluation measures were identified for each category by the LGRW Stormwater Education Committee.

## TARGET AUDIENCES

The target audiences are groups that affect or are affected by stormwater quality in their everyday actions. The target audiences identified in this PEP are the public and those key stakeholder groups contributing to, or potentially contributing to, stormwater pollution. The 2003 permit defines the public as including, but not limited to:

- residents,
- visitors to the area,
- businesses,
- commercial operations, and
- construction activities

The LGRW Stormwater Education Committee and Focus Group identified additional target audiences to include in the 2013 PEP as follows:

- public employees,
- industries,
- nonprofits conducting car washes,
- schools,
- riparian landowners,
- recreational users,
- lawn care companies,
- and landscapers.

In addition, the 2013 PEP also includes the following audiences recommended in the 2010 Focus Group Summary Report:

- auto repair shops,

- commercial power washers,
- carpet/floor cleaning companies,
- and septic system owners and haulers.

Table 2 lists the high priority target audiences for each public education category. Target audiences not listed within a certain category are considered to be a lower priority, but can be expected to be reached indirectly through the actions that are identified.

A social profile was developed for the LGRW by the Center for Environmental Study (CES) (2011). The social profile, in part, outlines the “socioeconomic characteristics of the Lower Grand River Watershed in order to recognize the historic, cultural, and political dynamics that shape watershed communities.” This document will be used to further characterize the target audiences in the LGRW to better reach these groups.

## **DEVELOPING MESSAGES**

The majority of people would be willing to change their habits if they knew their everyday behaviors were causing stormwater pollution. However, most people will not respond to negative criticism by changing a behavior that is being criticized. Therefore, it will be important that all messages delivered to target audiences emphasize personal empowerment, build on their concerns, and are not accusations. To achieve maximum effectiveness, this outreach campaign intends to provide consistent verbal and visual cues to the targeted audiences. Messages relayed to the target audiences will be concise to retain the attention of the readers or listeners. Messages will build on previous efforts allowing the plan to evolve to include information that is more detailed and still be identifiable to the recipient. Specifically, the Focus Group Summary Report (Appendix 1) recommended the following regarding the development of messages:

- Create messages that indicate direct benefits to the individual and what they care about (e.g. monetary benefits of environmental protection).
- Create messages that provide consistent, repeated messages to create awareness.
- Create messages that avoid technical or complex terminology.
- Reinforce messages by leading by example; if local governments can lead by example, their residents are more likely to follow suit.

Messages developed for the updated PEP are included in Table 2.

## **DELIVERY MECHANISMS**

Delivery mechanisms will relay stormwater messages to the target audiences. Previous delivery mechanisms from the original PEP were evaluated during a focus group session in 2009 (Appendix 1).

While some mechanisms were recommended for elimination or reduction (i.e., brochures), others were considered successful and will be continued over the next five years (e.g., lamppost banners, storm drain markers). New delivery mechanisms were also identified, including social media networks, “Johnny” advertisements, public service radio advertisements, and Wood TV 8 pop-up advertisements. The Focus Group Summary Report (Appendix 1) recommended the following regarding the implementation of delivery mechanisms:

- Create concise, visual, and emotionally moving delivery mechanisms.
- Create and promote identifiable branding.
- Use delivery mechanisms to promote a stormwater slogan.

Table 2 identifies the delivery mechanisms and responsible parties to promote, publicize, and facilitate education to reduce and prevent stormwater pollution. Table 3 lists the delivery mechanisms developed under the original PEP that can be reused in the future. Digital versions of these delivery mechanisms can be found at <http://www.ftch.com/lowergrandriverwatersheddocuments>.

**Table 3 - Previously Developed Delivery Mechanisms Available for Reuse**

<i>Delivery Mechanisms</i>	<i>Year Developed / Revised</i>
<i>Brochures/Flyers</i>	
Auto and Boat Care brochure ( <i>pdf</i> )	2007
Lawn Fertilizer brochure ( <i>pdf</i> )	2007
Stormwater Education brochure ( <i>pdf</i> )	2007
Pet Waste flyer ( <i>pdf</i> )	2009
"Landscaping for Water Quality" brochure ( <i>pdf</i> )	2010
"Solution to Stormwater Pollution" brochure ( <i>pdf</i> )	2010
Septic System guide ( <i>pdf</i> )	2010
"Healthy Lawn, Healthy Environment" brochure ( <i>pdf</i> )	2010
Illicit Discharges/Connections brochure ( <i>pdf</i> )	2010
"Rain Rain" brochure ( <i>pdf</i> )	2011
Citizens Reporting brochure ( <i>pdf</i> )	2012
Citizens Reporting brochure instructions ( <i>doc</i> )	2012
MS4 Employee Pollution report form ( <i>doc</i> )	2012
Non-phosphorus Fertilizer brochure ( <i>pdf</i> )	2012
"Do You Know Where Your Septic System Is?" brochure ( <i>pdf</i> )	2012
"Get the Most Out of Rain" flyer ( <i>pdf</i> )	2012
"West Michigan Take Back Meds" brochure ( <i>pdf</i> )	2012
Ottawa County Household Hazardous Waste brochure ( <i>pdf</i> )	2012
Meijer and TNC "Plant for a Better Earth" flyer ( <i>pdf</i> )	2012
<i>Newsletter Articles</i>	
Fertilizer article - <i>New Michigan Law Restricts Phosphorus Fertilizers (doc)</i>	2012
Household Waste article Kent - <i>Guide to Household Waste Disposal (doc)</i>	2012
Household Waste article Ottawa - <i>Guide to Household Waste Disposal (doc)</i>	2012
Rain Garden article - <i>What is a Rain Garden? (doc)</i>	2012
Septic System article - <i>Maintaining Your Septic System" (doc)</i>	2012
Stormwater article - <i>How You Can Help Reduce Pollution Entering the Grand River (doc)</i>	2012
MS4 Employee Stormwater article - <i>How You as an Employee Can Help Reduce Pollution Entering the Grand River (doc)</i>	2012
<i>Kids Materials</i>	
Water Cycle coloring book ( <i>pdf</i> )	2012
<i>Posters</i>	
Stormwater display board poster ( <i>pdf, high resolution</i> )	2009
Kitchen Grease poster ( <i>pdf, 12"x18"</i> )	2011
<i>Watershed Website</i>	
<a href="http://www.lowergrandriver.org">http://www.lowergrandriver.org</a>	Ongoing
<i>Radio Advertisements</i>	
Stormwater Runoff ad ( <i>mp3</i> )	2009
Stormwater Pollution 1 ad ( <i>mp3</i> )	2009
Stormwater Pollution 2 ad ( <i>mp3</i> )	2009
Household Hazardous Waste ad ( <i>mp3</i> )	2009
<i>Other Materials</i>	
Give-a-ways (library book/grocery bag, highlighter, letter opener, magnet clip, lunch bag, t-shirt)	2005 - 2012
Grand River Watershed sign design ( <i>pdf</i> )	2009
Lamppost Banner designs ( <i>pdf</i> )	2009
Storm Drain Marker installation instructions ( <i>pdf</i> )	2012
Eco Friendly Carwash Fundraiser letter ( <i>doc</i> )	2012

## EVALUATION METHODS

Evaluation measures are necessary to determine the level of permit compliance and program effectiveness. The LGRW Stormwater Education Committee selected evaluation measures to evaluate the activities outlined in the PEP strategy. For each delivery mechanism, an action measurement and result measurement were developed. Action measures evaluate the work performed by the permittees (e.g., number of brochure distributed), and result measures evaluate the outcomes and improvements resulting from the action (e.g., change in resident behavior after reading the brochure). Evaluation measures are listed in Table 2.

### ACTION MEASURES

To evaluate the work performed by the permittees to implement the delivery mechanisms, a permittee questionnaire will be used. The questionnaire will ask questions such as “How many website hits did your stormwater webpage receive?” Over time, the increase or decrease in the number of website hits by residents can be determined. In this way, the effectiveness of the webpage can be shown by comparing one period's number of hits to another.

To evaluate the work performed by the LGRW Stormwater Education Committee to implement the delivery mechanisms, other tools will be used. For example, a “booth form” will be developed to determine the increase in the number of booth visitors over time. The form will be attached to the LGRW stormwater display so permittees can fill it out as the display is used. In accordance with Table 2, the LGRW Stormwater Education Committee will also track Facebook “likes” and “friends,” watershed website hits, number and frequency of regional advertisements, etc., as well as prepare exit surveys for workshops.

### RESULT MEASURES

Milestones were developed for each delivery mechanism to assist with the results evaluation process. The milestones were established derived from baseline data obtained during the LGRW survey. CES conducted a survey of residents living in the LGRW in 2009 and 2010. CES developed a two-stage survey to assess whether specific I&E efforts, implemented during the Lower Grand River Organization of Watersheds (LGROW) Initiatives Project, would increase awareness of watershed issues. Results of this LGRW survey were then used to assist in establishing baseline data (e.g., 12% of people surveyed in the watershed know they live in the LGRW or one of its subwatersheds).

Three- and five-year milestones were then set based on this baseline data. For example, the following three-year milestone was established, “23% of people in the watershed know they live in the Lower Grand River Watershed or one of its subwatersheds.” Based on this milestone, PEP implementation efforts are expected to raise watershed awareness by 11% in three years. Achievement of this measurable goal will

be assessed using annual online resident surveys. Survey Monkey ([www.surveymonkey.com/](http://www.surveymonkey.com/)) is an affordable mechanism for creating online surveys. Public education efforts that were cost-effective for reaching a wide and varied audience will be used in future community outreach programs. The activities that did not reach their milestones will be eliminated or modified to increase their effectiveness.

In addition to the annual online resident surveys, the effectiveness of the entire PEP program will be assessed during a focus group session after five years of implementation. The format of the focus group session will follow the 2009 focus group session (Appendix 1). The focus group session will solicit for feedback on the successes and challenges of the PEP strategy. Recommendations will then be prepared for the next five-year PEP.

## **SCHEDULE OF IMPLEMENTATION**

Michigan has more fresh water than any state in the United States and most will agree that our state's water resources are becoming more and more polluted. Many Michigan residents, however, are still not aware that their everyday actions contribute to stormwater pollution. Based on the Focus Group Summary Report (Appendix 1), this also holds true for residents in the LGRW. Therefore, delivery mechanisms implemented between 2012 and 2017 will build on past efforts to raise awareness, educate, and inspire action. Once target audiences have become aware of the problems they are causing to their community's lakes and streams, they will be educated on how they can prevent further impairments to their watershed. Finally, programs and actions that encourage behavioral changes will be promoted. Table 2 includes the proposed schedule of each component in the PEP.

Table 2 - Public Education Plan Strategy for Participating Communities of the Lower Grand River Watershed

Public Education Categories (2003 Permit)	Key Messages	Delivery Mechanisms		High Priority Target Audiences	Awareness, Education, or Action	Timeline	Responsible Party	Action Evaluation Measure	Result Evaluation Measure			
		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool
<b>1. Personal watershed stewardship</b> Education about responsibility and stewardship.	1) A watershed is an area of land that drains to a common point. You live in the LGRW. You impact the watershed.  2) Learn more about the LGRW by visiting <a href="http://www.lowergrandriver.org">www.lowergrandriver.org</a>  3) Reasons for protecting the watershed.  4) Ways that individuals can affect the watershed through their activities.	Give-a-ways	Library book bag, reusable grocery bag	Residents, visitors, public employees	Awareness	Winter / Spring 2013, 2015	Permittees	Increase in number of give-a-ways taken by target audiences	12% of people surveyed in the watershed know they live in the LGRW or one of its subwatersheds *	23% of people surveyed in the watershed know they live in the LGRW or one of its subwatersheds	30% of people surveyed in the watershed know they live in the LGRW or one of its subwatersheds	Annual Resident Online Survey, Five-Year Focus Group
		Facebook	LGRW group page		Awareness	Updates - Summer Annually	Stormwater Education Committee	Increase in number of Facebook "friends" and "likes"				
		Festival booths	Grand River Clean-Up, John Ball Zoo's "Party for the Planet," Grandville's Michigan Week, Hudsonville Showcase, Sparta Business Expo		Education	Winter / Spring Annually	Permittees	Number of festival booths staffed each year, increase in number of booths visitors educated				
		Lamppost banners	"Grand River Watershed" banner		Awareness	Winter / Spring 2013, 2015, 2017	Permittees	Number and duration of banners installed				
		Maintain "Entering the Watershed" road signs	9 signs currently in Kent County and 9 signs in Ottawa County		Awareness	Summer 2013, 2015, 2017	Stormwater Education Committee	Number of road signs checked for maintenance needs, number of signs repaired				
		Watershed website	<a href="http://www.lowergrandriver.org">www.lowergrandriver.org</a>		Education	Updates - Summer Annually	Stormwater Education Committee	Number of weblinks to watershed website, increase in number of website hits				
		Wood TV 8 pop-up advertisement	<a href="http://www.woodtv.com">www.woodtv.com</a>		Awareness	Summer 2017	Stormwater Education Committee	Number and frequency of advertisements				

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		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool
<b>2. Ultimate stormwater discharge location and potential impacts-</b> Education on the location of residential stormwater system catch basins, where the system discharges, and impacts from pollutants.	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.  3) Education on the impacts of stormwater pollutants.  4) Education on the stormwater system and receiving water bodies in a person's or company's neighborhood.	<b>"Johnny" advertisements</b> <a href="http://www.johnnyadvertising.com">www.johnnyadvertising.com</a>		Residents	Awareness	Summer 2016	Stormwater Education Committee	Number and duration of advertisements	17% of people surveyed indicated that dumping chemicals on the ground or in the storm sewer negatively affects water quality.*	25% of people surveyed understand that 1) their storm drains discharge to local lakes and streams, and 2) their behaviors impact the quality of storm drain discharges	30% of people surveyed understand that 1) their storm drains discharge to local lakes and streams, and 2) their behaviors impact the quality of storm drain discharges	Annual Resident Online Survey, Five-Year Focus Group
		<b>Articles in professional publications or direct mailings</b> Association of Grand Rapids Landscape Professionals newsletter. Direct mailings to: Auto Repair - <a href="http://www.yellowpages.aol.com/auto-repair/mi/grand-rapids/">www.yellowpages.aol.com/auto-repair/mi/grand-rapids/</a> Power Washers - <a href="http://www.yellowpages.aol.com/grand-rapids-mi/power-washing/">www.yellowpages.aol.com/grand-rapids-mi/power-washing/</a> Carpet/Floor Cleaners - <a href="http://www.yellowpages.aol.com/carpet-and-rug-cleaners/mi/grand-rapids/">www.yellowpages.aol.com/carpet-and-rug-cleaners/mi/grand-rapids/</a>		Landscapers / lawn care companies, auto repair shops, commercial power washers, carpet/floor cleaning companies, commercial operations, industries	Education	Summer 2013, 2015, 2017	Stormwater Education Committee	Number of professional articles / mailings				
		<b>Billboard</b> USEPA materials - <a href="http://cfpub.epa.gov/npstbx/searchMaterials.cfm?GroupID=62">http://cfpub.epa.gov/npstbx/searchMaterials.cfm?GroupID=62</a>		Residents	Awareness	Summer 2015, 2017	Stormwater Education Committee	Number and duration of advertisements				
		<b>Brochures</b> City of Grand Rapids' <i>Rain Rain</i> , FTC&H's <i>Stormwater Management: Illicit Discharges and Connections</i>		Residents	Education	Winter / Spring 2014, 2016	Permittees	Increase in number of brochures taken by target audiences				
		<b>Bus advertisements or gas station pump advertising</b> ridetherapid.org, captive1.com		Residents	Awareness	Summer 2013, 2015, 2017	Stormwater Education Committee	Number and duration of advertisements				
		<b>Business window flyer</b> Rouge River Project's <i>Our Business Practices Can Affect Our Rivers</i> - <a href="http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3714-106374--00.html">http://www.michigan.gov/deq/0,1607,7-135-3313_3682_3714-106374--00.html</a>		Local businesses	Awareness/ Education	Winter / Spring 2014, 2016	Permittees	Number and duration of flyers posted				
		<b>Newsletter/Newspaper article</b> FTC&H's <i>How You Can Help Reduce Pollution Entering the Grand River</i>		Residents	Education	Winter / Spring Annually	Permittees	Number of articles disseminated to the public; number of households reached				

Table 2 - Public Education Plan Strategy for Participating Communities of the Lower Grand River Watershed

Public Education Categories (2003 Permit)	Key Messages	Delivery Mechanisms		High Priority Target Audiences	Awareness, Education, or Action	Timeline	Responsible Party	Action Evaluation Measure	Result Evaluation Measure			
		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool
		Radio public service announcement (or "on hold" phone messages)	City of Grand Rapids' <i>Water Spots</i>	Residents	Awareness / Education	Summer 2014, 2016	Stormwater Education Committee	Number and frequency of advertisements				
		Storm drain markers / stenciling, with door hanger distributions if volunteers are available	Markers: East Jordan Iron Works Stenciling: FTC&H's stenciling instructions Hangers: <a href="http://www.michigan.gov/documents/deq/ess-nps-savvy-door_209411_7.pdf">http://www.michigan.gov/documents/deq/ess-nps-savvy-door_209411_7.pdf</a>	Residents	Action	Winter / Spring Annually	Permittees	Number of drain markers installed / stenciled, increase in number of volunteers involved in installation / stenciling, number of door hanger distributed, decrease in illicit discharges / dumping				
		Watershed website links to YouTube video	<a href="http://www.youtube.com/watch?v=GrBEEjixaY&amp;feature=related">www.youtube.com/watch?v=GrBEEjixaY&amp;feature=related</a>	Residents	Education	Ongoing	Stormwater Education Committee	Number of web links to the watershed website (containing YouTube videos), increase in number of website hits				

Table 2 - Public Education Plan Strategy for Participating Communities of the Lower Grand River Watershed

Public Education Categories (2003 Permit)	Key Messages	Delivery Mechanisms		High Priority Target Audiences	Awareness, Education, or Action	Timeline	Responsible Party	Action Evaluation Measure	Result Evaluation Measure						
		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool			
<b>3. Public reporting of illicit discharges -</b> Encourage public reporting of the presence of illicit discharges or improper disposal into the stormwater system.	1) How to identify illicit discharges. 2) How to report illicit discharges. 3) Water quality impacts from illicit discharges. 4) Consequences / penalties associated with illicit discharges and improper waste disposal.	<b>Brochures</b> with reporting / contact information	FTC&H's Citizen reporting brochure, MS4 employee pollution report form	Residents, public employees, businesses, construction activities, industries	Awareness / Education / Action	Winter / Spring 2014-2017	Permittees	Increase in the number of brochures taken by target audiences	Typically <5 illicit discharge reports per community annually**	9% increase in the number of illicit discharge reports per community each year.	15% increase in the number of illicit discharge reports per community each year	Annual Resident Online Survey, Five-Year Focus Group			
		<b>Community public reporting webpages</b>	<a href="http://www.ci.kentwood.mi.us/CityOfKentwood/media/files/original-files/publicworks/pdf/How-to-Report-Water-Pollution.pdf">http://www.ci.kentwood.mi.us/CityOfKentwood/media/files/original-files/publicworks/pdf/How-to-Report-Water-Pollution.pdf</a>		Awareness / Education / Action	Ongoing	Permittees	Number of community reporting web pages, increase in number of phone calls resulting from website							
		<b>Newsletter article</b>	FTC&H's <i>How You Can Help Reduce Pollution Entering the Grand River</i> FTC&H's <i>How You as an Employee Can Help Reduce Pollution Entering the Grand River</i>		Awareness / Education	Winter / Spring Annually	Permittees	Number of newsletter articles disseminated, increase in number of phone calls resulting from article							
	1) Proper septic system care and maintenance. 2) How to recognize system failure. 3) Impacts failing systems have on water quality. 4) Where to go for assistance.	<b>Brochure</b>	USEPA's <i>A Homeowner's Guide to Septic Systems</i>	Septic system owners / haulers	Awareness / Education	Winter / Spring Annually	Permittees	Increase in number of brochures taken by target audiences					1% of watershed residents reported they regularly pump out their septic system when asked to name one thing they were doing to improve water quality*	9% of watershed residents surveyed report that they regularly pump out their septic system	15% of watershed residents surveyed report that they regularly pump out their septic system
		<b>County HD septic system inspections / repairs</b>	Ottawa County - <a href="https://www.miottawa.org/Health/OCHD/landev.htm">https://www.miottawa.org/Health/OCHD/landev.htm</a> Kent County - <a href="http://www.accesskent.com/Health/HealthDepartment/WellAndSeptic/WellSepticPermits.htm">http://www.accesskent.com/Health/HealthDepartment/WellAndSeptic/WellSepticPermits.htm</a>	Septic system owners	Action	Ongoing	Ottawa / Kent County HDs	Decrease in annual number of septic system repairs							

Table 2 - Public Education Plan Strategy for Participating Communities of the Lower Grand River Watershed

Public Education Categories (2003 Permit)	Key Messages	Delivery Mechanisms		High Priority Target Audiences	Awareness, Education, or Action	Timeline	Responsible Party	Action Evaluation Measure	Result Evaluation Measure			
		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool
		<b>Newsletter article</b>	FTC&H's <i>Maintaining Your Septic System</i>	Septic system owners	Awareness / Education	Winter / Spring Annually	Permittees	Number of newsletter articles disseminated to the public; number of households reached if articles were mailed				
		<b>Watershed website links to YouTube videos or brochure</b>	<a href="http://www.lowergrandriver.org">www.lowergrandriver.org</a>	Septic system owners	Awareness / Education	Ongoing	Stormwater Education Committee	Number of web links to the watershed website (containing YouTube videos / brochure), increase in number of website hits				
<b>4. Personal actions that can impact the watershed-</b> Education on the need to minimize the amount of residential, or non-commercial, wastes washed into storm sewer system.	1) BMPs for car, pavement, power washing. 2) Preferred cleaning materials and practices - "phosphate free" as important as "biodegradable." 3) BMPs for pesticide use, fertilizer use, and their disposal. 4) BMPs for proper management of grass clippings, leaf litter, and animal wastes. 5) BMPs for residential de-icer use.	<b>Brochures</b>	USEPA's <i>The Solution to Stormwater Pollution</i> , CES's <i>Landscaping for Water Quality</i>	Residents	Awareness / Education	Winter / Spring Annually	Permittees	Increase in number of brochures taken by target audiences	72% of watershed residents can name one thing they are doing to improve water quality.*	80% of watershed stakeholders surveyed can name one thing they are doing to improve water quality.	85% of watershed stakeholders surveyed can name one thing they are doing to improve water quality.	Annual Resident Online Survey, Five-Year Focus Group
		<b>Children's coloring or activity book</b>	KCDC's <i>Troutie</i> and WEF's <i>Water Cycle</i> coloring books	Schools	Education	Winter / Spring Annually	Permittees	Increase in number of books taken by target audiences				
		<b>Enviroscape classroom presentations</b>	Enviroscape models available through the OCDC and KCDC	Schools	Education	Winter / Spring Annually	Permittees	Number of presentations, increase in number of participants				

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		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool
<p>6) BMPs for native vegetation on residential properties as an alternative to turf grass.</p> <p>7) Effects of residential wastes on our water bodies.</p> <p>8) Education on LID techniques. For example, "Lower your water bill. Install a rain barrel to capture and reuse your stormwater."</p>		<b>Mailing to schools</b> regarding environmentally friendly car wash fundraisers	FTC&H's environmentally-friendly car wash fundraiser letter	Non-profit groups conducting car wash fundraisers	Education / Action	Winter / Spring 2013, 2015	Permittees	Number of letters mailed to schools or organizations, increase in number of environmentally friendly car washes				
		<b>Newsletter articles</b>	FTC&H's <i>New Michigan Law Restricts Phosphorus Fertilizers</i> , FTC&H's <i>What is a Rain Garden</i>	Residents	Awareness / Education	Winter / Spring Annually	Permittees	Number of newsletter articles disseminated to the public; number of households reached if articles were mailed				
		<b>Radio public service announcement</b> (or "on hold" phone messages)	City of Grand Rapids' <i>Water Spots</i>	Residents	Awareness	Summer 2014, 2016	Stormwater Education Committee	Number and frequency of advertisements, increase in the number of phone calls resulting from radio advertisement				
		<b>LID Workshops</b>	Rain gardens, native plant landscaping, stream buffers, or rain barrels	Residents, public employees	Action	Summer 2013, 2015	Stormwater Education Committee	Number of workshops, increase in the number of participants, increase in number of practices installed				
		<b>Park signage</b>	Pet waste or duck feeding signs	Residents, visitors, recreational users, riparian landowners	Awareness	Winter / Spring 2016	Permittees	Number of signs installed, decrease in pet waste or duck feeding				

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		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool
		<b>Stormwater display board</b>	LGRW Stormwater display board	Residents	Education	Ongoing	Permittees	Number and duration of stormwater displays				
		<b>Watershed website link</b> to YouTube video or information	<a href="http://www.lowergrandriver.org">www.lowergrandriver.org</a>	Residents, public employees	Education	Ongoing	Stormwater Education Committee	Number of web links to the watershed website (with YouTube videos / information), increase in number of website hits				
<b>5. Waste management assistance-</b> Education on proper disposal of HHW, travel trailer / boating sanitary wastes, chemicals, motor vehicle fluids, and unused medications.	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.  3) Education on types of HHW and available alternatives.  4) Education on disposal locations for HHW, travel trailer / boating sanitary wastes, chemicals, motor vehicle fluids, and unused medications.	<b>Radio public service announcement</b> (or "on hold" phone messages)	City of Grand Rapids' <i>Water Spots</i>	Residents	Awareness	Summer 2014, 2016	Stormwater Education Committee	Number and frequency of advertisements	To be determined	9% increase the number of watershed residents dropping off HHW during HHW collection events	15% increase the number of watershed residents dropping off HHW during HHW collection events	Annual Resident Online Survey, Five-Year Focus Group
		<b>Brochures</b>	<i>County Guide to Household Waste Disposal, West Michigan Take Back Meds</i>	Residents	Education	Winter / Spring Annually	Permittees	Increase in number of brochures taken by target audiences				
		<b>Information boards or brochures</b> at beaches or boat docks on sanitary waste disposal	<a href="http://www.mcgi.state.mi.us/mrbis/">http://www.mcgi.state.mi.us/mrbis/</a>	Recreational users	Awareness / Education	Winter / Spring 2016	Permittees	Number of signs installed, decrease in improper sanitary waste disposal				
		<b>County Household Waste Collections</b>	<a href="http://www.accesskent.com/YourGovernment/PublicWorks/recycle_household.htm">http://www.accesskent.com/YourGovernment/PublicWorks/recycle_household.htm</a> <a href="http://www.miottawa.org/Health/OCHD/hh_waste.htm">http://www.miottawa.org/Health/OCHD/hh_waste.htm</a>	Residents, visitors, public employees	Action	Ongoing	Ottawa County HD / Kent County DPW	Number of waste collection days held, increase in amount of material received during collection days or increase in number of people participating				

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		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool
		<b>Newsletter article</b>	FTC&H's <i>Guide to Household Waste Disposal</i>	Residents	Education	Winter / Spring Annually	Permittees	Number of newsletter articles disseminated to the public; number of households reached if articles were mailed				
		<b>Watershed website</b> information with web link to County Household Waste websites	<a href="http://www.accesskent.com/YourGovernment/PublicWorks/recycle_household.htm">http://www.accesskent.com/YourGovernment/PublicWorks/recycle_household.htm</a> <a href="http://www.miottawa.org/Health/OCHD/hh_waste.htm">http://www.miottawa.org/Health/OCHD/hh_waste.htm</a>	Residents	Education	Ongoing	Stormwater Education Committee	Number of website links to County HHW website, increase in number of website hits, if available				
<b>6. Management of riparian lands</b>  - Education concerning management of riparian lands to protect water quality.	1) Importance of riparian corridors / stream buffers.  2) How to landscape for better water quality.  3) Education on shoreline stabilization techniques, stream buffers, filter strips, conservation easements, and bioengineering techniques.	<b>Direct mailing</b> to priority preservation and restoration areas noted in the Watershed Management Plan	AWRI's <i>Riparian Owner's Guidebook</i> - <a href="http://www.gvsu.edu/forms/isc/ripguide.pdf">http://www.gvsu.edu/forms/isc/ripguide.pdf</a>		Education	Summer 2014, 2017	Regional	Number of mailings to riparian owners, increase in square footage of practices installed	To be determined	9% of watershed stakeholders surveyed report they planted native plants, planted a stream buffer / rain garden, or used shoreline stabilization techniques	15% of watershed stakeholders surveyed report they planted native plants, planted a stream buffer / rain garden, or used shoreline stabilization techniques	Annual Resident Online Survey, Five-Year Focus Group
		<b>Riparian management workshop</b>	Michigan Natural Shoreline Partnership - <a href="https://sites.google.com/site/mishorelinepartnership/">https://sites.google.com/site/mishorelinepartnership/</a>	Riparian landowners, construction activities, landscapers	Action	Summer 2014	Stormwater Education Committee	Number of workshops held; increase in number of participants, increase in number of practices installed				

\* Gajewski, B. 2010. A Social Profile of the Lower Grand River Watershed. Center for Environmental Study, Grand Rapids, MI. 105 pp.

\*\* NPDES MS4 Stormwater Progress Reports (2005-2009)

AWRI - Annis Water Resources Institute

CES - Center for Environmental Study

DPW - Department of Public Works

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		Mechanism	Specific Example(s)						Baseline Data (First Year)	Milestones (Third Year)	Milestones (Fifth Year)	Result Evaluation Tool

FTC&H - Fishbeck, Thompson, Carr & Huber, Inc.  
 HD - Health Department  
 HHW - Household Hazardous Waste  
 KCDC - Kent County Drain Commissioner  
 LGRW - Lower Grand River Watershed  
 LID - Low Impact Development  
 OCDC - Ottawa County Drain Commissioner  
 USEPA - U.S. Environmental Protection Agency  
 WEF - Water Environment Federation

## **PARTNERSHIP DEVELOPMENT**

During implementation of the original PEP, several partnerships were developed. Partners included LGROW, West Michigan Environmental Action Council (WMEAC), Kent County Department of Public Works (DPW), and the Great Lakes Stewardship Initiative (GLSI). These organizations assisted in reviewing products, providing useful resources, and expanding existing efforts. These partnerships will be continued and strengthened over the next five-year period.

Additional partnerships will be sought during the next five years (2012 to 2017), with assistance from the LGRW Stormwater Education Committee. During the first year of the five-year strategy, the LGRW Stormwater Education Committee will focus on identifying opportunities for additional partnerships. Partnership opportunities are currently underway with Trout Unlimited, Plaster Creek Stewards, Meijer Stores, CA Frost Environmental Science Academy, and the Kent and Ottawa Conservation Districts. The second year will focus on gaining commitments from these partners to various aspects of the updated PEP. During years three, four, and five, efforts will shift to securing additional funds through in-kind services and existing grant programs.

## **SUMMARY**

The sharing of information, time, expertise, and programs among the participating communities in Kent and Ottawa Counties allows the updated PEP to efficiently reach out to the target audiences in the LGRW. Since increasing awareness, education, and action of all residents in the watershed will help improve water quality and protect water resources of the watershed-based initiative, this PEP effectively meets the 2003 General Watershed Permit requirements with the greatest benefit for the participating communities. This regional approach to public education will share responsibilities, communicate messages to a greater number of audiences, and provide consistent and repetitive information to the public.

## REFERENCES

Center for Environmental Study. 2011. A Social Profile of the Lower Grand River Watershed. Prepared for the Grand Valley Metropolitan Council. Lower Grand River Organization of Watersheds Initiatives Implementation Project. MDEQ Tracking Code: 2007-0137. FTC&H, Grand Rapids, Michigan. 105 pp.

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Wilbur, J. 2006. Getting Your Feet Wet with Social Marketing, A Social Marketing Guide for Watershed Programs. Utah Department of Agriculture and Food, Salt Lake City, Utah. 132 pp.