



Lower Grand River Watershed  
Progress Report

# CITY OF GRAND RAPIDS

Reporting Period: August 1, 2018 - July 31, 2019

PREPARED BY THE

**GVMC**

GRAND VALLEY METROPOLITAN COUNCIL

Department of Environmental Programs

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## List of Abbreviations/Acronyms

AWRI	Annis Water Resources Institute
BMP	Best Management Practice
CoC	Certificate of Coverage
DPW	Department of Public Works
EGLE	Michigan Department of Environment, Great Lakes, and Energy (Prior to April 7, 2019, this Agency was known as MDEQ)
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
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 MS4 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 Environment, Great Lakes, and Energy (EGLE) 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

<b>Contact Information for Michigan Department of Environment, Great Lakes and Energy (EGLE):</b>	
Please provide current contact information for EGLE to use regarding stormwater issues.	
<b>Permit Application Contact</b>	
Name	Carrie Rivette
Title	Stormwater Manager
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	<a href="mailto:crivette@grcity.us">crivette@grcity.us</a>
<b>Stormwater Program Manager</b>	
Name	Carrie Rivette
Title	Stormwater Manager
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@grcity.us
<b>Stormwater Permit Fee Billing Address</b>	
Name	Carrie Rivette
Title	Stormwater Manager
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@grcity.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
- Subwatershed Committee

The list of committee members who have served on the committees during this reporting period are indicated in Table 1 below. Members denoted with an asterisk are not MS4 permitted representatives.

<b>Community</b>	<b>Representative</b>	<b>Public Engagement</b>	<b>Stormwater Ordinance (SWOrd)</b>	<b>Technical</b>	<b>Sustainability</b>	<b>Fund Development &amp; Membership</b>	<b>LGROW Executive</b>
Cascade Charter Township	Steve Peterson						
East Grand Rapids, City of	Doug LaFave						
Forest Hills Public Schools	Ron Boezwinkle						
Fruitport, Village of	Justin Clish						
Georgetown Charter Township	Rod Weersing	X					
Grand Haven, City of	Cheryl Davidson	X					
Grand Rapids Charter Township	Bob Versluys						
Grand Rapids, City of	Carrie Rivette	X	X	X	X	X	X

**Table 1. LGROW Committee Membership List as of July 31, 2019**

<b>Community</b>	<b>Representative</b>	<b>Public Engagement</b>	<b>Stormwater Ordinance (SWOrd)</b>	<b>Technical</b>	<b>Sustainability</b>	<b>Fund Development &amp; Membership</b>	<b>LGROW Executive</b>
Grand Rapids, City of	Michael Staal	X					
Grand Rapids, City of	Dan Taber			X			
Grandville, City of	Ken Krombeen		X			X	X
Grandville, City of	Todd Wibright			X			
Grandville, City of	Matt Butts		X				
GVSU*	Shannon Sullivan						
Hudsonville, City of	Jill Frielink	X					
KCDC	Brad Boomstra		X				
KCDC	Angie Latvaitis		X	X			
KCRC	Bruce Schutte	X					
KCRC	Andrew Reinhardt	X					
Kent County Health Department*	Brendan Earl	X					
Kent County Resource Recovery*	Isaac Thaler	X					
Kentwood, City of	Jim Beke		X	X			
Kentwood, City of	Dan Vanderheide		X				
Kentwood, City of	Kelsey Sloan	X		X			
EGLE*	Amanda St. Amour	X					
EGLE*	Michelle Storey	X				X	
EGLE*	Dana Strouse	X		X			
OCWRC	Dennis Cole	X					
OCRC	Jerry Olman	X					
Plainfield Charter Township	Rick Solle		X				

**Table 1. LGROW Committee Membership List as of July 31, 2019**

Community	Representative	Public Engagement	Stormwater Ordinance (SWOrd)	Technical	Sustainability	Fund Development & Membership	LGROW Executive
Plainfield Charter Township	Mary Trapp-Gunst	X					
Spring Lake, Village of	Chris Burns						
Walker, City of	Scott Connors		X			X	X
Walker, City of	Rachell Nagorsen	X	X	X	X		X
Wyoming, City of	Aaron Vis	X		X			X
Wyoming, City of	Myron Erickson		X				

**Public Engagement Committee**

The Public Engagement Committee met on September 12, 2018, October 10, 2018, November 14, 2018, January 9, 2019, February 13, 2019, and May 8, 2019 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 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 September 26, 2018, November 28, 2018 and May 29, 2019 during the reporting period. Meetings were focused on follow up items related to the LGRW alternative approach, the model ordinance, the standards manual, maintenance agreements, 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, the standards manual BMP design criteria appendix, and the LGROW Design Spreadsheet. 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 when all other green infrastructure practices have been considered, but are not feasible, due to site constraints as defined in the flow chart. Since this work began in 2015, much of this reporting period was spent editing, revising and finalizing the 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 15, 2018, October 31, 2018, December 19, 2018, April 17, 2019, and June 19, 2019 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 accessed 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. GVMC has hired LimnoTech to complete watershed modeling for TMDL requirements, and to update the TMDL

Implementation Plan. The Technical Committee has been involved in the work that LimnoTech is completing. At the October 2018 meeting, the committee enjoyed a Green Infrastructure tour around the City of Grand Rapids. IDEP outfall screening was also a focus of the Technical Committee, since most MS4's in the watershed were completed this work during the summer of 2018. A presentation at the April meeting was given by a representative from Encompass, LLC regarding water quality monitoring in the Grand River for the river restoration project, and a presentation from LinmoTech was given at the June meeting regarding watershed modeling for upcoming MS4 permit requirements.

### **Sustainability Committee**

The Sustainability Committee met on August 6, 2018, October 1, 2018, December 3, 2018, February 11, 2019, and June 3, 2019 during this reporting period. Agendas and minutes from the meetings are available at the following site: <https://www.lgrow.org/sustainability-committee>. During the reporting period, the committee members focused on three main topics: Sustainable Agriculture, Natural Connections, and the Grand River Water Trail. Sustainable agriculture is addressed through members participating and offering planning assistance for the USDA Regional Conservation Partnership Program grant activities in the Indian Mill Creek and Rogue River watersheds. The members also discussed current efforts of concerned citizens to highlight the importance of preserving farmland in Kent County. LGROW's Natural Connections Map was updated by creating a StoryMap that included regional and site specific green infrastructure practices being implemented in the MS4 communities. The planning of the Grand River Water Trail is supported by the members through reviewing the trail development plans that have been produced by the Upper Grand River Watershed Alliance and MGROW. Members are strategizing about how to fund a trail development plan for the Lower Grand River and submitting an application to the State to have it designated as a State Water Trail.

### **Fund Development & Membership Committee**

The Fund Development & Membership Committee did not meet in 2018 or 2019. The Committee Chair discussed possible restructuring of the committee at the Board Meetings. The goals of the Committee are being revised to better reflect the current state of LGROW's membership structure.

### **Board of Directors and Executive Committee Meetings**

LGROW's Board of Directors held meetings on December 6, 2018, and April 30, 2019. The semi-annual meetings are a chance for the Board to discuss the progress and participation of members in LGROW's Committees and the overall challenges and successes of LGROW's initiatives.

The Executive Committee of the Board continued to meet once a month, as much as possible, to assist in guiding LGROW's efforts and ensuring that projects and programs aligned with LGROW's Strategic Plan.

## **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, and are available upon request by MS4 communities. In addition, GVMC has hosted or partnered on several training events during the reporting period including:

- 16<sup>th</sup> Annual Grand River Spring Forum
  - Held on May 17, 2019 at Blandford Nature Center
- Stormwater General Awareness, Watershed Awareness, IDEP, and P2GH for:
  - Ottawa County Road Commission
    - September 19, 2018 at Grand Haven Garage
    - September 25, 2018 at Holland Garage
  - Ottawa County Road Commission, Ottawa County Water Resources Commission, Village of Spring Lake, Georgetown Township
    - March 1, 2019 at Hemlock Nature Center
  - Hudsonville and Georgetown Township
    - March 20, 2019 at Hudsonville City Hall
  - Grand Haven, Ferrysburg, and the Village of Fruitport
    - April 10, 2019 at Grand Haven DPW
  - Rockford
    - May 13, 2019 at Rockford DPW
  - Sparta
    - May 13, 2019 Village of Sparta offices
- Lunch and Learn
  - Offered at GVMC on June 19, 2019 hosted by Contech Engineered Solutions

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

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**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.



Attached to this electronic newsletter, you will find an informational brochure about ways to prevent pollution during the summer, and a green cleaning newsletter article. Please post and/or distribute to your employees and community as you see fit.

**SPRING FORUM**

The 16th Annual Spring Forum was held on May 17, 2019 at Blandford Nature Center. There were a record-setting 350 attendees, including students and teachers from 4 schools in the watershed that participated in the first-ever Student Forum and Poster Session.

Keynote speaker, Dr. Don Carpenter, spoke about removing the barriers to green infrastructure implementation. LGROW committee updates were reported, and exciting 'Shed Talks' covered Rainscaping, the RCPP program, community engagement, and the new Adopt a Drain program. Attendees had the option of attending different green infrastructure walking tours after lunch.

Without your continued support of LGROW's programs, our work would not be possible. We would like to extend our gratitude to the 2019 Spring Forum sponsors, that made this wonderful event happen. If you, or anyone you know, would be interested in sponsoring or presenting at next year's Spring Forum, please let us know.

More information can be found on the LGROW website

**LUNCH & LEARN  
 STORMWATER BMPs**

Representatives from Contech Engineered Solutions LLC (<https://www.conteches.com>) will be at GVMC on Wednesday June 19 from 11:30 am - 1:00 pm, holding a lunch and learn to inform us about their company's products that help manage stormwater. There will be discussion about how these products can help your community meet the water quality and quantity requirements under the new MS4 permit. Please RSVP to Cara at [cara.decker@gvmc.org](mailto:cara.decker@gvmc.org) so we can get an accurate headcount.



Following the Lunch and Learn at 1:00 pm, the LGROW Technical Committee will welcome representatives from LimnoTech to present the watershed modeling they have been completing in regards to new TMDL requirements under the upcoming MS4 permit.



www.lgrow.org Winter 2019

**MS4 UPDATE**

Information for MS4 Permittees in the Lower Grand River Watershed



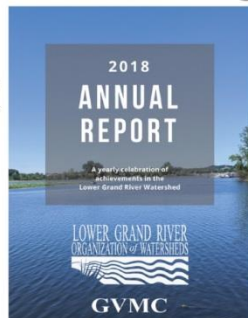
The Lower Grand River Organization of Watersheds (LGROW) participated in the World of Winter festival in Grand Rapids in February

**2018 LGROW Annual Report**

The 2018 LGROW annual report can be accessed electronically through LGROW's website at [www.lgrow.org](http://www.lgrow.org). The annual report highlights events, projects, and grant work from the past year. It is a celebration of the organization's success. It also sets goals for 2019 that are in alignment with the three long-term goals that are outlined in LGROW's strategic plan:

- #1: Healthy Watersheds
- #2: Engaged Community
- #3: Robust Organization

Please share and distribute this annual report. We are proud of what we have accomplished in the past year, and are excited to continue to expand our programs with your support!



**MS4 Upcoming Events**

Please Click Each Event For More Information

**August 15th, 1-2:30 Pm**  
**LGROW Technical Committee Meeting**  
 Location: GVMC

**August 23rd, 1-4 Pm**  
**Green Infrastructure Seminar**  
 Location: City Flats Hotel, Holland

**August 24th, 8 Am-12 Pm**  
**Farm Conservation Practices Bus Tour**  
 Location: Schwallier's Country Basket

**September 6th, 4-6 Pm**  
**Citizen Science Workshop**  
 Location: Blandford Nature Center

**September 8th, 8:30 Am-1Pm**  
**Mayor's Grand River Cleanup**  
 Location: 6th Street Park, Grand Rapids

**September 12th, 2-3:30 Pm**  
**LGROW Public Engagement Committee Meeting**  
 Location: GVMC

**September 13th, 4:30-6:30 Pm**  
**Watershed Jamboree**  
 Location: Richmond Park Shelter



## Monitoring

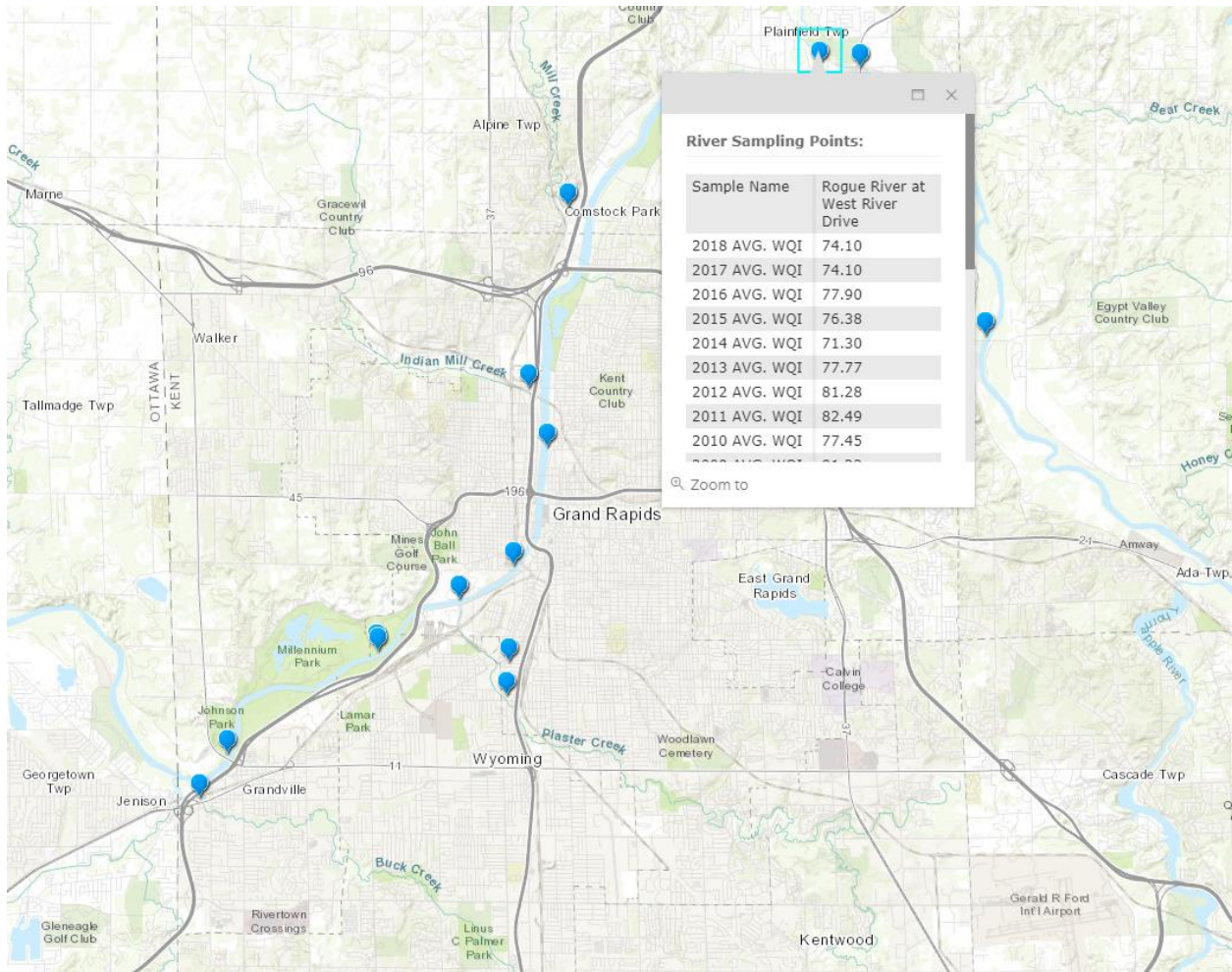


Figure 1 Grand Rapids Water Quality Index Web Interface

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 Rogue River at West River Drive is provided as an example of 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](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)

## Data Repository

The LGROW Technical Committee finished 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 finalized 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 all 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.

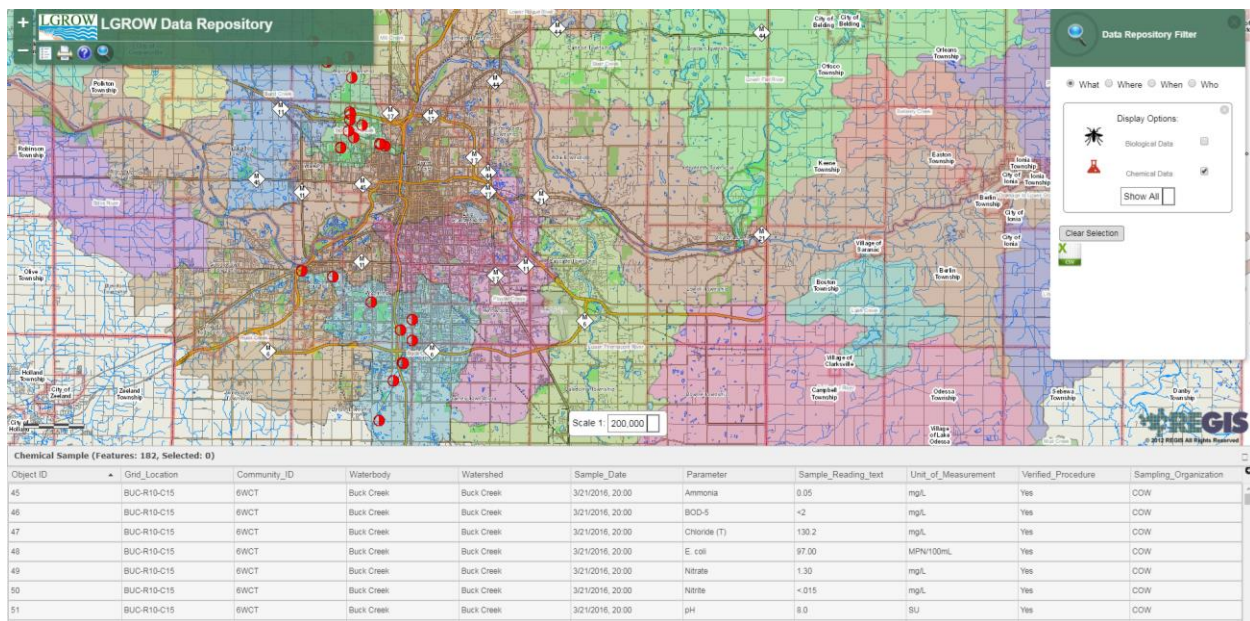


Figure 2 LGROW Data Repository

## Adopt a Drain Grand River

LGROW expanded the City of Grand Rapids “Basin Buddy” adopt-a-catch-basin program to MS4 communities throughout the watershed. This is described in the PEP Implementation section below and can be found here: <https://www.adoptadrain-lgrow.org/>

## **Part 2A(1) - 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 2018 was held on September 17-21, 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 have instituted or evaluated the potential for buffer ordinances. The Cities of Grand Rapids, 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 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 systems. 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, Tallmadge Township, Gaines Township, Wright Township 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.

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
<b>Kent County Road Commission (Kent County CEA)</b>	KCRC	616-242-6914		X			X
Kentwood, City of	Engineering Dept.	616-554-0737	X				X
<b>Ottawa County Water Resources Commissioner &amp; Administration (Ottawa County CEA)</b>	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**

EGLE 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. These practices were also covered in training given by GVMC staff, and more details can be found in Part 2D.

**Part 2A(2) – Summary of Municipal Commitments  
 August 1, 2018 to July 31, 2019**

<b>LGRW Prioritized Objectives for Permittees from 2011 WMP</b>	<b>Commitment</b>	<b>Timeline</b>	<b>Measures of Effectiveness</b>
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.
<b>Actions completed:</b>	All identified septic system owners have been notified. Additional notifications will be performed if additional septic systems are identified.		
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.
<b>Actions completed:</b>	There were no known septic system failures in the City during this reporting period.		
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.

<b>LGRW Prioritized Objectives for Permittees from 2011 WMP</b>	<b>Commitment</b>	<b>Timeline</b>	<b>Measures of Effectiveness</b>
<b>Actions completed:</b>	<p>There was only one (1) project within the City where the 75-foot natural features buffer was administratively lowered to a 50-foot setback, and that was the Hope Network Rehabilitation Center at 1470 E Beltline. The existing Hope Network Rehabilitation Center is a large campus-like setting surrounded by many small wetlands and a natural setting. In order for the facility to expand and remain viable, construction with a reduced setback was requested and granted. There is to be no actual fill or modifications of the wetlands. Construction has yet to start on this project.</p> <p>All other projects in the City maintained a minimum of 75' setback from wetlands and established natural features.</p>		
Implement MDNR wildlife population management practices.	<p>Continue to install "Don't feed the wildlife signs" where needed.</p> <p>Provide online training for staff.</p>	<p>Ongoing.</p> <p>Provide training by June 2013.</p>	<p>Number of signs – less feeding observed.</p> <p>Number of staff attending training.</p>
<b>Actions completed:</b>	<p>The City's only problematic areas of feeding wildlife are Riverside and Richmond Parks. Signage is installed at these locations. 141 people were trained online this year.</p>		
Implement sanitary sewer maintenance practices.	<p>Maintain compliance with CMOM (Capacity, Management, Operation &amp; Maintenance) for sanitary sewers in order to prevent seepage to storm sewers.</p>	<p>Ongoing.</p>	<p>Refer to cmom.net.</p> <p>Maintenance items are tracked in an enterprise asset management system.</p>
<b>Actions completed:</b>	<p>CMOM compliance has been maintained.</p>		

<b>LGRW Prioritized Objectives for Permittees from 2011 WMP</b>	<b>Commitment</b>	<b>Timeline</b>	<b>Measures of Effectiveness</b>
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.
<b>Actions completed:</b>	<p>There were a total of 13 projects with LID practices permitted and under construction this reporting period. The main focus of these projects included 10 park facilities, where a citizen passed millage allowed for overall park improvements. The main practice used were leaching basins and rain gardens. However, large-scale daylighting and swale construction projects were installed at Plaster Creek Park and Richmond Park.</p> <p>There were also three (3) projects at City facilities (Madison Heights Parking Lot and two at the Waste Water Recovery Facility (WRRF)) where underground detention systems and/or leaching basins were installed for stormwater management.</p>		
Implement watershed focused land-use planning.	<p>Continue enforcement of the City's current floodplain ordinance to protect flood plains not regulated by MDEQ.</p> <p>Continue enforcement of the city's current pet waste ordinance.</p> <p>Continue implementing commitment to LID, as detailed in Green Grand Rapids, a 2012 addendum to our Master Plan.</p>	Ongoing.	<p>Number of plans reviewed.</p> <p>Number of offsite LID practices implemented.</p>

<b>LGRW Prioritized Objectives for Permittees from 2011 WMP</b>	<b>Commitment</b>	<b>Timeline</b>	<b>Measures of Effectiveness</b>
<b>Actions completed:</b>	<p>This reporting period, 182 permits were issued for City and private projects. Of the permits issued, 89 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: 16 Detention / Retention Basins (26 with Infiltration Practices), 1 Vegetated Roof, 3 Vegetated Swales, and 7 Water Quality Devices.</p> <p>There were also 24 right-of-way infrastructure projects that incorporated LID practices into the design of the public storm sewer system and street design. These projects included infiltration basins, expanded tree planting systems, infiltration trenches, vegetative bulb outs, and porous pavement.</p>		
Implement proper soil erosion and sedimentation control techniques.	<p>Continue to enforce regulations as a Municipal Enforcing Agency.</p> <p>Train City field staff in SESC.</p> <p>Maintain certifications of Construction Stormwater Operators.</p>	<p>As projects are reviewed.</p> <p>Train a majority of field staff by June 30, 2013.</p> <p>Continue certifications.</p>	<p>Maintain MEA status.</p> <p>Percent of field employees trained.</p> <p>Number of Construction Stormwater Operators.</p>
<b>Actions completed:</b>	<p>Currently, 25 of the 42 required personnel are trained in construction stormwater operator training. This represents an increase from 32% last reporting period to 62% this reporting period. In addition to the required positions, we have 23 other staff members that have the construction stormwater operator training. We will continue training staff that are required to have this certification. Our goal for next reporting year is to have 75% of the 42 required personnel to receive this training.</p>		

<b>LGRW Prioritized Objectives for Permittees from 2011 WMP</b>	<b>Commitment</b>	<b>Timeline</b>	<b>Measures of Effectiveness</b>
Implement channel streambank stabilization, bio engineering and erosion control techniques.	<p>Compliance with DEQ permit conditions for any work that occurs within a stream.</p> <p>Flow restriction ordinance for all streams and reduced flow for impaired streams.</p>	<p>Continue to obtain DEQ permits for construction in a stream or channel.</p> <p>Continue to implement flow controls per stormwater ordinance.</p>	<p>Number of projects needing permits and permits obtained.</p> <p>Number of sites limited to reduced discharge.</p>
<b>Actions completed:</b>	<p>The City had one project (Richmond Park Daylighting and Indian Mill Creek Dam improvements) that required a MDEQ permit for stream or channel construction this year.</p> <p>Of the LUDS permits issued by the City this reporting year, 16 had flow restrictions to protect all waterways and eight (8) had flow restrictions for impaired waterways.</p>		



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

<b>LGRW Prioritized Objectives for Permittees from 2011 WMP</b>	<b>Commitment</b>	<b>Timeline</b>	<b>Measures of Effectiveness</b>
<b>Actions completed:</b>	Four 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 eight landscape maintenance contracts issued this year.		

**Part 2B - Stormwater Controls Inspection, Maintenance and Effectiveness  
 August 1, 2018 to July 31, 2019**

<b>Property Name: City Wide</b>				
<b>Structural Storm Water Control</b>	<b>Inspection Frequency</b>	<b>Maintenance Schedule</b>	<b>Inspection and Maintenance Conducted and Location of Log (if applicable)</b>	<b>Effectiveness of Control and Support Documentation</b>
Stormwater Manholes	Complaint Based	N/A	1985 Cleaned 10 Repaired	Identified problems were fixed and pollutants were removed.
Stormwater Catch basins	Complaint Based	Clean annually 2,500	4164 Cleaned	310 tons of solids were removed from the stormwater system and kept from the waterways.
Discharge Points	Complaint Based	N/A	252 Inspected discharge points and backflow preventers were inspected	In 2014, backflow preventers were installed in Grand Rapids and Walker. All backflow preventers are now inspected annually.
Stormwater Laterals	Complaint Based	N/A	151.4 ft. Cleaned 6 Repaired	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 event.
Stormwater Lift Stations	Complaint Based	Bi-weekly Inspection visit	8 wet wells were cleaned as needed based on inspections.	Annual cleanings appear to be sufficient.
Stormwater Gravity Mains	Complaint Based	N/A	343,556 ft. Cleaned 9 Repaired	Identified problems were fixed and

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			1,838.5 ft. Rootsawed	pollutants removed.
Infiltration Basins (underground)	Complaint Based	10 yr. Inspection cycle	Inspections are due 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 Cleaned	We have found that most separators are functioning fine with 1 cleaning annually. 1 unit will require 2 cleanings annually.
Siphons	Complaint Based	Clean annually	1 (286 ft.) Cleaned	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	41 Cleaned 12 inspected	Responding to complaints ensures that the worst areas are addressed more often.
Open Ditches	Complaint Based	N/A	3 ditches were excavated and cleaned. 5.9 miles of ditches were inspected.	We have been performing ditch inspections per our asset management plan since 2016.

## **Part 2C (1) - Procedures Status August 1, 2018 to July 31, 2019**

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). 3,465 yards of street sweepings were disposed of in this reporting period and prevented from entering the catch basins.
- b. Salt Application – Drivers are trained with 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 maintenance garage and public works yard including salt storage has trained staff that perform stormwater inspections.

(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.
- (d) Green Infrastructure Portfolio Standards and the City's Strategic Plan include green infrastructure goals.

**Part 2C (2) - Procedures Status by Type of Property  
 August 1, 2018 to July 31, 2019**

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

**Property Types Legend:**

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

<b>Types of Properties</b>	<b>O&amp;M Procedure</b>	<b>Location on <a href="http://mygrcity.us/collaboration/swppp">http://mygrcity.us/collaboration/swppp</a></b>
<b>PW, W, WW</b>	Concrete Waste Management	<a href="#">BMP Concrete Waste Management.pdf</a>
<b>A, C, D, F, G, L, M, Pk, Po, PW, R, T, V, W, WD, WW</b>	Dumpster Management	<a href="#">BMP Dumpster Management.pdf</a>
<b>Pk, PW, W</b>	Erosion and Sediment Control	<a href="#">BMP Erosion and Sediment Control.pdf</a>
<b>F, G, Po, PW</b>	Fueling Areas	<a href="#">BMP Fueling Areas.pdf</a>
<b>A, F, G, L, M, Pk, Po, PW, T, W, WD, WW</b>	Garbage Storage	<a href="#">BMP Garbage Storage.pdf</a>
<b>D, Pk, PW, W, WD, WW</b>	Material Covering	<a href="#">BMP Material Covering.pdf</a>
<b>D, Pk, PW, W, WD, WW</b>	Outdoor Storage Areas	<a href="#">BMP Outdoor Storage Areas.pdf</a>
<b>Pk, PW, W, WD, WW</b>	Outdoor Storage, Raw Materials	<a href="#">BMP Outdoor Storage, Raw Materials.pdf</a>

<b>Types of Properties</b>	<b>O&amp;M Procedure</b>	<b>Location on <a href="http://mygrcity.us/collaboration/swppp">http://mygrcity.us/collaboration/swppp</a></b>
<b>PW</b>	Paving and Grinding Operations	<a href="#">BMP Paving and Grinding Operations.pdf</a>
<b>F, M, PW, W, WW</b>	Petroleum and Chemical Storage, Small Quantities	<a href="#">BMP Petroleum and Chemical Storage, Small Q.pdf</a>
<b>F, M, PW, W, WW</b>	Petroleum and Chemical Disposal	<a href="#">BMP Petroleum and Chemical Disposal.pdf</a>
<b>F, M, W, WW</b>	Petroleum and Chemical Handling	<a href="#">BMP Petroleum and Chemical Handling.pdf</a>
<b>F, W, WW</b>	Petroleum and Chemical storage bulk	<a href="#">BMP Petroleum and Chemical Storage, Bulk.pdf</a>
<b>F, L, M, Pk, Po, PW, W, WW</b>	Salt Application	<a href="#">BMP Salt Application.pdf</a>
<b>PW</b>	Sand and Salt Storage	<a href="#">BMP Sand and Salt Storage.pdf</a>
<b>A, D, F, G, L, M, Pk, Po, PW, W</b>	Solid Waste Management	<a href="#">BMP Solid Waste Management.pdf</a>
<b>A, F, M, Pk, PW, W, WD, WW</b>	Spill Cleanup	<a href="#">BMP Spill Cleanup.pdf</a>
<b>A, F, M, Pk, PW, W, WD, WW</b>	Spill Prevention Control and Cleanup	<a href="#">BMP Spill Prevent Control.pdf</a>
<b>PW, W</b>	Dust Control	<a href="#">deq-wb-nps-dc 250612 7.pdf</a>
<b>A, D, F, G, M, Pk, PW, W, WD, WW</b>	Equipment Storage and Maintenance Areas	<a href="#">deq-wb-nps-ems 250618 7.pdf</a>
<b>F, L, Pk, Po, PW, R, V, W, WD, WW</b>	Fertilizer Management	<a href="#">deq-wb-nps-fm 250620 7.pdf</a>



<b>Types of Properties</b>	<b>O&amp;M Procedure</b>	<b>Location on <a href="http://mygrcity.us/collaboration/swppp">http://mygrcity.us/collaboration/swppp</a></b>
<b>F, L, Pk, Po, PW, R, V, W, WD, WW</b>	Lawn Maintenance	<a href="#">deq-wb-nps-lm_250884_7.pdf</a>
<b>D, F, L, Pk, Po, PW, W, WD, WW</b>	Organic Debris Disposal	<a href="#">deq-wb-nps-odd_250887_7.pdf</a>
<b>F, L, Pk, Po, PW, W, WD, WW</b>	Pesticide Management	<a href="#">deq-wb-nps-pm_250893_7.pdf</a>
<b>WW</b>	Stream Bank Stabilization	<a href="#">deq-wb-nps-sbs_250898_7.pdf</a>
<b>PW, W, WW</b>	Soil Management	<a href="#">deq-wb-nps-sm_250902_7.pdf</a>
<b>WW</b>	Slope, Shoreline, Stabilization	<a href="#">deq-wb-nps-sss_250907_7.pdf</a>
<b>Pk, PW</b>	Street Sweeping	<a href="#">deq-wb-nps-sw_250908_7.pdf</a>
<b>F, L, M, Pk, R, V, WD, WW</b>	Trees, Shrubs and Ground Covers	<a href="#">deq-wb-nps-tsg_250910_7.pdf</a>
<b>PW</b>	Winter Road Management	<a href="#">deq-wb-nps-wrm_250914_7.pdf</a>
<b>Pk</b>	Golf Course Manual	<a href="#">ess-nps-Golf-Course-Manual_209682_7.pdf</a>
<b>Pk, PW</b>	Road Salt Storage	<a href="#">Road Salt Application and Storage.doc</a>

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

**Part 2D - Staff and Contractors Training on Pollution Prevention and Good Housekeeping  
 August 1, 2018 to July 31, 2019**

<b>Training Topic Area</b>	<b>Employee Group to Receive Training</b>	<b>Training Frequency Goal</b>	<b>Potential Training Type</b>
<b>SWPPI Requirements</b>			
Maintenance activities, maintenance schedules, and inspection procedures	Collection System Maintenance Group	Ongoing  First 6 months of hire	<b>Written O&amp;M Procedures</b>  <b>Office of Water Programs, California State University, Sacramento Operation and Maintenance of Wastewater Collection Systems, Volumes I &amp; 2</b>
<b>Training completed:</b>	There are 13 Collection System Asset Technicians and 2 crew leaders. 14 of them have taken and passed the CALIFORNIA STATE UNIVERSITY, SACRAMENTO Operation and Maintenance of Wastewater Collection Systems, Volume I and II. The one without training has been in the department for only four months.		

<b>Training Topic Area</b>	<b>Employee Group to Receive Training</b>	<b>Training Frequency Goal</b>	<b>Potential Training Type</b>
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	<p><b>Online training which may include Powerpoints and/or the following videos</b></p> <p><b>Storm Watch - Municipal Storm Water Pollution Prevention - DVD from Excal Visual, LLC</b></p> <p><b>Spills &amp; Skills - Non-Emergency HazMat Spill Response - DVD from Excal Visual, LLC</b></p> <p><b>Keep An Eye On It! - Environmental Awareness for Gravel Road Maintenance - DVD from SEMCOG &amp; Road Commission for Oakland County</b></p>
<b>Training completed:</b>	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	<p><b>Written O&amp;M Procedures</b></p> <p><b>Written contract requirements</b></p>
<b>Training completed:</b>	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	<b>Training consistent with LID and other training/conferences as they become available</b>

<b>Training Topic Area</b>	<b>Employee Group to Receive Training</b>	<b>Training Frequency Goal</b>	<b>Potential Training Type</b>
<b>Training completed:</b>			<p>All stormwater management, design, and field staff have passed the comprehensive soil erosion and sedimentation control exam through EGLE. In addition, several field and design staff are trained as construction stormwater operators. The temporary employee in the stormwater department also had undergone construction stormwater operator training and passed the EGLE SESC exam prior to completing any inspections.</p> <p>In addition, at least one member of the stormwater team attended each of the following: Healing Our Waters (M, 5/8 – 5/9), West Michigan Soil Erosion Control Network (M&amp;F, 12/6), Green Infrastructure Exchange Network (M, 6/3 – 6/5). M - Management. F – Field Staff.</p>

<b>Training Topic Area</b>	<b>Employee Group to Receive Training</b>	<b>Training Frequency Goal</b>	<b>Potential Training Type</b>
Controls to reduce discharge of pesticides, herbicides, and fertilizers	Contractors	Ongoing	<p><b>Compliance with the State of Michigan Public Act 299 of 2010</b></p> <p><b>Staff is trained in proper use of pesticides, herbicides and fertilizers</b></p> <p><b>Contracts for these services contain language requiring proper usage</b></p> <ul style="list-style-type: none"> <li><b>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></li> <li><b>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 &amp; other materials to enter storm sewers, catch basins and/or water ways."</b></li> <li><b>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."</b></li> </ul>
<b>Training completed:</b>	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.		
<b>Other Topics</b>			

<b>Training Topic Area</b>	<b>Employee Group to Receive Training</b>	<b>Training Frequency Goal</b>	<b>Potential Training Type</b>
Construction site stormwater runoff	Field Staff Contractors	Preconstruction meeting	<b>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</b>
<b>Training completed:</b>	Stormwater pollution prevention is discussed at each pre-construction meeting for City projects. Contractors, city field staff, and designers are reminded of storm water 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 31 pre-construction meetings were attended where these items of soil erosion protection were discussed.		

<b>Training Topic Area</b>	<b>Employee Group to Receive Training</b>	<b>Training Frequency Goal</b>	<b>Potential Training Type</b>
LID	Stormwater Management Personnel, Field Staff & Design Personnel	Ongoing	<p><b>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;</b></p> <p><b>Reduce Runoff: Slow It Down, Spread It Out, Soak It In - DVD from USEPA</b></p> <p><b>RiverSmart Homes: Getting Smart about Runoff - DVD from USEPA</b></p> <p><b>Building Green: A Success Story in Philadelphia - DVD from USEPA</b></p> <p><b>After the Storm - DVD from USEPA</b></p> <p><b>BMP Tour of GVSU Campuses – Walking Tour</b></p>
<b>Training completed:</b>	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	<p><b>Items will be maintained on City intranet and periodic announcements made. These items will include various brochures and include;</b></p> <p><b>WaterPollutionReportForm.doc</b></p> <p><b>Article_City_Employees.doc</b></p>
<b>Training completed:</b>	141 new City staff were trained this year.		

<b>Training Topic Area</b>	<b>Employee Group to Receive Training</b>	<b>Training Frequency Goal</b>	<b>Potential Training Type</b>
General Storm Water Education	Top Management	Annually	<b>“Back to Basics” Storm Water Training – Live Presentations (in 2011 the Six Minimum Control Measures were highlighted)</b>
<b>Training completed:</b>	Due to management changes, we have been unable to confirm this training. Training will be given at this month’s Top Management meeting.		



## **Part 2E - Post Construction Controls Activities**

### **August 1, 2018 to July 31, 2019**

#### 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 6 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 – Public Education Plan

### 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, 2018, and July 31, 2019.

### Public Engagement Committee

The 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 2018-2019 Public Engagement Committee consisted of the following actively attending community partners:

<b>Table 3. Non-MS4 Partner Organizations</b>	
<b>Agency</b>	<b>Representative</b>
EGLE	Amanda St. Amour
GVMC – West Michigan Clean Air Coalition	Andrea Faber
Ottawa Co. Conservation District	Benjamin Jordan
East Jordan Ironworks	Kevin Spyhalski
GVMC	Eileen Boekestein
Trout Unlimited	Jamie Vaughan
Groundswell, GVSU	Joanna Allerhand
Groundswell, GVSU	Jessica Vander Ark
Kent County Resource Recovery	Isaac Thaler
EGLE	Michelle Storey
GVMC	Courtney Cromley
WMEAC	Kyle Hart
WMEAC	Thea VanGoor
GVMC/GVSU	Carlos Calderon
GVMC	Rachel Frantz
Grand Rapids Public Museum	Stephanie Ogren
American Rivers	Shanyn Viars
GVMC	Wendy Ogilvie
Kent County Health Department	Brendan Earl
Kent Conservation District	Jessie Schulte
Citizen Labs	Allen Clark
Cannon Township	Tricia Anderson
GVMC	Cara Decker

**Table 3. Non-MS4 Partner Organizations**

Agency	Representative
EGLE	Dana Strouse

The goals of the Public Engagement Committee are: To support programs, events, materials, and activities that help communities meet the educational requirements of the NPDES stormwater permits; To document successful implementation of the Information and Education Plan of the federally-approved Lower Grand River Watershed Management Plan; and, To cooperate and collaborate with LGROW’s network to foster public education and outreach regarding shared environmental priorities. During this reporting period, the Committee met six times. Each committee meeting is organized around these three goals, with specific activities scheduled throughout the year to meet those goals as follows:

January: Place orders for PEP giveaway materials and discuss distribution plan

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

May: Ongoing business, Committee updates, Planning for summer events

September: Review event year, Ongoing business

October: Choose focus areas for following year, Discuss changes for next year, Ongoing business,

November: Finalize giveaway order options 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 giveaways 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, 2018 through July 31, 2019 to 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.

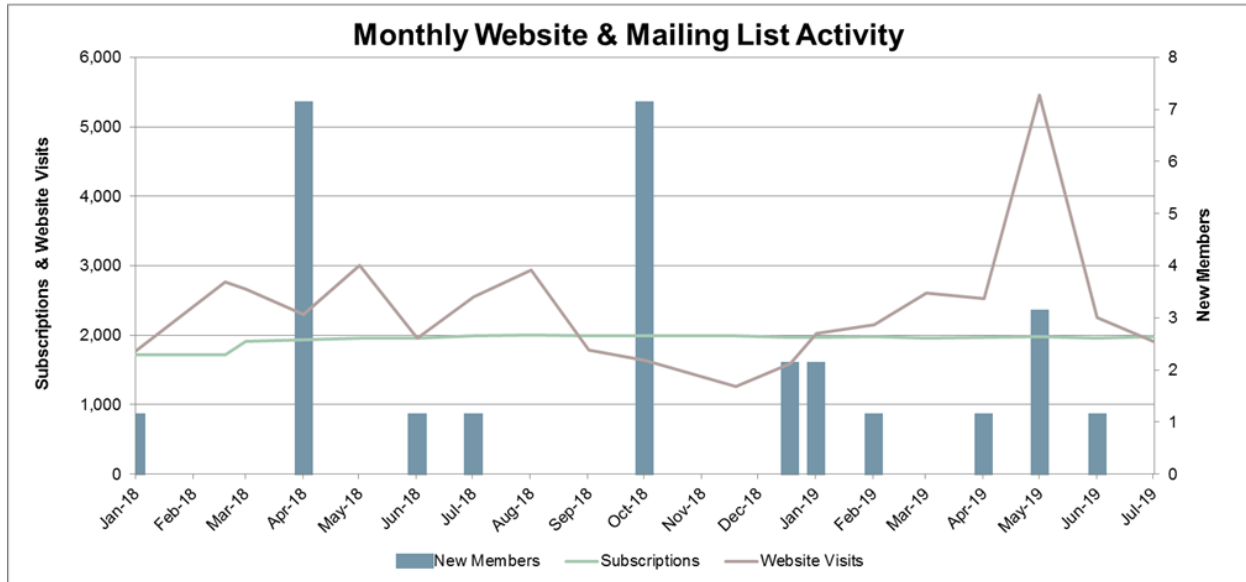
*Target Audience:* Residents, visitors, and public employees

*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.

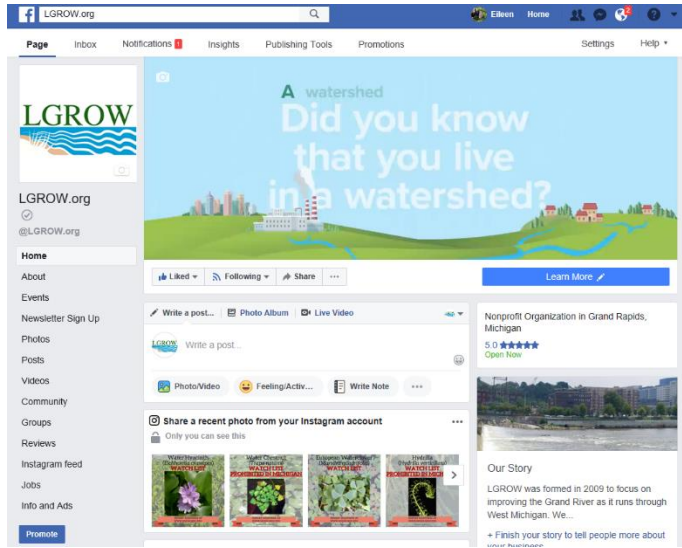
*Delivery Method:*

- Permittees' websites link to LGROW's website, [www.lgrow.org](http://www.lgrow.org). The watershed website provides information on non-point source (NPS) pollution, local watershed issues, water science education, and watershed management. The LGROW website was accessed by an average of 913 unique visitors each month. The website logged 10,959 unique visitors and 28,120 total page views 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. Website and mailing list activity by month**

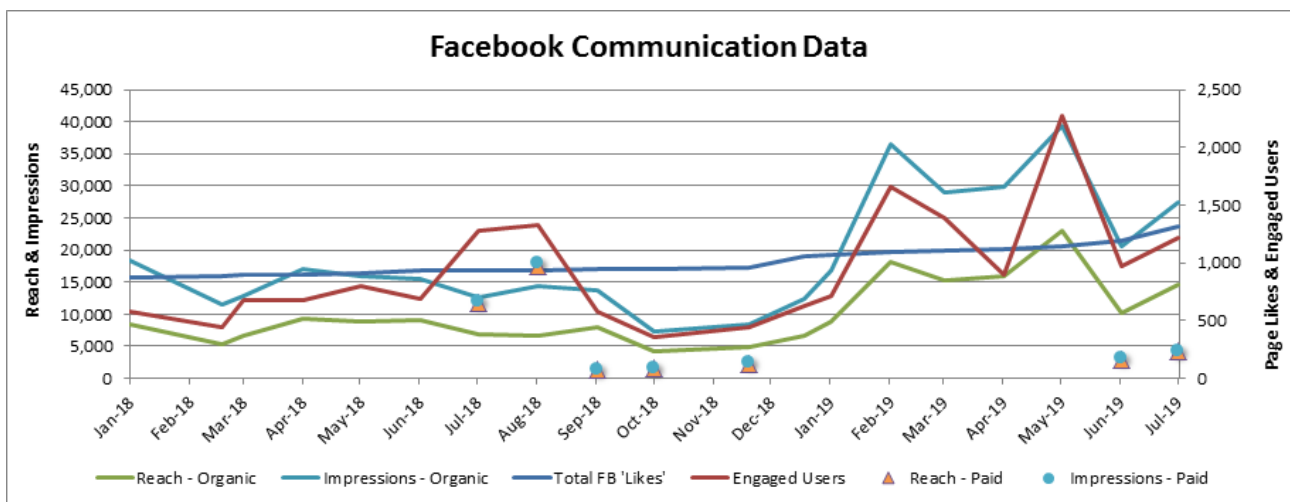


- LGROW worked to promote participation through its Facebook page with a regular posting schedule including watershed project highlights, upcoming events, and volunteer opportunities. Throughout the reporting period, LGROW Facebook posts have reached 166,087 people. As of the end of the reporting period, the Facebook page reached 1,313 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**





City of Grand Rapids  
 Lower Grand River Watershed  
 2018-2019 MS4 Progress Report

- Many Permittees displayed lamppost banners when purchased in 2012 or 2018 to advertise the presence of the Grand River, Rogue River, Buck Creek, Thornapple 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.

<b>Table 4 LGROW and MS4 Participant Events</b>		
<b>MS4 Community</b>	<b>Event/ Activity</b>	<b>Date</b>
East Grand Rapids, City of	LGROW Spring Forum	5/17/19
	Touch a Truck Event	5/22/19
Ferrysburg, City of	ReLeaf Tree Planting	6/8/2019
Forest Hills Public Schools	Classroom Programming	Ongoing
Fruitport, Village of	Old Fashioned Days	5/22-5/28/19
Georgetown Charter Township	Jenison Public Schools Collaboration	Ongoing
	Ottawa County Water Quality Forum	11/19/2018
	LGROW Spring Forum	5/17/2019
Grand Haven, City of	Earth Day Festival	4/27/2019
	Whitecaps	7/28/2019
	Robinson Elementary	10/10/2018
	Coast Guard Festival	7/27-8/5/2018; 7/26 - 8/4/2019



<b>Table 4 LGROW and MS4 Participant Events</b>		
<b>MS4 Community</b>	<b>Event/ Activity</b>	<b>Date</b>
	Salmon Festival	9/14-15/18
Grand Rapids, City of	Home and Garden Show	3/7-3/10/19
	Mayors Grand River Cleanup	9/8/18
	Ottawa County Water Quality Forum	11/19/18
	MWEA Watershed & Stormwater Seminar	12/4/18
	MWEA Watershed Summit	3/27/19
	Dia del Nino	4/27/19
	LGROW Spring Forum	5/17/19
	Water Resource Recovery Facility Tours	Ongoing
	Rainbarrel Workshops	5 in 2019
	Grand River Water Festival	6/22/19
	MWEA Annual Conference	6/23-6/26/19
	Rain Garden/GI Workday	October 2018 and February 2019
	National Green Infrastructure Certification Pilot Program	Ongoing
Grand Rapids Charter Township	Partner with FHPS	Ongoing
Grandville, City of	Buck Creek Cleanup	8/18/18
	Mayors Grand River Cleanup	9/8/18
	Michigan Week Community Event	5/15/19
	MWEA Annual Conference	6/23-6/26/19
	LGROW Spring Forum	5/17/19
Hudsonville, City of	Ottawa County Water Quality Forum	11/19/18
	DPW Days	5/4/19
	LGROW Spring Forum	5/17/19
	MWEA Watershed & Stormwater Seminar	12/4/18
	MWEA Watershed Summit	3/27/19
Kent County Road Commission	Facility Tours	Ongoing
	LGROW Spring Forum	5/17/19
	MWEA Annual Conference	6/23-6/26/19
Kent County Drain Commission	Riparian Planting at Shadyside Park	5/15/19
Kentwood, City of	Buck Creek Cleanup	8/18/18
	Rain Garden/GI Work Day	1/11/19
	Earth Day, Blandford Nature Ctr.	5/20/19
	Presentation @ Byron Ctr.	5/19

<b>Table 4 LGROW and MS4 Participant Events</b>		
<b>MS4 Community</b>	<b>Event/ Activity</b>	<b>Date</b>
	Charter School for rain garden	
	LGROW Spring Forum	5/17/19
Ottawa County Administration and Water Resources Commissioner	LGROW Spring Forum	5/17/19
	Ottawa County Water Quality Forum	11/19/18
Plainfield Charter Township	LGROW Spring Forum	5/17/19
Sparta, Village of	Partnership with Sparta Schools	Ongoing
	LGROW Spring Forum	5/17/19
	ReLeaf Tree Planting	6/8/19
	Nash Creek Cleanup	Multiple from 2018-2019
Spring Lake, Village of	LGROW Spring Forum	5/17/19
Walker, City of	MWEA Watershed & Stormwater Seminar	12/4/19
	LGROW Spring Forum	5/17/19
	Storm Drain Stenciling Event	6/1/19
	Indian Mill Creek Cleanup	6/2/2018
	Walker Carnival	6/10/19
	Green Infrastructure Seminar	8/23/18
	Green Infrastructure Tour	10/31/18
Wyoming, City of	Buck Creek Cleanup	8/18/18
	Partnership with Godwin and Wyoming Schools	Ongoing
	Facility Tours	Ongoing
	LGROW Spring Forum	5/17/19
	LGROW Watershed Jamboree	9/13/18
	Grand River Water Festival	6/22/19

- The Quiet Water Symposium promotes non-motorized outdoor recreation and a shared concern for our Great Lakes environment. The 24th Annual Symposium was held on March 2nd, 2019. 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 20, 2019. 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 Friends of Indian Mill Creek watershed group, and stormwater educational materials focusing on proper disposal of household hazardous wastes, alternatives to HHW, and reporting of illicit discharges.



- LGROW hosted its 16th Annual Grand River Spring Forum in the Blandford Nature Visitor Center, Friday May 17<sup>th</sup>, 2019. The event had a record-setting 150 attendees and attracted many great sponsors. During the morning portion of the Forum, attendees were welcomed by GVMC Director, John Weiss, Blandford Nature Center Land Stewardship Manager, Julie Batty, and the Chair of the LGROW Board, Carrie Rivette. LGROW Committee Chairs gave brief updates on their committee accomplishments, goals, and work being done. Don Carpenter, PhD, PE, LEED AP, the keynote speaker, presented his findings with the presentation, 'Determining Strategies for Removing Barriers to Green Infrastructure Implementation.'

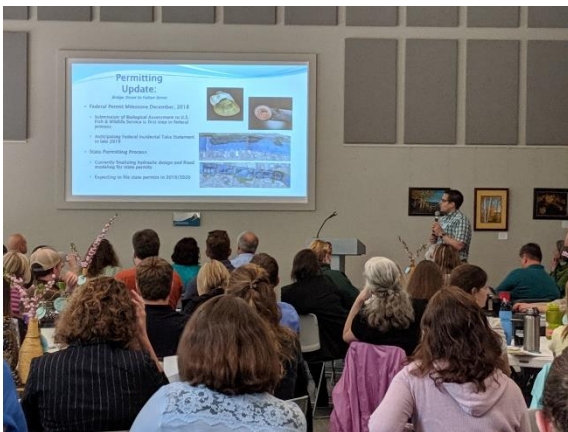


While the adults were enjoying LGROW updates and the Keynote presentation, student groups from five local schools presented their own projects to each other in the Star Schoolhouse. During the break, the students brought their posters to the Visitor Center for the Forum attendees to view and ask questions about their projects.



Finally, the 'Shed Talks featured multiple presentations celebrating LGROW projects and partnerships. The 'Grand River Rainscaping Program & Workforce Development,' presented by Revery Landscape Architect, Rebecca Marquardt and Al Pennington from Moore & Bruggink, gave an overview of the National Green Infrastructure Certification Course which piloted this past winter at Grand Rapids Community College. Matt Chapman, Grand Rapids Whitewater, and Reverend Nurya Love Parish of

Plainsong Farms, presented on the Lower Grand River Habitat Restoration & Farmland Conservation Project. Nichol DeMol of Trout Unlimited and Paco Ollervides from River Network gave a presentation on 'Community Engagement in Restoration' which highlighted partnerships in the watershed and diversity, equity, and inclusion efforts and future goals. The final 'Shed Talk was the unveiling of the Grand River Adopt-a-Drain program by GVMC's Stormwater Coordinator, Cara Decker, and James



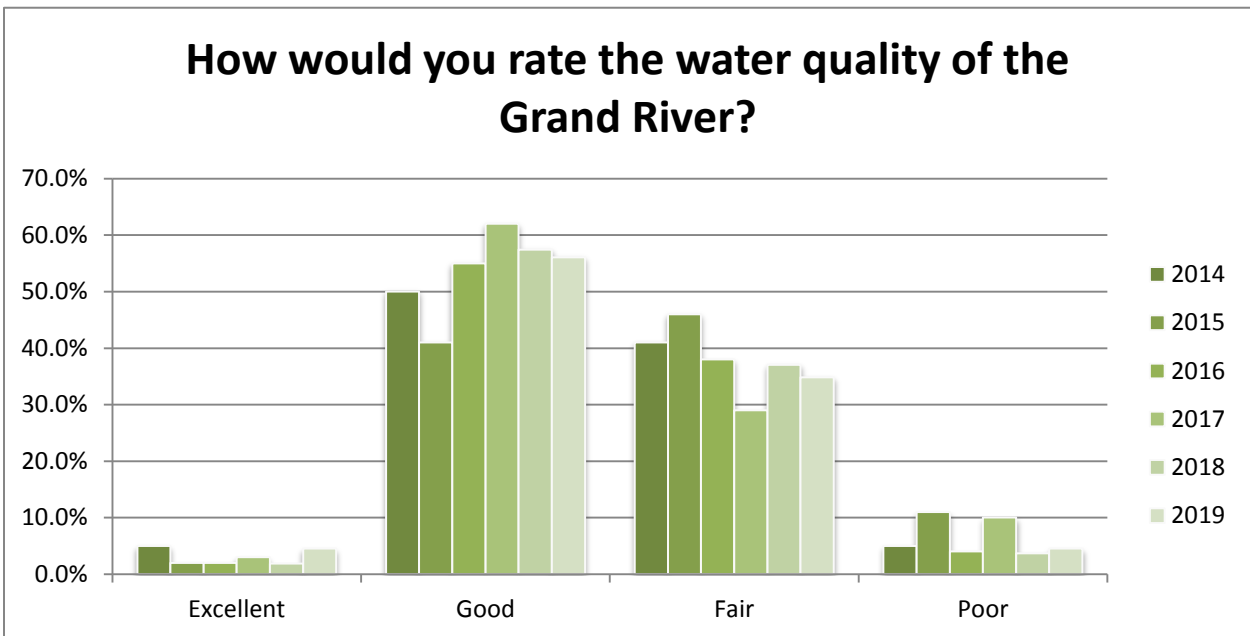
Wilfong of Citizen Labs, who have been working on the program. This program is an extension of the existing City of Grand Rapids Basin Buddy Program, where citizens 'adopt' a storm drain and promise to keep it clear of trash and debris.

After lunch was served, attendees were invited to attend one of two walking tours. The Highlands tour, led by the Land Conservancy, explored the site of the Highlands Restoration Project. The former Highlands Golf Course has begun to return to its natural state and will soon have a daylighted stream running through it, which is currently piped underground. The second walking tour featured a bioswale demonstration site, funded by the National Fish and Wildlife Foundation 5 Star and Urban Waters Grant, located adjacent to Blandford Nature Center's trail along Milo Street. The bioswale

slows, filters, and captures stormwater runoff from the street before it enters the Brandywine Creek, a tributary to Indian Mill Creek.

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 very similar numbers of respondents identifying the Grand River as "Poor", "Fair", or "Good" but a slight increase in number of respondents identifying the Grand River as "Excellent" from 2018 to 2019.

**Figure 5. 2019 Survey Results: How would you rate the water quality in the Grand River?**



- LGROW sponsored the Grand River Water Festival on June 22, 2019, 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 handed out 1-page watershed summaries to each visitor who identified their Subwatershed. 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 Sunday, July 28, 2019. The public was welcome to bring their dogs to the ballpark during that game. GVMC staff and volunteers from the City of Grand Haven (a MS4 permitted community) helped run a booth. Volunteers handed out LGROW pet waste bag dispensers to coincide with that night's theme. Volunteers discussed the importance of watershed protection with attendees of the game. Human attendance at the ballpark was 6,443 people that night.



- LGROW worked with students from schools throughout the watershed to educate about stormwater runoff and the connections between land use and water quality. Throughout the permit cycle, LGROW worked with 2,399 students living in MS4 communities. These activities can be seen in the table below. LGROW also led a professional development session for 25 educators from within the watershed, 21 of whom work in communities covered by an MS4 permit. Teachers were trained in



Students learn to play "Pollution or Solution" chutes and ladders game focusing on stormwater runoff and BMPs at River City Water Festival

the use of Project WET materials, which teach students about a variety of water issues including watersheds, water quality, stormwater, and best management practices. 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 4 schools in the nested jurisdiction of Kentwood Public Schools, at 5 schools in the permitted district of Forest Hills Public Schools, and at 1 school in the nested jurisdiction of Grandville Public Schools in 2018-2019.

**2018-2019 Student Outreach & Education Metrics (8/1/2018-7/31/2019)**

Date	Event	Location/School	Subwatershed	Youth Reached	MS4 Community
9/14/2018	Bioswale Maintenance Day	North Park Montessori	Lamberton Creek	50	Grand Rapids
10/15/2018	Water Quality Monitoring (10/15, 10/29, & 10/30/19)	Grand Rapids Public Museum School	Lamberton Creek, Mill Creek, and Indian Mill Creek	50	Grand Rapids
10/17/2018	River Walk Tour: Rapids Restoration & Grand River Water Quality	Kent Innovation High	Lower Grand	75	Various
10/17/2018	Rainscaping Site Assessment Activity & Native Plantings along Buck Creek Riparian Area	Grandville Middle School	Buck Creek	75	Grandville
10/18/2018	River City Water Festival: "Chutes and Ladders" Stormwater Pollution & Green Infrastructure Game	23 classes from schools throughout the watershed	Lower Grand	661	Various
10/19/2018	Sustainable Agriculture & Watershed Health Field Days at Plainsong Farm (10/19/18 & 5/30/19)	Sparta Middle School	Rogue River	110	Sparta
10/19/2018	Bioswale Planting at Blandford Nature Center/Milo St.	Blandford School (GRPS) 6th, CA Frost Middle/High, CA Frost Elementary	Indian Mill Creek	130	Grand Rapids
10/26/2018	Sustainable Agriculture & Watershed Health Field Days at Plainsong Farm (10/26/18, 12/4/18, 3/14/19, 5/28-29/19)	East Rockford Middle School	Rogue River	118	Rockford
11/02/2018	Water Quality Monitoring	Kent Skills Career Center	Lamberton Creek	25	Various
11/29/2018	Chutes and Ladders Stormwater Pollution & Green Infrastructure Game	Northern Trails 5/6 (Forest Hills)	Lower Grand	30	FHPS
12/13/2018	Watershed Presentation & "Chutes and Ladders" Stormwater Pollution & Green Infrastructure Game (12/13/18) & Watershed/Water Quality Monitoring Field Day @ Buck Creek (4/30/19)	Grandville Christian School	Buck Creek	55	Grandville
3/26/2019	Watershed Presentation and Assistance developing Groundswell project on Rain Gardens and Native Plantings (3/26/19, 4/18/19)	Central Woodlands 5/6 (Forest Hills)	Buck Creek	30	FHPS
04/08/2019	Watershed Presentation; Training high school seniors to teach watershed concepts to 2nd graders (4/8/19) & Project Showcase Assistance with Seniors and 2nd Graders (5/16/19)	East Lee Campus	Plaster Creek	25	Wyoming
5/6/2019	Macroinvertebrate Sampling in Grand River @ Canoemobile (5/6-5/6/19 & 5/14/19)	Grand Rapids Public Schools	Lower Grand	400	Grand Rapids
5/21/2019	Watershed & Stormwater Field Trip @ Plaster Creek	Vista Charter Academy	Plaster Creek	90	Grand Rapids
5/16/2019	Stormwater & Green Infrastructure Presentation and Model Building	Jenison Junior High	Rush Creek	405	JPS
05/22/2019	Stream Habitat Assessment (for erosion) on Forest Hills Northern Campus	Northern Trails 5/6 (Forest Hills)	Lower Grand	30	FHPS
06/28/2019	River Walk Tour: Rapids Restoration & Grand River Water Quality	TRIO Upward Bound (GVSU program to encourage GRPS students to attend college)	Lower Grand	20	Grand Rapids
06/10/2019	Indian Mill Creek and Coldbrook Creek Cleanup	Kenowa Hills High	Indian Mill Creek	50	KHPS
		<b>TOTAL YOUTH REACHED</b>		2399	

- LGROW's 30-second "Find my watershed" advertisement was played throughout the summer at Downtown Grand Rapids Inc.'s "Movies on Monroe" series. The advertisement was played at 4 events, with each night averaging over 4,000 people.



- On September 13, 2018, watershed groups across the LGRW came together to collaborate, share accomplishments and struggles, and to meet the public at the first annual Watershed Jamboree. There were representatives from the Rogue River, Plaster Creek, Indian Mill Creek, Flat River, Buck Creek, Coldwater River, Sand Creek, Thornapple River, and Rush Creek watersheds, who brought displays, brochures, and other materials to help spread information and involve the public in their work. After the meeting, the public was invited to join the fun for free hot dogs, games, macroinvertebrate identification, soil painting, fly fishing for land trout, and live music from the B-Side Growlers. There are 31 subwatersheds within the LGRW, only 11 of which have established watershed groups or representatives. LGROW is encouraging the success of established groups and fostering the establishment of new subwatershed groups. A Subwatershed group supporting the Coldbrook Creek watershed was formed as a result of this event. A Subwatershed Committee, representing the leadership of Subwatershed groups throughout the LGRW was also formed to give subwatersheds a voice on the LGROW Board.



- 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.



Summer Seasonal  
Tips Flier



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

*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

*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.



Storm drain markers

*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, 28 drain markers were installed and 63 new catch basins pre-stamped with the message "No Dumping: Drains to Waterway" were installed in the watershed. Over 2,000 pre-stamped catch basins were already in place prior to this reporting period.
- 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 Pledges, 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 materials were used by individual Permittees.
- 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.

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.

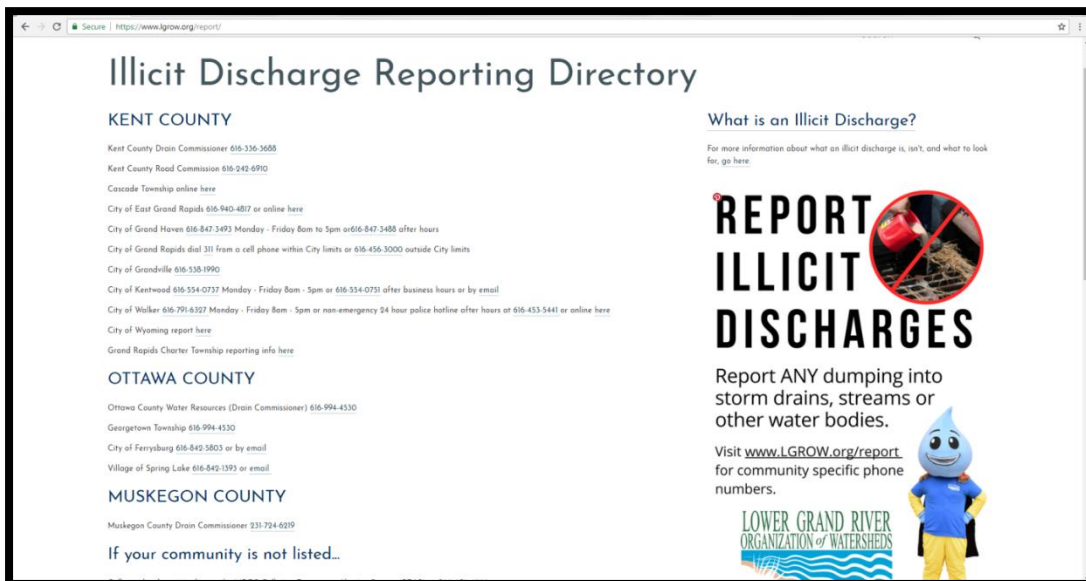
*Content of Message:* 1) How to identify illicit discharges. 2) How to report illicit discharges. 3) Water quality impacts from illicit discharges. 4) Consequences/penalties associated with illicit discharges and improper waste disposal. 5) Proper septic system care and maintenance. 6) How to recognize system failure. 7) Impacts failing systems have on water quality. 8) Where to go for assistance.



Coasters

*Delivery Method:*

- LGROW's Reporting Directory website for MS4 communities across the Lower Grand River Watershed was updated to include current information 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. Permittees made information about how to report illicit discharges available to residents and staff through a variety of channels, including by linking to this website.



- Illicit discharge magnets and coasters were distributed to promote use of the website and to raise awareness for DPW employees and citizens, encouraging them to report illicit discharges.
- Newsletter articles titled, 'Septic System Maintenance Protects Human Health and Water Quality' and 'Greening Your Spring Cleaning' were published for all MS4s to distribute to their employees or citizens. These articles highlighted steps the public can take to reduce illicit discharges from failing septic systems or improperly managed household hazardous waste.
- 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 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 17-21, 2018, by publishing a blog post and daily social media posts about proper septic maintenance. MS4 communities participated by using EPA's SepticSmart Week Social Media Guide or by sharing LGROW information via their social media channels.

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



*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



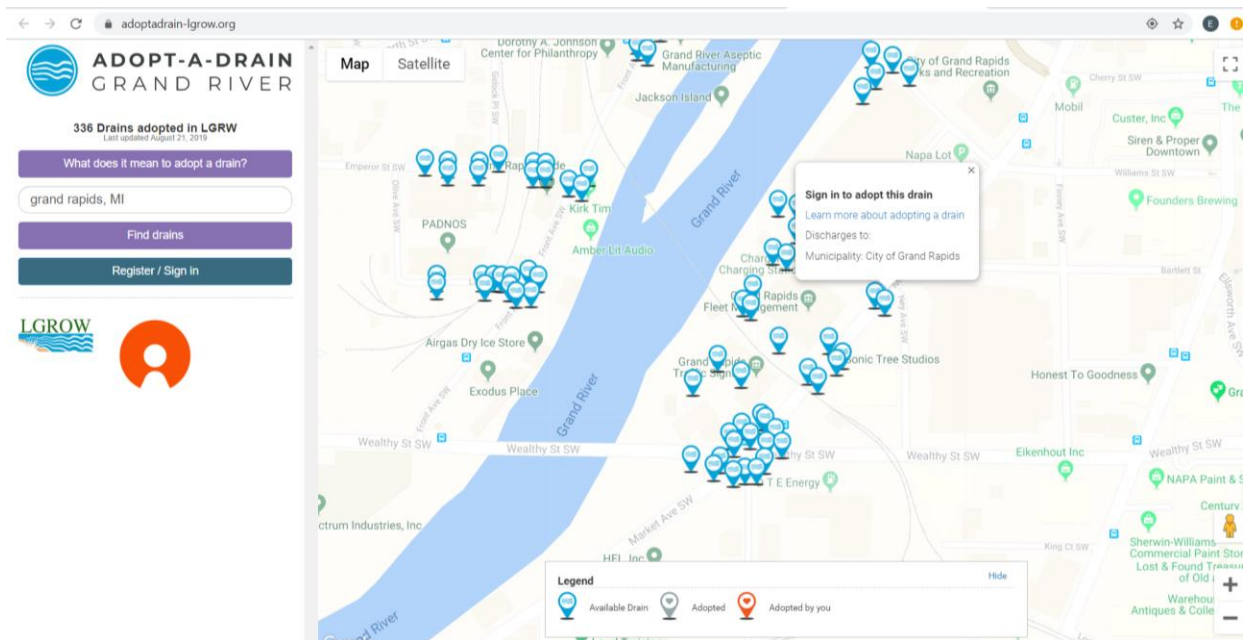
*Content of Message:* 1) BMPs for car, pavement, power washing. 2) Preferred cleaning materials and practices, "phosphate free as important as biodegradable". 3) BMPs for pesticide use, fertilizer use and their disposal. 4) BMPs for proper management of grass clippings, leaf litter, and animal wastes. 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*" at events and in municipality offices. This brochure is available in English and Spanish.
- Several communities hosted rain barrel events or rain garden work days as detailed in their PEP Questionnaires.
- LGROW and Permittees distributed pet waste bag dispensers to hook to the pet's leash. The dispensers came with a waterproof card providing information on dog parks in the Watershed and discussing the connection between picking up pet waste and protecting stormwater.
- Permittees also distributed a shammy to use for home car washes along with a brochure including 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.* The brochure also provides other environmental friendly car care tips.
- Some permittees distributed a flyer describing proper procedure for draining residential swimming pools in the fall. This was distributed publicly online via [www.lgrow.org](http://www.lgrow.org) and made available for customization by MS4 communities. The flyer can be downloaded at <https://www.lgrow.org/ms4information>.
- LGROW partnered with the nonprofit volunteer group Citizen Labs to expand the City of Grand Rapids' "Basin Buddy" program to MS4 communities throughout the LGRW. Adopt a Drain Grand River (<https://www.lgrow.org/adopt-a-drain>) provides education to citizens on the locations, ownership, and discharge location of storm drains in the watershed. It also allows citizens to assist municipalities by volunteering to "adopt" a catch basin by keeping it clear of trash, organic debris, and snow throughout the year. Currently 13 MS4 communities are participating in the program and 336 catch basins have been adopted.



City of Grand Rapids  
Lower Grand River Watershed  
2018-2019 MS4 Progress Report



Public Education Topic 5 - Waste Management Assistance

*PEP Objective 5:* Education on proper disposal of household hazardous 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 wastes, chemicals, motor vehicle fluids and unused medications.

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 and LGROW.org shared the newsletter article 'Greening Your Spring Cleaning' This article encourages 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 allow 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.

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

*Delivery Method:*

- LGROW continued to promote 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 24 properties, 22 of which were in MS4 communities. Residents who have a site assessment completed receive a customized report of what green



**Grand River Rainscaping**  
An LGROW Program

**TREATING STORMWATER NATURALLY**

**WHAT IS RAINSCAPING?**  
Rainscaping is a method of watershed restoration that promotes green infrastructure awareness and implementation among homeowners, landscapers, and contractors that highlights both the benefit of green infrastructure practices and the skills required for installation and maintenance.

**GREEN INFRASTRUCTURE**  
Green infrastructure is the practice of infiltrating stormwater by use of natural systems in order to reestablish a healthy water flow and improve water quality. These systems allow for the infiltration of stormwater before it is released into conventional storm sewer systems, protecting our lakes, rivers, and streams from harmful pollutants. These practices lead to vital community features such as public parks, forests, rivers, wetlands, and lakes. Using these natural systems to treat stormwater will result in clearer water, improved air quality, healthy wildlife habitats, and safe recreation sites. Urban areas are beginning to face new state and federal regulations to clean up rivers and reduce stormwater runoff. With green infrastructures these communities can create comprehensive plans, determine new development areas, and redevelop other areas to improve their local communities.

**HOW RAINSCAPING CAN HELP YOU!**

- Make your yard a haven for bees and butterflies
- Make your community healthier and more livable
- Improve wet problem areas in your yard
- Meet regulatory and economic goals
- Reach cost-effective and sustainable green decisions
- Manage your natural resources more effectively
- Redesign urban landscapes for environmental health

**GETTING STARTED**

**RAIN GARDENS**—Rain gardens are filled with specifically selected native plants that absorb untreated stormwater with their deep root systems, preventing it from polluting our waterways.

**STREAMSIDE BUFFER/RIPARIAN AREAS**—Streamside buffers, or riparian areas, are made up of native plants that surround a river or waterway in order to control erosion, filter pollutants, protect fish, reduce flow, and provide suitable wildlife habitat.

**NATIVE PLANTS**—Native landscaping utilizes indigenous plant species that attract pollinators and other beneficial insects. They have deep root systems which help infiltrate stormwater and require less water, fertilizer, and overall care, once established.

**TREES**—Trees are increasingly recognized for their importance in managing runoff. Roots take up water and help create conditions in the soil that promote infiltration. Depending on the size and species, a single tree may store 100 gallons, or more, of stormwater.

**RAIN BARRELS**—Rain barrels capture and store rainwater for future use. They can be bought or made from recycled drums of various sizes and connected directly to a downspout.

Find your watershed at [www.LGROW.org/watershedmap](http://www.LGROW.org/watershedmap)

**CONTACT US! | P 616-776-7605 | E INFO@LGROW.ORG**

[LGROW.org/rainscaping](http://LGROW.org/rainscaping)

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, 2018, and July 31, 2019. 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 and reported on 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. Based on the input provided by the Permittees, the most popular topics addressed were proper disposal of household hazardous waste and proper use of pesticides, herbicides, and fertilizers. In total, materials were distributed at around 50 events (see Table 4) and at various locations throughout the watershed.

The 2013 PEP identifies both outputs (number of items/brochures distributed and people reached) and outcomes (changes in awareness, attitudes, and behavior) as measures to evaluate during each 5-year permit cycle. Outputs for the current permit year have been identified in the PEP activity descriptions above. LGROW has been measuring outcomes through a 12-question community survey, which was last completed in 2017 and reported on in the 2016-2017 Progress Report. A new community survey is being developed as part of the contracted work with Petersen Research Consultants, LLC and will be implemented during the coming reporting cycles.

One outcome that is evaluated annually is the number of illicit discharge reports received by municipalities from the public. PEP Objective 3 identifies an overall 15% increase in illicit discharge reports each year in each community as the fifth-year milestone goal. Because the baseline for many communities was zero reports initially, it is difficult to evaluate if this objective is being effectively met with a 15% increase since an increase in reports may or may not also indicate an increase in illicit discharges. Cumulatively, the reporting MS4s had 28 illicit discharges reported during the 2014-15 reporting period, 61 illicit discharges reported during the 2015-16 reporting period, 54 reported during the 2016-17 reporting period, 34 reported during the 2017-2018 reporting period, and 39 reported during the 2018-2019 reporting period. From 2015 to the current reporting period, there has been a 39% overall increase in reports. The number of illicit discharges reported in each community varied widely, with a little less than half of permittees receiving zero reports. Looking at the number on a watershed-wide scale shows an increase in reporting for illicit discharges during this reporting period compared to last. This could be due to LGROW's focused effort on preventing illicit discharges during this reporting period. Efforts to educate the public about illicit discharges will continue in order to raise awareness and



encourage citizen reporting. Of the 39 illicit discharges reported in the watershed, all were investigated, and 35 of them were eliminated. Once investigated, a few of the reported discharges ended up being exempt (ie. uncontaminated groundwater), or non-existent. More community specific information can be found in Part 4 of this report.

Objective 3 also focuses on reducing illicit discharges from failing septic systems in MS4 communities. The Kent County Health Department has been an active member of the Public Engagement Committee in the past reporting cycle and provided the following information on septic system repairs in Kent County MS4 communities: During the 2018-19 reporting period, the KCHD issued 83 repair permits in MS4 communities in Kent County. These repairs are estimated to have prevented the discharge of 37,350 gallons daily of untreated or partially treated sewage with the potential to negatively affect groundwater and/or surface water. This totals 13,632,750 gallons of illicit discharges that were avoided annually. This data is based on an average 3-bedroom house in Kent County with 150 gallons/day per bedroom with double occupancy per the Sewage Regulations of Kent County, MI.

Another outcome measured annually is the number of watershed residents dropping off HHW during collection events as an evaluation of PEP Objective 5: Waste Management Assistance. The PEP sets a 15% increase in the number of watershed residents dropping off HHW during collection events as the fifth-year milestone. In 2015, Kent County switched their household hazardous waste collection from an appointment only system to regularly scheduled hours of operation. During the 2014-15 reporting period, an estimated 3,784 users dropped off household hazardous waste. During the 2015-16 reporting period the number of users climbed to approximately 5,046. Kent County did not track number of users from the 2016-2017 reporting period on, and instead tracked poundage, so the total poundage of materials dropped off will serve as an evaluation tool during this reporting period. The 2014-15 reporting period saw 102,064 pounds of household hazardous waste dropped off. During the 2015-2016 reporting year, users dropped off 197,404 pounds of HHW, and this climbed to 241,576 pounds during the 2016-2017 reporting period. In 2017, Kent County started reporting their HHW dropoff to LGROW in annual numbers rather than by reporting period. In the 2017 calendar year, they accepted 260,856 pounds of hazardous waste, a 71% increase in pounds from 2016. In 2018, they accepted 274,000 pounds of hazardous waste, a 5% increase in pounds from 2017. This represents a 139% increase since the drop off program started in the 2014-15 reporting period, which exceeds the fifth-year PEP objective of 15% increase. We use this program's data as the baseline for measuring increases since this model encourages more participation from Kent County residents. Utilization data for Ottawa County includes many areas outside the Lower Grand River Watershed so it doesn't provide a clear baseline for the permitted community participation within the watershed.

## 2019 Stormwater Public Education Plan (PEP) Questionnaire

### Reporting period of August 1, 2018 to July 31, 2019

Please complete this questionnaire to provide an evaluation of the stormwater education activities you have implemented between **August 1, 2018 and July 31, 2019**. GVMC will include this information, along with watershed-wide measures of effectiveness, in your 2018 Progress Report to EGLE. **Please return this form to GVMC by Friday, August 30, 2019.**

**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:

- |   |  |
|---|--|
| <input type="checkbox"/> LGROW Brochures  | <input type="checkbox"/> Paint by number watershed map   |
| <input type="checkbox"/> "Make your home the Solution to Stormwater Pollution" brochure                                 | <input checked="" type="checkbox"/> Trout stress ball with "Only rain in the drain – it leads directly to my home" |
| <input checked="" type="checkbox"/> "Do your part – be SepticSmart! brochure  | <input type="checkbox"/> Report illicit discharge magnets  |
| <input checked="" type="checkbox"/> Household hazardous waste disposal guidelines from Kent County or Ottawa County DPW | <input type="checkbox"/> Report illicit discharge coasters   |
| <input checked="" type="checkbox"/> LGROW Seasonal Tip Sheets (Fall, Winter, Spring, Summer)                            | <input type="checkbox"/> Native plant seeds  |
| <input checked="" type="checkbox"/> LGROW Chapstick   | <input checked="" type="checkbox"/> LGROW gardening gloves   |
| <input type="checkbox"/> LGROW Totebags   | <input type="checkbox"/> Safe waste disposal funnel  |
| <input type="checkbox"/> "Keep your lakes Great and your River Grand" sticker   | <input type="checkbox"/> Medication containers   |
| <input checked="" type="checkbox"/> Troutie coloring book   | <input type="checkbox"/> Floating key chain  |
|   | <input type="checkbox"/> Magnetic note pads  |
|   | <input checked="" type="checkbox"/> Other: Oil funnel, Lawn Care Tips, Drain the rain                              |

2. Have you given away all the materials (brochures, flyers, giveaways) you ordered from GVMC this year?

- Yes  No

3. Where did you distribute your materials?

- Government office  Library  Community event  Other Facebook Page

4. Approximately how many people did you interact with during distribution of materials? 350

5. What was the most popular giveaway from the materials distributed in your community? Lip Balm

6. What topics are of greatest interest to members of your community?

- |  |  |
|--|--|
| <input type="checkbox"/> How to report stormwater pollution              | <input type="checkbox"/> Proper use of pesticides/fertilizers/herbicides |
| <input type="checkbox"/> Stormwater discharge locations/impacts          | <input type="checkbox"/> Proper yard waste disposal                      |
| <input type="checkbox"/> Native vegetation/rain gardens/riparian buffers | <input type="checkbox"/> Proper septic system maintenance                |
| <input type="checkbox"/> Proper vehicle care/motor oil disposal          | <input checked="" type="checkbox"/> 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:
- Link to LGROW's reporting page posted to your website <https://www.lgrow.org/report/>
- Report Illicit Discharge magnets – Number distributed: Steelheaders
- Report Illicit Discharge key chains – Number distributed:
- Report Illicit Discharge coasters – Number distributed:

Please describe any interest, comments, or discussion generated from these materials:  
Recipients were surprised to see how seriously City staff take illicit discharges.

How many complaints were received from the general public regarding illicit discharges? About 20

**Newsletters, Banners, and Displays**

8. Did you display lamppost banners during this permit cycle?

- Displayed lamppost banners provided in 2009-2018 at (streets): Monroe & North Park
- Did not 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 the biggest impact was the adoption of catch basins after the winter clearing facebook posts.
- b. If applicable, list the newsletter name or webpage address used to distribute stormwater information to the public: <https://www.facebook.com/EnvironmentalServicesGR/>. There was also an article on soil erosion in the May issue of GR Connect.
- c. If applicable, how many residents received your community newsletter? Over 2,100 facebook followers. GR connect has 1,058 subscribers.
- d. If applicable, how many total website hits did you receive for your online newsletter articles or stormwater information website? Soul Grate reached almost 600 people. Catch basin clearing was over 1,000. Winter tips reached over 3,000.

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

- |  |                                     |  |
|--|-------------------------------------|--|
| Stormwater poster board display (Trifold)  | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |
| <input type="checkbox"/> No                |                                     |  |
| EnviroScape interactive stormwater model   | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |
| Watershed map with pushpins                | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |
| Stormwater mural banner and scavenger hunt | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |
| Major Runoff stormwater mascot             | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |
| Interactive corn hole board                | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |
| Interactive catch basin demos              | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |
| Watershed hand stamp                       | <input type="checkbox"/> Yes, Date: | <input checked="" type="checkbox"/> No |

**Events and Pledges**

11. Did you distribute any additional educational materials on native plants?

- Yes (Describe): Landscaping for water quality, MEAC brochures  No

12. Please describe any interest, comments, or discussion generated from native plant workshops or giveaways: How small changes in yards can make a big difference.

13. Did your community collect pet waste pledges distributed with the public education materials?  
 Yes, Number: 21       No

14. 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. Parking cars in the yard is not allowed in Grand Rapids. We did not participate in this. We encourage people to go to a commercial car wash.

15. Did you implement a storm drain awareness activity between August 1, 2018 and July 31, 2019?  
 Yes, we held a storm drain marking event on      (dates) and marked      (# catch basins)  
 Yes, we held a storm drain stenciling event on      (dates) and stenciled      (streets)  
 Yes, we have approximately 2,000 (#) 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: N/A  
Have you noticed a reduction in storm drain dumping?  Yes       No      Describe:      Added awareness tends to lead to more reporting of issues.

16. Please describe any interest, comments, or discussion generated from these materials/activities: N/A

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

Rain barrel workshop      Date: five in 2019      Number of Attendees: at least 10 attendees each  
 Rain garden/Green Infrastructure Workday      Date: October and February      Number of attendees: >= 10  
 River clean up (location): Grand Rapids      Date: 9/8/18      Number of Attendees: 1200  
 Watershed Jamboree – September 13, 2018  
 Ottawa County Water Quality Forum – November 19, 2018  
 MWEA Watershed & Stormwater Seminar – December 4, 2018  
 MWEA Watershed Summit – March 27, 2019  
 Earth Day at Blandford Nature Center – April 20, 2019  
 16<sup>th</sup> Annual Grand River Spring Forum – May 17, 2019  
 Grand River Water Festival – June 22, 2019  
 MWEA Annual Conference – June 23-26, 2019  
 West Michigan WhiteCaps Concourse Table – July 28, 2019  
 Other: Dia del Nino      Date: April 27, 2019      Number of Attendees: 100

Coloring books distributed

18. Describe any materials distributed, number of attendees, messages used at these events: While we didn't do drain marking event, our campaign to clear basins was amazing and so many took part. Received over 100 new basin buddies.

19. Please describe any educational materials, activities, or events that you would like to see LGROW provide in the future. Easy to transport games/demonstrations.

20. 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, sharing information on your community's social media accounts etc.) and submit any relevant documentation.

NGICP program setup/Pilot

Facebook

8/9/18 – Bioswales

8/15/18 Watershed Jamboree

8/23/18 WEMAC/Environmental Heros

8/30/18 Leaf Me Alone GR

8/30/18 Lend a Hand to the Grand/Basin Buddies

9/6/18 Mayors' River Cleanup

9/10-23/19 Septic Awareness

9/24/19 Draining swimming pools

9/25/19 LGROW Fall Tips

11/14/18 Atlas Bucket Pour

11/21/18 Blandford Rain Garden

12/26/18 LGROW Winter Tips

1/25/19 American Rivers GI Video

1/29/19 Winter Catch Basin Clearing

2/1-2/19 Catch Basin Clearing

2/3/19 Thank you for Clearing

2/4/19 Clearing Photos

2/6/19 Coldbrook Creek Organizational Meeting

2/12-14/19 Soul Grate Campaign

2/25/19 See us at the Home Show

3/1/19 Great Lakes Profiles

3/3/19 World's 25 Largest Lakes

3/25/19 LGROW Spring Tips

3/25/19 Lend a Hand to the Grand

3/16/19 Earth Month

3/18/19 2013 Flood Flashback

3/22/19 Plaster Creek Cleanup

4/30/19 WMEAC Grand River Water Quality

5/16/19 Green Cleaning

6/5/19 One Water

6/17/19 Plaster Creek Park

7/16/19 WMSBF Tours

## **Part 4 – Illicit Discharge Elimination Plan**

### **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 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.

During this reporting period, dry-weather screening was completed by GVMC with the assistance from the following communities: Cascade Township, the City of East Grand Rapids, City of Ferrysburg, Forest Hills Public Schools, Village of Fruitport, Georgetown Township, City of Grand Haven, City of Grandville, City of Hudsonville, Plainfield Township, City of Rockford, Village of Sparta, and the Village of Spring Lake. Other communities in the watershed that completed screening during this reporting period include: the Kent County Road Commission, and the City's of Grand Rapids, Kentwood, Walker and Wyoming. Field verification of discharge points and outfalls were completed during the screening, and then incorporated into the MS4's GIS data.

### Community IDEP Activities

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

Screening was conducted in Summer 2018. One resolved illicit discharge was described in the 2018 progress report. The only ongoing investigation from that sampling is the Silver Creek Drain. Further discussion pertaining to Silver Creek Drain is presented in the next Section.

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.

#### **678 Front Ave NW**

On September 10, 2018, we received a report from GVMC staff that Modernistic cleaning was dumping down a storm drain the night before. When questioned by the GVMC staff member, Modernistic informed them that they only put clean water down the catch basins. There was no evidence of dumping on September 10, so the catch basin was not cleaned out. However, Modernistic was informed that only stormwater is allowed in the catch basins.

#### **333 Washington St SE**

On September 13, 2018, we were notified that a watery-cement mixture was running into the storm drain near 333 Washington. When we arrived onsite, there was residue leading to two catch basins. Both basins and the gutter were cleaned and the property manager who had hired the offending contractor was notified. She contacted Concrete Solutions, contractor, and the remaining residue from the sidewalk and adjoining property was cleaned.

#### **I-196 at Valley NW**

We received a call on May 1, 2019, to inform us that a truck had tipped on I-196 at Valley and diesel fuel had spilled into two of our catch basins. Young's Environmental was called in and they vacuumed out the accident site and the two basins, recovering approximately 40 gallons of fuel. Booms were installed in the basins. The trucking company was billed for expenses.

#### **Wealthy St at Front St SW**

We received a call on May 4, 2019, to inform us that there was a large barrel leaking fluids in the street at Wealthy St and Front Ave. The barrel had been picked up and put in the parkway when we arrived, but there was evidence of this unknown fluid mixed with stormwater runoff in the curb line and in the catch basin sump. We put down sheet sorbents to stop the flow into the catch basin.

Sorbent booms were also added to protect the catch basin within 10 minutes of my arrival. We traced the storm main to a manhole approximately 500 feet away. There was no active flow in the manhole, and no evidence of any contamination in the manhole was apparent. A contractor was called in to clean the catch basin and the curb line.

The identity of the liquid is unknown. There were no labels on the barrel. It is also unknown who owned the barrel and how it got there. The barrel had a marking of 34L, and it was approximately 1/8 full when I was there. It is unknown as to how much liquid leaked out, but based on the amount of the sheen in the curb line, it is estimated that a minimal amount of liquid escaped the container.

#### **1101 Monroe Ave NW**

On May 31, 2019, one of our City soil erosion inspectors noticed firefighting foam in the parking lot at the Coldbrook Fire Training Facility at 1101 Monroe Ave NW and had entered one of the on-site catch basins. We spoke with the Battalion Chief who was on-site and she indicated that she was aware that the foam was not to be placed in the storm sewer system. However, there was an equipment malfunction on the truck that led to the discharge of the foam. Foam was not intended to be used in their training operations today. She indicated the leak lasted under a minute, but could not estimate a volume of release. The foam was drying out and we did not see any further discharge to the river due to limited volume and quick discharge time. Given the quick conduit to the river at this location, we determined no further action was necessary at this time.

#### **614 Neland SE**

On June 7, 2019, we received a call that there was a sewer backup at the above address and that sewage was going from the cleanout to the street and catch basin. Sewer maintenance vacuumed out the catch basin, cleaned the street and informed the home owner that a sewer cleaning company must be contacted to clean the lateral or the water would be shut off in the home.

Booms were placed to block additional sewage from entering the street. The lateral was repaired on June 7, 2019, and the booms were removed.



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.

**Wealthy Stormwater Station**

As noted in the 2018 progress report, numerous hours and close to \$200,000 were spent remediating the impact, and attempts were made to track by checking manholes and televising while distinct characteristics were present. Specialized manhole covers were installed in 2018 so that sampling could be performed when evidence of impact appeared again. However, additional releases have not occurred.

**Ken O Sha Industrial Dr SE**

On August 10, 2018, a City employee noticed a sewage smell near the outfall to Plaster Creek at the west end of Ken O Sha Industrial Dr SE. City staff collected grab samples for ammonia. From that, we were able to narrow down the source to approximately six facilities. We televised the pipes, but the discharge does not appear to be constant. As such, it was determined that it would be narrowed down by placing samplers in the manholes. Unfortunately, the sampling from both samplers installed revealed ammonia results of less than 0.1 ppm. As such, we were unable to determine the source and have not seen additional discharge. We will continue to monitor the outfall.

**Lake Michigan Drive NW**

On October 19, 2018, we were notified of soap suds in a catch basin near the apartment buildings at 425 Shawmut Boulevard NW in Grand Rapids by City Work Crews. Initial inspection by stormwater staff did not indicate any evidence of any suds in the private catch basins within the site or any soap in the catch basins within Shawmut Boulevard. City crews tested the internal plumbing connections of the apartment complex and found the connections were connected properly to the sanitary sewer system.

Upon subsequent investigation and televising, a private manhole was discovered at the northwest corner of the property at 2041 Lake Michigan Dr. The permitted sanitary route is through an easement and sanitary service line that bisects 2030 Birch St and connects to the sanitary sewer service within Shawmut. The owner of 2059 Lake Michigan Dr (Canine and Feline Design) indicated that they share a service with Ideal Printing at 2041 Lake Michigan Dr. Upon further inspection of the building at 2041 Lake Michigan Dr, an illicit connection of the shared service was discovered that traverses through the building and exits at the rear to two catch basins behind 2041 Lake Michigan Drive that eventually leads to storm sewer within Shawmut Boulevard.

Further televising was performed on the intended sanitary lateral and the connections to the storm system. In addition, review of all permitted activities and correspondence with the sites was performed. While there was correspondence regarding the property owners having issues with the intended lateral, there were no permits in the file or correspondence regarding the rerouting of the laterals to the storm system. We were able to meet with the site owners in August and they have been given a deadline of November 15, 2019, to have the original lateral cleaned and /or repaired and make the disconnection from the stormwater system.

<p>Please describe actions taken when indications of illicit discharges have been identified, if any.</p>
<p>Standard procedures are identified above. We take immediate response to stopping the discharge and then identify the source and responsible party.</p>
<p>Please provide:</p> <ul style="list-style-type: none"><li>• An estimated quantification of the number of discharges eliminated, and</li><li>• An estimated quantification of the volume of illicit flow eliminated (<i>For large spills or, where the amount discharged is possible to estimate</i>).</li></ul>
<p>Five illicit discharges were eliminated. None of the discharges eliminated contributed significant volumes of contamination.</p>
<p>Identify any specific coordination with the health department in response to illicit discharge elimination for failed or failing septic fields.</p>
<p>No potentially failing septic fields were identified during this reporting period, so coordination with the health department was not required. We are in frequent contact with the health department, though, and they have been responsive when needed in the past.</p>
<p>Describe the effectiveness of the program to prevent illicit discharges and the method used to assess effectiveness.</p>
<p>While IDEP outfall sampling has identified some illicit discharges in the past, we get a greater quantity reported by educated staff and citizens who are keeping an eye out along with our River Run sampling.</p>

## Part 5 - New Point Source Discharges of Stormwater

<p>Do you own or operate any NEW or previously unidentified stormwater discharges?</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If "yes," please indicate which discharge points are new on your outfall map or list.</p>
<p>Is your stormwater discharge point map attached or provided electronically?</p> <p><input type="checkbox"/> Map is attached <input checked="" type="checkbox"/> Map is provided electronically <input type="checkbox"/> Other. Please explain in comments section.</p>
<p>Is your stormwater discharge point list attached or provided electronically?</p> <p><input type="checkbox"/> List is attached <input checked="" type="checkbox"/> List is provided electronically <input type="checkbox"/> Other. Please explain in comments section.</p>
<p>Comments:</p> <p>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.</p>

## 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	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments:		

## 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**:

Along with the items listed under public education, the City partners with the following organizations regularly: Plaster Creek Stewards, WMEAC and Trout Unlimited to install green practices and increase public awareness.

On August 14, 2018, the City partnered with the Conservation Alliance to host a Backyard Collective event where volunteer cleaned and marked 98 catch basins near Riverside Park.

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

City staff is on the boards and/or committees of the Lower Grand River Organization of Watersheds, West Michigan Soil Erosion Control Network, Great Lakes Stormwater Collaborative, Michigan Water Asset Management Council and the Green Infrastructure Leadership Exchange.

In addition, we spent over \$745,000 on green infrastructure as part of our Vital Streets program in 2018 and are currently finishing a SAW grant for stormwater system cleaning, public education, TMDL planning and additional tools to help identify potential green infrastructure locations and monitor their effectiveness.

## 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

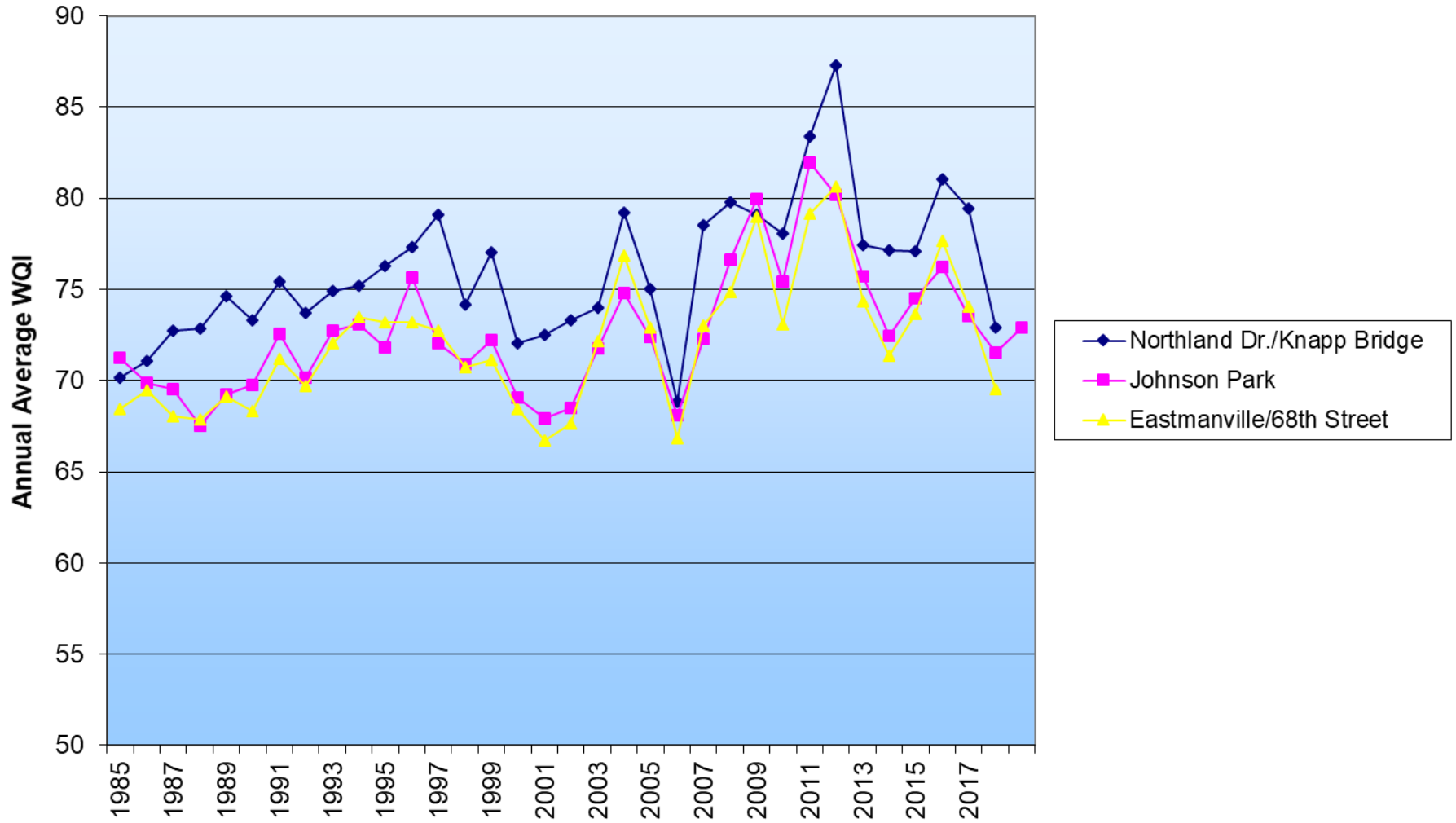
The following revisions to the SWPPI could be considered:

<b>Original SWPPI Section/Subsection</b>	<b>Revision</b>

## **Part 9 - 2018 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 immediately downstream of Grand Rapids. Grand Rapids has been monitoring the Grand River for over forty years and the data is made available to those which request it.

### Grand River, Water Quality Index 1985-2018





City of Grand Rapids  
 Lower Grand River Watershed  
 2018-2019 MS4 Progress Report

**QUARTERLY RIVER SURVEY REPORT**

**DATE: AUGUST 15, 2018**

**CITY OF GRAND RAPIDS EPSD**

<i>Grand River</i>		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH <sub>3</sub> -N	NO <sub>2</sub> -N	NO <sub>3</sub> -N
201801487	Northland Drive Bridge (250120)	8:25	25.1	10.1	8.49	3.1	13.7	23	19	63	645	0.06	<0.02	0.010	0.7
201801488	Wealthy Street Bridge (250090)	9:00	25.5	9.1	8.47	3.2	13.9	139	125	76	694	<0.05	<0.02	0.012	0.6
201801489	Railroad Bridge South (250070)	10:23	25.5	8.8	8.45	3.2	12.2	152		83	712	0.05	<0.02	0.012	0.9
201801490	Railroad Bridge North (250071)	10:35	25.5	9.4	8.42	3.3	14.3	118	86	80	707	0.06	<0.02	0.016	1.4
201801491	M-11, Wilson Avenue (250062)	10:00	25.4	8.7	8.41	4.2	13.6	74	46	79	707	0.06	<0.02	0.024	1.2
201801492	Eastmanville (250040)	8:21	25.4	11.6	8.50	4.9	16.2	16	7	83	729	0.10	<0.02	0.024	1.4

<i>Streams</i>		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH <sub>3</sub> -N	NO <sub>2</sub> -N	NO <sub>3</sub> -N
201801493	Rogue River at West River Drive	8:05	20.3	7.4	8.33	<2	4.6	172		47	616	<0.05	<0.02	0.008	1.4
201801494	Mill Creek at West River Drive	7:47	18.0	8.4	8.44	<2	4.0	816		58	712	<0.05	<0.02	0.007	1.4
201801495	Indian Mill Creek at Turner Avenue	7:30	16.5	8.3	8.23	<2	5.5	921		120	1020	<0.05	<0.02	0.008	1.7
201801496	Silver Creek at Crofton/Roy	9:18	18.5	8.7	8.25	2.9	6.1 >2419.6			198	1200	0.06	<0.02	0.008	2.9
201801497	Plaster 1 at Burton	9:36	20.6	6.8	8.15	<2	4.7	727		229	1330	0.06	0.06	0.017	1.4
201801498	Plaster 2 at Market	9:20	21.3	7.7	8.18	<2	2.6 >2419.6			228	1420	<0.05	0.05	0.013	1.4
201801499	Buck Creek at Chicago Drive	7:11	20.5	7.5	8.08	<2	8.0	579		178	1250	<0.05	<0.02	0.005	0.8
201801500	Deer Creek	8:34	20.6	6.2	8.26	<2	6.5	517		48	650	0.24	0.03	0.008	0.6
201801501	Coldbrook Storm Drain	7:12	17.4	8.9	8.33	<2	5.2	517		234	1340	<0.05	<0.02	0.007	1.0

<i>Grand River</i>		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
201801487	Northland Drive Bridge (250120)	<0.005	<0.005	2.20	<0.2	<0.005	<0.005	0.01	260	77.3
201801488	Wealthy Street Bridge (250090)	<0.005	<0.005	1.00	<0.2	<0.005	<0.005	0.02	260	72.8
201801489	Railroad Bridge South (250070)	<0.005	<0.005	0.15	<0.2	<0.005	<0.005	<0.01	280	71.8
201801490	Railroad Bridge North (250071)	<0.005	<0.005	0.16	<0.2	<0.005	<0.005	<0.01	270	70.1
201801491	M-11, Wilson Avenue (250062)	<0.005	<0.005	0.14	<0.2	<0.005	<0.005	<0.01	280	72.1
201801492	Eastmanville (250040)	<0.005	<0.005	0.16	<0.2	<0.005	<0.005	<0.01	280	66.5

<i>Streams</i>		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
201801493	Rogue River at West River Drive	<0.005	<0.005	0.17	<0.2	<0.005	<0.005	0.01	260	70.4
201801494	Mill Creek at West River Drive	<0.005	<0.005	0.13	<0.2	<0.005	<0.005	0.01	310	64.4
201801495	Indian Mill Creek at Turner Avenue	<0.005	<0.005	0.43	<0.2	<0.005	<0.005	0.02	390	62.4
201801496	Silver Creek at Crofton/Roy	0.005	<0.005	0.38	<0.2	0.005	<0.005	0.02	360	56.2
201801497	Plaster 1 at Burton	<0.005	<0.005	0.27	<0.2	<0.005	<0.005	<0.01	280	62.4
201801498	Plaster 2 at Market	<0.005	<0.005	0.20	<0.2	<0.005	<0.005	0.02	410	59.8
201801499	Buck Creek at Chicago Drive	<0.005	<0.005	0.42	<0.2	<0.005	<0.005	<0.01	400	67.8
201801500	Deer Creek	<0.005	<0.005	0.24	<0.2	<0.005	<0.005	<0.01	370	66.8
201801501	Coldbrook Storm Drain	<0.005	<0.005	0.28	<0.2	<0.005	<0.005	0.02	410	65.2

**Miscellaneous Information**  
 Weather conditions: overcast/humid  
 Field Technicians: BF/BC &JS/PK

**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<sub>3</sub>-N: Ammonia as nitrogen (mg/L)  
 NO<sub>2</sub>-N: Nitrite as nitrogen (mg/L)  
 NO<sub>3</sub>-N: Nitrate as nitrogen (mg/L)  
 Cr: Total Chromium (µg/L)  
 Cu: Total Copper (µg/L)  
 Fe: Total Iron (µg/L)  
 Hg: Total Mercury (µg/L)  
 Ni: Total Nickel (µg/L)  
 Ag: Total Silver (µg/L)  
 Zn: Total Zinc (µg/L)  
 Hardness (mg/L as CaCO<sub>3</sub>)  
 WQI: Water Quality Index (percent)

City of Grand Rapids  
 Lower Grand River Watershed  
 2018-2019 MS4 Progress Report

**QUARTERLY RIVER SURVEY REPORT**      **DATE: 17 OCT 2018**      **CITY OF GRAND RAPIDS EPSD**

<b>Grand River</b>		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH <sub>3</sub> -N	NO <sub>2</sub> -N	NO <sub>3</sub> -N
201802082	Northland Drive Bridge (250120)	9:13	10.3	9.9	8.25	<2	7	99	78	50	607	0.08	0.2	0.02	2.5
201802083	Wealthy Street Bridge (250090)	9:54	10.3	10.7	8.09	<2	9	101	99	60	611	0.07	0.2	0.02	2.5
201802084	Railroad Bridge South (250070)	10:25	10.4	9.8	8.26	<2	11	133	79	60	636	0.08	0.2	0.02	2.6
201802085	Railroad Bridge North (250071)	10:15	10.4	9.9	8.18	<2	9	91	96	60	634	0.08	0.2	0.02	2.6
201802086	M-11, Wilson Avenue (250082)	9:50	10.7	9.8	8.44	<2	10	99	135	60	628	0.08	0.3	0.02	2.6
201802087	Eastmanville (250040)	9:00	10.9	9.6	8.18	<2	11	152		70	641	0.10	0.3	0.02	2.8

<b>Streams</b>		Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH <sub>3</sub> -N	NO <sub>2</sub> -N	NO <sub>3</sub> -N
201802088	Rogue River at West River Drive	8:53	8.5	10.8	8.22	<2	2	147		50	619	<.05	<.2	<.015	1.6
201802089	Mill Creek at West River Drive	8:03	9.3	10.7	8.38	<2	<2	125		70	715	<.05	<.2	<.015	2.1
201802090	Indian Mill Creek at Turner Avenue	7:45	10.0	10.1	8.17	<2	<2	261		140	900	<.05	<.2	<.015	1.8
201802091	Silver Creek at Crofton/Roy	7:40	14.7	10.2	8.28	<2	3	679		260	1260	<.05	<.2	0.03	3.7
201802092	Plaster 1 at Burton	7:52	10.5	9.5	8.21	<2	<2	272		200	975	0.06	0.2	0.02	1.3
201802093	Plaster 2 at Market	10:13	10.3	10.3	8.04	<2	2	310		210	1080	0.06	<.2	0.02	1.5
201802094	Buck Creek at Chicago Drive	8:25	11.0	9.5	8.27	<2	<2	157		190	1050	<.05	<.2	<.015	1.2
201802095	Deer Creek	9:10	9.7	8.7	7.99	<2	5	387		60	682	0.13	0.2	0.04	5.3
201802096	Coldbrook Storm Drain	7:33	12.5	10.3	8.08	<2	2	236		230	917	<.05	<.2	<.015	0.5

**Miscellaneous Information**

Weather conditions: Overcast, cool with drizzle

Field Technicians: GGG/TW & BF/BC

**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<sub>3</sub>-N: Ammonia as nitrogen (mg/L)
- NO<sub>2</sub>-N: Nitrite as nitrogen (mg/L)
- NO<sub>3</sub>-N: Nitrate as nitrogen (mg/L)
- Cr: Total Chromium (µg/L)
- Cu: Total Copper (µg/L)
- Fe: Total Iron (µg/L)
- Hg: Total Mercury (µg/L)
- Ni: Total Nickel (µg/L)
- Ag: Total Silver (µg/L)
- Zn: Total Zinc (µg/L)
- Hardness (mg/L as CaCO<sub>3</sub>)
- WQI: Water Quality Index (percent)

<b>Grand River</b>		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
201802082	Northland Drive Bridge (250120)	<0.005	<0.005	0.39	<0.2	<0.005	<0.005	<0.01	280	73.0
201802083	Wealthy Street Bridge (250090)	<0.005	<0.005	0.39	<0.2	<0.005	<0.005	<0.01	270	74.0
201802084	Railroad Bridge South (250070)	<0.005	<0.005	0.45	<0.2	<0.005	<0.005	<0.01	280	71.7
201802085	Railroad Bridge North (250071)	<0.005	<0.005	0.41	<0.2	<0.005	<0.005	<0.01	280	73.3
201802086	M-11, Wilson Avenue (250082)	<0.005	<0.005	0.45	0.2	<0.005	<0.005	<0.01	280	72.0
201802087	Eastmanville (250040)	<0.005	<0.005	0.46	0.2	<0.005	<0.005	<0.01	280	71.0

<b>Streams</b>		Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI
201802088	Rogue River at West River Drive	<0.005	<0.005	0.21	0.5	<0.005	<0.005	<0.01	300	73.1
201802089	Mill Creek at West River Drive	<0.005	<0.005	0.19	<0.2	<0.005	<0.005	<0.01	320	72.2
201802090	Indian Mill Creek at Turner Avenue	<0.005	<0.005	0.29	<0.2	<0.005	<0.005	<0.01	340	69.8
201802091	Silver Creek at Crofton/Roy	<0.005	<0.005	0.09	0.2	<0.005	<0.005	0.01	350	61.4
201802092	Plaster 1 at Burton	<0.005	<0.005	0.39	0.3	<0.005	<0.005	<0.01	300	69.2
201802093	Plaster 2 at Market	<0.005	<0.005	0.34	<0.2	<0.005	<0.005	<0.01	330	69.3
201802094	Buck Creek at Chicago Drive	<0.005	<0.005	0.40	<0.2	<0.005	<0.005	<0.01	380	71.3
201802095	Deer Creek	<0.005	<0.005	0.51	<0.2	<0.005	<0.005	<0.01	310	64.6
201802096	Coldbrook Storm Drain	<0.005	<0.005	0.19	<0.2	<0.005	<0.005	<0.01	240	73.1

City of Grand Rapids  
 Lower Grand River Watershed  
 2018-2019 MS4 Progress Report

QUARTERLY RIVER SURVEY REPORT		March 27, 2019							CITY OF GRAND RAPIDS EPSD																	
<b>Grand River</b>													Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH3-N	NO2-N	NO3-N
2019-0503-01	Northland Drive Bridge (250120)	09:19	5.2	12	8.08	<2.0	6.3	31	6	32.2	522	0.07	0.264	<0.10	2.1											
2019-0503-02	Wealthy Street Bridge (250090)	09:52	5.4	12	7.15	<2.0	6.8	35	10	33.5	521	0.06	0.212	<0.10	2.1											
2019-0503-03	Railroad Bridge South (250070)	10:20	5.7	12	8.06	<2.0	6	33		46.4	555	0.07	0.39	<0.10	2.1											
2019-0503-04	Railroad Bridge North (250071)	10:10	5.6	12	7.66	<2.0	6.8	41	11	37.9	517	0.06	0.266	<0.10	2.0											
2019-0503-05	M-11, Wilson Avenue (250062)	09:40	5.6	12	8.08	<2.0	7.6	40	6	40.9	529	0.06	0.3	<0.10	2.1											
2019-0503-06	Eastmanville (250040)	08:48	5.7	12	8.03	<2.0	7.5	53	13	44.9	541	0.08	0.13	<0.10	2.1											
<b>Streams</b>													Time	Temp	DO	pH	BOD	TSS	FC	EC	Chloride	Cond	TP	NH3-N	NO2-N	NO3-N
2019-0503-07	Rogue River at West River Drive	08:57	4.3	12	8.25	<2.0	3.3	44		33.6	528	<0.05	0.096	<0.10	1.1											
2019-0503-08	Mill Creek at West River Drive	07:44	3.3	13	8.11	<2.0	<2	12		42.1	615	<0.05	0.393	<0.10	1.4											
2019-0503-09	Indian Mill Creek at Turner Avenue	07:23	4.1	12	7.46	<2.0	<2	15		104	876	<0.05	0.081	<0.10	1.5											
2019-0503-10	Silver Creek at Crofton/Roy	07:15	8.6	11	8.03	<2.0	4.3	127		211	1260	<0.05	0.111	<0.10	3.0											
2019-0503-11	Plaster 1 at Burton	07:35	4.7	11	7.78	<2	<2	48		258	1310	<0.05	0.12	<0.10	0.81											
2019-0503-12	Plaster 2 at Market	10:15	5.0	11	8.43	<2.0	5.4	44		70.2	655	0.05	0.134	<0.10	1.9											
2019-0503-13	Buck Creek at Chicago Drive	08:16	5.9	11	8.01	<2.0	2.4	37		157	1100	<0.05	0.175	<0.10	0.91											
2019-0503-14	Deer Creek	09:04	3.8	12	7.89	<2	2.7	39		41.1	596	0.09	0.238	<0.10	3.8											
2019-0503-15	Coldbrook Storm Drain	07:07	6.3	12	8.76	<2.0	2.7	27		167	863	<0.05	0.215	<0.10	0.35											
Miscellaneous Information																										
<b>Grand River</b>													Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI					
2019-0503-01	Northland Drive Bridge (250120)	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							79.8											
2019-0503-02	Wealthy Street Bridge (250090)	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							80.8											
2019-0503-03	Railroad Bridge South (250070)	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							79.7											
2019-0503-04	Railroad Bridge North (250071)	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							80.4											
2019-0503-05	M-11, Wilson Avenue (250062)	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							79.1											
2019-0503-06	Eastmanville (250040)	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							78.3											
<b>Streams</b>													Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI					
2019-0503-07	Rogue River at West River Drive	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							78.7											
2019-0503-08	Mill Creek at West River Drive	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							83.0											
2019-0503-09	Indian Mill Creek at Turner Avenue	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							82.8											
2019-0503-10	Silver Creek at Crofton/Roy	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	0.017							70.5											
2019-0503-11	Plaster 1 at Burton	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							76.8											
2019-0503-12	Plaster 2 at Market	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							76.4											
2019-0503-13	Buck Creek at Chicago Drive	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							79.4											
2019-0503-14	Deer Creek	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							76.2											
2019-0503-15	Coldbrook Storm Drain	<0.00500	<0.00500		<0.20	<0.00500	<0.00500	<0.0100							78.7											

Weather Conditions:  
 Field Technicians: [REDACTED]

**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: Faecal Coliform (#FC/100ml)  
 EC: E. coli (#E.C./100ml)  
 Chloride (mg/L)  
 Conductivity (µS/cm)  
 TP: Total Phosphorous (mg/L)  
 NH3-N: Ammonia as nitrogen (mg/L)  
 NO2-N: Nitrite as nitrogen (mg/L)  
 NO3-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<sub>3</sub>)  
 WQI: Water Quality Index (percent)



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- b. All 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 Stormwater Standards Manual that emphasizes green infrastructure. This 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. The one attached is the most current from September 2016.
- e. Annual Budget [40 CFR 122.42(c)(5)]

Activity	FY19 Expenditures	FY20 Budget
Stormwater Management (General Fund)	\$929,716	\$1,051,199
Stormwater Maintenance (Local and Major Streets Funds)	\$1,517,450	\$1,280,171
Street Sweeping (Refuse and Vital Streets Funds)	\$965,864	\$1,008,571

Capital Improvement Plan

KCDC	\$45,000
Emergency	\$150,000
Burton Breton Culverts	150,000
Shawmut Hills Bioswales	\$74,300
Richmond Park Daylighting	\$320,000
Alpine Stormwater Station Pumps	\$271,557
Glen Echo Drain Improvements	\$152,000
Various Pumping Station Improvements	\$75,000
Daylighting at The Highlands (design)	\$60,000

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Summary of Enforcement Actions and Inspections

Activity	2018-2019 Reporting Cycle
Stormwater Inspections	2906
Notices of Violations	57
Corrective Action Orders	3

## **Additional Documentation**