Lower Grand River Watershed Progress Report

City of Grand Rapids

Reporting Period: August 1, 2017– July 31, 2018

Prepared by the:

GVMC

Grand Valley Metropolitan Council

Environmental Programs

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http://www.lgrow.org

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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
GI	Green Infrastructure
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
KIH	Kent Innovation High School
LGROW	Lower Grand River Organization of Watersheds
LGRW	Lower Grand River Watershed
LID	Low Impact Development
MACC	Macatawa Area Coordinating Council
MDEQ	Michigan Department of Environmental Quality
MGROW	Middle Grand River Organization of Watersheds
MS4	Municipal Separate Storm Sewer System
MSUE	Michigan State University Extension
MWEA	Michigan Water Environment Association
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	Nonpoint Source
O&M	Operation and Maintenance
OCWRC	Ottawa County Water Resources 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
TMDL	Total Maximum Daily Load
TSS	Total Suspended Solids
USEPA	U.S. Environmental Protection Agency
WMEAC	West Michigan Environmental Action Council
WMP	Watershed Management Plan
WMSECN	West Michigan Soil Erosion Control Network
WMSRDC	West Michigan Shoreline Regional Development Commission
WQI	Water Quality Index

Purpose

This Lower Grand River Watershed Progress Report was developed by the Grand Valley Metropolitan Council's (GVMC) Department of Environmental Programs in collaboration with the regulated communities within the Lower Grand River Watershed. This document satisfies the requirement set forth in the Michigan Department of Environmental Quality's (MDEQ) National Pollutant Discharge Elimination System (NPDES) Wastewater Discharge General Permit, Storm Water Discharges from Municipal Separate Storm Sewer Systems (MS4s) Subject to Watershed Plan Requirements as outlined in Section B(3).

Part 1 – Contact Information

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	Michael Lunn
Title	Environmental Services Department Manager
Address	1300 Market Ave SW
City, State, Zip	Grand Rapids, MI 49503
Telephone (with area code)	616-456-3625
Fax (with area code)	616-456-3711
E-mail	mlunn@grand-rapids.mi.us
Stormwater Program Manager	
Name	Carrie Rivette
Title	Wastewater/Stormwater Maintenance Superintendent
Address	1300 Market Ave SW
City, State, Zip	Grand Rapids, MI 49503
Telephone (with area code)	616-456-3057
Fax (with area code)	616-456-3711
E-mail	crivette@grand-rapids.mi.us
Stormwater Permit Fee Billing Address	
Name	Michael Lunn
Title	Environmental Services Department Manager
Address	1300 Market Ave SW
City, State, Zip	Grand Rapids, MI 49503
Telephone (with area code)	616-456-3625
Fax (with area code)	616-456-3711
E-mail	mlunn@grand-rapids.mi.us

Part 2 – Municipal Stormwater Pollution Prevention Initiatives (SWPPI) Commitments

Committees have been working to address different subject areas to make program implementation as efficient as possible. Municipal Separate Storm Sewer System (MS4) permittees participate in the Lower Grand River Organization of Watersheds (LGROW) committees. 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:

- Public Engagement Committee
- Stormwater Ordinance Committee (SWOrd)
- Technical Committee
- Sustainability Committee
- Fund Development and Membership Committee
- LGROW Executive Committee

The list of committee members who have served on the committees during this reporting period are indicated in Table 2 below. Members denoted with an asterisk are not MS4 permitted representatives.

Table 1. LGROW Committee Membership List as of July 31, 2018

Community	Representative	Public Engagement	Stormwater Ordinance (SWOrd)	Technical	Sustainability	Fund Development & Membership	LGROW Executive
Cascade Charter Township	Mr. Steve Peterson						
East Grand Rapids, City of	Mr. Brian Donovan					X	X
East Grand Rapids, City of	Mr. Doug LaFave						
Forest Hills Public Schools	Ron Boezwinkle						
Fruitport, Village of	Jeremy Statler						
Georgetown Charter Township	Mr. Rod Weersing	X					
Grand Haven, City of	Ms. Cheryl Davidson	X					
Grand Rapids Charter Township	Bob Versluys						
Grand Rapids, City of	Mr. Mike Lunn			X			

Table 1. LGROW Committee Membership List as of July 31, 2018

Community	Representative	Public Engagement	Stormwater Ordinance (SWOrd)	Technical	Sustainability	Fund Development & Membership	LGROW Executive
Grand Rapids, City of	Ms. Carrie Rivette	X	X		X	X	X
Grand Rapids, City of	Mr. Michael Staal	X	X		X		
Grand Rapids, City of	Mr. Dan Taber		X	X			
Grandville, City of	Mr. Ken Krombeen		X			X	X
Grandville, City of	Mr. Todd Wibright			X			
GVSU*							
Hudsonville, City of	Ms. Jill Frielink	X					
KCDC	Mr. Brad Boomstra		X				
KCRC	Mr. Bruce Schutte	X					
Kent County Health Department*	Mr. Brendan Earl	X					
Kent Resource Recovery*	Ms. Megan Kretz	X					
Kentwood, City of	Mr. Jim Beke		X	X			
Kentwood, City of	Mr. Dan Vanderheide		X				
Kentwood, City of	Ms. Kelsey Sloan	X		X			
MDEQ*	Ms. Amanda St. Amour						
MDEQ*	Ms. Michelle Storey	X				X	
MDEQ*	Ms. Dana Strouse	X		X			
OCWRC	Mr. Dennis Cole	X	X				
OCWRC	Ms. Angela Walachovic	X					
OCRC	Mr. Jerry Olman	X					
Plainfield Charter Township	Mr. Rick Solle		X				
Plainfield Charter Township	Ms. Mary Trapp-Gunst	X					

Table 1. LGROW Committee Membership List as of July 31, 2018							
Community	**Representative**	**Public Engagement**	**Stormwater Ordinance (SWOrd)**	**Technical**	**Sustainability**	**Fund Development & Membership**	**LGROW Executive**
Spring Lake, Village of	Ms. Chris Burns						
Walker, City of	Mr. Scott Conners		X			X	X
Walker, City of	Ms. Rachell Nagorsen	X	X	X	X		X
Wyoming, City of	Mr. Aaron Vis	X		X			X
Wyoming, City of	Mr. Myron Erickson		X				

Public Engagement Committee

The Public Engagement Committee met on September 13, 2017, November 8, 2017, January 10, 2018, February 14, 2018, and May 16, 2018 during the reporting period. Agendas and minutes for the meetings are posted to https://www.lgrow.org/public-engagement. Throughout the reporting period, the group focused on implementation of the updated Public Education Plan (PEP) approved in February of 2013, available here: https://www.lgrow.org/ms4information.

The Public Engagement Committee has been functioning as a joint committee of the Lower Grand River Organization of Watersheds (LGROW) and the permitted Lower Grand MS4 communities since January of 2014. The goals of LGROW, the Lower Grand River Watershed Management Plan, the strategic plan, and the MS4 Public Education Plan align closely, and through this joint committee's combined efforts, the result has been a larger group of involved stakeholders. This group shares the common goals of raising awareness about the Lower Grand River Watershed (LGRW) and improving the stormwater quality within the watershed. The group focuses on messaging and outreach events that address the target messages of: Personal Watershed Stewardship, Ultimate Stormwater Discharge, Public Reporting of Illicit Discharges, Personal Actions that can Impact the Watershed, Waste Management, Management of Riparian Lands. A detailed list of these events and the outreach conducted during this reporting period is provided in Part 3.

SWOrd Committee

The Storm Water Ordinance (SWOrd) Committee met on January 12, 2018, March 9, 2018, March 27, 2018, May 15, 2018 and July 16, 2018 during the reporting period. Meetings were focused on follow up items related to the LGRW alternative approach, the model ordinance, the standards manual, and the stormwater design spreadsheet for MS4 permittees to utilize in their implementation of the new post-construction stormwater control requirements outlined in the 2016 NPDES Permit Application.

The committee finalized templates for the standards manual, model ordinance, the standards manual BMP design criteria appendix, and the LGROW Design Spreadsheet based on feedback from the Michigan Department of Environmental Quality (MDEQ) after the April 2015 submittal of the alternative approach for channel protection. The standards manual follows the steps outlined in the flow chart submitted with the permit applications for the design, review, and permitting of sites with post construction controls. The standards manual was developed in tandem with a LGROW Design Spreadsheet to assist site designers and reviewers to ensure site designs meet all the regulatory criteria outlined in the permit. The development of maintenance agreements per the stormwater post-construction controls is ongoing, and will continue through the next reporting period.

The manual and Design Spreadsheet tools are also designed to ensure that the alternative approach is only utilized as a last resort. The committee finalized the model ordinance for communities to customize for the application of these standards. On March 14, 2018 a meeting was held by GVMC for all MS4's in order to update each community with the progress made regarding their permit application. Since this work began in 2015, much of this reporting period was spent editing and revising permit application documents to accurately reflect how each community implements their MS4 program, accounting for new stormwater regulations under the next MS4 permit.

Technical Committee

The Technical Committee met on August 16, 2017, October 18, 2017, December 20, 2017, February 14, 2018, April 18, 2018, and June 20, 2018 during this reporting period. Agendas and minutes from the meetings are available at the following site: https://www.lgrow.org/technical-committee. During the reporting period, the committee members focused on the development of the LGROW Data Repository, which will serve as a resource for the sharing and viewing of water quality data collected throughout the watershed. The Data Repository can be accesses here: https://www.lgrow.org/data-repository/

The Committee also continued work on the watershed monitoring manual to guide the collection, processing, and storage of data in the Lower Grand River Watershed and the Lower Grand River Total

Maximum Daily Load (TMDL) monitoring, as required by the MS4 permit. The committee is coordinating the TMDL monitoring in the stream reaches identified in the MS4 Permit application letters. The City of Wyoming and the City of Grand Rapids are providing sampling equipment and laboratory space to collect and analyze the samples. This work will continue into the next reporting period. At the October 2017 meeting, the committee enjoyed an engaging presentation from a representative from the United States Geological Survey (USGS). IDEP outfall screening was also a focus of the Technical Committee, since many of the MS4's in the watershed were planning to complete this work during the summer of 2018.

Training

GVMC provides multiple training documents and DVDs for Permittee use. Documents are available at: https://www.lgrow.org/ms4information. Training materials, including newsletter articles for communities to provide to residents, can be found on the LGROW website. In addition, GVMC has hosted or partnered on several training events during the reporting period including:

- 15th Annual Grand River Spring Forum
    - Held on May 11, 2018 at the Cascade Library
- Stormwater General Awareness and IDEP
    - Offered May 22 and 23, 2018 in both Kent and Ottawa Counties
- Lunch and Learn
    - Offered at GVMC on June 29, 2018 hosted by Upstream Technologies

Training Library

A lending library of training materials is housed at GVMC 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

- IDDE – A Grate Concern: Illicit Discharge Detection & Elimination (14¼ Minutes)

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 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
- DVD from North Central Texas Council of Governments Municipal Employee Training Series: Preventing Stormwater Pollution: What We Can Do (includes the following videos)
  - Introduction: What We Can Do
  - Construction Activities and Land Disturbances
  - Fleet Maintenance and Material Handling
  - Streets and Drainage Maintenance
  - Parks and Grounds Maintenance
  - Solid Waste Management

Attendance at the live events and completion of other training is recorded in each MS4's individual training logs (Part 2D).

Newsletters

GVMC sent out seasonal MS4 Newsletters to communities to provide information regarding upcoming training, events, regulatory deadlines, committee meetings, and general program information during the reporting period.

www.lgrow.org Fall 2017

MS4 UPDATE

Information for MS4 Permitees in the Lower Grand River Watershed

Fish swimming over the 6th Street Dam in Sept. 2017

Newsletters such as this will periodically be sent to you. Since we are all a part of the Lower Grand River Watershed, it is important that everyone has current information, is up to date with regulatory requirements, and is aware of other activities happening in the watershed. This messaging also serves as a reminder for upcoming meetings and events, and offers MS4 training opportunities.

Leaves have begun to fall! Attached to this electronic newsletter, you will find an informational brochure about seasonal yard waste. Please post and/or distribute to your employees and community as you see fit. GVMC can print and customize this flier for your community, just let us know what changes you would like to make.

ON THE HORIZON

Next summer, many Lower Grand River MS4's will need to complete dry-weather screening of their outfalls. The last time outfall sampling occurred was in 2013 and 2014. GVMC will hire interns to complete IDEP testing. In Spring 2018, GVMC will give IDEP training and provide the materials needed to complete testing. In the coming months, please be thinking about any new outfalls, updates that need to be made to maps, problem or high-priority sites, and the amount of time it will take field personnel to complete your testing. More information will become available as testing time gets closer.

2016-2017 PROGRESS REPORT UPDATE

All MS4 Progress Reports were submitted to MDEQ by their October 1st due date. Please keep track of the trainings that you and your DPW staff complete during this reporting period. Note that the trainings listed in the progress report are examples and recommendations. MS4 training requirements may be met by other means; for example: information covered during staff meetings, fliers handed out, email blasts, or conferences attended throughout the year. Please make a note of these things as they happen in the 2017-2018 reporting period in order to meet training requirements. Thank you for your help and participation with the reporting process!

STORMWATER TRAINING OPPORTUNITIES

13th Annual MiCorps Conference and Training
Nov. 8-9, 2017 in Tustin, MI

Ottawa County Water Quality Forum
Nov. 30, 2017 in West Olive, MI

MWEA Watershed and Stormwater Seminar
Dec. 5, 2017 in East Lansing, MI

More information on these trainings can be found here.
Training DVDs are still available through GVMC. GVMC is looking to acquire more up-to-date training that is applicable to your municipality. If you have any ideas for MS4 materials to train DPW employees, please let us know.

UPCOMING COMMITTEE MEETINGS @ GVMC

Public Engagement Committee
November 8, 2017 3-4 PM
Sustainability Committee
December 4, 2017 1:30-2:30 PM
Technical Committee
December 20, 2017 10:30 AM- 12 PM
2018 Meeting dates and times can be found here.

MS4 COMMUNITIES

If you have any stormwater information or events coming up in your community that you would like to share with other MS4s in the area, please let us know so we can get the word out! (Send an email to cara.decker@gvmc.org)

GVMC

More MS4 information can be found on the **LGROW website**

www.lgrow.org Summer 2018

MS4 UPDATE

Information for MS4 Permitees in the Lower Grand River Watershed

Thank you for attending the 15th Annual LGROW Spring Forum on May 11, 2018!

Attached to this electronic newsletter, you will find an informational brochure about ways to prevent pollution during the summer. There are also newsletter articles that highlight general watershed awareness. Please post and/or distribute to your employees and community as you see fit.

MS4 PERMITS

All communities have received their updated Stormwater Standards Manuals. These manuals outline design standards to comply with new Post Construction Controls under the next MS4 permit. This is one of many documents that will make up the entire MS4 program for your community.

Timely review is necessary. Please work with Cara to get your comments incorporated into these documents. If you need extra explanation or desire further clarification, please do not hesitate to contact GVMC for help.

Once review is complete, the permit application will be submitted to MDEQ. While we are waiting for MDEQ's Permits Section to issue new MS4 permits, the LGROW Design Spreadsheet will be finalized in order to aid developers with compliance to the new permit requirements.

IDEP OUTFALL SCREENING

This summer, GVMC will be completing dry-weather screening of MS4 outfalls in accordance with the Illicit Discharge Elimination Plan (IDEP). The last time outfall screening occurred was in 2013 and 2014. GVMC will let you know when we will be in your community to complete this work. Screening is weather dependent, so we appreciate your willingness to be flexible.

GVMC provided IDEP training in May. Many thanks to those who attended- this will be documented in your annual progress report to MDEQ.

The training is available for you to share with those who were not able to attend. You can find the slides here: **www.lgrow.org/ms4information**
Please record the date and the names of DPW employees who view the training. We will report them to MDEQ in your progress report.

More information can be found on the LGROW website

www.lgrow.org Winter 2018

MS4 UPDATE

Information for MS4 Permitees in the Lower Grand River Watershed

Snowmelt carrying nonpoint source pollution (salt) to storm drain with direct connection to the Grand River

Winter is still here! Attached to this electronic newsletter, you will find an informational brochure about ways to prevent pollution during the winter. There is also a newsletter article that highlights LGROW's illicit discharge reporting website. Please post and/or distribute to your employees and community as you see fit.

MS4 PERMIT MEETING

A full MS4 meeting will be held on Wednesday, March 14, 2018, from 1:30-3:30pm, at the City of Walker's Commission Chambers located at: 4243 Remembrance Rd NW, Walker, MI 49534.

GVMC will give updates to the permit application process and review new stormwater standards that your community will be responsible for implementing once the ordinance is adopted. This is an important meeting to have all municipal employees and elected officials attend in order to review and understand the new permit requirements before they go to MDEQ's permit section and your new permit is issued. Please make every effort to attend and invite engineers, planners, supervisors, and other employees from your community who will have responsibility in implementing these new standards.

2017 PUBLIC EDUCATION PLAN FOCUS GROUP

A focus group was held on December 18, 2017 at GVMC with the purpose to determine changes in the awareness, education, and behavior of the public as a result of stormwater education efforts since 2009. This focus group ended up being a very educational experience for its participants, while providing valuable feedback on LGROW outreach activities. The mixed demographic of participants and the number of MS4 communities participating provided a fairly diverse view of LGROW's reach into the watershed, and participants shared many ideas to improve LGROW messaging. We plan on using recommendations from this focus group to update the MS4 Public Education Plan, and provide more effective stormwater messaging throughout the watershed. The complete report can be found at: **www.lgrow.org/ms4information**

More information can be found on the LGROW website

Monitoring

The Grand River Water Quality Index (WQI) is used to show the trend of Grand River water quality 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 are available upon request. A record of the WQI for Wealthy Street Bridge is provided as an example of improving water quality in the Grand River. An interactive map and data from sampling events can be viewed as follows: https://grandrapids.maps.arcgis.com/apps/Embed/index.html?webmap=b58bd9f6cda949599b15753b888a7048&extent=-85.8676,42.8116,-85.4244,43.0326&zoom=true&scale=true&search=true&searchextent=false&legend=true&disable_scroll=false&theme=light

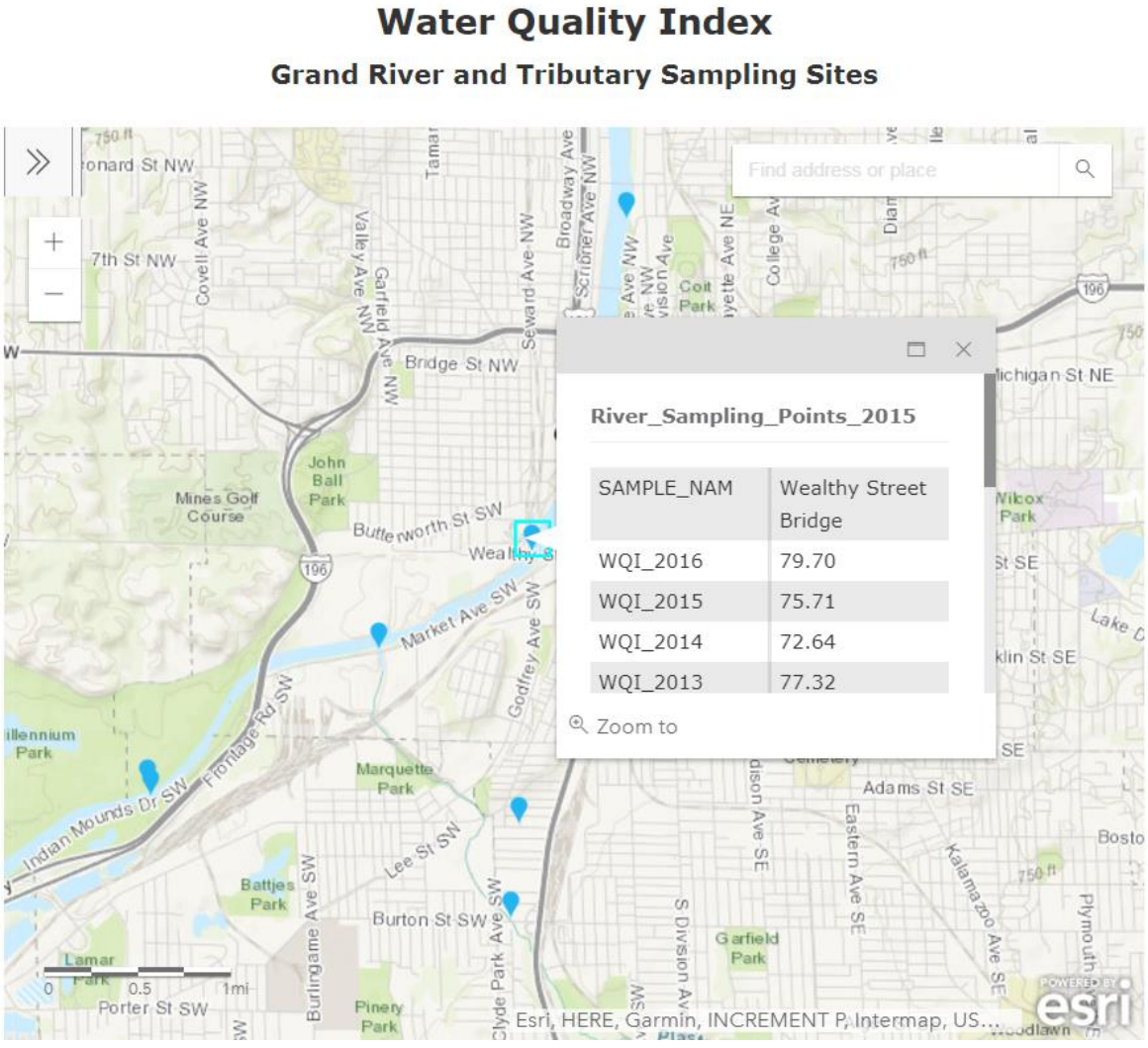


Figure 1 Grand Rapids Water Quality Index Web Interface

Data Repository

The LGROW Technical Committee continued working on the design for a watershed-wide data repository with the help of GVMC's Regional Geographic Information System (REGIS) department. Using data collected by the Friends of Buck Creek as part of their 319 monitoring grant, and Indian Mill Creek, as part of GVSU Graduate Students' research, the committee designed a landing page, which provides access to the collected data via an Arc GIS online interface – a free online GIS software that allows users basic viewing and searching capabilities. The group also designed a tutorial for data repository users. The long-term goal is that the data repository will be a central location to access water quality data from sampling events in the Lower Grand River Watershed. With this goal in mind, the Technical Committee also developed submittal tools to allow users to share collected scientific water quality data. The data will be reviewed and checked by LGROW before it is uploaded into the data repository for public viewing at this site: https://www.lgrow.org/data-repository/. Some students and teachers in local school districts have already begun to use the repository to aid classroom learning.

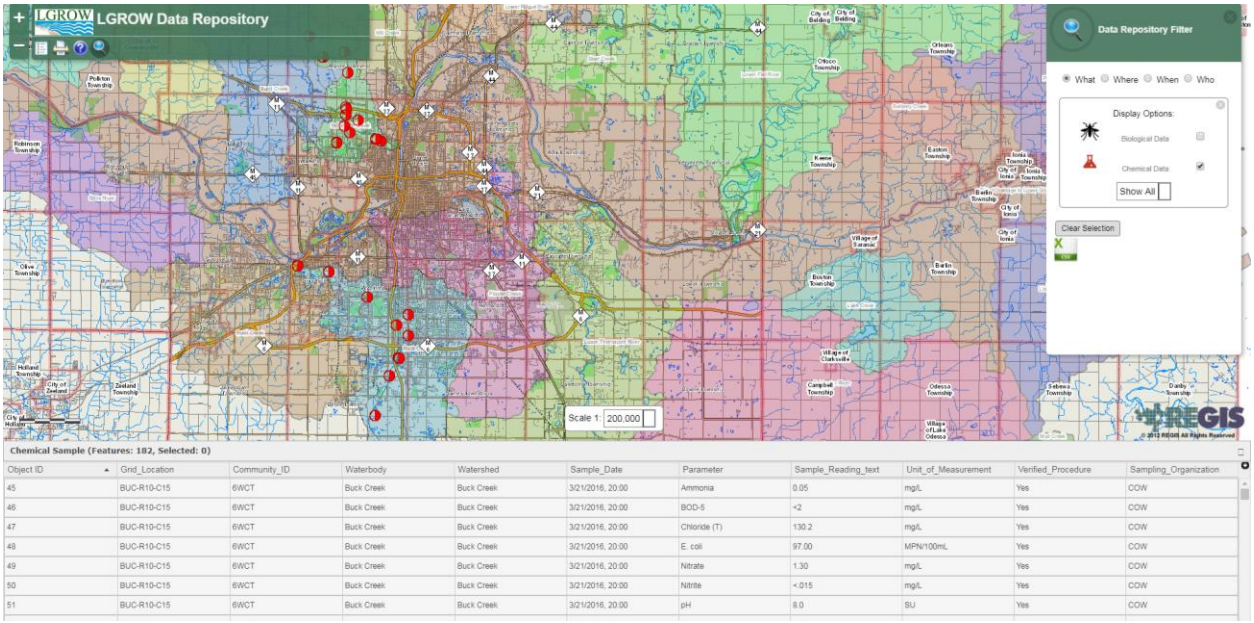


Figure 2 LGROW Data Repository

MDEQ Program Audits

GVMC assists communities in preparing for audits, and in addressing any deficiencies identified by MDEQ. During this reporting period, MDEQ performed audits on site for the following communities in the Lower Grand River Watershed:

City of Wyoming, August 29, 2017

City of Grandville, January 18, 2018

Kent County Road Commission, January 24, 2018

Supplemental documentation for these audits will be included in this report for each of the communities listed above. All communities that were audited during this reporting period were found to be in compliance and are implementing effective MS4 programs.

Part 2A - Lower Grand River Watershed Management Plan Prioritized Objectives

Encouraging proper septic tank maintenance

Each year a portion of the public education materials distributed address proper septic tank maintenance. Detailed information regarding the nature of these materials is included in Part 3 - PEP of this progress report. Additionally, communities in both Kent and Ottawa Counties work collaboratively with their respective Health Departments to report and ensure correction of failing or failed septic systems. Individual communities track this data in Part 4 – IDEP of this progress report.
The US EPA hosts SepticSmart Week once a year, and LGROW uses the materials provided to encourage of proper septic system care. SepticSmart Week 2017 was held on September 18-22, and focused on educating homeowners and communities on the proper care and maintenance of their septic systems.

Encouraging septage ordinance

The Ottawa County Health Department presently has an ordinance in place requiring point of sale inspections. The permitted communities located within Ottawa County collaborate with and rely on the Ottawa County Health Department for ongoing enforcement of the ordinance.

Kent and Muskegon Counties have not passed an ordinance requiring point of sale septic system inspections. The permitted entities within Kent and Muskegon County rely on implementation of the IDEP and reporting/enforcement through their stormwater ordinances and the Health Department to follow up on failing or failed septic systems. In the case of a failed septic system, a connection to sanitary is typically required if a sanitary sewer connection is available within 250 feet.

Implement vegetative buffering practices and restore and protect the stream buffer and canopy

Several communities including the City of East Grand Rapids and the City of Grand Rapids have instituted or evaluated the potential for buffer ordinances. The Cities of Hudsonville and Rockford have included buffer provisions within their zoning ordinances. Many other communities have adopted mowing buffer procedures on the properties they own and maintain. These procedures are identified in Part 2C.

Implement Michigan Department of Natural Resources wildlife population management practices

Three communities are working with the Michigan Department of Natural Resources on supervised programs to control populations of Canada Geese. These programs include Egg Destruction (East Grand

Rapids and Kent County Drain Commissioner), Goose Relocation (Kent County Drain Commissioner), Nest Destruction (Kent County Drain Commissioner), and Targeted Goose hunts for population reduction (Plainfield Charter Township). Communities throughout the watershed are utilizing signage to discourage the feeding of waterfowl, actively installing goose deterrents, and/or instituting procedures for a no-mow buffer adjacent to streams and ponds to function as a natural deterrent. The City of Hudsonville has provided a portal on their website for residents to report nuisance wildlife.

Implement sanitary sewer maintenance practices

Sanitary sewer service is provided by several communities to residents in expanded service areas. Through these partnerships, many communities are able to utilize sanitary sewer infrastructure instead of relying on septic fields. The City of Grand Rapids collaborates with Cascade Charter Township, the City of East Grand Rapids, Forest Hills Public Schools, Grand Rapids Charter Township, Kent County, Kentwood, and the City of Walker. The City of Wyoming collaborates with the City of Kentwood and portions of the City of Grandville. The City of Grandville collaborates with the City of Hudsonville and portions of Georgetown Charter Township. The City of Grand Haven collaborates with the City of Ferrysburg and the Village of Spring Lake. The North Kent Sewer Authority collaborates with Plainfield Charter Township and the City of Rockford. All of the MS4 LGROW community members have procedures to inspect and maintain their sanitary sewer systems, which are independent of their MS4 systems. Information related to the maintenance and upgrades of sewer infrastructure is included in Part 2B of the report.

Implement Low Impact Development Practices

Low Impact Development (LID) and Green Infrastructure (GI) are critical components in both the SWPPI and the PEP. Detailed information on the training related to LID practices and implementation is detailed in Part 2D. Tracking of the installation and consideration of LID practices by Permittees is tracked in Part 2E. The PEP incorporates messages on the implementation of LID practices such as rain gardens, buffer strips, and native plantings for their direct benefits to water quality. The PEP focuses on LID practices that are feasible for individual homeowners to implement, rather than large scale development.

Implement watershed focused land-use planning

Throughout the watershed, construction in FEMA mapped floodplains is regulated by the Michigan Building Code to ensure that construction below the base flood elevation does not occur. This is accomplished by providing prescribed release rates for Bank Erosion Control, as well as Flood Control. Water Quality control is addressed with detention and infiltration, where possible, or delayed and restricted release where it is not.

As the Stormwater Ordinance Committee worked on developing the model stormwater ordinance for the next MS4 permit, many of the design requirements needed to prevent or mitigate flooding in site designs were left intact. Though these were not required as part of the MS4 permit application, permitted communities recognize the need for flood protection for the protection of downstream residences and receiving waters.

Implement proper soil erosion and sedimentation control techniques

Part 91, Soil Erosion and Sedimentation Control (SESC), of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended, regulates the activity of earth work and mandates that projects disturbing an area greater than one acre in size or an area less than 500 feet from a lake or stream obtain a soil erosion permit from the regulatory agency with jurisdiction over the area in which they are working. Table 2 details which Permittees work collaboratively with the county enforcing agent (CEA), which Permittees administer their own program as a municipal enforcing agent (MEA), and which Permittees have the authority to oversee their own projects as authorized public agencies (APA). MEA, CEA, and APA programs implement a thorough soil erosion and sediment control plan review and regular site inspections in their programs for permitted sites. Plan review and site inspections are conducted by staff with either a comprehensive or inspector construction site stormwater operator certification respectively.

Training on topics related to construction site stormwater runoff is detailed in Part 2D. Training ensures that even if a community does not oversee their own program, field staff will be informed regarding observations on a construction site and the appropriate entity to report to if there is an offsite discharge or poorly maintained SESC measures. Many LGRW MS4 permitted communities who administer a Part 91 program also work closely with the West Michigan Soil Erosion Control Network, a professional network that provides regular training, panel discussions and field demonstrations on BMPs and new technologies in this field.

Table 2. LGRW Part 91 Administration Authority as of July 31, 2018							
Community	**Part 91 Contact Info**		**MEA**	**Utilizes CEA**			**APA**
	Name	**Phone**		**Kent**	**Muskegon**	**Ottawa**	
Cascade Charter Township	KCRC	616-242-6914		X			
East Grand Rapids, City of	KCRC	616-242-6914		X			
Ferrysburg, City of	OCWRC	616-994-4530				X	
Forest Hills Public Schools	KCRC	616-242-6914		X			
Fruitport, Village of	Muskegon County DPW	231-724-6411			X		
Georgetown Charter Township	OCWRC	616-994-4530				X	
Grand Haven, City of	OCWRC	616-994-4530				X	
Grand Rapids Charter Township	KCRC	616-242-6914		X			
Grand Rapids, City of	Environmental Services Dept.	616-456-3057	X				X
Grandville, City of	KCRC	616-242-6914		X			
Hudsonville, City of	OCWRC	616-994-4530				X	
Kent County Drain Commissioner & Administration	Deputy Drain Commissioner	616-336-3688					X
Kent County DPW	Kent Co. DPW	616-336-3694					X
Kent County Road Commission (Kent County CEA)	KCRC	616-242-6914		X			X
Kentwood, City of	Engineering Dept.	616-554-0737	X				X
Ottawa County Water Resources Commissioner & Administration (Ottawa County CEA)	OCWRC	616-994-4530				X	X
Ottawa County Road Commission	Engineering Dept.	616-842-5400					X
Plainfield Charter Township	KCRC	616-242-6914		X			
Rockford, City of	Public Services Dept.	616-866-9631	X				
Sparta, Village of	KCRC	616-242-6914		X			
Spring Lake, Village of	OCWRC	616-994-4530				X	
Walker, City of	Engineering Dept.	616-453-6311	X				
Wyoming, City of	KCRC	616-242-6914		X			

Implement channel and stream bank stabilization, bio-engineering and erosion control techniques

The MDEQ requires a joint permit from the state of Michigan for all work performed in channels that are designated as waters of the state. Any work that occurs within 500 feet of a lake or stream requires a soil erosion control permit from the authorized Part 91 agency, as referenced above. These permitting procedures work in tandem to prevent negative impacts during and after construction, as well as to ensure adequate restoration. Permitted communities in the Lower Grand River Watershed have policies in place to ensure protection of drainage systems from construction site runoff as detailed in Part 2C and perform regular training as referenced in Part 2D related to construction site stormwater runoff and water quality protection.

Implement turf management and proper fertilizer application practices

Permitted communities within the Lower Grand River Watershed have developed procedures for managing vegetation and using fertilizers on Permittee owned properties as outlined in Part 2C. These policies and procedures were reviewed as permittees prepared their individual permit applications in Spring 2015. All staff at the communities and their subcontractors adhere to these procedures. Training is also provided in the form of the brochure, "What Every Landscaper Must Know". This brochure is distributed as part of the comprehensive training plan on controls to reduce the discharge of pesticides, herbicides, and fertilizers, as described in Part 2D. The brochure was updated in 2014 to allow for permitted MS4s to customize it for distribution to their staff and contractors as well as local landscaping businesses.

Appendix 2-A - Summary of Municipal Commitments

Completed August 1, 2017 to July 31, 2018

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Encourage proper septic tank management.	Provide educational brochures to all homeowners with septic systems. Currently there are approximately 257 within the City limits, none of which have storm sewers in the area.	December 2012.	Document that all brochures were sent. Report number of septic tank failures reported.
Actions completed:	**During septic tank week (September 19-21), 3 Septic Smart brochures were posted. Each of the posts received between 27- and 1,100 views. No septic tank failures were found this year.**		
Encourage septage ordinance.	Continue to work with the County or the Committee on septic tank issues.	Ongoing.	Number of failed septic systems connected to public sewer. Number of failed septic systems reported to Health Department and number of repairs and permits issued.
Actions completed:	No failed septic systems were reported this year.		
Implement vegetative buffering practices. Restore and protect the stream buffer and canopy.	Continue to enforce environmental features ordinance passed in 2012 requiring a 75-foot buffer protecting rivers, wetlands, streams, water bodies and sensitive environmental receptors. Prepare and adopt tree ordinance for the protection and restoration of the City's canopy.	Continue to implement environmental features buffer. Implement tree ordinance by June 30, 2013.	Report number of sites where buffer ordinance was applied. Adoption of tree ordinance.

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Actions completed:	There were 3 residential building site projects where the 75-foot setback requirement was administratively lowered to a 50-foot setback. These include: Oxford Place (2161 Eastcastle), Viridian Place (843 Maryland Ave, NE) Michigan Meadows (2233 Michigan St, NE). These projects were approved for a reduced setback because in each case the residential developments improved water quality for the site as a whole with additional on-site detention and water quality treatment. Oxford Place is the only current project under construction as the others are still proceeding through the permitting process. All other projects in the City maintained a minimum of 75' setback from wetlands and established natural features. The City Commission has adopted an updated tree ordinance on September 22, 2015. All development plans are reviewed for existing and proposed tree canopy conditions, and are leading towards reaching an overall tree canopy goal for the City of 40%.		
Implement MDNR wildlife population management practices.	Continue to install "Don't feed the wildlife signs" where needed. Provide online training for staff.	Ongoing. Provide training by June 2013.	Number of signs – less feeding observed. Number of staff attending training.
Actions completed:	The City's only problematic areas of feeding wildlife are Riverside and Richmond Parks. Signage is installed at these locations. 35 people were trained online this year.		
Implement sanitary sewer maintenance practices.	Maintain compliance with CMOM (Capacity, Management, Operation & Maintenance) for sanitary sewers in order to prevent seepage to storm sewers.	Ongoing.	Refer to cmom.net. Maintenance items are tracked in an enterprise asset management system.
Actions completed:	CMOM compliance has been maintained.		
Implement Low Impact Development practices.	Continue implementing commitment to LID, as detailed in Green Grand Rapids, a 2012 addendum to our Master Plan.	Ongoing.	Number and type of LID practices utilized at City properties.

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Actions completed:	Construction of five (5) City property sites with LID practices were completed this reporting period. These were park (Coit and Huff) and school facilities (Museum School, GRCC, Campus Elementary) that incorporated stormwater detention and infiltration designs to accommodate stormwater management at existing facilities that were redeveloped.		
Implement watershed focused land-use planning.	Continue enforcement of the City's current floodplain ordinance to protect flood plains not regulated by MDEQ. Continue enforcement of the city's current pet waste ordinance. Continue implementing commitment to LID, as detailed in Green Grand Rapids, a 2012 addendum to our Master Plan.	Ongoing.	Number of plans reviewed. Number of offsite LID practices implemented.
Actions completed:	This reporting period, 150 permits were issued for City and private projects. Of the permits issued, 99 were private projects that incorporated LID. Typically, LID is only implemented when impervious surfaces at a site are increased. The LID improvements included a combination of: 23 Detention / Retention Basins, 22 with Infiltration Practices, 1 Vegetated Roof, 5 Vegetated Swales, and 9 Water Quality Devices. There were also 27 right-of-way infrastructure projects that incorporated LID practices into the design of the public storm sewer system and street design. Projects incorporated infiltration basins, expanded tree planting systems, infiltration trenches, vegetative bulb outs, and porous pavement.		
Implement proper soil erosion and sedimentation control techniques.	Continue to enforce regulations as a Municipal Enforcing Agency. Train City field staff in SESC. Maintain certifications of Construction Stormwater Operators.	As projects are reviewed. Train a majority of field staff by June 30, 2013. Continue certifications.	Maintain MEA status. Percent of field employees trained. Number of Construction Stormwater Operators.
Actions completed:	Currently, 22 of the 42 required personnel are trained in construction stormwater operator training. This represents a 20 percent increase from last year. Our goal for next reporting year is to have 75% of the 42 required personnel to receive this training.		

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Implement channel streambank stabilization, bio engineering and erosion control techniques.	Compliance with DEQ permit conditions for any work that occurs within a stream. Flow restriction ordinance for all streams and reduced flow for impaired streams.	Continue to obtain DEQ permits for construction in a stream or channel. Continue to implement flow controls per stormwater ordinance.	Number of projects needing permits and permits obtained. Number of sites limited to reduced discharge.
Actions completed:	The City had three projects that required a MDEQ permit for stream or channel construction this year. Of the LUDS permits issued by the City this reporting year, 23 had flow restrictions to protect all waterways and five had flow restrictions for impaired waterways.		

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

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Actions completed:	Eight City staff members are certified in pesticide application by the state. This certification requires ongoing training, including fertilizer and herbicide application. These employees are responsible for application of pesticides, herbicides, and fertilizers. There were two landscape maintenance contracts issued this year.		

Appendix 2-B - Storm Water Controls Inspection, Maintenance and Effectiveness

August 1, 2017 to July 31, 2018

Property Name: City Wide				
Structural Storm Water Control	**Inspection Frequency**	**Maintenance Schedule**	**Inspection and Maintenance Conducted and Location of Log (if applicable)**	**Effectiveness of Control and Support Documentation**
Stormwater Manholes	Complaint Based	N/A	1006 Cleaned 1 Manholes replaced 26 Manholes repaired	Identified problems were fixed and pollutants were removed.
Stormwater Catch basins	Complaint Based	Clean 2,500 annually	4,093 cleaned	386 tons of solids were removed from the stormwater system and kept from the waterways.
Discharge Points	Complaint Based	N/A	54 discharge points and backflow preventers were inspected	In 2014, backflow preventers were in installed in Grand Rapids and Walker. All backflow preventers are now inspected annually.
Stormwater Laterals	Complaint Based	N/A	115 feet cleaned 7 laterals repaired 2 laterals replaced	Identified problems were fixed.
Stormwater Pressurized Mains	Complaint Based	Bi-weekly Inspection visit	Inspections occur once every 3 weeks from May through October and once every 4 weeks from November through April	No failures of a stormwater pumping station during a rain even.t
Stormwater Lift Stations	Complaint Based	Bi-weekly Inspection visit	All 11 wet wells were cleaned as needed based on inspections.	Annual cleanings appear to be sufficient.
Stormwater Gravity Mains	Complaint Based	N/A	277,527 feet cleaned 384 feet were root sawed and cleared 154 feet were replaced	Identified problems were fixed and pollutants removed.
Infiltration Basins (underground)	Complaint Based	10 yr. Inspection cycle	Inspections in CityWorks for 2019 and 2026	The basins appear to function well.
Detention Basins	Complaint Based	Maintain & Inspect three times annually	The one pond that is operated by the City was inspected once every 2-8 weeks.	The basin appears to function well

Hydro Separators	Complaint Based	Clean twice year	0*	*Separators cleaned in August 2018. With eight years of cleaning hydro separators, we have found most separators are functioning fine with 1 cleaning annually. 1 unit will require 2 cleanings annually.
Siphons	Complaint Based	Clean annually	0*	*One siphon cleaned in August 2018. Annual cleanings appear to be appropriate. As construction projects take place, we continue to remove as many siphons as possible.
Creek gates	Complaint Based	Clean annually	45 cleanings were performed 2 creek gates were repaired 13 inspections were performed	Responding to complaints ensures that the worst areas are addressed more often.
Open Ditches	Complaint Based	N/A	545 feet was cleared and restored along 5 sites	This work was complaint related to neighborhood ditches. Funds were budgeted to address the most problematic areas.

Appendix 2-C (1) - Procedures Status by Type of Property

August 1, 2017 to July 31, 2018

The following Pollution Prevention and Good Housekeeping procedures were adopted by the City. Dates of revised procedures are listed and revisions attached.

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

Types of Properties	O&M Procedure	Location on http://mygrcity.us/collaboration/swppp
F, M, W, WW	Petroleum and Chemical Handling	BMP Petroleum and Chemical Handling.pdf
F, W, WW	Petroleum and Chemical storage bulk	BMP Petroleum and Chemical Storage, Bulk.pdf
F, L, M, Pk, Po, PW, W, WW	Salt Application	BMP Salt Application.pdf
PW	Sand and Salt Storage	BMP Sand and Salt Storage.pdf
A, D, F, G, L, M, Pk, Po, PW, W	Solid Waste Management	BMP Solid Waste Management.pdf
A, F, M, Pk, PW, W, WD, WW	Spill Cleanup	BMP Spill Cleanup.pdf
A, F, M, Pk, PW, W, WD, WW	Spill Prevention Control and Cleanup	BMP Spill Prevent Control.pdf
PW, W	Dust Control	deq-wb-nps-dc 250612 7.pdf
A, D, F, G, M, Pk, PW, W, WD, WW	Equipment Storage and Maintenance Areas	deq-wb-nps-ems 250618 7.pdf
F, L, Pk, Po, PW, R, V, W, WD, WW	Fertilizer Management	deq-wb-nps-fm 250620 7.pdf
F, L, Pk, Po, PW, R, V, W, WD, WW	Lawn Maintenance	deq-wb-nps-lm 250884 7.pdf
D, F, L, Pk, Po, PW, W, WD, WW	Organic Debris Disposal	deq-wb-nps-odd 250887 7.pdf
F, L, Pk, Po, PW, W, WD, WW	Pesticide Management	deq-wb-nps-pm 250893 7.pdf

Types of Properties	O&M Procedure	Location on http://mygrcity.us/collaboration/swppp
WW	Stream Bank Stabilization	deq-wb-nps-sbs_250898_7.pdf
PW, W, WW	Soil Management	deq-wb-nps-sm_250902_7.pdf
WW	Slope, Shoreline, Stabilization	deq-wb-nps-sss_250907_7.pdf
Pk, PW	Street Sweeping	deq-wb-nps-sw_250908_7.pdf
F, L, M, Pk, R, V, WD, WW	Trees, Shrubs and Ground Covers	deq-wb-nps-tsg_250910_7.pdf
PW	Winter Road Management	deq-wb-nps-wrm_250914_7.pdf
Pk	Golf Course Manual	ess-nps-Golf-Course-Manual_209682_7.pdf
Pk, PW	Road Salt Storage	Road Salt Application and Storage.doc

The City has reviewed and customized these procedures during the 2012-2013 permit cycle.

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

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

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

(a) Streets, roads, highways
- ***a.*** Street Sweeping – goal is once every 70-90 days (weather dependent). 5,900 yards of street sweeping debris were disposed of in this reporting period.
- b. Salt Application – Drivers are trained with new equipment to utilize salt most cost effectively which minimizes the amount used on the roadways.
- c. SESC Program – tracking and construction is controlled via ordinance
- d. Vehicle Accident Spills – Fire Department has a policy for cleanup and control in place as submitted with the 2011-2012 annual report.
- e. Dust Control - See BMP sheet
- f. Snow Removal – See BMP sheet
- g. Gravel Road – See BMP sheet
- h. Roadside Vegetation – See BMP sheet

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

(c) Maintenance garages
- a. The traffic safety facility, maintenance garage and public works yard including salt storage has trained staff. Inspections are to be performed daily, with detailed reports being prepared quarterly.

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

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

(b) Contractors are required as part of their contract to properly dispose of dredge spoil, accumulated sediments, floatables, and other debris in a type II landfill.

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

additional water quality protection devices or practices.

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

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

August 1, 2017 to July 31, 2018

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
SWPPI Requirements			
Maintenance activities, maintenance schedules, and inspection procedures	Collection System Maintenance Group	Ongoing First 6 months of hire	**Written O&M Procedures** **Office of Water Programs, California State University, Sacramento Operation and Maintenance of Wastewater Collection Systems, Volumes I & 2**
Training completed:	There are 13 Collection System Asset Technicians and 2 crew leaders. 14 of them have taken and passed the CALIFORNIA STATE UNIVERSITY, SACREAMENTO Operation and Maintenance of Wastewater Collection Systems, Volume I and II. The one without training has been in the department for only four months.		
Controls on streets, parking lots, maintenance garages, and storage yards	Public Services, Facilities and Fleet Management, Field Staff and Parking Services	Hire in 2 year cycle	**Online training which may include Powerpoints and/or the following videos** **Storm Watch - Municipal Storm Water Pollution Prevention - DVD from Excal Visual, LLC** **Spills & Skills - Non-Emergency HazMat Spill Response - DVD from Excal Visual, LLC** **Keep An Eye On It! - Environmental Awareness for Gravel Road Maintenance - DVD from SEMCOG & Road Commission for Oakland County**

Training Topic Area	**Employee Group to Receive Training**	**Training Frequency Goal**	**Potential Training Type**
Training completed:	Training is performed on hire. If deficiencies are noted during the quarterly inspections, responsible parties are trained on the proper techniques.		
Disposal of O&M waste	Collection System Maintenance Group Contractors	Ongoing Contract	**Written O&M Procedures** **Written contract requirements**
Training completed:	The Operation and Maintenance of Wastewater Collection Service training noted above includes managing a collection system O&M program, supervising a sewer cleaning program, and complying with the NPDES permit and applicable rules and regulations.		
Water quality protection in flood control projects (detention basins, dams)	Stormwater Management Personnel, Field Staff & Design Personnel	Ongoing	**Training consistent with LID and other training/conferences as they become available**
Training completed:	All stormwater management, design, and field staff have passed the comprehensive soil erosion and sedimentation control exam through the MDEQ. In addition, several field and design staff are trained as construction stormwater operators. All stormwater management, design, and field staff have passed the comprehensive soil erosion and sedimentation control exam through the MDEQ. In addition, several field and design staff are trained as construction stormwater operators. At least one member of the stormwater team attended each of the following: Bank Erosion Hazard Index M, 8/16), Healing Our Waters (M, 10/17-10/19), West Michigan Soil Erosion Control Network (M&F, 3/18), Green Infrastructure Exchange Network (M, 4/29-5/2). M - Management. F – Field Staff.		

Training Topic Area	**Employee Group to Receive Training**	**Training Frequency Goal**	**Potential Training Type**
Controls to reduce discharge of pesticides, herbicides, and fertilizers	Contractors	Ongoing	**Compliance with the State of Michigan Public Act 299 of 2010** **Staff is trained in proper use of pesticides, herbicides and fertilizers** **Contracts for these services contain language requiring proper usage** **a. "No clippings of grass or weeds may be left in the street, on the curb, parkways, or sidewalk, but must be properly disposed of by the contractor."** **b. "All chemicals and materials which are spilled or misapplied to areas other than turf shall be cleaned up immediately. The contractor shall not allow chemicals & other materials to enter storm sewers, catch basins and/or water ways."** **c. "No chemical of any kind may be discharged into the gutters or sewer system. If granular(s) are used they must be swept or blown clean off all impermeable surfaces."**
Training completed:	All contractors involved in landscaping must agree to abide by the requirements above. As noted in Appendix 2-A, staff in charge of pesticide, herbicide and fertilizer application are certified by the State for pesticide application and their training includes herbicide and fertilizer application practices.		
Other Topics			
Construction site stormwater runoff	Field Staff Contractors	Preconstruction meeting	**Training may include one or both of the following;** **Ground Control - Storm Water Pollution Prevention for Construction Sites - DVD from Excal Visual, LLC** **LGRW_ContractorTrainingBrochure_2011-09-16.pub**

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
Training completed:	Stormwater pollution prevention is discussed at each pre-construction meeting for City projects. Contractors, city field staff, and designers are reminded of stormwater pollution prevention requirements and that our stormwater system drains directly to the river and must be protected. Contractors are presented with the LGROW brochure "What Every Earth Work Contractor Must Know About Storm Water" at the pre-construction meeting. Site specific stormwater pollution prevention and soil erosion control items are also discussed for each project. A total of 23 pre-construction meetings were attended where these items of soil erosion protection were discussed.		
LID	Stormwater Management Personnel, Field Staff & Design Personnel	Ongoing	**Provide copies of the SEMCOG Low Impact Design manual. Provide opportunities for training and attendance of webinars and other conferences. The following videos are also available for their use;** **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**
Training completed:	Since 2015, LID is the default street design in the City, it is discussed in connection with all street reconstructions. In addition to the trainings noted above, the City leads Green Infrastructure tours 3-4 times a year.		
IDEP	All Employees	Ongoing	**Items will be maintained on City intranet and periodic announcements made. These items will include various brochures and include;** **WaterPollutionReportForm.doc** **Article_City_Employees.doc**
Training completed:	35 new City staff were trained this year.		

Training Topic Area	**Employee Group to Receive Training**	**Training Frequency Goal**	**Potential Training Type**
General Storm Water Education	Top Management	Annually	**"IDEP" Storm Water Training – Live Presentations 2018 – Report it don't ignore it**
Training completed:	Training was presented to Top Management by the Public Utilities Director on January 12, 2018.		

Appendix 2-E - Post Construction Controls Activities Completed

August 1, 2017 to July 31, 2018

Implementation

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

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

The City of Grand Rapids Ordinances Ord. No. 2012-01, § 1 of 2012 is a zoning ordinance establishing setbacks for rivers, wetlands, streams, water bodies, or other sensitive environmental areas. Incentives for using Low Impact Development are also included in the zoning ordinances.

In addition, the Green Grand Rapids Master Plan Update depicts Grand Rapids' commitment to using Low Impact Development, conserving green space and protecting our waterways.

Operation and Maintenance

In 2010, the City had a draft stormwater ordinance that included long term operation and maintenance of post-construction controls. However, when the MS4 permit was withdrawn, the ordinance was not finalized for adoption. Upon receipt of a new permit, the ordinance will be adopted within 12 months. The use of operation and maintenance agreements are outlined in that ordinance, and in the Stormwater Management Plan that will be a part of the new permit.

Currently, all post construction controls are inspected, to the extent they can be, from public rights of way. In addition, the City's nuisance ordinance can be utilized to inspect controls if a complaint is received by Code Enforcement.

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

No enforcement was needed for post-construction controls after construction was completed.

Have any long-term operation and maintenance agreements been signed?

No – See above.

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 buffer ordinance noted above protects sensitive areas. The requirement for stormwater storage only when impervious has expanded, along with the presence of existing infrastructure, direct people to infill.

Part 3 - PEP

Regional PEP

The updated Public Education Plan (PEP) was approved by MDEQ in February 2013. 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. This section provides a report of public education activities implemented between August 1, 2017, and July 31, 2018.

Public Engagement Committee

LGRW Public Engagement 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 and the LGR Watershed Management Plan. In addition to MS4 communities, the 2017-2018 Public Engagement Committee consisted of the following community partners:

Table 3. Non-MS4 Partner Organizations

Agency	Representative
MDEQ	Amanda St. Amour
GVMC – West Michigan Clean Air Coalition	Andrea Faber
Ottawa Co. Conservation District	Benjamin Jordan
Boy Scouts of America	Bridget Knight
GVMC	Eileen Boekestein
Trout Unlimited	Jamie Vaughan
Groundswell, GVSU	Joanna Allerhand
Groundswell, GVSU	Kymberly Pawelka
Kent County Resource Recovery	Megan Kretz
MDEQ	Michelle Storey
WMEAC	Jessica VanderArk
WMEAC	Kyle Hart
GVMC/GVSU	Carlos Calderon
The Right Place	Rick Chapla
GVMC	Rachel Frantz
Grand Rapids Public Museum	Stephanie Ogren
Grand Rapids Public Museum	Erin Koren
GVMC	Wendy Ogilvie
Kent County Health Department	Brendan Earl
Kent Conservation District	Jessie Schulte
Citizen Labs	Allen Clark
GVMC	Cara Decker

During this reporting period, the Committee reorganized to set priority topics and create a functional meeting schedule. Instead of holding meetings once every two months, the committee meets in January, February and May. During the summer months, meetings are not held because communities are busy attending and hosting outreach events. The group reconvenes in September to review their summer activities, and begin to plan for the next year. Meetings are then held in October and November. Goals for each meeting are as follows:

January: Distribute PEP materials and discuss distribution

February: Pick up orders, Plan for the year's events

May: Ongoing business, Committee updates

September: Review event year, Ongoing business

October: Ongoing business, Discuss changes for next year

November: Finalize orders for next year

During the October Committee meeting, the group chooses which PEP topics to focus on for the next year. Information regarding all topics covered in the PEP may be discussed and promoted by communities throughout the year, as described in detail in the remainder of this section of the report. The committee decided that if more energy is focused on a few key topics each year, then education regarding those specific topics can be thoroughly explored. Educational materials and give-aways are then designed around the key topics. While each year focuses on a particular set of topics, all six education categories will still be addressed in detail at least once during each reporting period.

Additional information regarding the Public Education Committee is available at: https://www.lgrow.org/ms4information. Materials, training opportunities, and other resources are available via this webpage.

PEP Implementation

This section describes the public education activities implemented by the Permittees from August 1, 2017 through July 31, 2018. The following report describes activities which meet the requirements of the 2013 approved PEP. Target audiences, messages, and delivery mechanisms are described for each Public Education Topic.

Public Education Topic 1 - Personal Watershed Stewardship

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

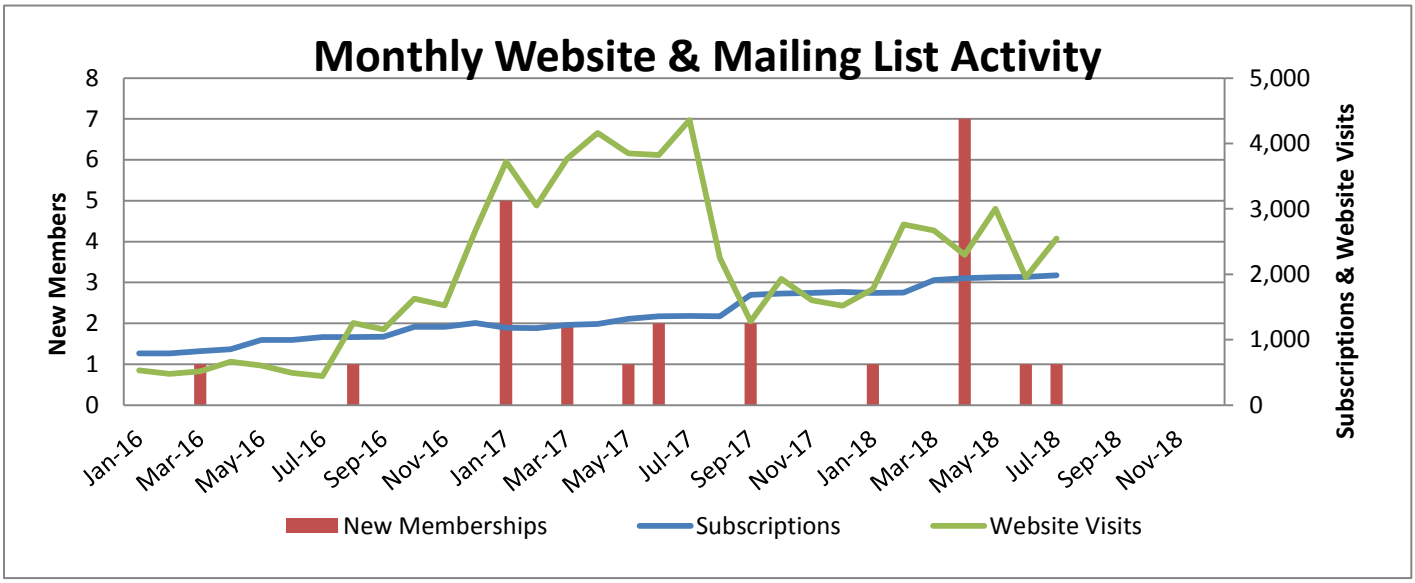
Target Audience: Residents, visitors, and public employees

Content of Message: 1) A watershed is an area of land draining to a common point. You live in the LGRW, you impact the watershed. 2) Learn more about the LGROW by visiting LGROW.org. 3) Reasons for protecting the watershed. 4) Ways individual can affect the watershed through their activities.

Delivery Method:

- Permittees' websites link to LGROW's website, www.lgrow.org. The watershed website provides information on non-point source (NPS) pollution, local watershed issues, water science education, and watershed management. A major website update was launched at the beginning of the 2017-2018 reporting period and was accessed by an average of 758 unique visitors each month. The website logged 9,090 unique visitors over the entire reporting period.
- LGROW also sends out a seasonal email newsletter with information about the watershed, upcoming educational events, and stormwater educational articles. Newsletter subscriptions and website traffic by month are displayed in Figure 3.

Figure 3. Page Visits to LGROW.org by Month



- LGROW worked to promote participation through its Facebook page with a regular posting schedule including watershed project highlights, upcoming events, and volunteer opportunities. Throughout the reporting period, LGROW Facebook posts have reached 107,622 people. As of the end of the reporting period, the Facebook page reached 935 Likes (this number has increased from the last reporting period). Facebook user engagement has shown consistent growth over the reporting period with the average number of Likes, Shares, and Comments. LGROW promoted its Facebook page three times during the reporting period using paid promotions, which increased its audience significantly. Facebook activity is displayed by month in Figure 4.

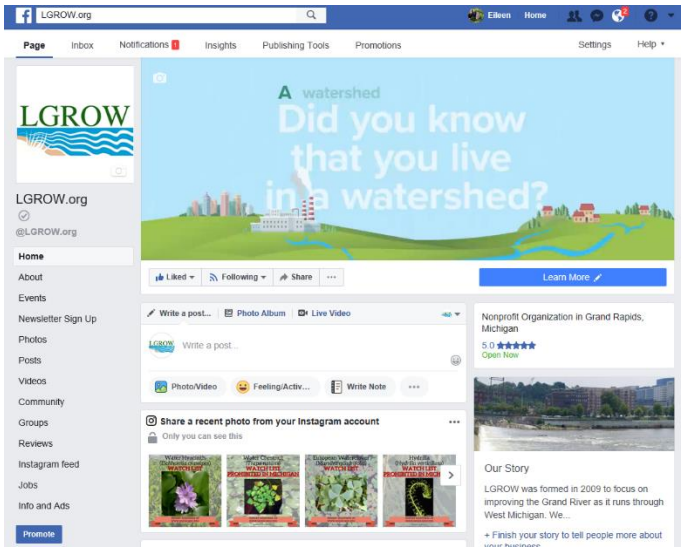
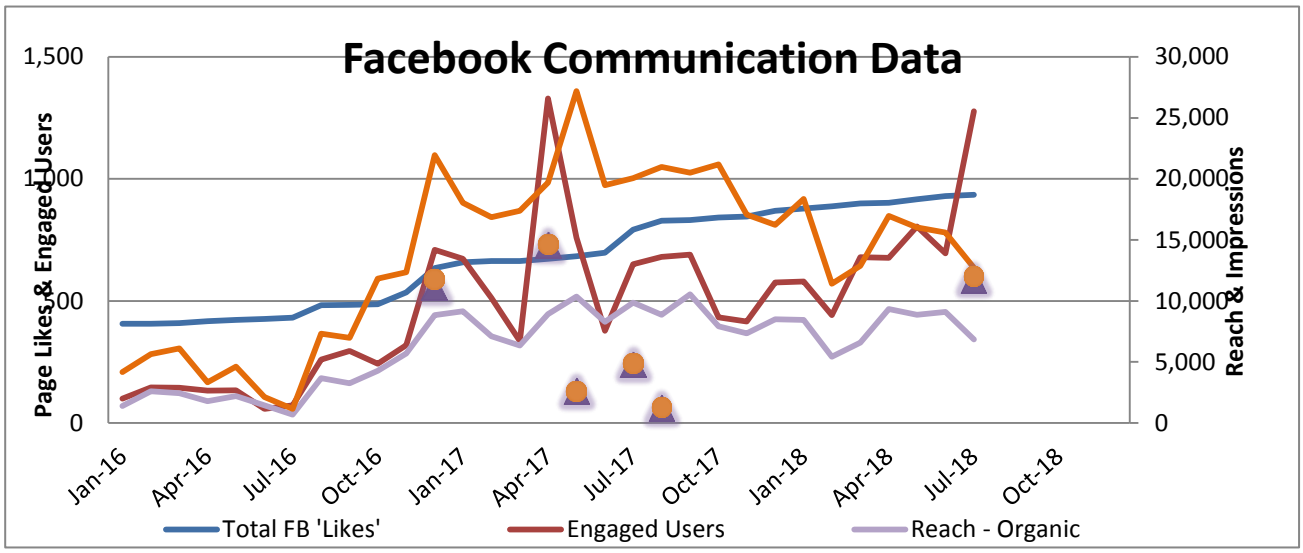


Figure 4 Facebook Communication Data by Month



- Permittees distributed LGROW, stormwater, and watershed education materials listed below to residents in the LGRW at multiple events, and venues. Materials were distributed according to

the type of event and the target audiences in attendance. Listed below are the number and type of educational materials ordered by permittees to distribute throughout the reporting period:

- 2000 LGROW Lip Balms
- 1500 "Report Illicit Discharge" fridge magnets
- 1000 Rainbow Trout "Only rain in the drain" stress balls
- 1500 "Keep your Lakes Great and your River Grand" dry bags
- 700 "Keep your Lakes Great and your River Grand" magic scarves
- 1200 "Report Illicit Discharge" coasters
- 500 Car Wash pledges and shammies
- 500 Pet Waste pledges and dispensers
- 1000 Paint by number Watershed Maps

Other public education materials ordered during previous permit cycles were also distributed by permittees, including:

- Keep Your Lakes Great and Your Rivers Grand Magnets
- Keep Your Lakes Great and Your Rivers Grand vinyl stickers
- Watershed Temporary Tattoos
- Troutie Coloring Books
- Reusable Water Bottles
- Reusable Tote Bags
- LGROW Brochures
- Landscaping for Water Quality booklets
- LGROW Gardening Gloves
- LGROW Pens
- LGROW Custom Baseballs

- Many Permittees displayed lamppost banners when first purchased in 2012 to advertise the presence of the Grand River, Rogue River, and Plaster Creek Watersheds. The banners featured the LGROW logo and the message "Yours to Protect." In early 2018, 4 communities ordered additional banners for display, including new banners for Buck Creek and the Thornapple River.

Banners on display in Spring Lake

- Through cooperation of staff in permitted MS4 communities, Public Engagement Committee participants, GVMC staff, and other members of LGROW, about 50 events around the watershed had representation from the Lower Grand River. Event participation by community is detailed in Table 4. Community-specific event activities are detailed in each Permittees' PEP questionnaire. Events attended by more than one MS4, or that were coordinated through LGROW, are discussed in the section following Table 4, and in the Delivery Method section of corresponding objectives.

Table 4 LGROW and MS4 Participant Events

MS4 Community	Event/ Activity	Date
Cascade Charter Township	LGROW Spring Forum Host	5/11/2018
Ferrysburg, City of	LGROW Focus Group	12/18/2017
Forest Hills Public Schools	Classroom Programming through Groundswell	Ongoing
Georgetown Charter Township	Jenison Public Schools Collaboration	Ongoing
	Ottawa County Water Quality Forum	11/30/2017
Grand Haven, City of	Earth Day Festival	4/21/2018
	LGROW Focus Group	12/18/2017
	Robinson Elementary	3/21/2018
	Coast Guard Festival	7/28 - 8/5/2017
	Salmon Festival	9/16/2017
Grand Rapids, City of	Home Show	3/1-4/2018
	Mayors Grand River Cleanup	9/9/2017
	Ottawa County Water Quality Forum	11/30/2017
	Grand River Water Festival	6/23/2018
	Dia del Nino	4/28/2018
	Canoemobile	5/7-5/11/2018
	Presentation to Museum School	10/11/2017
	Water Resource Recovery Facility Tours	Ongoing
	Rainbarrel Workshop	7/29/2018
	WhiteCaps Game	7/26/2018
	Grand River Spring Forum	5/11/2018
Grand Rapids Charter Township	Partner with FHPS	Ongoing
Grandville, City of	Buck Creek Cleanup	8/5/2017
	Mayors Grand River Cleanup	9/9/2017
	Michigan Week Community Event	5/16/2018
Hudsonville, City of	Ottawa County Water Quality Forum	11/30/2017
Kent County Drain Commissioner	Grand River Spring Forum	5/11/2018
Kent County Road Commission	Facility Tours	Ongoing
Kentwood, City of	Touch A Truck/DPW Behind the Scenes (with Kent Co DPW)	5/16/2018
	Buck Creek Cleanup	8/5/2017
	LGROW Focus Group	12/18/2017
	Grand River Spring Forum	5/11/2018

Table 4 LGROW and MS4 Participant Events

MS4 Community	Event/ Activity	Date
Ottawa County Administration and Water Resources Commissioner	Ottawa County Water Quality Forum	11/30/2017
	Grand River Spring Forum	5/11/2018
Ottawa County Road Commission	Partner with Georgetown Township & Jenison Public Schools	Ongoing
Plainfield Charter Township	Grand River Spring Forum	5/11/2018
Sparta, Village of	Nash Creek Cleanup-Planting	4/18//2018
	Village Hazardous Waste Collection	4/19/2018
	Partnership with Sparta Schools	Ongoing
Spring Lake, Village of	Mill Point Park River Cleanup	5/12/2018
	LGROW Focus Group	12/18/2017
Walker, City of	Grand River Spring Forum	5/11/2018
	Indian Mill Creek Cleanup	6/2/2018
	KDL Reading Carnival	6/12/2018
Wyoming, City of	Buck Creek Cleanup	8/5/2017
	Partnership with Godwin and Wyoming Schools	Ongoing
	City Cleanup	4/21/2018
	Facility Tours	Ongoing
	Grand River Spring Forum	5/11/2018

- The Quiet Water Symposium promotes non-motorized outdoor recreation and a shared concern for our Great Lakes environment. The 23rd Annual Symposium was held on March 3rd, 2018. LGROW hosted a booth with several watershed displays and distributed information and giveaways focused on watershed awareness and the development of a Water Trail throughout the Grand River. Although this event takes place outside the LGRW, many of the attendees travel through the Lower Grand during their excursions. The Symposium also presents a valuable opportunity to partner with our upstream watershed, the Middle Grand River

Organization of Watersheds (MGROW), who is actively involved in public outreach through their own MS4 program.

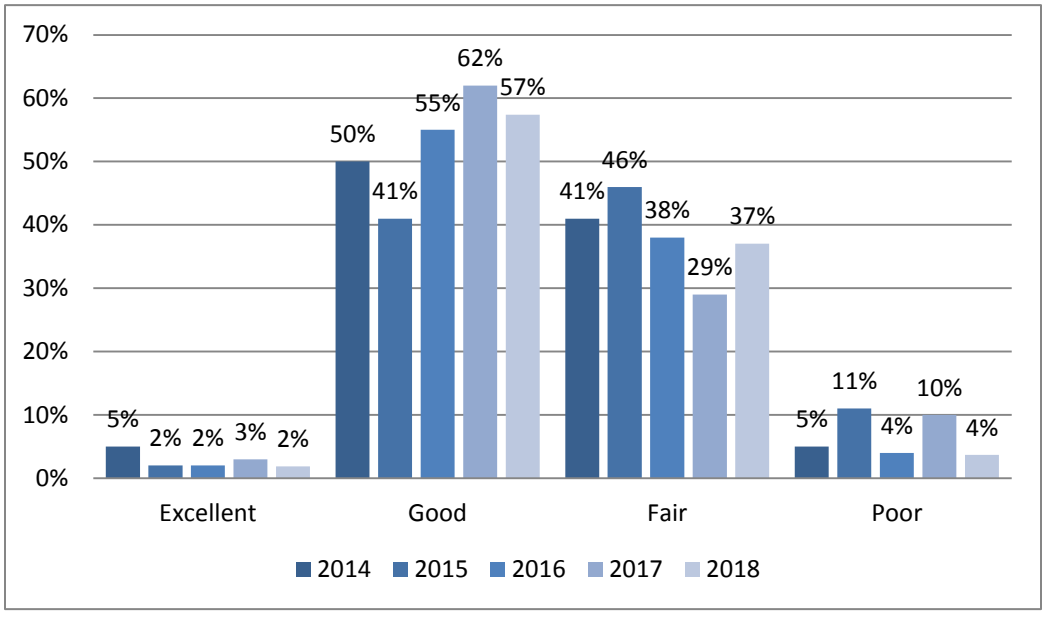
- LGROW hosted a table at the Blandford Nature Center Earth Day event on April 21, 2018. This was a public event designed to connect residents of the Grand Rapids metro area with their local community conservation resources, information on new and upcoming projects, and highlight volunteer opportunities to get involved. LGROW hosted a table with information on the watershed, the LGROW Rainscaping program pilot in Indian Mill Creek Watershed, and stormwater educational materials focusing on pet waste and car wash pledges.

- The 15th Annual Grand River Forum on May 11, 2018, was put on by LGROW at the Wisner Center in Cascade Township. The event offered 111 attendees a regional perspective on emerging issues and accomplishments from around the Watershed. This year's keynote speaker, Al Steinman, from GVSU's Annis Water Resources Institute, spoke about Integrated Water Management. Next, Scott Conners (City of Walker Engineer and LGROW Board Chair) moderated a Panel Discussion that focused on the new post-construction control stormwater requirements. Panelists included Carrie Rivette, Wastewater/Stormwater Superintendent of the City of Grand Rapids, Teresa Siedel, Director of the Water Resources Division of MDEQ, and Jeff Gritter, Project Manager at Vriesman and Korhorn Civil Engineers. The LGROW Chair, who was previously Scott Conners from the City of Walker, changed hands to Carrie Rivette from the City of Grand Rapids. This change was commemorated with a 'Passing of the Paddle' ceremony.

The remainder of the forum focused on emerging watershed issues. Presentations were given by Jessie Schulte (Kent County Conservation District) and Rob Petit (ECT) on the Regional Conservation Partnership Program; Brenda Perry (Facilitator, Kent Innovation High School), Joe Phillips (Design Lab Instructor, Kent Career Tech Center) and their students on place-based environmental education curriculum they used in their classrooms; Wes Landon (Native Edge, LLC.) and Julie Parks (Executive Director of Workforce Training, Grand Rapids Community College) on the Rainscaping Program; Natalie Henley (West Michigan Environmental Action Council) on the Grand River Water Trail; LGROW Committee Chairs gave updates for each committee; and LGROW Staff discussed the pre-forum survey results.

Each forum participant completed surveys after both registering and attending the event. A selection of the questions from each survey is asked annually to determine if there is a measurable change in people's attitudes toward and perception of the river. Figure 5 shows an increase in respondents identifying water quality in the Grand River as "Fair" rather than "Poor" from 2017 to 2018.

Figure 4. 2017 Survey Results: How would you rate the water quality in the Grand River?



- LGROW sponsored the Grand River Water Festival on June 23, 2018, at Riverside Park, which was attended by approximately 3,000 people. The festival is a free-of-charge, day-long, music driven, environmental festival featuring traditional folk, country, bluegrass, Cajun, blues, and world beat music performed by Michigan musicians. Visitors to the LGROW booth identified their location in the watershed by referencing maps, and Major Runoff, the Stormwater Mascot, engaged with children and adults. Volunteers at the LGROW booth helped children of all ages create paintings of nature scenes using native soils to the watershed, similar to artists who create field drawings using natural materials they find in the environment. The LGROW booth's educational materials focused on how homeowners can reduce stormwater runoff from their properties by installing green infrastructure practices through the LGROW Rainscaping program.

- LGROW hosted a concourse table at a WhiteCaps game on Thursday, June 26, 2018. GVMC staff and volunteers from the City of Grand Rapids (a MS4 permitted community) helped run a booth. Volunteers handed out LGROW baseballs, LGROW brochures, Pet Waste Pledges with pet waste bag dispensers, and Car Wash Pledges with shammies. Volunteers discussed the importance of watershed protection with attendees of the game.

- LGROW worked with students from schools throughout the watershed to educate about the connections between land use and water quality. LGROW led activities for 465 students from the City of Grand Rapids and Plainfield Township focused on macroinvertebrate sampling and runoff vs. infiltration at the annual Canoemobile event at Riverside Park in Grand Rapids. LGROW also worked directly with Jenison Public Schools and Forest Hills Public Schools to teach 99 students at Bauerwood

Elementary and 90 at Northern Trails 5/6 about the Grand River Watershed and the ultimate discharge location of stormwater systems, as well as personal actions that can protect water quality. These activities resulted in students marking 50 catch basins on Northern Trails' campus and 100 catch basins in the neighborhood surrounding Bauerwood. LGROW also assisted schools with their existing educational activities surrounding watersheds and nonpoint source pollution. LGROW led an activity connecting land use and habitat with macroinvertebrates and water quality at a Water Field Day for 525 students in Godfrey Lee schools in Wyoming, helped 25 students stencil 9 catch basins and complete rain garden/riparian maintenance near Buck Creek in Grandville, and assisted a teacher at Pinewood Elementary in Kentwood Public Schools with her annual Buck Creek education day for 120 students. Additionally, 40 students from Kenowa Hills High School participated in the spring Indian Mill Creek Cleanup. LGROW also participates as a member of the Groundswell advisory council, which supports schools in the Lower Grand River Watershed as they implement place-based education and stewardship projects in the watershed. Groundswell reaches approximately 500 students annually through its programs focused on the Lower Grand River Watershed, including supporting projects at 3 schools in the nested jurisdiction of Kentwood Public Schools and at 5 schools in the permitted district of Forest Hills Public Schools.

Students marking catch basins at Northern Trails 5/6 in Forest Hills

- The 'Find My Watershed Tool' was improved during this reporting period and can be accessed via LGROW's homepage, or at: https://www.google.com/maps/d/u/0/viewer?mid=1WuQZRA612p4X1t_9i4qNYlP_830_ZIi-&ll=42.99923233465322%2C-85.46882900000003&z=9 . An advertisement was created through National CineMedia, LLC regarding this tool. The 30-second advertisement is also available for viewing on LGROW's website. The advertisement ran for 8 weeks as a digital media campaign, targeted online to people who were in the Lower Grand River Watershed. About 79% of people that the advertisement was delivered to watched the entire commercial. Industry average is around 60%. The commercial was shown 120,419 times.

- Seasonal Watershed 'Tip' fliers were distributed to communities. These fliers focused on positive actions that Department of Public Works employees and citizens alike could take to improve the water quality in the watershed. Tips focused on different actions that were relevant to that respective season.

Fall Seasonal Tips Flier

<u>Public Education Topic 2 - Ultimate Stormwater Discharge Location and Potential Impacts</u>

PEP Objective 2: Education on the location of residential stormwater system catch basins, where the system discharges, and impacts from pollutants.

Target Audience: Landscapers/lawn care companies, auto repair shops, commercial power washers, carpet/floor cleaning companies, commercial operations, industries, residents, and local businesses

Storm drain markers

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. 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.

This topic was chosen as one of two key topics by the Public Education Committee to focus on during this reporting period.

Delivery Method:

- Permittees installed the plastic storm drain markers designed by the Public Engagement Committee. The drain markers carry the messages "Keep your Lakes Great and your Rivers Grand." Some Permittees also engaged with community partners to do storm drain stenciling events which are detailed in the PEP Questionnaire. This image was also used on several giveaways including vinyl stickers and magnets. In total, 150 drain markers were installed and 9 storm drains stenciled with the message "No Dumping: Drains to Waterway" in the watershed.

- Permittees utilized a variety of stormwater displays including the drop toss game, the watershed pushpin map, the LGROW banners on non-point source pollution, Car Wash and Pet Waste Pledge posters, and the "Grand River Yours To Protect" informational poster board at a variety of events and locations throughout the Watershed. The PEP Questionnaire included in this report details when and where these displays were used by individual Permittees.

- An advertisement explaining that storm drains lead directly to rivers, lakes and streams was printed on the back of all household hazardous waste collection flyers printed for Kent County MS4 communities.

- Troutie Stress Balls were provided for communities to distribute. The fish shaped stress balls had the message: 'Only rain in the drain, it leads directly to my home!' This give-away allowed people to easily make the connection between storm drains and water quality as it relates to aquatic habitat.

Household Hazardous Waste flyer advertisement

Public Education Topic 3 - Public Reporting of Illicit Discharges

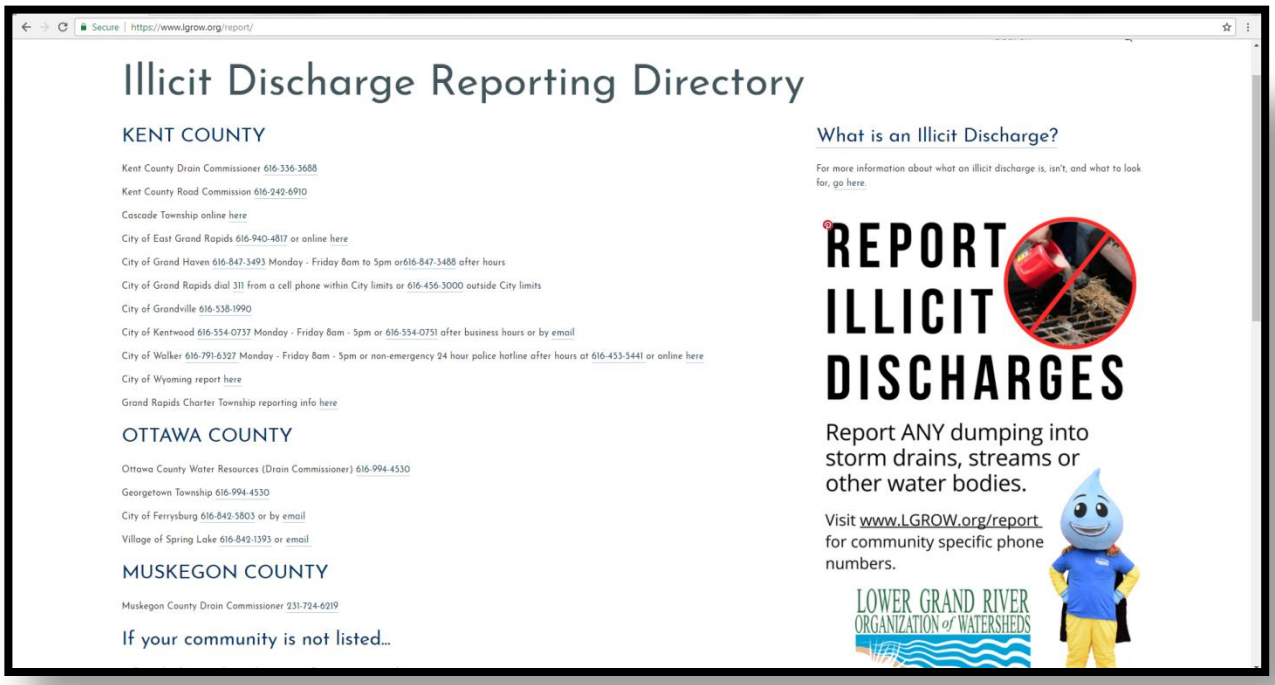
PEP Objective 3: Encourage public reporting of the presence of illicit discharges or improper disposal into the stormwater system.

Target Audience: Residents, public employees, businesses, construction activities, industries, and septic system owners/haulers.

Content of Message: 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. 5) Proper septic system care and maintenance. 6) How to recognize system failure. 7) Impacts failing systems have on water quality. 8) Where to go for assistance.

The Public Reporting of Illicit Discharges was selected by the Public Education Committee as one of two key topics to focus on for this reporting period. It was important that communities focused on this topic because IDEP outfall screening occurred for many municipalities in the watershed during the summer of 2018.

Delivery Method:



- A reporting website for MS4 communities across the Lower Grand River Watershed was created in order to offer a Reporting Directory for DPW employees or citizens seeking information about how to report illicit discharges. This website can be found at: https://www.lgrow.org/report/. Communities were encouraged to share this information on their municipal webpages, and on social media.

Information was also added to the LGROW website to inform the public about what an illicit discharge is.

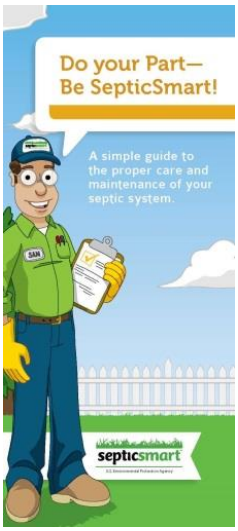
- Illicit discharge magnets and coasters were created in conjunction with the reporting website to promote use of the website and to raise awareness for DPW employees and citizens, encouraging them to report illicit discharges.

Coasters

- A newsletter article titled, 'Reduce and Report Pollution Entering the Grand River' was published for all MS4s to distribute to their employees or citizens. This article highlighted the reporting webpage, and gave advice on how to reduce stormwater pollution.

- Permittees made information about how to report illicit discharges available to residents and staff through a variety of channels. Some communities promote the Citizens Reporting form developed previously by LGROW, while others use an online reporting form. The method each community used to distribute this information is detailed in PEP Questionnaires.

- 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.



- Permittees distributed copies of USEPA's *"Do your Part- Be Septic Smart!"* brochure to their residents. This brochure describes what a septic system is, how it works, and how to maintain it. LGROW participated in SepticSmart week September 18-22, 2017 by publishing a blog post and daily social media posts about proper septic maintenance.

<u>Public Education Topic 4 - Personal Actions that can Impact the Watershed</u>

PEP Objective 4: Education on the need to minimize the amount of residential or non-commercial wastes washed into the storm sewer system.

Target Audience: Residents, schools, non-profit groups conducting carwash fundraisers, public employees, visitors, recreational users, riparian landowners

Content of Message: 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 deicer use. 6) BMPs for native vegetation on residential properties as an alternative to turf grass. 7) Effects of residential wastes on our waterbodies. 8) Education on low impact development techniques.

Delivery Method:

- Permittees distributed the brochure "*Make your Household the Solution to Water Pollution*". The Public Engagement Committee contracted with the Hispanic Center of West Michigan to produce a Spanish translation of this brochure for communities as well.

- Several communities hosted rain barrel events or rain garden work days as detailed in their PEP Questionnaires.

- Permittees collected pet waste pledges from dog owners in exchange for a free pet waste bag dispenser to hook to the pet's leash. The pledges also provide information on dog parks in the Watershed and discuss the connection between picking up pet waste and protecting stormwater. This brochure was adapted, with permission, from a similar program in Portland, Oregon. In this reporting period, 127 new pet waste pledges were collected from around the watershed.

- Permittees collected car wash pledges from residents in exchange for a free shammy to use for home car washes. The pledge provides the following information about car washes: *There's no problem with washing your car, it just matters how and where you choose to wash it. The average homeowner uses 116 gallons of water to wash a car. If you wash your car in your driveway, all that water, along with the soap, grease, brake dust, oil, and dirt that you wash off your car flows directly into the nearest storm drain. From there, it's just a short trip to the Grand River and eventually Lake Michigan*. In addition, residents keep a portion of the pledge that provides other environmental friendly car care tips. In this reporting period, 52 new car wash pledges were collected from around the watershed.

- LGROW developed a flyer describing proper procedure for draining residential swimming pools in the fall. This was distributed publicly online via www.lgrow.org and made available for customization by MS4 communities. The flyer can be downloaded at https://www.lgrow.org/ms4information.

Public Education Topic 5 - Waste Management Assistance

PEP Objective 5: Education on proper disposal of household hazard waste (HHW), travel trailer/boating sanitary wastes, chemicals, motor vehicle fluids, and unused medications.

Target Audience: Residents, visitors, and public employees

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. 3) Education on types of HHW and available alternatives. 4) Education on disposal locations of HHW, travel trailer/boating sanitary wasters, chemicals, motor vehicle fluids and unused medications.

Delivery Method:

- Permittees and LGROW.org shared the newsletter articles *"How You Can Help Reduce Pollution Entering the Grand River"* and *"What Can You Do to Help Protect Your Watershed?"* These articles explain the watershed concept and encourage residents to dispose of pet waste, paints, motor oil, etc., in the appropriate locations, not in the storm drains.

- Permittees distributed the flyer "*Make Your Household the Solution to Stormwater Pollution"* in both English and Spanish, which also details the importance of proper disposal of household hazardous waste.

- Both Kent and Ottawa County communities distributed household hazardous waste flyers at events and provided information on recycling household hazardous waste via the phone and websites. Many permittees also opted to distribute these materials at their respective community events. Kent County's expanded household hazardous waste collection hours to allowed more Kent County residents to take advantage of this service.

- Many communities hosted clean up days to encourage proper disposal of unwanted materials. Details of these events, as applicable, are provided in individual PEP Questionnaires and Part 7.

Public Education Topics 6 - Management of Riparian Lands

PEP Objective 6: Education concerning management of riparian lands to protect water quality.

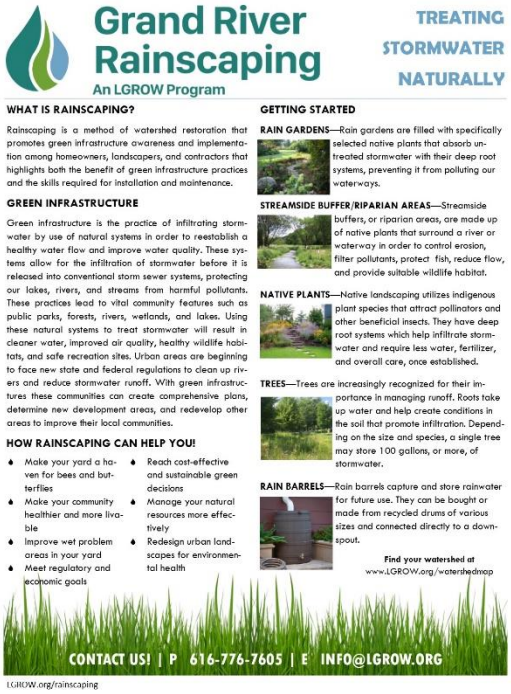
Target Audience: Riparian landowners, construction activities, landscapers

Content of Message: 1) Importance of riparian corridors/stream buffers. 2) How to landscape for better water quality. 3) Education on shoreline stabilization techniques, stream buggers, filter strips, conservation easements, and bioengineering techniques.

Delivery Method:

- Permittees distributed the brochure "*What Every Landscaper Should Know*, to their subcontractors and facilities staff. These brochures detail BMPs for fertilizer and pesticide application, lawn care, and native plantings.

- LGROW launched and promoted its Grand River Rainscaping: Treating Stormwater Naturally program. This program aims to promote installation of green infrastructure and native landscaping practices to reduce stormwater runoff from residential properties and improve water quality. Residential site assessments were performed on 28 properties, 19 of which were in MS4 communities, and a 600 square foot demonstration rain garden was installed at West Catholic High School. Residents who have a site assessment completed receive a customized report of what green infrastructure practices are best suited to their site as well as resources for implementing those practices. The Rainscaping program is aimed at both shoreline and non-shoreline properties.

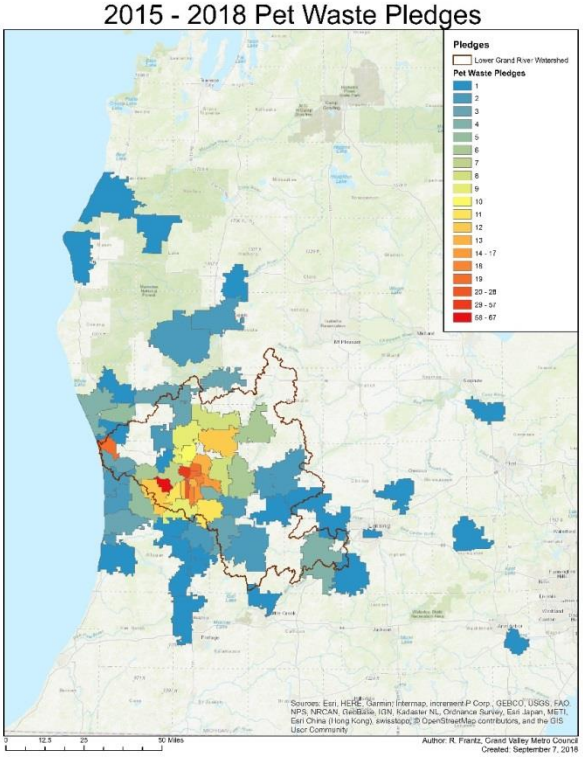


Evaluation Measures

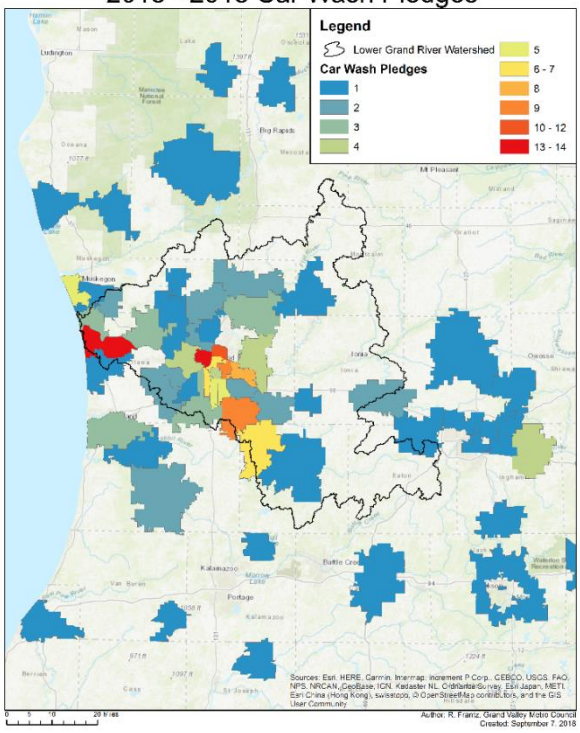
This section includes a description of the quantitative and qualitative evaluation measures of PEP effectiveness implemented between August 1, 2017, and July 31, 2018. During this reporting period, LGROW also contracted with Petersen Research Consultants, LLC to create updated robust evaluation measures for the PEP. An updated evaluation plan will be completed during the next permit cycle as part of LGROW's ongoing PEP update process.

During this permit cycle, permittees completed PEP Questionnaires to provide a quantitative and qualitative evaluation of their individual stormwater education efforts. In total, materials were distributed at over 50 events (Table 4) and at various locations throughout the watershed. The car wash and pet waste pledges represent more than an educational outreach effort; these are a commitment to a behavioral change which has an important impact on water quality. The majority of responses for both pledges were from residents within the watershed. This program was very popular, with a total of 551 pet waste and 211 car wash pledges collected since the start of the 2015-16 reporting period to the end of the 2017-2018 reporting period. Of those totals, 127 pet waste and 52 car wash pledges were collected during the 2017-2018 reporting period from across the watershed.

2015 - 2018 Pet Waste Pledges



2015 - 2018 Car Wash Pledges



2017 Public Education Focus Group

A focus group was held on December 18, 2017 at the offices of GVMC with the purpose to determine changes in the awareness, education, and behavior of the public as a result of stormwater education efforts. The last focus group held to evaluate the PEP was in 2009 at Fishbeck, Thompson, Carr & Huber (FTC&H) in Grand Rapids to determine changes in the awareness, education, and behavior of the public as a result of stormwater education efforts in 2008 and 2009.

The 2017 focus group was held with the purpose to determine changes in the awareness, education, and behavior of the public as a result of stormwater education efforts since 2009. Using the information provided from the focus group, the PEP for the LGRW communities can be edited in the future to better serve the public. The challenges, successes, and recommendations communicated in this report will be evaluated to modify the PEP as needed. The updated PEP will result in a more effective public outreach campaign to reduce stormwater pollution and raise MS4 awareness during the next permit cycle.

Focus group participants were nominated by local units of government that maintain MS4 permits. Each participating local unit of government was asked to submit two potential participants that meet the following criteria:

1. The nominees must live in Kent or Ottawa Counties, specifically in the Lower Grand River Watershed, preferably in the community they are representing
2. The individuals do not manage or have direct involvement with your community's MS4 Permit
3. The nominees have had the potential to encounter LGROW deliverables (examples: events, educational outreach, brochures or fliers, LGROW website or Facebook page)

GVMC staff administered the 1.5 hour long focus group session on December 18, 2017. Twelve invited individuals were present, representing Kent and Ottawa Counties. Eleven of the 23 municipalities that

GVMC works with regarding MS4 permits were represented. There was a diverse demographic represented among the group.

Discussion began with introductions of everyone present and an ice breaker question. The conversation followed six dialogue questions led by GVMC. The dialogue questions were as follows:

2017 LGROW Focus Group Dialogue Questions
1. What do you know about LGROW?
2. What LGROW information have you seen, heard, or read?
3. Did the message (that you have seen, heard, or read) influence you? If so, how?
4. Have you seen any stormwater or pollution prevention messaging at your workplace? Who was the message from? (LGROW, employer, other org.)
5. How could LGROW project deliverables be improved?
6. Where and how do you get information on community activities?

This focus group ended up being a very educational experience for its participants while providing valuable feedback on LGROW outreach activities. The mixed demographic of participants and the number of MS4 communities participating provided a fairly diverse view of LGROW's reach into the watershed, and participants shared many ideas to improve LGROW messaging.

Key take-aways for LGROW from the focus group are summarized in the following table:

How LGROW messages can be improved	
New Target Audiences	• *Municipal employees* • *Adults through schoolchildren* • *People living in apartment complexes* • *LEED certified building owners* • *Farmers*
Reworking Messages	• *Translating materials in to the language of the neighborhood* • *Address 'why' citizens need to know the message presented* • *Simplify messages*
Delivery Mechanisms	• *Placement of watershed information (placement of 'Entering the Watershed' signs, more signs for GI)* • *Tours of municipalities and events at breweries* • *Word of mouth*

	• *Presence at festivals* • *Advertising in churches in the watershed*

The full 2017 Focus Group Report is attached to this Progress Report. Please reference it for further details.

2018 Stormwater Public Education Plan (PEP) Questionnaire

Reporting period of August 1, 2017 to July 31, 2018

Please complete this questionnaire to provide an evaluation of the stormwater education activities you have implemented between **August 1, 2017 and July 31, 2018**. GVMC will include this information, along with watershed-wide measures of effectiveness, in your 2017 Progress Report to MDEQ. **Please return this form to GVMC by September 7, 2018.**

Community Name: City of Grand Rapids

Brochures, Flyers, and Giveaways:

1. Which of the following general stormwater awareness/LGROW materials (brochure, flyers, giveaways) did you order/distribute from GVMC this year:

☒ LGROW Brochures
☐ Grand River Infographic
☒ "Make your home the Solution to Stormwater Pollution" brochure
☒ "Do your part – be SepticSmart! brochure
☒ Household hazardous waste disposal guidelines from Kent County DPW
☒ Seasonal Tip Sheets (Fall, Winter, Spring, Summer)
☒ LGROW Water Bottles
☒ LGROW Chapstick
☒ "Keep your Lakes Great and your River Grand" dry bags
☐ LGROW "magic scarf"
☒ LGROW Totebags
☒ "Keep your lakes Great and your River Grand" sticker
☒ Troutie coloring book
☐ Paint by number watershed map
☐ Watershed hand stamp
☒ "Report Illicit Discharges" magnet
☒ Trout stress ball with "Only rain in the drain – it leads directly to my home"
☒ Report Illicit Discharges beverage coaster
☐ Other:

2. Have you given away all the materials (brochures, flyers, giveaways) you ordered from GVMC this year?
   ☐ Yes ☒ No We over order materials to have them on hand at all times.

3. Where did you distribute your materials?
   ☒ Government office ☐ Library ☒ Community event ☐ Other

4. Approximately how many people did you interact with during distribution of materials? 400

5. What was the most popular giveaway from the materials distributed in your community? Dry bags, stress balls and pet waste bags.

6. What topics are of greatest interest to members of 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 septic system maintenance
☒ Household hazardous waste management

Illicit Discharge Reporting

7. Did you distribute illicit discharge reporting materials to your residents?

☒ Hard copies of "Citizens Reporting Brochures" from the IDEP – Number distributed: 15-311 Brochures
☒ Link to LGROW's reporting page posted to your website https://www.lgrow.org/report/
☒ Report Illicit Discharge magnets – Number distributed: 200

Please describe any interest, comments, or discussion generated from the brochure, magnet or website https://www.lgrow.org/report/:
We wrote an article for Steelheaders' website, as they were unaware of our response to reported illicit discharges.

How many complaints were received from the general public regarding illicit discharges? There were five illicit discharges reported by citizens this reporting year.

Newsletters, Banners, and Displays

8. Did you order and display new lamppost banners during this permit cycle?
   ☐ Ordered and displayed new lamppost banners at (streets):
   ☒ Displayed lamppost banners provided in 2009-2013 at (streets): North Park
   ☐ Did not order or display lamppost banners

9. Did you distribute stormwater focused newsletter articles to your residents? ☒Yes ☐No
   a. Please describe any interest, comments, or discussion generated from the articles Feedback was primarily likes and shares.
   b. If applicable, list the newsletter name or webpage address used to distribute stormwater information to the public: GR Environmental Services Facebook Page
   c. If applicable, how many residents received your community newsletter? NA
   d. If applicable, how many total website hits did you receive for your online newsletter articles or stormwater information website? 19,582

10. Did you use any of the following materials or activities at events during the reporting period?

Stormwater poster board display	☐Yes, Date:	☐No
EnviroScape interactive stormwater model	☐Yes, Date:	☐No
Watershed map with pushpins	☒Yes, Date:	☐No
Stormwater mural banner and scavenger hunt	☐Yes, Date:	☐No
Major Runoff stormwater mascot	☒Yes, Date:	☐No
Interactive Corn Hole Board	☐Yes, Date:	☐No
Interactive catch basin demos	☒Yes, Date:	☐No

Events and Pledges

11. Did you host a seed bomb or native plant workshop? ☐ Yes, on: ☒No

12. Did you distribute any additional educational materials on native plants?
    ☒ Yes (Describe): **Hundreds of 'Landscaping for water quality'** ☐No

13. Please describe any interest, comments, or discussion generated from native plant workshops or giveaways: People get excited to get ideas for their own plantings.

14. Did your community collect pet waste pledges distributed with the public education materials?
    ☒Yes, Number: 209 ☐No

15. Did your community collect car wash pledges distributed with the public education materials?
    ☐Yes, Number: ☒No

Please describe any interest, comments, or discussion generated from either of the pledges and associated giveaways.

16. Did you implement a storm drain awareness activity between August 1, 2017 and July 31, 2018?

☐ Yes: (streets) on (dates)
☐ Yes, we held a storm drain stenciling event on (dates) and stenciled (streets)
☒ Yes, we have approximately over 1,000 (#) pre-marked catch basin backs/grates with the message "No dumping, drains to waterway"
☐ Yes, we hung door knob flyers on (streets) on (dates)

Please describe any interest, comments, or discussion generated from the activities above:
Have you noticed a reduction in storm drain dumping? ☐Yes ☒No Describe:

17. Please describe any interest, comments, or discussion generated from these materials/activities: It varies from those that think we still have combined sewers to those who can't believe that anyone would dump to a catch basin.

18. Did you participate in any community stormwater events? (check all that apply)

☒ Rain barrel workshop Date: **July 29, 2018** Number of Attendees: **15 barrels distributed**
☒ Rain garden/Green Infrastructure Workday Date: Number of attendees:
☒ River clean up (location): Mayor's River Cleanup Date: September 9, 2017
Number of Attendees: 1,300
☒ Ottawa County Water Quality Forum – November 30, 2017
☒ MWEA Watershed & Stormwater Seminar – December 5, 2017
☒ MWEA Watershed Summit – March 28, 2018
☐ Earth Day at Blandford Nature Center – April 21, 2018
☒ 15th Annual Grand River Spring Forum – May 11, 2018
☒ Grand River Water Festival – June 24, 2018
☒ MWEA Annual Conference – June 25-27, 2018
☒ West Michigan WhiteCaps Concourse Table – July 26, 2018
☐ Other: **Macatawa Coordinating Council – Making the Case for Green Infrastructure panel (8/22/17), Indiana Association for Floodplain Management Annual Conference (9/6-9/8/17), Michigan Wetlands Conference presentation (9/29/17), presentation to the Museum school (10/11/17), Panel at Museum School final project presentations (11/17/17), Home Show (3/1-3/4/18) , Sweetwater cross training and conference (4/25/4/26/17), Dia del Nino (4/28/18), Green Infrastructure Exchange (4/29/5/2) and Canoemobile - Parks sponsorship and stormwater education on land (5/7- 5/11/18).**

Describe any materials distributed, number of attendees, messages used at these events: **A spreadsheet with materials distributed is attached.**

19. If applicable, please describe any other stormwater public education activities your community implemented beyond the events described above (This includes education with school groups, other community events, etc.) and submit any relevant documentation.

We had over 1,400 people go through our facility on tours during this reporting period. Our tours include stormwater education.

Part 4 - IDEP

Regional IDEP Activities

The IDEP for the Lower Grand River Watershed was approved in July of 2013 as meeting requirements of the General Permit Application for Storm Water Discharges from MS4s. The IDEP is intended to prohibit and effectively eliminate illicit discharges to the MS4.

The IDEP is being implemented under a cooperative program administered by the Grand Valley Metropolitan Council (GVMC) and involving the county agencies and municipal units participating in the Watershed Approach. The approved IDEP utilizes an alternative approach which includes the sampling of all storm sewer outfalls to Waters of the State within the urbanized area for the following parameters: surfactants, temperature, ammonia, and pH. Cooperative agreements were signed by participating communities to ensure that any illicit discharges detected would be traced upstream to their point of origin within the approved timeline whether or not they crossed jurisdictional boundaries. Illicit discharges that were identified either by public reporting or staff identification during this reporting period are detailed in each community's IDEP. Descriptions of the other IDEP activities undertaken on an individual basis are included below. 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.

Dry-weather screening was completed by the Kent County Drain Commissioner during this reporting period for the Drain Commissioner's MS4. Other communities in the watershed began outfall sampling in the summer of 2018, and that work had not been completed at the time this report was written. A full report on IDEP outfall screening will be included in next year's report.

Community IDEP Activities

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.

The Technical Committee worked with MDEQ on IDEP revisions throughout the reporting period and submitted the final draft for review and approval on July 31, 2013.

Please describe any dry-weather screening conducted during the reporting period and the findings of that screening.
Dry weather screening has been taking place through the majority of the summer on the outfalls owned by the City and is ongoing. Prior to the start of sampling, training was attended by Mr. Daniel Taber and Ms. Tori Graves that was provided by GVMC regarding the dry weather screening process. Currently, there are two (2) outfalls that are being monitored with follow up activities. One outfall near Charley's Crab was discovered to have oil in the outlet, and appropriate measures were taken to boom and remove the oil. The likely source of this was a truck accident in the days prior on US 131. The second outfall is with the Silver Creek County Drain. Ammonia levels were detected and tracing and additional sampling took place. A manhole with a contaminated sump was thought to be the source of the ammonia reading, however following the cleaning of the basin and heavy rains that occurred the week of 8/27/18, sampling indicated ammonia still being present at this location. Investigation continues. All sampling information is being submitted to the KCDC and MDEQ. A complete breakdown of sampling information will be presented in the next annual report.

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.

303 S Division

On 8/7/17 ESD staff were notified of a contractor dumping paint in two catch basins near the above building. We contacted sewer maintenance and the effected basins were cleaned up by 3:47 pm. The contractor was contacted and our soil erosion inspectors worked with him to determine if any more basins were dumped into and to let him know that dumping to catch basins is illegal. The contractor was billed for our time for cleaning basins and a Notice of Violation was issued.

200 Ionia Ave SW

On 8/11/17, At 2:46 pm, we discovered grout, which appeared to be from pavement cores, in the catch basin at 200 Ionia SW. At approximately 3:30 pm, a vactor truck was dispatched and 2 basins were noted to be impacted and were vacuumed out. Soil and Materials Engineering (SME) was the contractor and was informed that they could not allow the grout into the street and must sweep the street. The street had been swept when inspected today. SME was billed for our cleanup expenses.

1750 Elizabeth NW

On 9/7/17, at approximately 11:20 am, Kevin Hines, soil erosion inspector, was completing construction inspection in the area and saw discolored liquid in road and gutter pan and stopped to investigate. Kevin noticed liquid smell of chemicals used during industrial process and reported it to Dan Taber. Dan Taber arrived on-site at approximately 11:45 AM. The liquid appeared to be from a spill inside the facility (First Choice Industrial Services LLC) that went out onto the truck bay and into the gutter. Dan contacted sewer maintenance and the catch basin was cleaned by 2:06 pm.

NW Corner of 6th Street and Scribner Ave NW

On 9/19/17 at approximately 1:10 pm, one of our soil erosion inspectors noted drilling fluids flowing to a catch basin at the northwest corner of 6th St and Scribner Ave NW. The drilling was being performed by Miller Pipeline, working as a subcontractor to DTE. Miller Pipeline and DTE issued Notices of Violation.

Bridge St Outfall

On 11/5/17, a sheen on the river was reported to Grand Rapids Fire Department at approximately 1 pm. The sheen appeared to start at the outfall on the east side of the river, just south of Bridge St. GRFD and environmental services staff tracked a diesel odor to a catch basin near 200 Ottawa Ave NE, but did not find any signs of dumping into the basin. The odor stopped upstream of there. They also checked the construction site on Ionia and did not see or smell anything. The search was discontinued at approximately 5:30 when they could not find it further upstream.

Booms were put near the outfall to catch the residuals and the sheen dissipated in two days. It appears to be a case rising groundwater releasing a pocket of contaminated soils.

Leonard, Fuller to Ball St, NE

At approximately 3 pm on 11/16/17, ESD received a request from the contractor working on the Leonard St to clean out storm manholes on the site. Upon arrival yesterday afternoon, technicians

discovered that concrete washout and debris had been dumped into the manholes. The entire stretch was inspected and cleaned and the contractor was charged for cleanup costs.

24 S Division Ave
On 12/12/17, City staff received video of mop water being dumped into a catch basin in the street outside of Lucky's. It appears to have happened on Sunday, but the complaint went to neighborhood development via email and then the police department. So, by the time we received it, the snow melt would have pushed the water through. We have sent the owner a warning letter that will notified him of fines and cleanup fees if this happens in the future.

266 Griggs St, SE
ESD received an email (3/27/18) from our Public Services Department that a resident at the above address was seen shoving yard waste into the storm sewer. ESD cleaned the basin and informed the resident that fines will be assessed if this happens again.

Wealthy St Pump Station
Wealthy Stormwater Station is the City's largest station and has 10 – 250 horsepower pumps each capable of pumping 50,000 gallons per minute. When the Grand River is below 8', stormwater flows by gravity through the station to the Grand River. When the river is above 8', gates close automatically and stormwater from the west side is pumped into the river to prevent flooding.

On March 28, 2018, ESD staff was performing preventive maintenance at the Wealthy Stormwater Station and discovered a heavy sheen (3-4 inches) and petroleum odor in the wet well. This was addressed by SET Environmental, Inc., and a budget amendment was previously approved by City Commission. This incident was about to be considered closed when another incident was noted. On June 5, a sheen and high ammonia scum were noted in the wet well. Again, SET environmental, Inc. was called to install booms and vacuum the contaminants out for proper disposal.

The station receives stormwater from over 2,000 catch basins connected to over 34 miles of storm main. Generally, it drains a significant portion of the northwestern quadrant of the City. Work was again performed to determine the source of the contamination. Manholes were opened and inspected. When that did not show us indications of the origin of the release, we brought in cameras to televise the storm sewer upstream of the stormwater pumping station. That also did not give us indication of the origin of the release.

Given the ammonia odor with this incident and that there was a yellow, chalky substance on top, we suspected that fertilizer may have been mixed in with the oil. As such, a search was performed for all landscaping/landscaping supply facilities in the stormwater catchment. Cursory inspection of these properties via public rights of way did not reveal possible sources of the contamination. Given the size of the stormwater pipes, oversized manhole covers were utilized on the main pipes leading to the stormwater system. These covers do not allow for in situ monitoring equipment to be installed. We have recently received specialized manhole covers that will allow us to perform in situ sampling in an effort to determine the source of the contamination. This will entail a step by step process of sampling at each place where the pipes branch off to determine the source.

47 Monroe St, NW
ESD was notified at 1:41 pm on 7/26/18 that Total Protection Fire Service (TPFS) was dumping what appeared to be waste oil down a catch basin. Sewer maintenance went yesterday afternoon to determine if there was anything remaining in the catch basin. They saw a slight sheen on one basin and what looks to be a grout/slurry mix in another. Both basins were cleaned.

TPFS located the van in question and noted that it was water from draining the fire protection system.

TPFS was informed that the only thing allowed in the catch basins is rain water. They were going to reinforce this with their employees. Given the residuals found in the basins were not likely from TPFS, no fines were given.
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.
Status of the Wealthy pumping station is detailed above.
Please describe actions taken when indications of illicit discharges have been identified, if any.
Please see above.
Please provide: ● An estimated quantification of the number of discharges eliminated, and ● An estimated quantification of the volume of illicit flow eliminated (*For large spills or, where the amount discharged is possible to estimate)*.
Nine illicit discharges were eliminated. None of those had quantifiable discharges.
Identify any specific coordination with the health department in response to illicit discharge elimination for failed or failing septic fields.
No failing septic tanks were identified during the reporting period. The rates for connecting to water and sanitary sewer were drastically reduced in January 2017, encouraging people to connect to sanitary sewer.

Describe the effectiveness of the program to prevent illicit discharges and the method used to assess effectiveness.
The City has completed five cycles of dry weather monitoring, with minimal illicit discharges identified proportionally to the work involved in inspecting all 480 outfalls. As such, dry weather screening should be discontinued. The periodic monitoring of the Grand River and tributaries has proven effective in identifying illicit discharges and should be continued.

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: Map and list were submitted to MDEQ as Appendix 2 in Illicit Discharge Elimination Plan revision, July 30, 2013. Updated lists were submitted to the MDEQ as part of the 2016 MS4 Permit Application which is currently under review. List is unchanged.

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**
N/A	☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No
	☐Yes ☐No	☐Yes ☐No
Comments: The City of Grand Rapids does not have any 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 Mayors' 14th Annual Grand River Clean-up took place on September 8, 2017, and had over 1,300 participants. Over 15,000 pounds of trash from 40 miles of stream bank along the lower Grand River, Mill Creek, and Plaster Creek were removed. The City is a partner with the Lower Grand River Organization of Watersheds, Plaster Creek Stewards, WMEAC, Trout Unlimited and others on a Great Lakes Restoration Initiative grant where LID projects are being implemented in three different watersheds while teaching students about LID techniques and stormwater pollution. The City's school partner is the North Park Montessori School and the 4th-6th grade classes that helped plant a new bioswale taking in street runoff.
Please list any other actions your community has conducted to reduce stormwater pollution
• The City spent over $536,000 installing green infrastructure practices as part of their Vital Streets program. • The City has members on the LGROW and WMSECN Boards. • The City is using a SAW grant for stormwater system cleaning, public education and TMDL planning.

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?

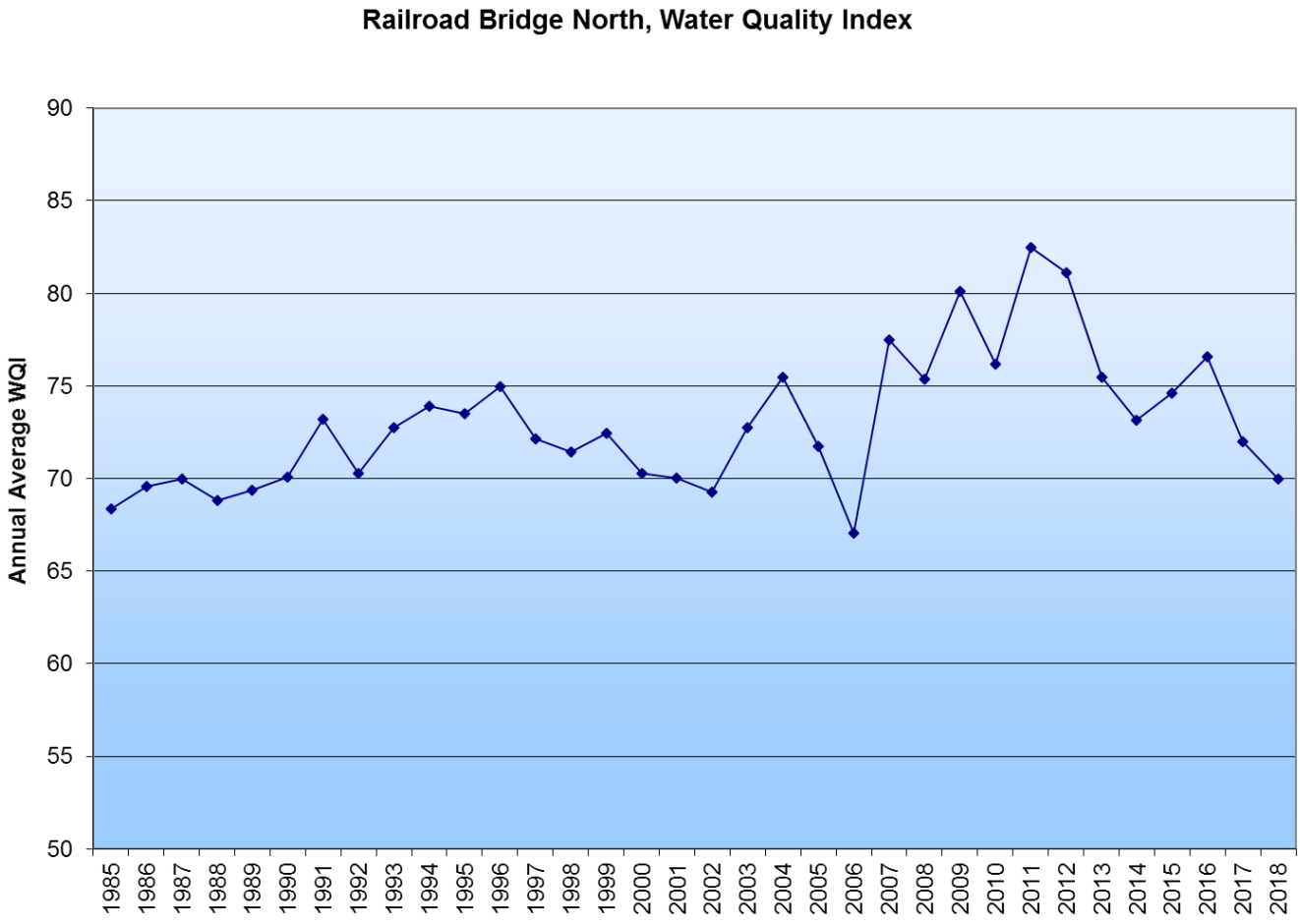
☒ No, the SWPPI does not need any revisions

☐ The following revisions to the SWPPI could be considered:

Original SWPPI Section/Subsection	**Revision**

Part 9 – 2017 Stormwater Special Reporting

a. Environmental Impacts [40 CFR 122.42(c)(7)]
    a. A Grand River Water Quality Index (WQI) of 71-90 indicates good water quality with high diversity of aquatic life and very few limits for recreational use. The WQI graph shows that the Grand River water quality continues to be good downstream of Grand Rapids. Extreme rain events in 2013 and 2014 and sampling within the first 48 hours of a rain event are likely why the WQI has decreased in 2013 and 2014. Grand Rapids has been monitoring the Grand River for forty years and the data is made available to those which request it. This summer, sampling was performed on a monthly basis, with the exception of the month of June, for additional data.



QUARTERLY RIVER SURVEY REPORT — DATE: 10/10/2017 — CITY OF GRAND RAPIDS EPSD

River Survey Report

Grand River		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH_3-N	NO_2-N	NO_3-N
201701813	Northland Drive Bridge (250120)	8:50	11.8	8.3	8.48	<2	5.7	250	219	60	688	0.04	0.04	0.01	<0.1
201701814	Wealthy Street Bridge (250090)	10:45	15.2	9.1	8.5	<2	3.7	145	803	50	651	0.03	0.04	0.007	<0.1
201701815	Railroad Bridge South (250070)	10:55	15.1	9.1	8.26	2.1	17.4	>1500		40	463	0.2	0.1	0.008	<0.1
201701816	Railroad Bridge North (250071)	10:45	15.8	9.1	8.17	<2	9.6	>1500	3500	60	607	0.14	0.23	0.01	0.1
201701817	M-11, Wilson Avenue (250062)	10:21	16.2	8.8	8.23	<2	10.4	>1500	4100	60	622	0.14	0.21	0.01	<0.1
201701818	Eastmanville (250040)	9:36	17.1	8.5	8.28	<2	6.2	250	365	70	717	0.05	0.13	0.01	<0.1

Streams		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH_3-N	NO_2-N	NO_3-N
201701819	Rogue River at West River Drive	9:23	13.5	9	8.33	<2	35	>1500		40	635	0.09	0.03	0.008	0.1
201701820	Mill Creek at West River Drive	8:25	12.8	9.8	8.33	<2	49	>1500		40	460	0.1	0.02	0.011	0.1
201701821	Indian Mill Creek at Turner Avenue	8:04	12.9	9.5	7.89	3.7	134	>1500		40	332	0.32	0.06	0.008	0.2
201701822	Silver Creek at Crofton/Roy	8:14	12.9	10.4	7.34	3.5	28.6	>1500		<10	159	0.16	0.06	0.002	<0.1
201701823	Plaster 1 at Burton	7:26	14	9.3	7.73	3.6	104	>1500		40	260	0.24	0.09	0.007	0.2
201701824	Plaster 2 at Market	10:56	14	9.3	8.07	3.7	73	>1500		20	205	0.26	0.08	0.003	<0.1
201701825	Buck Creek at Chicago Drive	8:29	14.1	9	8.34	<2	68.4	>1500		100	765	0.16	0.06	0.011	<0.1
201701826	Deer Creek	9:45	14.5	6.6	8.03	3.6	12.6	>1500		40	540	0.23	0.04	<0.001	<0.1
201701827	Coldbrook Storm Drain	7:30	13.5	10.1	7.5	3.5	36.6	>1500		20	173	0.16	0.07	0.003	<0.1

Grand River		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
201701813	Northland Drive Bridge (250120)	<0.005	<0.005	0.14	<0.2	<0.005	<0.005	<0.01	270	72.6
201701814	Wealthy Street Bridge (250090)	<0.005	<0.005	0.13	<0.2	<0.005	<0.005	<0.01	240	75.6
201701815	Railroad Bridge South (250070)	<0.005	<0.005	0.32	<0.2	<0.005	<0.005	0.02	170	67.0
201701816	Railroad Bridge North (250071)	<0.005	<0.005	0.18	<0.2	<0.005	<0.005	<0.01	220	67.5
201701817	M-11, Wilson Avenue (250062)	<0.005	<0.005	0.27	<0.2	<0.005	<0.005	0.01	230	66.9
201701818	Eastmanville (250040)	<0.005	<0.005	0.13	<0.2	<0.005	<0.005	<0.01	270	72.9

Streams		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
201701819	Rogue River at West River Drive	<0.005	<0.005	0.43	<0.2	<0.005	<0.005	<0.01	240	67.6
201701820	Mill Creek at West River Drive	<0.005	<0.005	0.45	<0.2	<0.005	<0.005	<0.01	190	68.1
201701821	Indian Mill Creek at Turner Avenue	<0.005	0.008	2.30	<0.2	<0.005	<0.005	0.05	130	64.5
201701822	Silver Creek at Crofton/Roy	<0.005	0.005	0.37	<0.2	<0.005	<0.005	0.03	22	68.0
201701823	Plaster 1 at Burton	<0.005	0.006	1.10	<0.2	<0.005	<0.005	0.08	96	65.6
201701824	Plaster 2 at Market	0.006	0.008	2.50	<0.2	<0.005	<0.005	0.06	72	65.2
201701825	Buck Creek at Chicago Drive	<0.005	<0.005	1.20	<0.2	<0.005	<0.005	0.02	250	66.9
201701826	Deer Creek	<0.005	<0.005	0.51	<0.2	<0.005	<0.005	<0.01	200	61.7
201701827	Coldbrook Storm Drain	0.008	0.006	1.10	<0.2	<0.005	<0.005	0.03	42	67.9

Miscellaneous Information

Weather conditions: Rain and wind

Field Technicians: Bert Carlstrom/Todd Williams, Paul Kuklewski/Carrie Turner

Test Descriptions

Time (hh:mm)
Temperature (°C)
DO: Dissolved Oxygen (mg/L)
pH (pH units)
BOD: 5-day Biochemical Oxygen Demand (mg/L)
TSS: Total Suspended Solids (mg/L)
FC: Fecal Coliform (#FC/100ml)
EC: E. coli (#EC/100mL)
Chloride (mg/l)
Conductivity (uS/cm)
TP: Total Phosphorous (mg/L)
NH_3-N: Ammonia as nitrogen (mg/L)
NO_2-N: Nitrite as nitrogen (mg/L)
NO_3-N: Nitrate as nitrogen (mg/L)
Cr: Total Chromium (ug/L)
Cu: Total Copper (ug/L)
Fe: Total Iron (ug/L)
Hg: Total Mercury (ug/L)
Ni: Total Nickel (ug/L)
Ag: Total Silver (ug/L)
Zn: Total Zinc (ug/L)
Hardness (mg/L as $CaCO_3$)
WQI: Water Quality Index (percent)

QUARTERLY RIVER SURVEY REPORT — DATE: MARCH 28, 2018 — CITY OF GRAND RAPIDS EPSD

Grand River		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH_3-N	NO_2-N	NO_3-N
1800529	Northland Drive Bridge (250120)	8:45	6.00	12.1	8.65	3.0	4.0	34	59	NA	617	<0.05	<0.02	0.006	1.1
1800530	Wealthy Street Bridge (250090)	9:20	6.90	11.9	8.64	3.3	5.6	43	54	NA	623	<0.05	<0.02	0.007	1.2
1800531	Railroad Bridge South (250070)	9:43	6.20	12.2	8.67	2.8	6.0	70		NA	670	<0.05	<0.02	0.006	1.1
1800532	Railroad Bridge North (250071)	9:39	6.30	12.3	8.66	3.2	7.2	67	62	NA	644	<0.05	<0.02	0.006	1.3
1800533	M-11, Wilson Avenue (250062)	9:09	6.20	12.3	8.79	3.2	6.0	70	68	NA	649	<0.05	<0.02	0.006	1.3
1800534	Eastmanville (250040)	8:34	6.70	12.1	8.51	3.0	6.2	125	128	NA	672	<0.05	<0.02	0.014	1.3

Streams		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH_3-N	NO_2-N	NO_3-N
1800535	Rogue River at West River Drive	8:30	6.20	10.9	8.23	2.2	1.8	57		NA	579	<0.05	<0.02	<0.001	1.2
1800536	Mill Creek at West River Drive	7:45	6.30	11.0	8.39	2.5	0.8	60		NA	658	<0.05	<0.02	0.004	1.3
1800537	Indian Mill Creek at Turner Avenue	7:30	6.80	10.2	7.99	2.1	1.8	300		NA	907	<0.05	<0.02	0.008	1.3
1800538	Silver Creek at Croften/Roy	10:02	9.00	10.7	8.33	2.1	1.0	1330		NA	1200	<0.05	<0.02	0.008	2.1
1800539	Plaster 1 at Burton	7:04	7.30	9.8	8.74	4.3	4.6	250		NA	1420	<0.05	<0.02	0.012	0.3
1800540	Plaster 2 at Market	9:30	6.50	10.0	8.14	4.2	4.8	575		NA	1510	<0.05	0.02	0.012	0.4
1800541	Buck Creek at Chicago Drive	7:26	7.20	9.9	8.36	2.7	3.6	275		NA	1060	<0.05	<0.02	0.010	0.5
1800542	Deer Creek	8:44	5.60	9.9	8.15	5.6	5.4	365		NA	739	0.08	0.35	0.017	1.5
1800543	Coldbrook Storm Drain		7.40	10.5	8.15	3.9	3.2	3500		NA	1110	0.06	0.07	0.005	0.3

Grand River		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
1800529	Northland Drive Bridge (250120)	<0.005	<0.005	0.24	<0.2	<0.005	<0.005	<0.01	270	75.1
1800530	Wealthy Street Bridge (250090)	<0.005	<0.005	0.25	<0.2	<0.005	<0.005	<0.01	290	73.7
1800531	Railroad Bridge South (250070)	<0.005	<0.005	0.26	<0.2	<0.005	<0.005	<0.01	280	73.2
1800532	Railroad Bridge North (250071)	<0.005	<0.005	0.25	<0.2	<0.005	<0.005	<0.01	280	72.1
1800533	M-11, Wilson Avenue (250062)	<0.005	<0.005	0.27	<0.2	<0.005	<0.005	<0.01	280	71.3
1800534	Eastmanville (250040)	<0.005	<0.005	0.28	<0.2	<0.005	<0.005	<0.01	280	71.0

Streams		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
1800535	Rogue River at West River Drive	<0.005	<0.005	0.15	<0.2	<0.005	<0.005	<0.01	270	76.3
1800536	Mill Creek at West River Drive	<0.005	<0.005	0.17	<0.2	<0.005	<0.005	<0.01	300	74.6
1800537	Indian Mill Creek at Turner Avenue	<0.005	<0.005	0.24	<0.2	<0.005	<0.005	<0.01	320	71.0
1800538	Silver Creek at Croften/Roy	<0.005	<0.005	0.11	<0.2	<0.005	<0.005	0.02	340	63.4
1800539	Plaster 1 at Burton	<0.005	<0.005	0.39	<0.2	<0.005	<0.005	0.01	250	68.6
1800540	Plaster 2 at Market	<0.005	<0.005	0.36	<0.2	<0.005	<0.005	0.01	280	68.4
1800541	Buck Creek at Chicago Drive	<0.005	<0.005	0.39	<0.2	<0.005	<0.005	<0.01	300	71.4
1800542	Deer Creek	<0.005	<0.005	0.57	<0.2	<0.005	<0.005	<0.01	260	65.3
1800543	Coldbrook Storm Drain	<0.005	<0.005	0.28		<0.005	<0.005	0.01	260	62.3

Miscellaneous Information

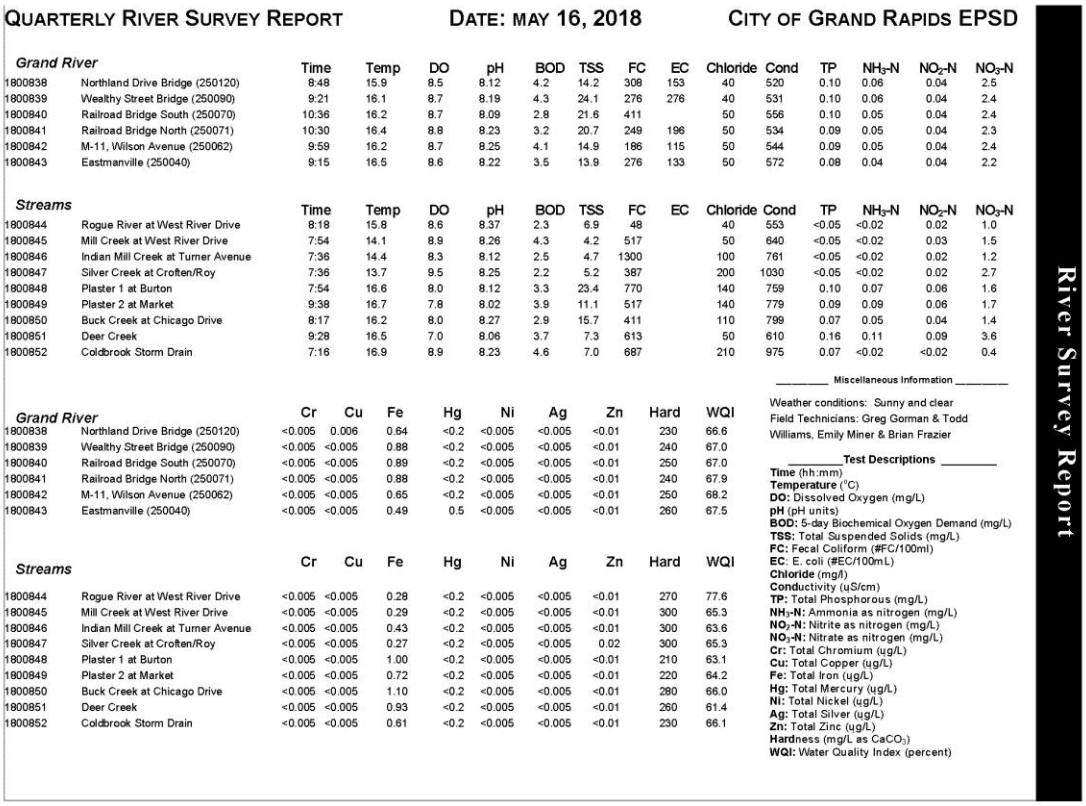
Weather conditions: Calm, overcast

Field Technicians: Brian Frazier & Bert Carlstrom, Paul Kuklewski & Todd Williams

Test Descriptions

Time (hh:mm)
Temperature (°C)
DO: Dissolved Oxygen (mg/L)
pH (pH units)
BOD: 5-day Biochemical Oxygen Demand (mg/L)
TSS: Total Suspended Solids (mg/L)
FC: Fecal Coliform (#FC/100ml)
EC: E. coli (#EC/100mL)
Chloride (mg/l)
Conductivity (µS/cm)
TP: Total Phosphorous (mg/L)
NH_3-N: Ammonia as nitrogen (mg/L)
NO_2-N: Nitrite as nitrogen (mg/L)
NO_3-N: Nitrate as nitrogen (mg/L)
Cr: Total Chromium (ug/L)
Cu: Total Copper (ug/L)
Fe: Total Iron (ug/L)
Hg: Total Mercury (ug/L)
Ni: Total Nickel (ug/L)
Ag: Total Silver (ug/L)
Zn: Total Zinc (ug/L)
Hardness (mg/L as $CaCO_3$)
WQI: Water Quality Index (percent)

River Survey Report



QUARTERLY RIVER SURVEY REPORT **DATE: MAY 16, 2018** **CITY OF GRAND RAPIDS EPSD**

River Survey Report

Grand River		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH_3-N	NO_2-N	NO_3-N
1800838	Northland Drive Bridge (250120)	8:48	15.9	8.5	8.12	4.2	14.2	308	153	40	520	0.10	0.06	0.04	2.5
1800839	Wealthy Street Bridge (250090)	9:21	16.1	8.7	8.19	4.3	24.1	276	276	40	531	0.10	0.06	0.04	2.4
1800840	Railroad Bridge South (250070)	10:36	16.2	8.7	8.09	2.8	21.6	411		50	556	0.10	0.05	0.04	2.4
1800841	Railroad Bridge North (250071)	10:30	16.4	8.8	8.23	3.2	20.7	249	196	50	534	0.09	0.05	0.04	2.3
1800842	M-11, Wilson Avenue (250062)	9:59	16.2	8.7	8.25	4.1	14.9	186	115	50	544	0.09	0.05	0.04	2.4
1800843	Eastmanville (250040)	9:15	16.5	8.6	8.22	3.5	13.9	276	133	50	572	0.08	0.04	0.04	2.2

Streams		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH_3-N	NO_2-N	NO_3-N
1800844	Rogue River at West River Drive	8:18	15.8	8.6	8.37	2.3	6.9	48		40	553	<0.05	<0.02	0.02	1.0
1800845	Mill Creek at West River Drive	7:54	14.1	8.9	8.26	4.3	4.2	517		50	640	<0.05	<0.02	0.03	1.5
1800846	Indian Mill Creek at Turner Avenue	7:36	14.4	8.3	8.12	2.5	4.7	1300		100	761	<0.05	<0.02	0.02	1.2
1800847	Silver Creek at Crofton/Roy	7:36	13.7	9.5	8.25	2.2	5.2	387		200	1030	<0.05	<0.02	0.02	2.7
1800848	Plaster 1 at Burton	7:54	16.6	8.0	8.12	3.3	23.4	770		140	759	0.10	0.07	0.06	1.6
1800849	Plaster 2 at Market	9:38	16.7	7.8	8.02	3.9	11.1	517		140	779	0.09	0.09	0.06	1.7
1800850	Buck Creek at Chicago Drive	8:17	16.2	8.0	8.27	2.9	15.7	411		110	799	0.07	0.05	0.04	1.4
1800851	Deer Creek	9:28	16.5	7.0	8.06	3.7	7.3	613		50	610	0.16	0.11	0.09	3.6
1800852	Coldbrook Storm Drain	7:16	16.9	8.9	8.23	4.6	7.0	687		210	975	0.07	<0.02	<0.02	0.4

Grand River		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
1800838	Northland Drive Bridge (250120)	<0.005	0.006	0.64	<0.2	<0.005	<0.005	<0.01	230	66.6
1800839	Wealthy Street Bridge (250090)	<0.005	<0.005	0.88	<0.2	<0.005	<0.005	<0.01	240	67.0
1800840	Railroad Bridge South (250070)	<0.005	<0.005	0.89	<0.2	<0.005	<0.005	<0.01	250	67.0
1800841	Railroad Bridge North (250071)	<0.005	<0.005	0.88	<0.2	<0.005	<0.005	<0.01	240	67.9
1800842	M-11, Wilson Avenue (250062)	<0.005	<0.005	0.65	<0.2	<0.005	<0.005	<0.01	250	68.2
1800843	Eastmanville (250040)	<0.005	<0.005	0.49	0.5	<0.005	<0.005	<0.01	260	67.5

Streams		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
1800844	Rogue River at West River Drive	<0.005	<0.005	0.28	<0.2	<0.005	<0.005	<0.01	270	77.6
1800845	Mill Creek at West River Drive	<0.005	<0.005	0.29	<0.2	<0.005	<0.005	<0.01	300	65.3
1800846	Indian Mill Creek at Turner Avenue	<0.005	<0.005	0.43	<0.2	<0.005	<0.005	<0.01	300	63.6
1800847	Silver Creek at Crofton/Roy	<0.005	<0.005	0.27	<0.2	<0.005	<0.005	0.02	300	65.3
1800848	Plaster 1 at Burton	<0.005	<0.005	1.00	<0.2	<0.005	<0.005	<0.01	210	63.1
1800849	Plaster 2 at Market	<0.005	<0.005	0.72	<0.2	<0.005	<0.005	<0.01	220	64.2
1800850	Buck Creek at Chicago Drive	<0.005	<0.005	1.10	<0.2	<0.005	<0.005	<0.01	280	66.0
1800851	Deer Creek	<0.005	<0.005	0.93	<0.2	<0.005	<0.005	<0.01	260	61.4
1800852	Coldbrook Storm Drain	<0.005	<0.005	0.61	<0.2	<0.005	<0.005	<0.01	230	66.1

Miscellaneous Information

Weather conditions: Sunny and clear
Field Technicians: Greg Gorman & Todd Williams, Emily Miner & Brian Frazier

Test Descriptions

Time (hh:mm)
Temperature (°C)
DO: Dissolved Oxygen (mg/L)
pH (pH units)
BOD: 5-day Biochemical Oxygen Demand (mg/L)
TSS: Total Suspended Solids (mg/L)
FC: Fecal Coliform (#FC/100ml)
EC: E. coli (#EC/100mL)
Chloride (mg/l)
Conductivity (uS/cm)
TP: Total Phosphorous (mg/L)
NH_3-N: Ammonia as nitrogen (mg/L)
NO_2-N: Nitrite as nitrogen (mg/L)
NO_3-N: Nitrate as nitrogen (mg/L)
Cr: Total Chromium (ug/L)
Cu: Total Copper (ug/L)
Fe: Total Iron (ug/L)
Hg: Total Mercury (ug/L)
Ni: Total Nickel (ug/L)
Ag: Total Silver (ug/L)
Zn: Total Zinc (ug/L)
Hardness (mg/L as $CaCO_3$)
WQI: Water Quality Index (percent)

   b. ll CSO and SSO occurrences are reported to the DEQ as required in NPDES Permit #MI0026069 when they occur.
   c. Illicit Discharges can be found in Part 4 of the Report.

b. Data and Results [40 CFR 122.42(c)(4)] – see above

c. BMP Changes [40 CFR 122.42(c)(2)]
   a. None.
   b. We have a Draft Stormwater Standards Manual that emphasizes green infrastructure and will be implemented upon revising our City ordinance. A draft ordinance will be submitted within six months of permit approval.

d. Revised Financial Analysis [40 CFR 122.42(c)(3)]
   a. The stormwater program continues to be funded from the City General Fund, Local and Major Streets, Refuse, and Vital Streets Funds. Funding levels have been increased due to low impact development funding through the streets income tax extension. Funds for asset management have also increased. A fiscal analysis of City of Grand Rapids is included as an attachment.

e. Annual Budget [40 CFR 122.42(c)(5)]

Activity	FY18 Expenditures	FY19 Budget

Stormwater Management (General Fund)	$687,864	$949,000
Stormwater Maintenance (Local and Major Streets Funds)	$1,277,793	$1,344,000
Street Sweeping (Refuse and Vital Streets Funds)	$904,140	$1,002,857

Capital Improvement Plan

Project	Amount	
CIPP Rehab of Sanitary and Storm Sewers - Various Sites	$	100,000
Drainage Improvements and Emergency Repairs	$	200,000
Kent County Drain Commission Special Assessments	$	45,000
Burton-Breton Branch of Plaster Creek - Channelization and Cleaning	$	33,000
Oakleigh Ave in Hogadone District - Channelizing and Cleaning	$	20,000
Shawmut Hills Baseball Diamond and Channel Stormwater Improvement	$	11,145
Shawmut Hills Baseball Diamond and Channel Stormwater Improvement	$	63,155
Capilano Stormwater Improvements	$	6,000
Capilano Stormwater Improvements	$	35,000
Burton-Breton Branch of Plaster Creek - Enlargement of Culverts	$	22,698
Richmond Park Dam/Bioswales	$	190,000
Residual Transfer Pad and Sanitary Pump Station	$	200,000

Summary of Enforcement Actions and Inspections

Activity	2017-2018 Reporting Cycle
Stormwater Inspections	2759
Notices of Violations	97
Corrective Action Orders	8

Summary of Street Sweeping

The City has disposed of 5,898 cubic yards of waste from street sweeping this reporting year at a cost of over $98,000. This has prevented almost 5,400 tons of material from entering the stormwater system.

Additional Documentation

2017 Focus Group Report for the NPDES MS4 Public Education Plan in the Lower Grand River Watershed

December 2017

Grand Valley Metropolitan Council

GVMC

Introduction

A focus group was held on December 18, 2017 as part of the compliance activities associated with the National Pollution Discharge Elimination System (NPDES) Stormwater Regulations watershed-based permit for communities in the Lower Grand River Watershed (LGRW). The focus group served as an evaluation tool for the LGRW Public Education Plan (PEP), an integral part of the NPDES Municipal Separate Storm Sewer System (MS4) permit. In 2003, twenty three entities made up of county, city, village, township, university, and local school districts collaborated under the guidance of Grand Valley Metropolitan Council (GVMC) to apply for a watershed-based stormwater permits. The Lower Grand River Organization of Watersheds (LGROW) was officially formed as an agency of GVMC in 2009 to coordinate the implementation of the permits and provide basin-wide oversight, conduct watershed-wide initiatives, and prioritize water quality concerns.

The PEP was created for the participating communities in Kent, Ottawa, and Muskegon Counties and is intended to educate the public on stormwater pollution reduction. Successful implementation of the PEP will form partnerships with agencies and organizations that have existing programs and use educational materials and strategies familiar and relevant to the area residents. LGROW is the mechanism used to promote PEP programs and materials.

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 also 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 this regional watershed-based initiative is the cooperation and resource sharing that is developed between the participating communities. Implementing a successful PEP takes funding and preparation time that one community may find impossible to do alone. However, when 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.

The last focus group held to evaluate the PEP was in 2009 at Fishbeck, Thompson, Carr & Huber (FTC&H) in Grand Rapids. The purpose of the focus group was to determine changes in the awareness, education, and behavior of the public as a result of stormwater education efforts in 2008 and 2009. Results of that session were used by GVMC and the LGROW Public Engagement Committee to further enhance the goals, objectives, and deliverables of the MS4 program.

The 2017 focus group was held at the offices of GVMC with the purpose to determine changes in the awareness, education, and behavior of the public as a result of stormwater education efforts since 2009.

In this report the results of the focus group will be evaluated, and recommendations given by participants will be used to edit and update the current LGRW MS4 PEP.

Methods

Focus group participants were nominated by local units of government that maintain MS4 permits. Each participating local unit of government was asked to submit two potential participants that meet the following criteria:

1. The nominees must live in Kent or Ottawa Counties, specifically in the Lower Grand River Watershed, preferably in the community they are representing
2. The individuals do not manage or have direct involvement with your community's MS4 Permit
3. The nominees have had the potential to encounter LGROW deliverables (examples: events, educational outreach, brochures or fliers, LGROW website or Facebook page)

GVMC staff administered the 1.5 hour long focus group session on December 18, 2017. Twelve invited individuals were present, representing Kent and Ottawa Counties. Eleven of the 23 municipalities that GVMC works with regarding MS4 permits were represented. There was a diverse demographic represented among the group.

Focus Group Dialogue

All participants were asked to fill out the following questionnaire before discussion began:

Table 1 – Questionnaire
1. Name?
2. Affiliation or workplace?
3. What community (city, township, or village) do you live in?
4. What local parks do you most often go to?
5. What community do you work in?
6. What is the zip code where you live?

The results of this questionnaire indicated that all twelve participants live in the Lower Grand River Watershed and subwatersheds of the Lower Grand (Plaster Creek, Lower Rogue, Indian Mill Creek, and Spring Lake). Half of the participants worked for the municipality that they were representing for the focus group, although only one of those six work directly to manage their municipality's MS4 permit.

Discussion began with introductions of everyone present and an ice breaker question. The conversation followed six dialogue questions led by GVMC. The dialogue questions were as follows:

Table 2 – 2017 Dialogue Questions
1. What do you know about LGROW?
2. What LGROW information have you seen, heard, or read?
3. Did the message (that you have seen, heard, or read) influence you? If so, how?
4. Have you seen any stormwater or pollution prevention messaging at your workplace? Who was the message from? (LGROW, employer, other org.)
5. How could LGROW project deliverables be improved?
6. Where and how do you get information on community activities?

Question #1: What do you know about LGROW?

In all correspondence with participants prior to the focus group, the words 'Lower Grand River Organization of Watersheds' were not used. This was in order to determine the reach of the organization. When asked what they knew about LGROW, participants could not specifically spell out what LGROW stands for, but did display knowledge of watershed concepts and understand that the organization had something to do with watershed protection. One participant identified LGROW as the Lower Grand River Association of Watersheds and correctly described it as "a watershed partner for the larger area." Once told what LGROW stood for, participants were able to identify events and projects that LGROW partners and participates in, such as the Mayor's Grand River Cleanup (led by the West Michigan Environmental Action Council, WMEAC), Basin Buddy program and Stormwater Oversight Commission (City of Grand Rapids), MS4 permit management (GVMC/LGROW) and pet waste pledges (LGROW).

After topics for Question #1 were exhausted, GVMC staff explained the purpose of this focus group as it relates to the MS4 permitting process and explained the history of LGROW.

Question #2: What LGROW information have you seen, heard, or read?

The purpose of this question was to learn which materials LGROW had successfully administered to the communities. Some participants mentioned school activities, rain barrel workshops, and tours/events at breweries. Others described activities that their individual communities completed as part of MS4 compliance, including displays at city hall, e-newsletters, no dumping signs on catch basins, and touch-a-truck events where the DPW conducts outreach. Representatives from Grand Haven discussed their community's work with schools focusing on source water protection and recognized materials with LGROW's older "Keep it Pure: Yours to Protect" messaging. One participant was familiar with the LGROW Spring Forum and encouraged others to attend.

Participants wondered if LGROW ran a Master Rain Gardener program and asked about LGROW's connection to WMEAC and to Plaster Creek Stewards. The only LGROW-specific information that participants were able to relay was storm drain markers and pet waste signs.

Discussion for this question also raised participant concerns regarding combined sewer overflow (CSO) that reaches the Lower Grand River from upstream communities and its local effects. Participants also questioned if there would be opportunity for LGROW to do outreach concerning PFAS drinking water contamination.

All participants received re-usable LGROW tote bags that contained LGROW promotional and public outreach materials. GVMC staff also presented a power point presentation that contained pictures of other LGROW materials that were used in the past, materials that could not fit into the tote bags (ex: storm drain stencils), and pictures from events or festivals that LGROW has been present at.

Question #3: Did the message (that you have seen, heard, or read) influence you? If so, how?

The discussion regarding Question #3 didn't focus on how the stormwater messages changed behavior in participants, but instead focused on the content of messages. Participants did indicate that they had seen 'Entering the [Lower Grand River] Watershed' signs, but discussion did not cover how that information affected their behavior. Most participants agreed that placing these signs at watershed boundaries is better than only along the stream, but one participant thought the signs were not useful because people ignore them on busy streets.

Storm drain markings were discussed at length, and the general group consensus was that storm drain markers are good to have. However, the way that the storm drains are marked can affect the purpose of the marking. For example, the group seemed to be in agreement that the circular LGROW drain markers are hard to read, and therefore the message they are trying to convey (no dumping, drains to local waterway), gets lost. Also, if all drain markers are in English, and they are used in a neighborhood that isn't predominately native English speakers, the message gets lost. Excellent points were made by focus group participants asking about LGROW's outreach in different languages, and approaching citizen perspectives from different cultural point of views. If someone is from a culture where it is common practice to dump things down the storm drain, they may need different educational messages than those who understand how local stormwater infrastructure works.

Question #4: Have you seen any stormwater or pollution prevention messaging at your workplace? Who was the message from (LGROW, employer, other org.)?

One participant shared that unless you are working for a DPW directly with the stormwater permit, one would not receive official stormwater training. However, in that community, there is stormwater education provided to employees, especially if their daily job encounters stormwater management best management practices (BMPs). The general consensus from the focus group was that participants hadn't seen much information about stormwater in their workplace, or couldn't specifically recall any stormwater messaging at work.

Question #5: How could LGROW project deliverables be improved?

Participants offered helpful and realistic ways for deliverables to be achieved, how to improve messaging and improved methods of outreach. One suggestion was to connect watershed education with drinking water quality. Citizens are often more concerned with the quality of drinking water than surface water and stormwater runoff. If a connection between stormwater and drinking water can be made, citizens may become more invested in stormwater messaging.

There were many ideas about the methods used to reach people. The general consensus was that LGROW needs a broader reach and more people need to be aware of stormwater messaging. Participants mentioned that they would like to see messages on billboards, on physical print materials such as newspapers or magazines, and/or in promotional videos that offer watershed education messaging.

New audiences and topics for outreach were also suggested, including educating residents of apartment complexes on their current impacts as well as how they can manage future properties, and educating owners of LEED buildings on maintenance of their green infrastructure.

One participant mentioned that communication with local governments is crucial. For example, LGROW has been encouraging people to wash their car on their grass (or at a commercial car wash) in order to avoid runoff polluted with soap and automobile fluids entering the storm sewer system through storm drains. However, it was mentioned that it is against some city codes to park your vehicle on the lawn and residents can get ticketed.

Question #6: Where and how do you get information on community activities?

Many participants received community information from the internet. Internet and social media sites mentioned included: Facebook, Instagram, Nextdoor, municipal websites, Experience Grand Rapids website, and Eventbrite.

Other sources include community newsletter and mailers, water bill mailers, and word of mouth. It was mentioned that word of mouth is extremely important in communities where people do not have access to the internet or smart phones. Also, participants expressed that it isn't enough to tell people about the watershed or stormwater pollution prevention, you also need to tell them why they should care about information you are presenting.

Other Discussion

GVMC staff asked for other suggestions for new LGROW promotional materials and giveaways that would help promote stormwater messaging. New ideas from the focus group participants included: phone accessories such as PopSockets, water bottle stickers to get free water refills (similar to a program Art Prize has used in Grand Rapids), conducting storm drain marking events with private neighborhood associations who would not otherwise have their drains marked by a municipality, pencils for kids at schools, politicians spreading the word when they go door-to-door during campaign season, and attending farmers markets to partner with farmers who could hand out information on LGROW's behalf.

Results

This focus group ended up being a very educational experience for its participants while providing valuable feedback on LGROW outreach activities. The mixed demographic of participants and the number of MS4 communities participating provided a fairly diverse view of LGROW's reach into the watershed, and participants shared many ideas to improve LGROW messaging.

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New Target Audiences

- *Municipal employees*
- *Adults through schoolchildren*
- *People living in apartment complexes*
- *LEED certified building owners*
- *Farmers*

Much of the focus group time was spent explaining to participants what LGROW does and why, instead of gaining insight on how to improve specific LGROW messages and materials. The fact that many of the participants were employees of municipalities participating in the MS4 program suggests that LGROW may need to emphasize improvement of outreach to these communities in order to extend our reach into the wider watershed community. Since these communities are meant to be assisting in spreading LGROW's stormwater messaging and materials, it is important that their employees understand LGROW's work. More stormwater messaging needs to be available to municipality employees regarding that municipality's stormwater permit and program. Focus group participants were not opposed to learning more about their municipality's program, instead they seemed genuinely interested to know more about it and seemed willing to share that information with others. LGROW needs to find a more effective way for municipalities to share stormwater program information with municipality employees.

Frequently, LGROW focuses its attention on educating school children. It was suggested that information could be given to children at school for them to take home to their parents. Adults may become more invested in the messaging if it comes to them from their children. One participant suggested that LGROW spends a lot of time educating children, and should focus on targeting its messages to adults. An effective way to reach many adults at one time would be to expand messaging to apartment complexes. After this comment was made, other participants agreed, and suggested that private home associations, or subdivisions be brought into the loop in order to reach many adults who have a vested interest in the watershed, but aren't receiving messaging from another source. Other target audiences suggested were the owners of local LEED certified buildings. It is a good idea to reach out to these owners because they may need education on how to maintain their green infrastructure (GI).

Reworking Messages

- *Translating materials in to the language of the neighborhood*
- *Address 'why' citizens need to know the message presented*
- *Simplify messages*

Participants stressed the importance of materials being available in the language of citizens that LGROW is wishing to serve. There is a large Hispanic population in West Michigan, and in order to reach those people, materials in Spanish should be available. It is also important to take into consideration cultural values because many people may not understand how their local stormwater infrastructure works. While educating people on how the storm sewer works, focus group participants also mentioned that it

is important to explain to people why LGROW messages are important and how stormwater affects their everyday life. Messages should also be simple, in order to ensure understanding and avoid confusion.

Delivery Mechanisms

- *Placement of watershed information (placement of 'Entering the Watershed' signs, more signs for GI)*
- *Tours of municipalities and events at breweries*
- *Word of mouth*
- *Presence at festivals*
- *Advertising in churches in the watershed*

There was excellent discussion by the group about ways that they would like to receive more information regarding stormwater messaging, and the places where they thought that messaging would be well received in the watershed.

'You are now entering the [Lower Grand River] Watershed' signs were deemed helpful by participants. Only one participant expressed that these signs are not helpful to citizens, because if you drive past them frequently in your neighborhood, you quickly become immune and ignore them. There was discussion about the placement of the watershed signs, and the group seemed to agree that it is helpful to have the signs placed at watershed boundaries, not directly at river or stream crossings. However, it was suggested that if signs were placed along bike or walking trails, there would be an opportunity for people to stop and read the sign and any other information provided with it. It is not practical for a driver of a car or passenger to read the whole sign while driving by. It was suggested that LGROW consider placing more signs in parks with watershed information, where interested parties will stop and read. Participants also noted that you might reach more people if you have a sign on a roadside versus a trail based on how busy that road or trail is.

Participants noticed that stormwater education is often given during facilities tours at municipalities, and that is a good place to get information to a captive audience. Also, many people have an interest in local breweries, so events or messaging promoted at breweries would also be successful.

Word of mouth is extremely helpful in communities for people who do not have internet access or smartphones. It was suggested that LGROW find a community leader and use them to spread educational messages.

Attending festivals is another mechanism that was suggested during the focus group, and advertising events or stormwater messaging in churches was also mentioned. Festivals and churches usually contain many local leaders, and this would be a great way to get active community members involved.

Key take-aways for LGROW from the focus group are summarized in the following table:

How LGROW messages can be improved	
New Target Audiences	• *Municipal employees* • *Adults through schoolchildren* • *People living in apartment complexes* • *LEED certified building owners* • *Farmers*
Reworking Messages	• *Translating materials in to the language of the neighborhood* • *Address 'why' citizens need to know the message presented* • *Simplify messages*
Delivery Mechanisms	• *Placement of watershed information (placement of 'Entering the Watershed' signs, more signs for GI)* • *Tours of municipalities and events at breweries* • *Word of mouth* • *Presence at festivals* • *Advertising in churches in the watershed*

Future Action Steps

Using the information provided from the focus group, the PEP for the LGRW communities can be edited to better serve the public. The challenges, successes, and recommendations communicated in this report will be evaluated to modify the PEP as needed. The updated PEP will result in a more effective public outreach campaign to reduce stormwater pollution and raise MS4 awareness during the next permit cycle.

Photos


LGROW Stormwater
Outreach Materials
LOWER GRAND RIVER
ORGANIZATION OF WATERSHEDS


Drain Markers & Door Hangers

ESD Material Tracking 2017-2018

Date of Event	Event Title	Event Description	Adopt a Catch Basin	Be Stormwater Savvy- Don't let a wood drop go bad	Environmental Tip #1 - Water & Oil Do Not Mix	Environmental Tip #2 - Don't Rush to Flush	Environmental Tip #3- No Wipes in the Pipes	Environmental Tip #4 - Rain water is not Wastewater	Environmental Tip #5 - Resort It! Don't Ignore it.	Environmental Tip #6 - We Never Close	Environmental Tip #7- Maintain the Drain	Environmental Tip #8- Water Conservation	Landscaping for Water Quality	Rain. Rain	Sanitary and Stormwater Sewers	Stormwater & the Construction Industry	Tinsutie Coloring Books (Kent County Drain Commissioner)	Use Phosphorus-Free Fertilizer	Water. Michigan's Most Valuable Resource (MWEA Jobs Booklet)	Water Tools for Teachers	WM Take Back the Meds	Three Decades of Work. A Lifetime of Cleaner Work Brochure	Other	Brochure Name:	Other 2	Brochure Name:	Current Brochure Total:	ESD Pens	Cell Phone Wallets	Sticky Notes	Water Bottles	Doggie Bag dispenser/poop bags	LGROW Magnets	Tattoos	311 sticker	Tote Bae	ESD Sunglasses	ESD Crayons	Other	Giveaway Name:	Other 2	Giveaway Name:	Current Giveaway Total:	Anv Additional Comments
2018-05-21	US Steelheaders Monthly Meeting	Presented on IDEP	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	10	25	311 contact	15	HHW	50	25	0	0	0	0	1	0	0	0	0	0	1	Phone Dry Bag	0		27	I left information with the ersous.
2018-03-04	West Michigan Home and Garden Show	Home Show	2	0	1	0	0	0	0	0	0	0	8	0	0	0	4	0	2	0	2	0	1	A Homeowner's Guide to Septic Systems	1	The Solution to Stormwater Pollution	19	14	7	0	0	0	2	0	0	0	0	0	3	36	Chapsticks	1	Gardening Gloves	63	1- Grease Bags/Trappers- Stormwater Runoff Take It Personally
2018-03-03	West Michigan Home and Garden Show	Home Show	6	0	0	1	2	1	0	0	0	0	59	0	2	3	94	0	3	0	11	0	2	Homeowner's Guide to Septic Systems	16	Rain Gardens	197	99	12	0	0	0	30	8	0	0	0	61	82	46	Gardening Gloves	159	Chapsticks	497	2- Stop Pointless Personal Pollution- Sustainability Starts at Your Sink- Waste and Recycling Guide- 311 Brochure- Grease Bags/Trappers- Coasters- Trout Smes Balls
2018-03-02	West Michigan Home and Garden Show	Home Show	0	0	0	0	0	0	0	0	0	0	17	0	0	0	35	0	0	0	0	0	1	Drug Free Drains	2	The Solution to Stormwater Pollution	55	44	56	0	0	0	22	5	0	0	0	33	29	25	Gardening Gloves	55	Chapsticks	269	5- MSU Extn Lawn Care- 311 Brochure- Grease Bags/Trappers- Coasters
2018-03-01	West Michigan Home and Garden Show	Home Show	2	0	1	1	6	1	1	1	1	1	27	0	1	0	3	0	5	0	1	0	1	Drug Free Drains	1	Your Path to Water Wise Lawn Sprinkling	49	24	6	0	0		5	0	0	0	0	19	7	36	Gardening Gloves	33	Chapsticks	130	7- A Homeowner's Guide to Septic Systems- Be Stormwater Savvy- Don't Let a Good Drop go Bad- Waste & Recycling Guide- MSU Extn Lawn Care- Grease Bags/Trappers- LGROW Reporting Magnet- Coasters- Trout Smes Balls
2017-06-06	Commissioner's Night Out	Meet and Greet with Mayor and Commissioners at the Knic Center	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1	CSO Trifold brochure	2	HOZMAN.ung brochures	7	2	0	0	0		0	0	0	0	0	0	0	0				0	Additional Items- A Homeowner's Guide to Septic Systems- Waste & Recycling Guide- MSU Extn Lawn Care- Grease Bags/Trappers- LGROW Reporting Magnet- Coasters- Trout Smes Balls
2017-03-02	Home Show	Home Show	14	0	13	18	24	15	16	13	17	14	86	2	0	0	122	14	0	0	36	0	1	Drug Free Drains	1	ESD Stormwater Quality Improvements	406	99	0	0	0		40	0	1	9	0	121	128	31	Gloves	24	Grease Bags	332	Phow WWT Works for You!
2017-03-02	Home Show	Home Show	14	0	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0		27	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2017-04-29	Dia del Nino	Dia del Nino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0		0	0	0	0	0		11	0	0	0	0	0	0	0		0		11	This is an additional submission for the Dia del Nino event.
2017-04-29	Dia del Nino	Dia del Nino	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	0	0	0	0	0	16	Rain Garden	5	Notices	141	0	0	0	0		0	0	0	0	0	133	0	25	Gloves	0		25	
2017-05-06	Party for the Planet	Party for the Planet	2	0	0	0	0	0	0	0	0	0	53	1	1	0	0	5	0	0	0	2	10	Safe Homes	4	Storm Runoff	85	75	0	0	0		85	0	0	4	0	152	0	59	Gloves	5	Lawn Care Tips	228	
2017-05-04	School Presntation	presentation on wastewater and stormwater treatment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	Wastewater treatment: students resource guide	1	Surface Water: students resource guide	2	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2017-05-04	School presentation	presentation on wastewater and stormwater treatment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	About Wastewater Treatment	25	Go with the Flow	26	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2017-05-04	School Presentation	presentation on wastewater and stormwater treatment	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	ESD Storm Water Quality Improvements	1	3 decades of work: A Lifetime of Cleaner Water	2	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2017-04-27	Public Tour	tour of the treatment process for earth week	1	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	2	0	1	hazardous waste disposal	0		8	0	0	0	0		0	0	0	0	0	0	0	12	Heron Stickers	0		12	
2017-04-06	East Minister Church	Church wanted to have materials to distribute about the environment	0	0	0	0	0	0	0	0	0	0	15	0	0	0	0	15	0	0	15	15	15	A Fish Story	15	The Solution to SW Pollution	75	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2017-02-09	Fresh to Flush	Science on Tap - Speakeasy Lounge	0	0	0	0	20	0	0	0	0	0	10	0	0	0	0	0	0	0	0	10	0		0		30	0	0	0	0		0	0	0	0	0	70	0	0		0		0	Presentation to 200+ on the history of the Grand River and Wastewater.
2016-10-28	Spring Lake Rotary Club	Discussing recent CSO work/stormwater management	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41	0		0		0	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2016-10-27	City Hall	CSO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0		0		0	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2016-09-15	Tremont Rain Garden Neighborhood Maintenance	Public event for rain garden maintenance and stormwater education	0	0	0	0	0	0	0	0	0	0	1	0	0	0	25	0	0	0	0	0	0		0		26	0	0	0	0		0	0	0	0	0	0	25	0		0		25	
2016-08-22	utility of the future tour	public tour	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	13	Go With the Flow (WEF publication)	0		23	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2016-08-10	unitedwaynight	program to bring relevancy from workplace into classroom	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	go with the flow	1	about wastewater treatment	2	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2016-07-26	Tour - Mayors Intern	Tour	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0		0	0	0	0	0		0	0	0	0	0	0	0	0		0		0	Two Person Tour
2016-06-02	Rain Garden & Plaster Creek Tour	students from Caledonia are studying watersheds and raingardens	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	Rain gardens. Why do we need a rain garden	1	GRWWP rain garden plant species	4	1	0	0	0		0	0	0	0	0	0	0	0		0		1	Grous is a part of ersoundwell
2016-05-23	Forest Hills Northern High School visit	2 students from FHN visited with Mike Lunn this morning to work on a class proj	30	30	30	30	30	30	30	30	30	30	0	0	0	0	0	0	0	0	0	0	0		0		240	0	0	0	0		0	0	0	0	0	0	0	0		0		0	
2016-05-07	Party for the Planet - John Ball Zoo	Public Environmental Education at Zoo Event	3	0	0	0	0	0	0	0	0	0	10	0	0	0	12	0	0	0	0	0	0		0		25	0	0	0	0		14	0	0	0	0			45	Herron Sticker	30	ESD Crayons	89	Event focused for children (ages 6-12) were largest group.Also had the "wipes display" bottles.

Post Details

City of Grand Rapids Environmental Services Department Like Page

Published by Kolene Allen [?] · August 18, 2017 ·

City of Grand Rapids Environmental Services Department updated their info... Send Message

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Performance for Your Post

135 People Reached

2 Likes, Comments & Shares

2 Likes	**2** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
0 Shares	**0** On Post	**0** On Shares

4 Post Clicks

0 Photo Views	**2** Link Clicks	**2** Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department Like Page

Published by Kolene Allen [?] · September 7, 2017 ·

The 14th Annual Mayors' Grand River Cleanup is Saturday from 9 am - 1 pm! The annual event is hosted by West Michigan Environmental Action Council.

This is a great way to help out the community and keep the Grand River clean.

You can get more info and sign up using the link below. Here's the schedule:... See More

Mayors' Grand River Cleanup - WMEAC

Mayors' Grand River Cleanup

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Tasha Shively, Stan Kirk and 2 others 1 Comment 1 Share

Like Comment Share

Performance for Your Post

296 People Reached

8 Likes, Comments & Shares

4 Likes	**4** On Post	**0** On Shares
2 Comments	**2** On Post	**0** On Shares
2 Shares	**1** On Post	**1** On Shares

18 Post Clicks

0 Photo Views	**2** Link Clicks	**16** Other Clicks

NEGATIVE FEEDBACK

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Post Details

City of Grand Rapids Environmental Services Department added 6 new photos to the album: Mayors' Grand River Cleanup 2017 — in Grand Rapids, Michigan.

Like Page

Published by Kolene Allen [?] · September 12, 2017 ·

Some of our staff volunteered on Saturday at the Mayors' Grand River Cleanup. Hosted by West Michigan Environmental Action Council, this annual event ogranizes over 1000 volunteers to pick up trash along a 40 mile stretch of the Grand River and its' tributaries in Grand Rapids, Grandville, Walker, Wyoming and Plainfield Township. This year, the event included roads and storm basins in the Seeds of Promise neighborhoods to collect trash BEFORE it enters the river, which is where our staff were able to help out.

Performance for Your Post

4,684 People Reached

16 Likes, Comments & Shares

14 Likes	**14** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
2 Shares	**2** On Post	**0** On Shares

47 Post Clicks

31 Photo Views	**0** Link Clicks	**16** Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · September 13, 2017 ·

This past Friday, students from the North Park Montessori Academy helped The City of Grand Rapids and LGROW.org with the planting of eight trees along Eastern Avenue. This planting is part of a bioswale to be installed near the school and is made possible through a Great Lakes Restoration Initiative grant. Next week, the students will take on planting nearly 450 native plants in the bioswale.

A bioswale is a green landscaping feature that uses native plants to clean stormwater runoff by allowing it to drain slowly, cleaning it as it filters through the plants before entering the groundwater.

Performance for Your Post

909 People Reached

39 Reactions, Comments & Shares

25 Like	**20** On Post	**5** On Shares
8 Love	**7** On Post	**1** On Shares
2 Comments	**2** On Post	**0** On Shares
5 Shares	**5** On Post	**0** On Shares

92 Post Clicks

46 Photo Views	**0** Link Clicks	**46** Other Clicks

NEGATIVE FEEDBACK

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Post Details

City of Grand Rapids Environmental Services Department updated their cover photo.

Like Page

Published by Kolene Allen [?] · September 18, 2017 ·

With over 17,000 storm drains in the city, we need your help to keep them clear this fall as the leaves drop. Storm drains that get clogged with leaves and other debris can flood streets and yards. If you see leaves covering ones near your home or business, become a Basin Buddy and help us keep Grand Rapids safe and clean. Thank you!

Learn more HERE: https://www.grandrapidsmi.gov/.../Programs-and-In.../Basin-Buddy

View Insights | Boost Unavailable

Greg Wemple, Alyssa Wagner and 14 others — 1 Comment 6 Shares

Like | Comment | Share

Performance for Your Post

798 People Reached

30 Likes, Comments & Shares

22 Likes	**16** On Post	**6** On Shares
2 Comments	**1** On Post	**1** On Shares
6 Shares	**6** On Post	**0** On Shares

51 Post Clicks

16 Photo Views	**1** Link Clicks	**34** Other Clicks

NEGATIVE FEEDBACK

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Post Details

City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · September 19, 2017 ·

It's SepticSmart Week so we're sharing tips all week long to help homeowners properly care for their septic tanks. One important tip to owning a septic tank is to keep it inspected on a regular basis. This can help save you money!

Learn more at http://epa.gov/septicsmart

#SepticSmart

Performance for Your Post

352 People Reached

6 Likes, Comments & Shares

4 Likes	**1** On Post	**3** On Shares
0 Comments	**0** On Post	**0** On Shares
2 Shares	**2** On Post	**0** On Shares

3 Post Clicks

0 Photo Views	**1** Link Clicks	**2** Other Clicks

NEGATIVE FEEDBACK

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Post Details

City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · September 20, 2017 ·

It's SepticSmart Week so we're sharing lots of pointers all week long on how homeowners can keep their septic systems running efficiently and with as little impact on the environment as possible.

Did you know that trees and shrubs near your drain field can cause damage? To maximize the life of your septic's drain field, shield your field!

Learn more at http://www.epa.gov/septicsmart... See More

Performance for Your Post

272 People Reached

4 Likes, Comments & Shares

3 Likes	**2** On Post	**1** On Shares
0 Comments	**0** On Post	**0** On Shares
1 Shares	**1** On Post	**0** On Shares

6 Post Clicks

1 Photo Views	**1** Link Clicks	**4** Other Clicks

NEGATIVE FEEDBACK

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Post Details

City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · September 21, 2017 ·

As part of SepticSmart Week, we're helping homeowners keep their septic systems running smoothly by sharing tips all week long. Don't overload your systems with too much water. Whenever possible, stagger your water use. In other words, don't run your dishwasher, laundry, and other appliances that use water all at the same time!

Learn more at http://www.epa.gov/SepticSmart

#SepticSmart

Performance for Your Post

1,161 People Reached

14 Likes, Comments & Shares

6 Likes	**4** On Post	**2** On Shares
6 Comments	**3** On Post	**3** On Shares
2 Shares	**2** On Post	**0** On Shares

37 Post Clicks

3 Photo Views	**2** Link Clicks	**32** Other Clicks

NEGATIVE FEEDBACK

1 Hide Post	**0** Hide All Posts
0 Report as Spam	**0** Unlike Page

Reported stats may be delayed from what appears on posts

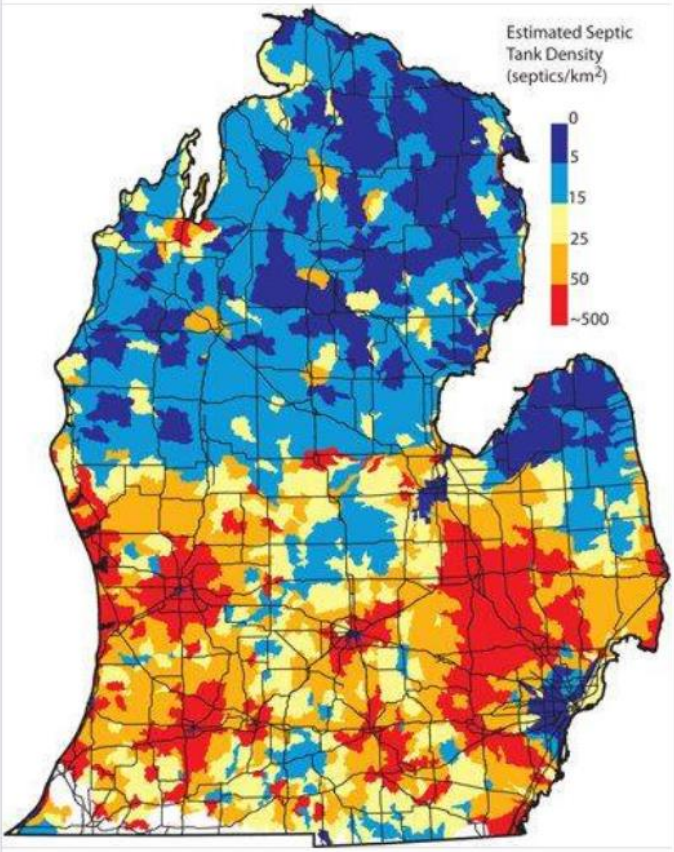
Post Details

City of Grand Rapids Environmental Services Department
shared a photo.
Published by Kolene Allen [?] · September 22, 2017 ·

There are approximately 200 known septic systems within The City of Grand Rapids. Keeping them in good working condition is so important, since systems that aren't properly maintained and in good working condition can leak. In fact, a recent study by GVSU estimates that in Kent Allen County alone, about 1 million gallons of raw sewage per day enters our lakes and streams from leaking septic systems.

Here's a heat map of septic system locations throughout the lower peninsula, for anyone who's curious.

#smartseptic



West Michigan Environmental Action Council
September 21, 2017 ·

Like Page

Performance for Your Post

619 People Reached

15 Reactions, Comments & Shares

6 Like	**6** On Post	**0** On Shares
2 Wow	**2** On Post	**0** On Shares
7 Comments	**1** On Post	**6** On Shares
0 Shares	**0** On Post	**0** On Shares

83 Post Clicks

6 Photo Views	**0** Link Clicks	**77** Other Clicks

NEGATIVE FEEDBACK

1 Hide Post	**0** Hide All Posts
0 Report as Spam	**0** Unlike Page

Reported stats may be delayed from what appears on posts

Post Details

City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · September 29, 2017 ·

Last Friday, a group of students from the North Park Montessori Academy worked hard during their second planting day this month. They helped The City of Grand Rapids and LGROW.org plant nearly 450 native perennials in the new bioswale located at Eastern Avenue and Elmdale Street. The plants included black-eyed susan, fox sedge, butterfly milkweed, sky-blue aster, yarrow and purple love grass.

Get More Likes, Comments and Shares
Boost this post for $10 to reach up to 5,200 people.

Performance for Your Post

435 People Reached

20 Likes, Comments & Shares

20 Likes	**20** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
0 Shares	**0** On Post	**0** On Shares

41 Post Clicks

20 Photo Views	**0** Link Clicks	**21** Other Clicks

NEGATIVE FEEDBACK

0 Hide Post	**0** Hide All Posts
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Post Details

City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · September 30, 2017 ·

Did you know that there is a right way and a wrong way to empty your swimming pool? Click on the link below for three easy steps to properly empty your pool while protecting the environment.

LEARN MORE: http://bit.ly/GRPools

Get More Likes, Comments and Shares
Boost this post for $10 to reach up to 5,200 people.

View Insights | Boost Post

Michael Staal, Marie Cimochowicz and William Edwards — 3 Shares

Like · Comment · Share

Performance for Your Post

1,033 People Reached

6 Likes, Comments & Shares

3 Likes	**3** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
3 Shares	**3** On Post	**0** On Shares

32 Post Clicks

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Post Details

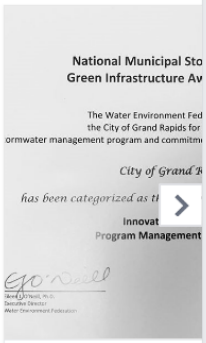
City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · October 6, 2017 ·

It was a great honor to be recognized by the Water Environment Federation (WEF) at the annual WEFTEC 2017 Conference for The City of Grand Rapids' commitment to our innovative stormwater management program and green infrastructure projects. Thank you #WEFTEC17!

WEF announces third year of MS4 award winners at WEFTEC 2017 - The Stormwater



WEF announces third year of winners at WEFTEC 2017 - Th

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Randy DeBoer, Raoul Duke and 12 others

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Performance for Your Post

392 People Reached

15 Reactions, Comments & Shares

13 Like	12 On Post	1 On Shares
2 Love	2 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

10 Post Clicks

0 Photo Views	3 Link Clicks	7 Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department shared a post.

Published by Carrie Rivette [?] · October 14, 2017 ·

LGROW.org
October 13, 2017 ·

Performance for Your Post

392 People Reached

11 Likes, Comments & Shares

9 Likes	9 On Post	0 On Shares
2 Comments	2 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

11 Post Clicks

4 Photo Views	0 Link Clicks	7 Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department
Published by Kolene Allen [?] · November 17, 2017 ·

Like Page

There are over 18,000 storm drains in The City of Grand Rapids. If you have one in front of your house, now is a great time to make sure it is clear of debris. Keeping them clear not only helps keep the Grand River clean, but can also prevent flooding on the street.

You can even adopt a storm drain and earn myGRcitypoints. Learn more: http://grcity.us/basinbuddy

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Kayne Ferrier, Dawn Roskamp Harvey and 7 others — 17 Shares

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3,259 People Reached

58 Reactions, Comments & Shares

34 Like	9 On Post	25 On Shares
3 Love	0 On Post	3 On Shares
3 Comments	0 On Post	3 On Shares
18 Shares	17 On Post	1 On Shares

95 Post Clicks

15 Photo Views	2 Link Clicks	78 Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department updated their cover photo.
Published by Kolene Allen [?] · December 8, 2017 ·

Like Page

Please help us prevent flooding this winter. Blocked storm basins can cause flooding issues. If you see snow or ice build up on a storm basin, please clear it or call 311 (616-456-3000) for assistance.

Thank you for helping to keep our city safe and clean.

You can learn more about taking care of storm basins here: https://www.grandrapidsmi.gov/.../Programs-and-In.../Basin-Buddy

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Barney Boyer, Stan Kirk and 14 others — 28 Shares

Like · Comment · Share

Performance for Your Post

4,478 People Reached

73 Reactions, Comments & Shares

34 Like	15 On Post	19 On Shares
1 Love	0 On Post	1 On Shares
1 Haha	1 On Post	0 On Shares
10 Comments	0 On Post	10 On Shares
28 Shares	28 On Post	0 On Shares

143 Post Clicks

14 Photo Views	4 Link Clicks	125 Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department

Like Page

Published by Kolene Allen [?] · February 8 ·

The GVSU Urban Planning Association is hosting a very special talk with engineer and stormwater manager, Carrie Rivette, to showcase some of the exciting green infrastructure projects happening in The City of Grand Rapids. While the event is at GVSU, it is open to anyone interested in sustainability in the City. Carrie will speak on Monday, February 12th at 7 pm in Mackinac Hall B-1-118.

LANTHORN.COM

Grand Rapids stormwater manager to speak at GVSU on green infrastructure

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Tina Steadman, Catrina Chambers and 13 others — 2 Shares

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534 People Reached

24 Reactions, Comments & Shares

20 Like	**14** On Post	**6** On Shares
2 Love	**1** On Post	**1** On Shares
0 Comments	**0** On Post	**0** On Shares
2 Shares	**2** On Post	**0** On Shares

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Post Details

City of Grand Rapids Environmental Services Department updated their cover photo.

Like Page

Published by Kolene Allen [?] · February 28 ·

Now that the snow has melted, catch basins are becoming covered in leaves and debris. You can help us keep the Grand River clean by keeping them clear or calling 311 to report a clogged catch basin and we'll come take care of it right away.

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Jamee Bacinski, Lauren Odom and 10 others — 3 Comments 6 Shares

Like | Comment | Share

Performance for Your Post

587 People Reached

25 Likes, Comments & Shares

12 Likes	**12** On Post	**0** On Shares
7 Comments	**7** On Post	**0** On Shares
6 Shares	**6** On Post	**0** On Shares

50 Post Clicks

11 Photo Views	**0** Link Clicks	**39** Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department Like Page

Published by Michael Staal · March 3 ·

Stop by and see us today at the West Michigan Home and Garden Show at the Devos Place. We have plenty of free giveaways and information that you can use to protect your watershed.

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Haris Alibašić, Kayne Ferrier and 11 others

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Performance for Your Post

309 People Reached

13 Likes, Comments & Shares

13 Likes	13 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
0 Shares	0 On Post	0 On Shares

7 Post Clicks

6 Photo Views	0 Link Clicks	1 Other Clicks

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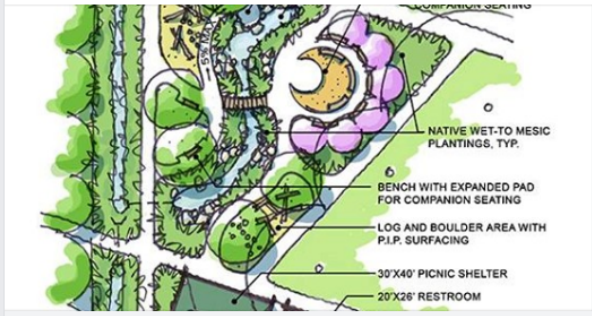
Post Details

City of Grand Rapids Environmental Services Department Like Page

Published by Kolene Allen · March 30 ·

We're really excited to get started on the new Roberto Clemente Park. The redesigned park will create more than just a fun place for families to spend time. Plans to manage stormwater will offer up some unique play areas while educating the public. The improved park will be the home to rain gardens, bioswales, and tributary streams - all that work with nature to clean water before it enters the Grand River and surrounding watershed.

Construction begins next summer.



RAPIDGROWTHMEDIA.COM

Roberto Clemente Park

City of Grand Rapids Environmental Services Department/Parks and...

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View Insights | Boost Post

Haris Alibašić, Jim Winslow and 17 others 5 Shares

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Performance for Your Post

717 People Reached

32 Reactions, Comments & Shares

23 Like	15 On Post	8 On Shares
4 Love	4 On Post	0 On Shares
0 Comments	0 On Post	0 On Shares
5 Shares	5 On Post	0 On Shares

50 Post Clicks

0 Photo Views	25 Link Clicks	25 Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department shared a post.
Published by Kolene Allen [?] · May 1 ·

We had a great time at MiCareerQuest 2018, a huge event that connects 10,000 people (mostly students) with career options. We were there to talk about the different jobs available in the water sector. We brought along our "camera truck," a high-tech inspection device on wheels! There is a robotic camera attached to a cable that can travel down sewer pipes to not just identify problems, but all tell us the condition of popes so that we can fix problems before they begin.

The Michigan Water Environment Association stopped by and took a few pictures of us in action. You can check out all the job openings around the whole state in the water field on their job board at https://www.mi-wea.org/employment.php

Michigan Water Environment Association Like Page
April 27 ·

Here are some photos from the MiCareerQuest 2018 event hosted Wednesday in Grand Rapids. Approximately 10,000 people (mostly students) attended to learn about c...
See More

Performance for Your Post

111 People Reached

5 Likes, Comments & Shares

5 Likes	**5** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
0 Shares	**0** On Post	**0** On Shares

30 Post Clicks

11 Photo Views	**1** Link Clicks	**18** Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department Like Page
Published by Michael Staal [?] · May 21 ·

Last Friday, the City of Grand Rapids revealed new signage at the Elmdale Street Bioswale and led a day of bioswale maintenance and storm drain clean-up in the surrounding area. We couldn't have done it without the hardworking 4th, 5th, and 6th graders form the North Park Montessori Academy and our amazing partner, LGROW.org. Together, we were able to clean numerous catch basins and keep the bioswale looking nice for the summer ahead.

Performance for Your Post

363 People Reached

17 Reactions, Comments & Shares

14 Like	**14** On Post	**0** On Shares
3 Love	**3** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
0 Shares	**0** On Post	**0** On Shares

23 Post Clicks

12 Photo Views	**0** Link Clicks	**11** Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department shared a post.
Published by Kolene Allen [?] · May 31 ·

Grand Rapids Whitewater (GRWW) has an excellent opportunity this summer for high school students starting their junior year in the fall.

The Summer Science and Leadership Program is a 10-day class where students will:
• Conduct a hands-on science investigation of the federally endangered snuffbox mussel.
• Learn about and practice principles of Design Thinking, a process for creativity and innovation.... See More

LGROW.org is feeling excited.
May 30 ·

Grand Rapids Whitewater (GRWW) is launching an amazing summer research and leadership program for high school students completing their sophomore or junior year...

See More

GRANDRAPIDSWHITEWATER.ORG
Grand Rapids Whitewater » Summer Science and Leadership Program
Summer Science and Leadership Program By Elizabeth Bush On May 24, 2018 Big City, Little Mussel The Grand River is the heart of our city and the intersection of its history, business, ecology, and social…

View Insights | Boost Unavailable

Emily Bryant | 1 Share

Like | Comment | Share

Performance for Your Post

84 People Reached

2 Likes, Comments & Shares

1 Likes	**1** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
1 Shares	**1** On Post	**0** On Shares

7 Post Clicks

0 Photo Views	**1** Link Clicks	**6** Other Clicks

NEGATIVE FEEDBACK

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Promotions | View Insights | Boost Unavailable

Post Details

City of Grand Rapids Environmental Services Department
Published by Kolene Allen [?] · June 8 ·

Like Page

Our friends at LGROW.org have some great tips for protecting our watershed this summer. Please take a look at this handy guide and share with friends and family so we can all have a safe, fun, and happy summer!

Performance for Your Post

1,236 People Reached

41 Reactions, Comments & Shares

33 Like	**17** On Post	**16** On Shares
1 Love	**1** On Post	**0** On Shares
1 Comments	**1** On Post	**0** On Shares
6 Shares	**6** On Post	**0** On Shares

35 Post Clicks

13 Photo Views	**0** Link Clicks	**22** Other Clicks

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Post Details

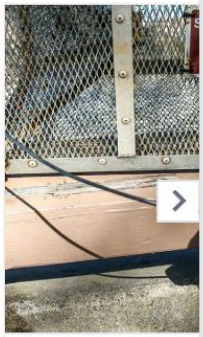
City of Grand Rapids Environmental Services Department Like Page

Published by Kolene Allen [?] · June 11 ·

It's been almost 40 years since a study on the sea lamprey population has been done in the Grand River. As we prepare to bring the rapids back to the river, an estimate on the number of sea lampreys in the Grand River will help us better understand how to create a barrier to keep them spreading further into Michigan.

Sea lampreys, native to the Atlantic, reached the Great Lakes through shipping canals in the past century. They have a devastating effect on our native species. The eel-like predators have razor sharp teeth that attach to fish, suck their blood, and kill them. It is estimated that one lamprey can kill around 40 pounds of fish in it's short lifetime. Creating a barrier to keep them from traveling further into the Great Lakes is a key factor we must consider when restoring the rapids.

Researchers trap Grand River lamprey with sex pheromones



Researchers trap Grand Rive sex pheromones

Performance for Your Post

634 People Reached

22 Reactions, Comments & Shares

18 Like	**14** On Post	**4** On Shares
1 Wow	**0** On Post	**1** On Shares
0 Comments	**0** On Post	**0** On Shares
3 Shares	**3** On Post	**0** On Shares

53 Post Clicks

0 Photo Views	**10** Link Clicks	**43** Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department shared a post.

Published by Kolene Allen [?] · June 26 ·

Get a free home site assessment and recommendations for creating the best suitable environment on your property to improve water quality.

LEARN MORE: https://www.lgrow.org/rainscaping/

Rogue River Home Rivers Initiative Project - Trout Unlimited Like Page

June 19 ·

Through the Grand River Rainscaping Program, Trout Unlimited and other partners including LGROW.org, Plaster Creek Stewards, City of Grand Rapids Environmental ...

See More

Performance for Your Post

98 People Reached

13 Likes, Comments & Shares

11 Likes	**11** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
2 Shares	**2** On Post	**0** On Shares

26 Post Clicks

3 Photo Views	**4** Link Clicks	**19** Other Clicks

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Post Details

City of Grand Rapids Environmental Services Department shared an event.

Published by Kolene Allen [?] · June 21 ·

Join us this weekend at Riverside Park for the 9th Annual Grand River Water Festival and celebrate water with beer, bands, and food! Click below for the amazing music line up.

SAT, JUN 23

Grand River Water Festival

Riverside Park, 2nd Boat Launch, 2001 Monroe Ave…

★ Interested

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Rachel M Frantz, Stan Kirk and Raoul Duke

Like Comment

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172 People Reached

3 Likes, Comments & Shares

3 Likes	**3** On Post	**0** On Shares
0 Comments	**0** On Post	**0** On Shares
0 Shares	**0** On Post	**0** On Shares

7 Post Clicks

0 Photo Views	**0** Link Clicks	**7** Other Clicks

NEGATIVE FEEDBACK

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FY2017 Annual Report
Stormwater Oversight Commission

April 2018

City of Grand Rapids, MI
Environmental Services Department
1300 Market Avenue SW
Grand Rapids, MI 49503

Table of Contents

1. INTRODUCTION

The City of Grand Rapids' Stormwater Oversight Commission (SOC) was established by the City Commission by resolution number 83170 on January 28, 2014. Per the resolution, the SOC shall:

1. Support and advocate for the goals and objectives established in the 2013 Stormwater Asset Management Plan.

2. Monitor the community's changing stormwater needs and recommend program priorities to address those needs.

3. Be an advisory body of the City.

4. Report on and make recommendations to the City Manager and City Commission on stormwater performance, review expenditures and capital investment strategies.

5. Monitor achievement of stormwater outcomes.

6. Review the City's annual (Stormwater) Progress Report.

7. Make recommendations to the City Manager and City Commission regarding policies.

8. Plan for achieving Stormwater Management Level of Service "C" as provided in the 2013 Stormwater Asset Management Plan.

9. Review, recommend and approve changes to the Stormwater Technical Reference Manual and report all changes to the City Commission and City Manager.

10. Annually review and recommend changes to the established criteria within the 2013 Stormwater Asset Management Plan for facility improvements, land acquisition, capital renovation or development.

11. Annually review the investments of the income tax extension designated for Vital Streets.

12. Advise the Environmental Services Manager regarding the effect of budgetary decisions on the stormwater system and interpretation of policy as needed.

13. Assist the Environmental Services Manager in the evaluation of stormwater programs and facilities and make recommendations for improvements.

Members of the SOC are:

- Elaine Sterrett Isely – Chairperson 2017
- Kristine Bersche – Vice Chairperson 2017
- Jack Barr
- Edgar L. Davis
- Elizabeth Hernandez
- Joshua Lunger
- Randal Meyering
- Christine Olmeda
- Ken Yonker

The SOC began meeting in August of 2014. The meetings in 2014 focused on general stormwater education and state and federal regulations governing stormwater. The meetings in 2015 focused on achieving Level of Service "C" in asset management and developing new technical references for future changes to stormwater technical reference manual. The meetings in 2016 focused on policy development required for both the Vital Streets plan and the requirements of the upcoming municipal separate storm sewer system (MS4) permit from the Michigan Department of Environmental Quality (MDEQ). In 2016, the Stormwater Oversight Commission served as the Green Infrastructure Work Group for the development of the Vital Streets Plan. The green infrastructure portion of the Vital Streets Plan focused on fitting the green infrastructure best management practices to the Vital Streets Plan street type and mode.

In 2017, the Stormwater Oversight Commission focused on continued progress toward Level of Service "C" in the stormwater system asset management and review of the anticipated stormwater standards. In addition, the Stormwater Oversight Commission performed the following:

- Approved the Green Infrastructure Guidance Manual and associated Green Infrastructure Fact Sheets
- Recommended the change from 2 year storm release rate to a 1 year storm release rate for Extended Detention Standards in the upcoming MS4 permit.
- Signed a Memorandum of Understanding with the Vital Streets Oversight Commission creating a liaison position for a member on each commission to serve on the other
- Recommended the acceptance of the West Michigan Environmental Action Council's proposal for the updating the City's public education program funded by the SAW Grant
- Had a combined tour with the Vital Streets Oversight Commission to look at green infrastructure installations and an active street reconstruction.

Agendas and Minutes for the FY2017 meetings can be found on the City of Grand Rapids public meeting portal here.

2. STORMWATER PERFORMANCE

2.1 Report

The City's stormwater performance is governed by the Michigan Department of Environmental Quality (MDEQ). The annual progress report for the MS4 program was submitted to the MDEQ in September 2017. This report details the City's stormwater work including but not limited to stormwater public education, stormwater maintenance, and soil erosion sedimentation control permit reviews. The City's 2017 annual report was submitted to the MDEQ on September 26, 2017, and on December 1, 2017, the MDEQ acknowledged receipt of our annual report with no comments. A copy of the report can be found here.

In this year's report the City of Grand Rapids highlighted its continued excellence with stormwater public education. The City participated in multiple outreach events, including the 2017 West Michigan Home & Garden Show, the 2017 River City Water Festival, the 2017 Party for the Planet, and the Día Del Niño. In addition, City staff led tours of the Water Resource Recovery Facility (WRRF) for over 1,175 people from eight year olds to adults. This tour not only describes all of the processes at the state-of-the-art WRRF, but also explains the importance that each person has on stormwater.

2.2 Recommendations

Given the performance report as stated above, there are no recommendations for the City's stormwater performance at this time.

3. STORMWATER EXPENDITURES

3.1 Report

The SOC reviewed expenditures at the end of FY2017 and also approved the FY2019 budget submission. Tables 1 and 2 summarize stormwater management and stormwater maintenance budget expenditures. The FY2017 stormwater management budget was $397,690, and 54%, or $213,740, of the budget was expended in the fiscal year. This was due to a vacancy in the Engineering Assistant I role in the Soil Erosion Sedimentation Control Inspectors and the plan in contractual services budget in Stormwater Management changed over the year.

Table 1. FY2017 Stormwater Management Expenditures

	Budget	**Expenditures**	**Percent of Budget**
Stormwater Management	$397,690	$213,740	54%
- Contractual Services	$205,810	$75,162	37%

The FY2017 stormwater maintenance budget was $1,052,181, of which $863,159 was expended in the fiscal year. The expenditures in the contractual services category exceeded the forecasted budget due to the Vital Streets contract and lack of available personnel to perform stormwater maintenance and repair work.

Table 2. FY2017 Stormwater Maintenance Expenditures

	Budget	**Expenditures**	**Percent of Budget**
Stormwater Maintenance	$1,052,181	$863,159	82%
- Personnel	$362,321	$107,835	30%
- Contractual Services	$126,102	$224,762	178%
- Supplies	$29,811	$48,074	161%

In FY2017, the City of Grand Rapids increased the tree canopy by 424 trees, installed more than 10 infiltration basin, and planted multiple rain gardens and bioswales. With the increase of the tree canopy alone, the City is infiltrating an additional 254,400 gallons annually. Tables 3 layouts the breakdown of cost for each project type below. Out of the total project cost of $25.4 million, more than $500,000 was stormwater and green infrastructure cost and $8.3 million was Vital Streets cost.

According to the stormwater investment guidelines, approximately $2.1 million was estimated for expenditure on stormwater and green infrastructure in FY2017. According to Table 3, over $500,000 of that budget was expended. With the initial focus of Vital Streets being resurfacing, the opportunities for implementing green infrastructure are limited. Therefore, the expenditures are only approximately 25% of the budget.

Table 3. FY2017 Projects Funded by the Vital Streets Income Tax Investment

No.	Project Name	Infiltration Practice	Trees Volume Infiltrated per Year	Acreage of Treatment (First Inch)	Total Stormwater/ Green Infrastructure Costs	Total Vital Streets Cost	Total Project Cost
1	Reconstruction of Dorchester Avenue from Hall Street to Oxford Street	Remove 4 trees; bioretention basin; porous pavement; infiltration basins	-2400	25 sq. ft./tree	$174,036	$ 998,900	$ 1,054,000
2	Improvements in Ann Street from Turner Ave. to US-131 Northbound Ramp and in Turner Avenue from Ann St. to US-131 Southbound Ramp	Landscape Island			$14,600	$369,400	$369,400
3	Pedestrian Safety Improvements at Various Locations	24 trees; gateway landscaping ; remove 1 tree	13800	25 sq. ft./tree	$ 39,040.00	$ 1,336,263	$ 3,021,000
4	Reconstruction of College Avenue from Wealthy Street to Cherry Street	None			$ -	$ 233,300	$ 743,000
5	Reconstruction of Michigan Street from Monroe Avenue to Ionia Avenue	Infiltration planters; street trees , landscaping			$ 63,252	$ 597,400	$ 1,726,000
6	Livingston Reservoir Second Transmission Watermain (Contract No. 2 and No. 3)	67 trees	40200	25 sq. ft./tree	$ 32,920	$ 1,902,900	$ 8,603,000
7	Reconstruction of Oakland Avenue from B Street to Franklin Street	None			$ -	$ 333,000	$ 821,000

8	Improvements to Veteran's Memorial Park	Lump Sum			$ -	$ 34,270	$ 1,101,000
9	Resurfacing of Burton Street from Breton Avenue to the East Beltline (M37/M44)	None			$ -	$ 594,418	$ 1,320,000
10	Reconstruction of Nason Street from Will Avenue to Turner Avenue	Infiltration basins; remove 4 trees	-2400	25 sq. ft./tree	$ 9,600	$ 135,873	$ 347,500
11	Reconstruction of Ottawa Avenue from Michigan Street to Hastings Street	Rain garden; infiltration basin; remove 3 trees	-1800	25 sq. ft./tree	$ 18,950	$ 144,767	$ 1,356,000
12	Resurfacing of Fuller Avenue from Alexander Street to Franklin Street, Monroe Avenue from I-196 to Newberry Street and 32nd Street from Kalamazoo Avenue to East City Limits	7 Infiltration basins			$ 12,500	$ 699,006	$ 1,382,700
13	Rotomill/Resurfacing and Watermain Replacement in Fulton Street from Worcester Drive to Maryland Avenue	None			40$ -	$ 195,043	$ 1,122,500
14	Reconstruction of Melbourne and Lawrence Street from West End to Coit Avenue	Infiltration basins; remove 2 trees	-1200	25 sq. ft./tree	$ 25,618	$ 258,900	$ 984,000
15	Sidewalk in Richmond Street (City of Walker) from Maplerow Avenue to Mullins Avenue and from Pheasant Avenue	Remove 6 trees	-3600	25 sq. ft./tree	$ (3,000)	$ 225,500	$ 851,000

	to City Limits and Sidewalk and Storm Sewer in Richmond Street (City of Grand Rapids) from City Limits to Acacia Drive						
16	Improvements in Michigan Street from Bostwick Avenue to Barclay Avenue	Bioswales and streetscape			$ 25,890.70	$ 174,000	$ 474,000
17	Trees Planted with Local Contract - Rotomill/resurfacing and reconstruction - Various Locations	353 trees	211,800	25 sq. ft./tree	$ 122,810	$ 122,810	$ 122,810
	TOTAL		254,400		$ 536,218	$ 8,355,749	$ 25,398,910

3.2 Grants

During 2017, the Stormwater Oversight Commission has recommended pursuing and utilizing multiple grants to advance the stormwater efforts of the City of Grand Rapids.

Stormwater, Asset Management, and Wastewater (SAW) Grant

In November 2016, the City first received notice that the State of Michigan was awarding the City of Grand Rapids $2 million in grant funding for SAW grant funding. In addition to the grant funding, the City committed to provide $695,175 in matching funds to perform multiple tasks that will improve the City's stormwater sewer system and make it resilient for future generations. The grant funds will be used to perform the following work over the three year grant period:

- Hydraulic Model of the City's Stormwater System
- Basic Water Quality Model of the Lower Grand River Watershed
- Perform Supplemental Drainage System Cleaning & Condition Assessments
- Public Education Program Development
- Stormwater Incentives Program Development
- Compensatory Mitigation Program Development
- Procure a Tracking Database for Municipal Separate Storm Sewer System Permit Compliance

During the first year of the grant, the funding has been utilized for the following:

1. A computer model of the stormwater system was initiated.
2. The consulting engineer began delineating watersheds and performing an impervious cover study.
3. The City retained a contractor to perform additional cleaning and inspection of storm main.
4. A non-profit organization was hired to update the City's stormwater public education program.

In the upcoming year, a sub-consultant will perform a radar rainfall study.

Great Lakes Protection Fund Grant

In addition to the City's efforts to develop a Compensatory Mitigation Program through the SAW grant, American Rivers, a national advocacy organization, received a grant from the Great Lakes Protection Fund to develop a stormwater credit trading program for cities without a stormwater utility fee. Grand Rapids staff has met with American Rivers to discuss new MS4 permit requirements from the State of Michigan. American Rivers also has met with Chamber of Commerce and the Business Community as well as reached out to the Non-Profit Housing Community to discuss this Compensatory Mitigation Program. The initial report appears to be promising, but the full program report is not expected for another year.

Great Lakes Restoration Initiative Grant

In June 2016, the City and its partners at the Grand Valley Metropolitan Council, the North Park Montessori School, the West Michigan Environmental Action Council (WMEAC), and many others received notice that the U.S. Environmental Protection Agency had awarded us grant funding through the Great Lakes Restoration Initiative to teach kids about stormwater pollution and to install a green infrastructure project.

The City teamed up with the 4th-6th grade classrooms at North Park Montessori School to teach them about stormwater pollution and why it is important to only have rain in the drain. The students also performed their own storm drain clean up and designed postcards and door hangers to distribute to the neighbors for a rain barrel workshop. The WMEAC staff taught the students how to make a rain barrel and the students led the public rain barrel workshop.

City staff also worked on designing a bioswale to install in the parkway near the school. The students provided valuable insight into how they wanted the bioswale to look. At the beginning of the 2017-2018 school year, the students installed the plants in the bioswale. The post-project evaluations compared to the pre-project evaluations showed the students enjoyed the project and learned a great deal.

3.3 Recommendations

The total expenditures for both stormwater management and stormwater maintenance were under the FY2017 budget due to a variety of staffing vacancies. The SOC was pleased with the ditch improvements that were successfully executed this year and recommended continued implementation of that work. The SOC also recommended the use of the recently awarded SAW grant through the MDEQ for further advancement toward reaching the Level of Service "C" through supplemental televising and cleaning of the stormwater system and further consideration of other grant opportunities for future stormwater work.

4. CAPITAL INVESTMENT STRATEGY

4.1 Report

The capital investment strategy is to achieve Level of Service "C" as outlined in the 2013 Asset Management and Capital Improvement Plan. Level of Service "C" is defined in Appendix B. FY2017 was a successful year for finishing capital projects.

Three capital projects were completed this year.

- Richmond Park Daylighting – Preliminary Engineering
- Front Ave NW – Approximately 460 feet of 18 inch storm sewer main was lined with cured in place pipe lining.
- Richmond Park NW – Approximately 875 feet of 12 inch sewer was lined with cured in place pipe lining.
- A large amount of capital investment has gone to reimbursement of the Kent County Drain Commissioner's Office for repairs and maintenance of various county drains in the City.

Capital Improvement Funding has been planned out through 2023 to match the investment strategy in the plan, as shown in Tables 4 through 8 below.

Table 4. FY2019 Capital Projects

Drainage Improvements and Emergency Repairs	Capital Reserve Fund	$200,000
Kent County Drain Commission Special Assessments	Capital Reserve Fund	$45,000
Burton-Breton Branch of Plaster Creek - Channelization and Cleaning	Capital Reserve Fund	$33,000
Oakleigh Ave in Hogadone District - Channelizing and Cleaning	Capital Reserve Fund	$20,000
Shawmut Hills Baseball Diamond and Channel Stormwater Improvements	Capital Reserve Fund	$11,145
Shawmut Hills Baseball Diamond and Channel Stormwater Improvements	Capital Reserve Fund	$63,155
Capilano Stormwater Improvements	Capital Reserve Fund	$41,400
Burton-Breton Branch of Plaster Creek – Enlargement of Culverts	Capital Reserve Fund	$22,698
Richmond Park Dam/Bioswales	Capital Reserve Fund	$190,000
Residual Transfer Pad and Sanitary Pump Station	Capital Reserve Fund	$200,000
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	$ 100,000
FY2019 TOTAL		**$ 926,398**

Table 5. FY2020 Capital Projects

Drainage Improvements and Emergency Repairs	Capital Reserve Fund	$ 195,000
Burton-Breton Branch of Plaster Creek - Channelization and Cleaning	Capital Reserve Fund	$ 210,000
Maplegrove Detention Pond	Capital Reserve Fund	$ 78,300
Kent County Drain Commission Special Assessments	Capital Reserve Fund	$ 45,000
Oakleigh Ave in Hogadone District - Channelizing and Cleaning	Capital Reserve Fund	$ 213,582
Plaster Creek Bank Erosion	Capital Reserve Fund	$ 75,975
Drainage Improvements and Emergency Repairs	Capital Reserve Fund	$ 195,000
Burton-Breton Branch of Plaster Creek – Enlargement of Culverts	Capital Reserve Fund	$ 160,000
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	$ 100,000
FY2020 TOTAL		**$ 1,077,857**

Table 6. FY2021 Capital Projects

Drainage Improvements and Emergency Repairs	Capital Reserve Fund	$ 181,604
Kent County Drain Commission Special Assessments	Capital Reserve Fund	$ 45,000
Indian Mill Creek Dredging	Capital Reserve Fund	$ 65,400
Coldbrook Drain Rehabilitation - Michigan and Fuller	Capital Reserve Fund	$ 37,500
Plaster Creek Bank Erosion	Capital Reserve Fund	$ 396,225
Maplegrove Detention Pond	Capital Reserve Fund	$ 403,700
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	$ 100,000
FY2021 TOTAL		**$ 1,229,429**

Table 7. FY2022 Capital Projects

Indian Mill Creek Dredging	Capital Reserve Fund	$ 380,000
Coldbrook Drain Rehabilitation - Michigan and Fuller	Capital Reserve Fund	$ 212,500
Plaster Creek Bank Restoration	Capital Reserve Fund	$ 300,000
Water Quality Improvement from the Daylighting Plan	Capital Reserve Fund	$ 47,805
Drainage Improvements and Emergency Repairs 2020+	Capital Reserve Fund	$ 97,209
Kent County Drain Commissioner Special Assessments 2020+	Capital Reserve Fund	$ 45,000
Green Infrastructure Implementation	Capital Reserve Fund	$198,486
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	$ 100,000
FY2022 TOTAL		**$ 1,381,000**

Table 8. FY2023 Capital Projects

Water Quality Improvement from the Daylighting Plan	Capital Reserve Fund	$ 300,000
Green Infrastructure Implementation	Capital Reserve Fund	$ 336,000
Daylighting Implementation	Capital Reserve Fund	$ 400,000
Drainage Improvements and Emergency Repairs 2020+	Capital Reserve Fund	$ 200,000
Kent County Drain Commissioner Special Assessments 2020+	Capital Reserve Fund	$ 45,000
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	$ 100,000
FY2023 TOTAL		**$ 1,381,000**

Projects were chosen using the 2013 Asset Management and Capital Improvement Plan.

4.2 Recommendations

There are no recommendations regarding Capital Investment Strategy at this time. However, given that all recommended projects from the Capital Improvement Plan have now been scheduled, we will continue to incorporate the Large Scale Green Infrastructure Opportunities report and the Stream Daylighting Opportunities Assessment into the Asset Management and Capital Improvement Plan.

5. STORMWATER TECHINICAL REFERENCE MANUAL

5.1 Changes

The SOC reviewed the Technical Reference Manual in 2016 in relation to proposed changes in conjunction with ordinance review for the MS4 permit issuance. In 2017, City staff has been systematically presenting portions of the manual for the SOC to familiarize themselves with the upcoming MS4 permit requirements. The SOC continues to review updated and new technical documents that will provide data and reference for the recommendations to the Stormwater Technical Reference Manual and the Vital Streets Plan. At the beginning of 2017, the SOC recommended for approval the *Green Infrastructure Guidance Manual* *and* *revised Green Infrastructure Fact Sheets*. The new documents include additions to the Green Infrastructure Fact Sheets and the continuing development of the Green Infrastructure Technical Specifications.

The *Green Infrastructure Guidance Manual* is a planning level document that is intended as a starting point for incorporating green infrastructure into a site or within the street right-of-way. The document is targeted toward developers, engineers, and city officials. The guidance manual was updated to include an improved explanation of the design principles and green infrastructure practices siting possibilities to be in line with the Vital Street plan.

The Green Infrastructure Fact Sheets, both new and revised, contain the basic conceptual designs, objectives, and key considerations for multiple types of green infrastructure, including curb extensions, leaching basins, and rain barrels. These fact sheets will be able to provide City leaders, staff, and developers a snapshot into a variety of green infrastructure manual practices.

The Green Infrastructure Technical Specifications is a manual currently in process that will be provided to developers and engineers with technical information on how green infrastructure will need to be designed in the City of Grand Rapids. This document was completed in 2017.

5.2 Recommendations

Once the MDEQ issues the next MS4 permit, recommendations for the Stormwater Technical Reference Manual will be evaluated.

6. RECOMMENDATIONS FOR 2013 STORMWATER ASSET MANAGEMENT AND CAPITAL IMPROVEMENT PLAN

6.1 Facility Improvements

During FY2017, the focus of facility improvements has been on asset management. In order to determine what facilities need improvement, the facilities need to be assessed through cleaning and televising. The 2013 Stormwater Asset Management and Capital Improvement Plan has set the goal to attain Level of Service "C". The SOC has requested monthly updates on progress made on stormwater assets that have been cleaned and/or inspected. Table 9 summarizes the annual cleaning and inspection data for the FY2017.

Table 9. FY2017 Asset Management Data

Asset	FY17 Annual Goal	FY2017 Totals	Percentages
Storm Main Cleaned (ft)	210,668	195,906	93%
Storm Main Televised (ft)	30,471	37,177	122%
Catch Basins Cleaned (ea)	3,965	3,919	99%

The FY2017 totals are near or have surpassed the annual goals. The Level of Service "C" annual goal is based on a five year cycle of preventative maintenance. The cleaning and televising portion of the stormwater asset management program started in 2013 after many decades of only reactive maintenance. Through those years where no preventative maintenance was performed; sediment, debris, and other materials were still collecting in the catch basins and storm pipes. Therefore, it has taken the vactor trucks much longer to clean several decades of material buildup out of the system, as opposed to five years of material buildup. The initial five year cycle of preventative maintenance may take eight years to complete, but once the initial cleaning is complete, the Level of Service "C" goals will be attainable. The maintenance log for other Level of Service "C" criteria was taken from the annual City of Grand Rapids' Lower Grand River Watershed Progress Report submitted to the MDEQ and is attached in Appendix B. Please note that since the MDEQ reporting year and the City of Grand Rapids fiscal year start in different months, some of the numbers in Appendix B will not match this report.

The FY2015 – FY2017 data for stormwater sewer repairs are shown in Table 10. Due to an increase in storm sewer cleanings and inspections, as well as the implementation of the City's 311 customer service center, these values are not comparable to years before 2015. The lack of past investment led to a lack of preventative maintenance, but now that this maintenance is being performed, the corrective maintenance issues are being identified and reported at a higher frequency. With the implementation of the 311 customer service center, our citizens have better communication with us, and we have been able to address their problems quickly.

Table 10. FY2015-FY2017 Stormwater Repair Data

Maintenance Type	FY2015 Results	FY2016 Results	FY2017 Results
Storm Main Replaced - Point Repairs	25	23	23
Storm Lateral Replaced (ft)	15	12	20
Storm Sewer Lined (ft)	778	392	1,375
Storm Manholes Repaired/Replaced (ea)	9	84	19
Storm Catch Basins Repaired/Replaced (ea)	125	109	65
Roadside Ditches Shaping/Cleaning (ft)	0	400	875

In FY2017, City staff maintained eight stormwater pumping stations for use during major rainfall events. These stations pump stormwater to the river during times where the river level is too high to allow a gravity discharge. The lift stations are not designed to be in constant use, but because they are critical infrastructure, as they provide flood relief in the system during high river levels, reliable operation is mandatory. In order to maintain these stormwater pump stations, regular maintenance and inspections are necessary. Table 11 shows the type of work orders utilized to properly operate these facilities.

Many of the work orders are for preventative maintenance. Any issues discovered are documented, and new corrective maintenance work orders are created. The corrective maintenance work orders may include troubleshooting pump malfunctions, bearing replacements, alarm diagnostics, and communication checks.

Table 11. FY2017 Stormwater Station Maintenance Data

Work Order Type
Air Filter Inspections/Replacements
Bar Screen Cleaning
Motor Tests (Bi-annual)
Electrical Preventative Maintenance (Annual)
Instrumentation Preventative Maintenance (Annual)
Wet Well Vactor Cleaning
Stormwater Station – Biweekly Inspections
Corrective Maintenance

6.2 Land Acquisition

No land acquisitions were considered during FY2017.

6.3 Capital Renovation or Development

During FY2017, the SOC continued to evaluate multiple ideas for capital development. As evidenced in the Capital Investment Strategy (Section 4.1), the SOC has continued to pursue opportunities in the large scale green infrastructure opportunities and stream daylighting opportunities. The SOC has also taken a focus on recommending grant opportunities as shown in Section 3.2 to further expand the Capital Investment Strategy.

6.4 Recommendations

The goal of the 2013 Stormwater Asset Management and Capital Improvement Plan was to reach the Level of Service "C" by 2020 through small step increases in annual asset management goals. As shown in Tables 11 and 12, the FY2017 goals were not achieved in all asset fields, nor was there in an increase in the production of all fields from FY2016 to FY2017. Near the end of FY2017, as the staffing levels at the Sewer Maintenance team became near or at full, there was a measureable increase of preventative maintenance performance from that group. The SOC recommends continued monitoring of the Level of Service "C" goals now that the staffing level at Sewer Maintenance has become near full and to continue pursuing projects from the large scale green infrastructure opportunities report.

7. RECOMMENDATIONS REGARDING STORMWATER POLICY

In March 2015, the permit application for the discharge of stormwater to surfaces waters of the state from a MS4 was submitted to the MDEQ. Changes to the stormwater code will be required to address requirements under upcoming MS4 permit. The recent work of the Lower Grand River Organization of Watershed's (LGROW) Stormwater Ordinance Committee, on which City staff participate, was presented to SOC in a series of six separate presentations to prepare for the upcoming MS4 permit.

Through FY2017, the SOC evaluated multiple criteria for new stormwater policies in order to meet the upcoming permit requirement. These criteria include the new rainfall data, the size of the flood control storage, and the stormwater permit threshold. One change that was recommended in 2017 was lowering the release rate of the extended detention policy from a 2 year storm release rate to a 1 year storm release rate. The extended detention policy states that a landowner, if unable to infiltrate the entire required volume for channel protection in 72 hours, may create an extended detention basin. All runoff collected in the basin within 24 hours is released within 72 hours. This release rate was originally limited to a 2 year storm release rate, but the initial comments from the MDEQ stated that they wanted no greater than the 1 year storm release rate. After evaluating the impacts this change would have on multiple sites, the Stormwater Oversight Commission recommended to accept the change the extended detention release rate to a 1 year storm release rate.

While we will work on our preferred changes to stormwater code, final recommendations will not be made until we have come to an agreement with the MDEQ on the final requirements.

Appendix A

Level of Service "C" Parameters

Level of Service C

This LOS is intended to allow the City to determine critical infrastructure and identify high priority areas. Refer to Table 4-3. Key elements of this LOS include:

- Funding would increase for O&M to allow for the assessment of the entire collection system greater than 75 years old every 10 years. Funding also assumes performing corrective maintenance where necessary and preventative maintenance on 10 percent of all inspected assets.
- Inspection of 50 percent of culverts annually, along with replacing or renewing the worst 5 percent.
- Inventory and inspection of approximately 4 miles each of open channels and ditches annually with funding for preventative maintenance, and establishing a minimal annual renewal program.
- Inspection of all discharge points every 5 years, with corrective maintenance to repair or replace the top 10 percent worst condition each year. And preventative maintenance on 5 percent of inspected outfalls annually.
- Inspections and routine maintenance on other system assets would be organized so that pertinent data are collected and stored in the GIS database.
- 10 percent of all new capital spending would be directed towards green infrastructure.
- Regulatory spending would be increased to establish a public education program.
- Capital spending would be based on an assumed system replacement every 150 years, with catch basins and laterals assigned a 100 year replacement cycle.

Table 4-3 Level of Service C Definition

Asset	Inspection	Corrective	Preventative	System Renewal
Gravity Mains	PACP CCTV inspect pipes greater than 75 years old over 10-year period.	Replace 15% of assets that have reached end of EEL over 10 years.	Perform rehabilitation to extend EEL for 10% of inspected sewers over 10 years	Replace every 150 years.
MH	Inspectmanholes greater than 75 years old over 10-year period.	Replace 15% of assets that have reached end of EEL over 10 years.	Perform rehabilitation to extend EEL for 10% of inspected sewers over 10 years.	Replace every 150 years.
Laterals	Inpect CB laterals greater than 75 years old over 10-year period.	Replace 15% of assets that have reached end of EEL over 10 years.	Perform rehabilitation to extend EEL for 10% of inspected laterals over 10 years.	Replace every 100 years.
Catch basins	Clean and inspect 25% annually (Approx. 4264). Record and monitor debris levels for cleaning prioritization.	Replace 15% of assets that have reached end of EEL over 10 years.	Perform rehabilitation to extend EEL for 10% of inspected catch basins over 10 years.	Replace every 100 years.
Force Mains	Visual inspection every 2 weeks during pump station inspection. PACP CCTV inspect every 15 years.			Replace every 100 years.
Siphons	Clean and inspect annually.			Replace every 150 years.
Culverts	CCTV/walk/inspect 50% of culverts annually.	Replace/rehabilitate top 5% by POF.		Replace every 150 years.
Open Channel	Walk, inventory and inspect 4 miles of open channel annually.		Remove debris at 1 site per mile inspected.	Restore 7.5% minor, 3% moderate and 1% severe construction for length inspected each year.
Ditches	Inspect 4 miles of roadside ditch annually.			Grade or clean 10% of length inspected.
Discharge Points	Inspect all discharge points every 5 years per MS4 requirements.	Replace top 10% by POF each cycle.	Stabilize bank and erosion control at 5% of assets each cycle.	Replace every 150 years.
Creek gates	Inspect annually, clean as needed. Record and monitor conditions for prioritization.			Costs included with adjacent assets.
Detention Basins	Complete site inspection 3 times annually including routine maintenance.			Facility renovation every 100 years. Includes re-grading, seeding, renew inlet/outlet structures.
Infiltration Basins	Clean and inspect every 5 years.			Replace system every 150 years.
Lift Stations	Inspect facility every 2 weeks. Log inspection data in GIS every 6 months.			Replace pumps every 30 years, structural, mechanical and electrical components replaced every 100 years.
Hydro Separators	Clean and inspect annually. Record debris accumulation for prioritizing cleaning schedule and frequency.			Replace every 150 years.
Green Infrastructure	Inspect and perform recommended maintenance annually.			Invest 10% of all collection system capital renewal costs on GI. GI=+25% increase to construction costs.

Appendix B

Lower Grand River Watershed Progress Report Maintenance Log

Permittee: **City of Grand Rapids**

Appendix 2-B - Storm Water Controls
Inspection, Maintenance and Effectiveness
August 1, 2016 to July 31, 2017

Property Name: City Wide				
Structural Storm Water Control	**Inspection Frequency**	**Maintenance Schedule**	**Inspection and Maintenance Conducted and Location of Log (if applicable)**	**Effectiveness of Control and Support Documentation**
Stormwater Manholes	Complaint Based	N/A	1108 Cleaned 4 manhole replaced 10 manholes repaired Logs are maintained in Cityworks	Identified problems were fixed and pollutants were removed.
Stormwater Catch basins	Complaint Based	Clean 2,500 annually	3,918 cleaned Logs are maintained in Cityworks.	2,462 tons of solids were removed from the stormwater system and kept from the waterways
Discharge Points	Complaint Based	N/A	273 discharge points and backflow preventers were inspected	In 2014, backflow preventers were in installed in Grand Rapids and Walker. All backflow preventers are now inspected annually.
Stormwater Laterals	Complaint Based	N/A	536 feet cleaned 3 laterals repaired 11 laterals replaced Logs are maintained in CityWorks	Identified problems were fixed.

Permittee: **City of Grand Rapids**

Stormwater Pressurized Mains	Complaint Based	Bi-weekly Inspection visit	Inspections occur once every 3 weeks from May through October and once every 4 weeks from November through April	No failures of a stormwater pumping station during a rain event
Stormwater Lift Stations	Complaint Based	Bi-weekly Inspection visit	All 11 wet wells were cleaned as needed based on inspections.	Annual cleanings appear to be sufficient.
Stormwater Gravity Mains	Complaint Based	N/A	196,634 feet cleaned 3,456 feet were rootsawed and cleared 280 feet were replaced	Identified problems were fixed and pollutants removed
Infiltration Basins (underground)	Complaint Based	10 yr. Inspection cycle	Inspections in CityWorks for 2019 and 2026	The basins appear to function well
Detention Basins	Complaint Based	Maintain & Inspect three times annually	The one pond that is operated by the City was inspected once every 2-8 weeks.	The basin appears to function well
Hydro Separators	Complaint Based	Clean twice year	8 hydroseparator cleanings were performed	With three years of cleaning hydro separators, we have found most separators are functioning fine with 1 cleaning annually. 1 unit will require 2 cleanings annually.
Siphons	Complaint Based	Clean annually	1 siphon cleaning was performed this year	Annual cleanings appear to be appropriate. As construction projects take place, we continue to remove as many siphons as possible.

Creek gates	Complaint Based	Clean annually	16 cleanings were performed 0 creek gates were repaired 29 inspections were performed.	Responding to complaints ensures that the worst areas are addressed more often
Open Ditches	Complaint Based	N/A	750 feet of ditch was cleared and restored along 6 sites	This work was complaint related to neighborhood ditches. Funds were budgeted to address the most problematic areas.