



Lower Grand River Watershed Progress Report

City of Grand Rapids

Reporting Period: August 1, 2015– July 31, 2016



Prepared by the:

GVMC

Grand Valley Metropolitan Council

Environmental Programs

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List of Abbreviations/Acronyms

AWRI	Annis Water Resources Institute
BMP	Best Management Practice
CES	Center for Environmental Study
CoC	Certificate of Coverage
Technical	Data, Information, and Procedures
DPW	Department of Public Works
GI	Green Infrastructure
GVMC	Grand Valley Metropolitan Council
HD	Health Department
ICMA	International City/Country Management Association
IDEP	Illicit Discharge Elimination Plan
I&E	Information and Education
KCDC	Kent County Drain Commissioner
KCRC	Kent County Road Commission
KIH	Kent Innovation High School
LGROW	Lower Grand River Organization of Watersheds
LGRW	Lower Grand River Watershed
LID	Low Impact Development
MACC	Macatawa Area Coordinating Council
MDEQ	Michigan Department of Environmental Quality
MGROW	Middle Grand River Organization of Watersheds
MS4	Municipal Separate Storm Sewer System
MSUE	Michigan State University Extension
MWEA	Michigan Water Environment Association
NOAA	National Oceanic and Atmospheric Administration
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

Part 1 – Contact Information

Table 1 - Contact Information for Michigan Department of Environmental Quality (MDEQ):	
Please provide current contact information for MDEQ to use regarding stormwater issues.	
Permit Application Contact	
Name	Michael Lunn
Title	Environmental Services Department Manager
Address	1300 Market Ave SW
City, State, Zip	Grand Rapids, MI 49503
Telephone (with area code)	616-456-3625
Fax (with area code)	616-456-3711
E-mail	mlunn@grcity.us
Stormwater Program Manager	
Name	Carrie Rivette
Title	Wastewater/Stormwater Maintenance Superintendent
Address	1300 Market Ave SW
City, State, Zip	Grand Rapids, MI 49503
Telephone (with area code)	616-456-3057
Fax (with area code)	616-456-3711
E-mail	crivette@grcity.us
Stormwater Permit Fee Billing Address	
Name	Michael Lunn
Title	Environmental Services Department Manager
Address	1300 Market Ave SW
City, State, Zip	Grand Rapids, MI 49503
Telephone (with area code)	616-456-3625
Fax (with area code)	616-456-3711
E-mail	mlunn@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. Every participating Municipal Separate Storm Sewer System (MS4) permittee has a representative on at least one committee. Committee meetings have also been used to update everyone on the progress of the other committees and the program in general. The committees are as follows:

- Public Engagement Committee
- Stormwater Ordinance Committee (SWOrd)
- Technical Committee

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

Community	Representative	Public Engagement	Stormwater Ordinance (SWOrd)	Technical	Sustainability	Fund Development & Membership	LGROW Executive
Cascade Charter Township	Mr. Steve Peterson	X	X				
East Grand Rapids, City of	Mr. Brian Donovan					X	
East Grand Rapids, City of	Mr. Doug LaFave			X			
Forest Hills Public Schools	Mrs. Lea Sevigny	X					X
Fruitport, Village of	Ms. Marjorie Stonecypher	X					
Georgetown Charter Township	Mr. Rod Weersing	X					
Grand Haven, City of	Ms. Cheryl Davidson	X					
Grand Rapids Charter Township	Mr. Bob Versluys		X				
Grand Rapids, City of	Mr. Mike Lunn			X			
Grand Rapids, City of	Ms. Carrie Rivette	X	X		X	X	X
Grand Rapids, City of	Mr. Michael Staal	X	X		X		
Grand Rapids, City of	Mr. Dan Taber			X			
Grandville, City of	Mr. Ken Krombeen		X			X	X

Table 1. LGRW Committee Membership List as of July 31, 2016							
Community	Representative	Public Engagement	Stormwater Ordinance (SWOrd)	Technical	Sustainability	Fund Development & Membership	LGROW Executive
Grandville, City of	Mr. Jay Kwiatkowski	X					
GVSU*	Mr. John Koches			X			X
Hudsonville, City of	Ms. Jill Frielink				X		
KCDC	Mr. Brad Boomstra		X				X
KCDC	Ms. Angie Latvaitis			X			
KCDC	Ms. Lani Brown	X					
KCRC	Mr. Dave Beck Sean McKean	X					
KCRC	Mr. Dave Bennett						
KCRC	Mr. Wayne Harrall		X				
Kent County Health Department*	Mr. Jason Buck			X			
Kent Resource Recovery*	Ms. Megan Kretz	X					
Kentwood, City of	Mr. Jim Beke		X	X			
Kentwood, City of	Mr. Dan Vanderheide		X				
Kentwood, City of	Mr. John Gorney	X					
MDEQ*	Ms. Amanda St. Amour	X	X	X			
MDEQ*	Ms. Michelle Storey	X				X	
MDEQ*	Ms. Dana Strouse	X		X			
OCWRC	Mr. Dennis Cole		X				
OCWRC	Ms. Angela Walachovic	X					
OCRC	Mr. Jerry Olman	X					
Plainfield Charter Township	Mr. Rick Solle		X				
Plainfield Charter Township	Ms. Mary Trapp-Gunst	X					
Spring Lake, Village of	Ms. Chris Burns	X					

Table 1. LGRW Committee Membership List as of July 31, 2016

Community	Representative	Public Engagement	Stormwater Ordinance (SWOrd)	Technical	Sustainability	Fund Development & Membership	LGROW Executive
Walker, City of	Mr. Scott Conners		X			X	X
Walker, City of	Ms. Rachell Nagorsen	X	X	X	X		
Wyoming, City of	Mr. Aaron Vis	X	X	X			X
Wyoming, City of	Mr. Myron Erickson		X				

Public Engagement Committee

The Public Engagement Committee met on September 9, 2015, November 18, 2015, January 13, 2016, March 9, 2016, and May 11, 2016 during the reporting period. Agendas and minutes for the meetings are posted to <http://www.lgrow.org/MS4pampep>. Throughout the reporting period, the group focused on implementation of the updated Public Education Plan (PEP) approved in February of 2013, available here: <http://www.lgrow.org/uploads/files/PEP%20Master.pdf>.

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. During this reporting period, the group selected messaging and outreach events which focused on the target messages of Personal Watershed Stewardship, Ultimate Stormwater Discharge, Public Reporting of Illicit Discharges, Personal Actions that can Impact the Watershed, and Waste Management. A detailed list of these events and the outreach conducted is provided in Part 3.

SWOrd Committee

The SWOrd Committee met on August 31, 2015, October 26, 2015, December 14, 2015, January 25, 2016, February 29, 2016, March 31, 2016, May 23, 2016, June 15, 2016, and July 25, 2016 during the reporting period. Meetings were focused on developing a model ordinance, a standards manual, and a stormwater design calculator tool for MS4 permittees to utilize in their implementation of the new post-

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construction stormwater control requirements outlined in the 2016 NPDES Permit Application. Minutes and agendas for the meetings are available at: <http://www.lgrows.org/MS4pccord>.

Based on feedback from the Michigan Department of Environmental Quality (MDEQ) after the submittal of the alternative approach for channel protection submitted in April of 2015, the committee began drafting a detailed standards manual. This 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 stormwater calculator to assist site designers and reviewers to ensure site designs meet all the regulatory criteria outlined in the permit. The manual and calculator tools are also designed to ensure that the alternative approach is only utilized as a last resort. Finally, the committee continues to work on developing and updating the model ordinance for communities to adopt in their application of these standards. At this time, permitted MS4 communities are customizing the standards manual and model ordinance while updating their elected officials on these new requirements and their implementation.

Technical Committee

The Technical Committee met on October 21, 2015, December 16, 2015, February 17, 2016, April 20, 2016, and June 15, 2016 during this reporting period. Agendas and minutes from the meetings are available at the following site: <http://www.lgrows.org/MS4Technical>. In 2015, the committee members focused on the development of a watershed monitoring manual to guide the collection, processing, and storage of data in the Lower Grand River Watershed. This manual will guide groups, including the newly formed Friends of Buck Creek, and the Lower Grand River Total Maximum Daily Load (TMDL) monitoring, as required by the MS4 permit. The group also resumed work on the LGROW data repository which will serve as a resource for the sharing and viewing of water quality data collected throughout the watershed. As of the close of this reporting period, the committee is finalizing preliminary TMDL monitoring in the stream reaches identified in the MS4 Permit application letters. The City of Wyoming and the City of Grand Rapids are providing sampling equipment and laboratory space to collect and analyze the samples. Interns funded by the Lower Grand MS4s will be conducting the field work.

Training

GVMC provides multiple training documents and DVDs for Permittee use. In addition, GVMC has hosted or partnered on several training events during the reporting period including:

- Stormwater Information for Landscapers (brochure, updated)
- REGIS Outfall and Storm Sewer System Mapping In GIS
- West Michigan Green Infrastructure Conference & Grand Rapids Green Infrastructure Tour
- Soil Erosion & Sediment Control 101 Panel Discussion (West Michigan Soil Erosion Control Network)

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

Training Library

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

DVD from Excal Visual, LLC

- IDDE – a grate concern: Illicit Discharge Detection & Elimination (14¼ Minutes)

DVD from Excal Visual, LLC

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

DVD from Excal Visual, LLC

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

DVD from Excal Visual, LLC

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

DVD from Excal Visual, LLC

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

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

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

DVD from USEPA - Reduce Runoff: Slow It Down, Spread It Out, Soak It In (includes the following videos)

- Reduce Runoff: Slow It Down, Spread It Out, Soak It In 9 Minutes
- RiverSmart Homes: Getting Smart about Runoff 12 Minutes

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- Building Green: A Success Story in Philadelphia 11 Minutes
- After the Storm 22 Minutes

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

Each permitted community also conducted a detailed review of their current inspection and maintenance procedures for structural BMPs, as well as a detailed review of operational BMPs in preparation for the submittal of the new individual MS4 permit application in April of 2015. Preparation of the submitted BMP manuals, proved to be a valuable training tool for Permittees to ensure that their current procedures were updated and adequately protect stormwater.

Live Training

On August 4-5, 2015, LGROW, in cooperation with the MDEQ and many other community partners, hosted the West Michigan Green Infrastructure Conference. This two-day event expanded on the 2014 statewide conference to highlight a broad range of benefits and opportunities provided by Green

Infrastructure (GI) planning and preservation in West Michigan. Along with two plenary sessions, this

conference included concurrent sessions in three tracks:

1. Finance and Policy; 2. Stormwater and Flood Management; and, 3. Infrastructure at the Regional Scale. LGROW also hosted one of three Green Infrastructure tours which provided attendees with an up close look at the following Green Infrastructure sites in and around Grand Rapids:

- Grand Rapids Water Resource Recovery Facility:
Native landscaped rain garden
- The Rapid Operations Center: Green roof and live wall
- Joe Taylor Park: Underground stormwater treatment and infiltration; porous concrete parking lot
- Kreiser Pond: Native landscaped bioswale
- Whiskey Creek: Native landscaped bioswale
- John Ball Zoo: Live wall and green roof



The Michigan Water Environment Association (MWEA) offers two events annually that are widely attended by LGRW MS4 permittees. The first is the Watershed and Stormwater seminar, offered this year on December 3, 2015. The 2015 seminar is designed for all who have a direct stake in stormwater

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and watershed management, non-point source pollution or the modeling of urban stormwater systems. Attendees include: civil and environmental engineers; landscape architects and engineers; scientists; policy makers; local, regional, and state engineering professionals; public works personnel; municipal/township managers; environmental consultants; and, college/university instructors and researchers.

The second event, the Michigan Watershed Summit offered on March 16, 2016, focused on the following objectives:

- Assembling a diverse group of Michigan's watershed groups
- Providing an opportunity for speakers from other organizations to share information and updates
- Giving these groups a chance to interact with and learn from each other
- Facilitating discussion on current status, concerns and outlooks regarding Michigan's water environment

The West Michigan Soil Erosion Control Network (WMSECN) is a professional organization focused on the protection and enhancement of the natural environment by promoting effective soil erosion control. WMSECN hosts regular training and professional development events including field demonstrations, speaker panels, networking events and technical design sessions. On March 3, 2016, the WMSECN hosted a live training session titled "Best of the BMPs" which focused on the selection and implementation of BMPs for construction site stormwater pollution prevention. Permitted MS4 communities implementing soil erosion control permitting programs either as Municipal Enforcing Agents (MEAs) or County Enforcing Agents (CEAs) attended the event.

Attendance at these events is recorded in each MS4's individual training logs (Part 2D).

Monitoring

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

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

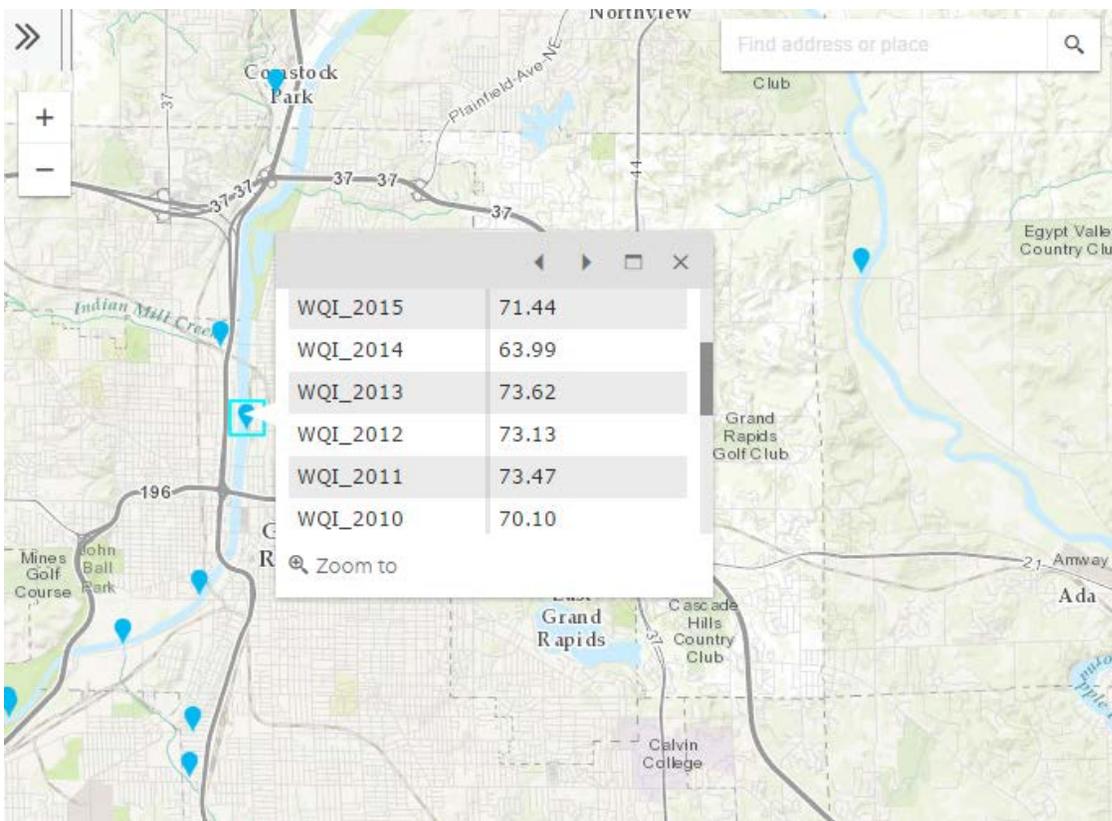


Figure 1. Grand Rapids Water Quality Index Web Interface

Data Repository

The LGROW Technical Committee began working on the design for a watershed-wide data repository. Using data collected by the Friends of Buck Creek as part of their 319 monitoring grant, 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

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designed a tutorial for data repository users. The long-term goal is that the data repository will be a central location to access water quality data from sampling events in the Lower Grand River Watershed. With this goal in mind, the Technical Committee also developed submittal tools to allow users to share collected scientific water quality data. The data will be reviewed and checked by LGROW before it is uploaded into the data repository for public viewing at this site: <http://www.lgrow.org/datarepository>.

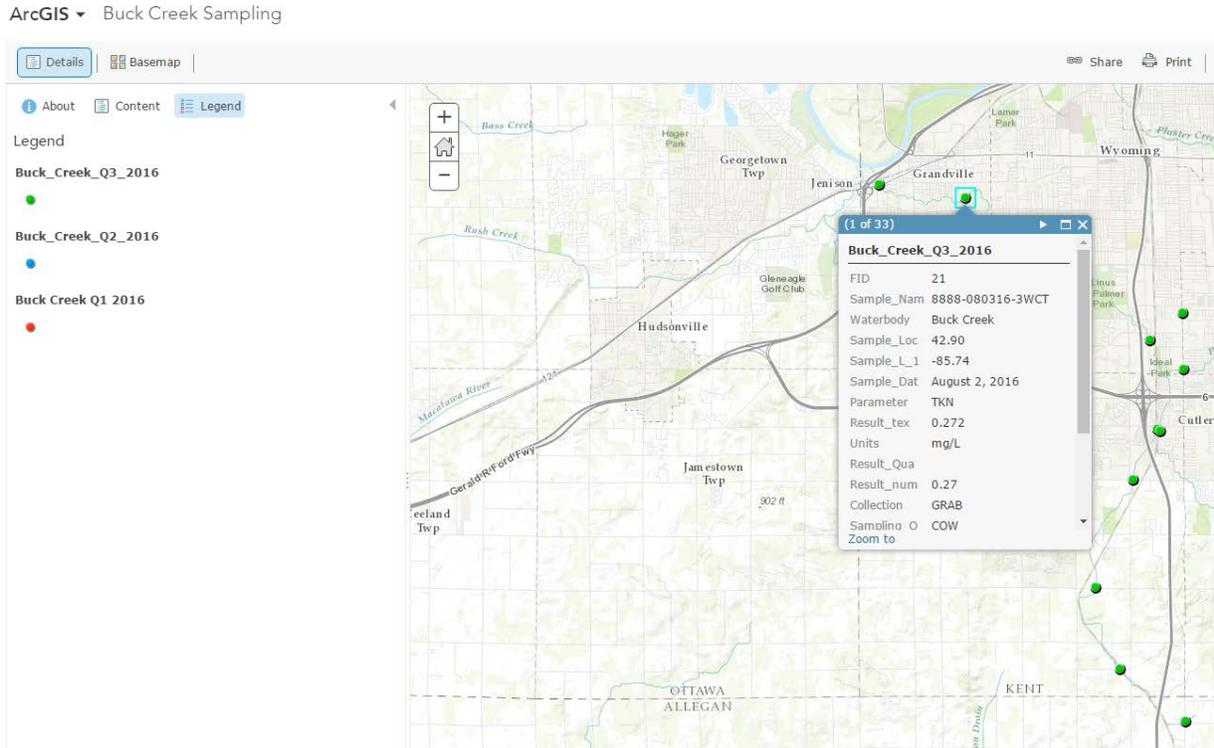


Figure 2. LGROW Data Repository

MDEQ Program Audits

MDEQ is expecting to perform MS4 Program Audits in all MS4 communities within 5 years. GVMC assists communities in preparing for audits, and in addressing any deficiencies identified by MDEQ. During this reporting period, MDEQ performed audits on the following LGRW communities:

August 18, 2015

Village of Spring Lake

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

Encouraging proper septic tank maintenance

Each year a portion of the public education materials distributed address proper septic tank maintenance. Detailed information regarding the nature of these materials is included in Part 3 - PEP of the 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 the progress report.

Encouraging septage ordinance

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

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

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

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

Implement Michigan Department of Natural Resources wildlife population management practices

Three communities are working with the Michigan Department of Natural Resources on supervised programs to control populations of Canada Geese. These programs include Egg Destruction (East Grand Rapids and Kent County Drain Commissioner) Goose Relocation (Kent County Drain Commissioner), Nest Destruction (Kent County Drain Commissioner), and Targeted Goose hunts for population reduction (Plainfield Charter Township). Communities throughout the watershed are utilizing signage to discourage

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the feeding of waterfowl, actively installing goose deterrents, and/or instituting procedures for a no-mow buffer adjacent to streams and ponds to function as a natural deterrent. The City of Hudsonville has provided a portal on their website for residents to report nuisance wildlife.

Implement sanitary sewer maintenance practices

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

Implement Low Impact Development Practices

Low Impact Development (LID) and green infrastructure are critical components in both the SWPPI and the PEP. Detailed information on the training related to LID practices and implementation is detailed in Appendix 2D. Tracking of the installation and consideration of LID practices by Permittees is tracked in Appendix 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. GVMC, in cooperation with the MDEQ, Macatawa Area Coordinating Council (MACC), and the West Michigan Shoreline Regional Development Commission (WMSRDC), cooperatively planned a West Michigan Green Infrastructure Conference for August of 2015 which was attended by 170 industry professionals including many representatives of regulated MS4 communities.

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.

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As the Stormwater Ordinance Committee worked on developing the new model stormwater ordinance, 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.

GVMC Departments are collaborating on a Single Source Project, which would involve collecting and mapping, via REGIS, updated zoning information from all GVMC members as well as all other communities within Kent County to create one information source for economic developers, transportation planners, and environmental managers. In addition to the zoning maps, transportation information such as traffic counts, congestion, and road conditions, and environmental data, such as brownfields, impaired water bodies, and watershed boundaries would be included. This cooperative effort has been discussed as a priority for many years and is now possible, building upon internal GVMC communications between programs and staff. This information will be useful to MS4 permittees in making smart land use decisions.

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 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

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in this field. Events offered during the reporting period through the WMSECN and attended by MS4 are detailed in the training section of the report.

Table 2. LGRW Part 91 Administration Authority as of July 31, 2015							
Community	Part 91 Contact Info		MEA	Utilizes CEA			APA
	Name	Phone		Kent	Muskegon	Ottawa	
Cascade Charter Township	KCRC	616-242-6914		X			
East Grand Rapids, City of	KCRC	616-242-6914		X			
Ferrysburg, City of	OCWRC	616-994-4530				X	
Forest Hills Public Schools	KCRC	616-242-6914		X			
Fruitport, Village of	Muskegon County DPW	231-724-6411			X		
Georgetown Charter Township	OCWRC	616-994-4530				X	
Grand Haven, City of	OCWRC	616-994-4530				X	
Grand Rapids Charter Township	KCRC	616-242-6914		X			
Grand Rapids, City of	Environmental Services Dept.	616-456-3057	X				X
Grandville, City of	KCRC	616-242-6914		X			
Hudsonville, City of	OCWRC	616-994-4530				X	
Kent County Drain Commissioner & Administration	Deputy Drain Commissioner	616-336-3688					X
Kent County DPW	Kent Co. DPW	616-336-3694					X
Kent County Road Commission (Kent County CEA)	KCRC	616-242-6914		X			X
Kentwood, City of	Engineering Dept.	616-554-0737	X				X
Ottawa County Water Resources Commissioner & Administration (Ottawa County CEA)	OCWRC	616-994-4530				X	X
Ottawa County Road Commission	Engineering Dept.	616-842-5400					X
Plainfield Charter Township	KCRC	616-242-6914		X			
Rockford, City of	Public Services Dept.	616-866-9631	X				
Sparta, Village of	KCRC	616-242-6914		X			
Spring Lake, Village of	OCWRC	616-994-4530				X	
Walker, City of	Engineering Dept.	616-453-6311	X				
Wyoming, City of	KCRC	616-242-6914		X			

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

The MDEQ requires a joint permit from the state of Michigan for all work performed in channels that are designated as waters of the state. Any work that occurs within 500 feet of a lake or stream requires a soil erosion control permit from the authorized Part 91 agency, as referenced above. These permitting procedures work in tandem to prevent negative impacts during and after construction, as well as to ensure adequate restoration. Permitted communities in the Lower Grand River Watershed have policies in place to ensure protection of drainage systems from construction site runoff as detailed in Appendix 2C and perform regular training as referenced in Appendix 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 Appendix 2C. These policies and procedures were reviewed as permittees prepared their individual permit applications in Spring 2015. All staff at the communities and their subcontractors adhere to these procedures. Training is also provided in the form of the brochure, "What Every Landscaper Must Know". This brochure is distributed as part of the comprehensive training plan on controls to reduce the discharge of pesticides, herbicides, and fertilizers, as described in Appendix 2D. The brochure was updated in 2014 to allow for permitted MS4s to customize it for distribution to their staff and contractors as well as local landscaping businesses.

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Encourage proper septic tank management.	Provide educational brochures to all homeowners with septic systems. Currently there are approximately 257 within the City limits, none of which have storm sewers in the area.	December 2012.	Document that all brochures were sent. Report number of septic tank failures reported.
Actions completed:	192 brochures were sent to homeowners with septic systems. Homeowners on this list included homeowners that had not received brochures since 2014 and 3 new homeowners that were added to this list this year. No septic tank failures were reported this year. Please see attached list of septic homeowners and mailing dates.		
Encourage septage ordinance.	Continue to work with the County or the Committee on septic tank issues.	Ongoing.	Number of failed septic systems connected to public sewer. Number of failed septic systems reported to Health Department and number of repairs and permits issued.
Actions completed:	No failed septic systems were reported this year. On July 28, 2015, the City Commission approved the Grand River Restoration steering committee's final report. This report gave the committee's vision in restoring the river and downtown area. One item included in improving the river water quality was to improve the septic programs and policies in the Grand River watershed area in coordination with the state and local health departments.		
Implement vegetative buffering practices. Restore and protect the stream buffer and canopy.	Continue to enforce environmental features ordinance passed in 2012 requiring a 75-foot buffer protecting rivers, wetlands, streams, water bodies and sensitive environmental receptors. Prepare and adopt tree ordinance for the protection and restoration of the City's canopy.	Continue to implement environmental features buffer. Implement tree ordinance by June 30, 2013.	Report number of sites where buffer ordinance was applied. Adoption of tree ordinance.

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
Actions completed:	<p>No exceptions to the 75-foot natural features buffer were requested during this reporting year.</p> <p>The City Commission adopted an updated tree ordinance on September 22, 2015, to the City's Zoning Ordinance for new requirements regarding enhancing the tree canopy within the City and providing for additional tree protection and tree canopy coverage as it relates to new construction or redevelopment of sites.</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>
Actions completed:	<p>The City's only problematic area of feeding wildlife is Riverside Park. Signage has been installed at this location. 159 staff members were trained in person this year, and an additional 4 people were trained online this year.</p>		
Implement sanitary sewer maintenance practices.	<p>Maintain compliance with CMOM (Capacity, Management, Operation & 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>
Actions completed:	<p>CMOM compliance has been maintained.</p>		
Implement Low Impact Development practices.	<p>Continue implementing commitment to LID, as detailed in Green Grand Rapids, a 2012 addendum to our Master Plan.</p>	<p>Ongoing.</p>	<p>Number and type of LID practices utilized at City properties.</p>
Actions completed:	<p>Construction for 6 City property sites with LID practices were completed this reporting period. These were predominately park facilities that incorporated stormwater detention and infiltration designs to accommodate stormwater management at existing facilities that were redeveloped.</p>		

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
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>
Actions completed:	<p>This reporting period, 169 permits were issued for City and private projects. Of the permits issued, 64 were private projects that incorporated LID. Typically, LID is only implemented when impervious surfaces at a site are increased. The LID improvements included: 20 Detention / Retention Basins, 25 with Infiltration Practices, 1 utilizing Native Vegetation, 2 Vegetated Swales, 1 Vegetative Roof, and 9 Water Quality Devices.</p> <p>There were also 11 right-of-way infrastructure projects that incorporated LID practices into the design of the public storm sewer system and street design. Projects incorporated infiltration basins, expanded tree planting systems, infiltration trenches, vegetative bulb outs, and porous pavement.</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>
Actions completed:	<p>Currently, 13 of the 42 required personnel are trained in construction stormwater operator training. This is due to a continued high rate of personnel turnover and staff realignment. In addition to the required positions, we have 11 other staff members that have the construction stormwater operator training. We are currently clarifying the positions that require this training, and we will continue training staff that are required to have this certification. Our goal for next reporting year is to have trained 75% of the 42 required personnel to receive training.</p>		

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
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>
Actions completed:	The City did not have any projects within a stream this reporting year. Of the LUDS permits issued by the City this reporting year, 20 had flow restrictions to protect all waterways and 7 had flow restrictions for impaired waterways.		

LGRW Prioritized Objectives for Permittees from 2011 WMP	Commitment	Timeline	Measures of Effectiveness
<p>Implement turf management and proper fertilizer application practices.</p>	<p>Continue to be in compliance with the State of Michigan Public Act 299 of 2010.</p> <p>Staff is trained in proper use of pesticides, herbicides and fertilizers.</p> <p>Contracts for these services contain language requiring proper usage.</p> <p>a. "No clippings of grass or weeds may be left in the street, on the curb, parkways, or sidewalk, but must be properly disposed of by the contractor."</p> <p>b. "All chemicals and materials which are spilled or misapplied to areas other than turf shall be cleaned up immediately. The contractor shall not allow chemicals & other materials to enter storm sewers, catch basins and/or water ways."</p> <p>c. "No chemical of any kind may be discharged into the gutters or sewer system. If granular(s) are used they must be swept or blown clean off all impermeable surfaces."</p>	<p>Ongoing.</p>	<p>Number of staff trained.</p> <p>Number of contracts issued.</p>
<p>Actions completed:</p>	<p>6 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 6 landscape maintenance contracts issued this year.</p>		

Part 2B - Stormwater Controls Inspection, Maintenance and Effectiveness

Property Name: City Wide				
Structural Storm Water Control	Inspection Frequency	Maintenance Schedule	Inspection and Maintenance Conducted and Location of Log (if applicable)	Effectiveness of Control and Support Documentation
Stormwater Manholes	Complaint Based	N/A	290 Cleaned 1 manhole replaced 6 manholes repaired Logs are maintained in Cityworks	Identified problems were fixed and pollutants were removed.
Stormwater Catch basins	Complaint Based	Clean annually 2,500	3,488 cleaned Logs are maintained in Cityworks.	2,416 tons of solids were removed from the stormwater system and kept from the waterways
Discharge Points	Complaint Based	N/A	518 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	1,401 feet cleaned 7 laterals repaired 6 laterals replaced Logs are maintained in CityWorks	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	All 11 wet wells were cleaned as needed based on inspections.	Given that the shortest gap between cleanings was two months every 2 to 4 weeks appears to be sufficient.
Stormwater Gravity Mains	Complaint Based	N/A	34,800 feet cleaned 1,673 feet were rootsawed and cleared 26.5 feet were replaced	Identified problems were fixed and pollutants removed
Infiltration Basins (underground)	Complaint Based	10 yr. Inspection cycle	Inspections in CityWorks for 2019 and 2026	The basins appear to function well

Property Name: City Wide				
Structural Storm Water Control	Inspection Frequency	Maintenance Schedule	Inspection and Maintenance Conducted and Location of Log (if applicable)	Effectiveness of Control and Support Documentation
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	10 hydroseparator cleanings were performed	With two years of cleaning hydro separators, we have found most separators are functioning fine with 1 cleaning annually. 1 unit will require 2 cleanings annually.
Siphons	Complaint Based	Clean annually	4 siphon cleanings were performed this year	Annual cleanings appear to be appropriate. As construction projects take place, we continue to remove as many siphons as possible.
Creek gates	Complaint Based	Clean annually	58 cleanings were performed 0 creek gates were repaired 26 inspections were performed.	Responding to complaints ensures that the worst areas are addressed more often
Open Ditches	Complaint Based	N/A	400 feet of ditch was cleared and restored along Kendall St. SE	This work was complaint related to neighborhood ditches. Funds were budgeted to address the most problematic areas.

Part 2C - Procedures Status

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

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

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		

Permittee: City of Grand Rapids

Types of Properties	O&M Procedure	Location http://mygrcity.us/collaboration/swppp	on
PW	Paving and Grinding Operations	BMP Paving and Grinding Operations.pdf	
F, M, PW, W, WW	Petroleum and Chemical Storage, Small Quantities	BMP Petroleum and Chemical Storage, Small Q.pdf	
F, M, PW, W, WW	Petroleum and Chemical Disposal	BMP Petroleum and Chemical Disposal.pdf	
F, M, W, WW	Petroleum and Chemical Handling	BMP Petroleum and Chemical Handling.pdf	
F, W, WW	Petroleum and Chemical storage bulk	BMP Petroleum and Chemical Storage, Bulk.pdf	
F, L, M, Pk, Po, PW, W, WW	Salt Application	BMP Salt Application.pdf	
PW	Sand and Salt Storage	BMP Sand and Salt Storage.pdf	
A, D, F, G, L, M, Pk, Po, PW, W	Solid Waste Management	BMP Solid Waste Management.pdf	
A, F, M, Pk, PW, W, WD, WW	Spill Cleanup	BMP Spill Cleanup.pdf	
A, F, M, Pk, PW, W, WD, WW	Spill Prevention Control and Cleanup	BMP Spill Prevent Control.pdf	
PW, W	Dust Control	deq-wb-nps-dc_250612_7.pdf	

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		

Permittee: City of Grand Rapids

Types of Properties	O&M Procedure	Location http://mygrcity.us/collaboration/swppp	on
A, D, F, G, M, Pk, PW, W, WD, WW	Equipment Storage and Maintenance Areas	deq-wb-nps-ems_250618_7.pdf	
F, L, Pk, Po, PW, R, V, W, WD, WW	Fertilizer Management	deq-wb-nps-fm_250620_7.pdf	
F, L, Pk, Po, PW, R, V, W, WD, WW	Lawn Maintenance	deq-wb-nps-lm_250884_7.pdf	
D, F, L, Pk, Po, PW, W, WD, WW	Organic Debris Disposal	deq-wb-nps-odd_250887_7.pdf	
F, L, Pk, Po, PW, W, WD, WW	Pesticide Management	deq-wb-nps-pm_250893_7.pdf	
WW	Stream Bank Stabilization	deq-wb-nps-sbs_250898_7.pdf	
PW, W, WW	Soil Management	deq-wb-nps-sm_250902_7.pdf	
WW	Slope, Shoreline, Stabilization	deq-wb-nps-sss_250907_7.pdf	
Pk, PW	Street Sweeping	deq-wb-nps-sw_250908_7.pdf	
F, L, M, Pk, R, V, WD, WW	Trees, Shrubs and Ground Covers	deq-wb-nps-tsg_250910_7.pdf	
PW	Winter Road Management	deq-wb-nps-wrm_250914_7.pdf	

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		

Permittee: City of Grand Rapids

Types of Properties	O&M Procedure	Location on http://mygrcity.us/collaboration/swppp
Pk	Golf Course Manual	ess-nps-Golf-Course-Manual_209682_7.pdf
Pk, PW	Road Salt Storage	Road Salt Application and Storage.doc

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

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		

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

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

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

(a) Streets, roads, highways

a. Street Sweeping – goal is once every 70-90 days (weather dependent).

i. **The City has disposed of 3,493 cubic yards of waste from street sweeping this reporting year at a cost of over \$45,500. This has prevented approximately 3,200 tons of materials from entering the stormwater system.**

b. Salt Application – Drivers are trained with new equipment to utilize salt most cost effectively which minimizes the amount used on the roadways.

c. SESC Program – tracking and construction is controlled via ordinance

d. Vehicle Accident Spills – Fire Department has a policy for cleanup and control in place as submitted with the 2011-2012 annual report.

e. Dust Control - See BMP sheet

f. Snow Removal – See BMP sheet

g. Gravel Road – See BMP sheet

h. Roadside Vegetation – See BMP sheet

(b) Parking lots

a. Every surface parking lot has check sheet has cleaning the curb lines as a daily activity (5 days per week). Larger pieces of trash or debris are removed daily from the lot. Finer materials of grit and gravel are allowed to accumulate until there is a sufficient volume to warrant sweeping. Sweeping the curb lines is done weekly, monthly, or bi-monthly, depending on the inspection, season or activity in the lot.

b. During the winter months curb line cleaning activity is reduced due to snow accumulation. However, when the snow melts in the spring the curb lines are cleaned as they become accessible. During the fall, falling and blowing leaves require more attention and result in an increased frequency of cleaning curb lines.

c. Parking lots associated with City owned buildings are cleaned on an as-needed basis. The department responsible for the lot inspects and schedules cleaning.

(c) Maintenance garages

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

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

(a) Dredge spoil, accumulated sediments, floatables, and other debris from the use of City staff and equipment for these activities are dumped on a concrete slab located at the water resource recovery facility (WRRF). The liquid is discharged to the WRRF 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.

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

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
SWPPI Requirements			
Maintenance activities, maintenance schedules, and inspection procedures	Collection System Maintenance Group	Ongoing First 6 months of hire	Written O&M Procedures Office of Water Programs, California State University, Sacramento Operation and Maintenance of Wastewater Collection Systems, Volumes I & 2
Training completed:	There are 11 Collection System Asset Technicians and 2 crew leaders. 10 of them have taken and passed the CALIFORNIA STATE UNIVERSITY, SACRAMENTO Operation and Maintenance of Wastewater Collection Systems, Volume I and II.		
Controls on streets, parking lots, maintenance garages, and storage yards	Public Services, Facilities and Fleet Management, Field Staff and Parking Services	Hire in 2 year cycle	Online training which may include PowerPoints and/or the following videos Storm Watch - Municipal Storm Water Pollution Prevention - DVD from Excal Visual, LLC Spills & Skills - Non-Emergency HazMat Spill Response - DVD from Excal Visual, LLC Keep An Eye On It! - Environmental Awareness for Gravel Road Maintenance - DVD from SEMCOG & Road Commission for Oakland County
Training completed:	Training is performed on hire. If deficiencies are noted during the quarterly inspections, responsible parties are trained on the proper techniques.		

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
Disposal of O&M waste	Collection System Maintenance Group Contractors	Ongoing Contract	Written O&M Procedures Written contract requirements
Training completed:	The Operation and Maintenance of Wastewater Collection Service training noted above includes managing a collection system O&M program, supervising a sewer cleaning program, and complying with the NPDES permit and applicable rules and regulations.		
Water quality protection in flood control projects (detention basins, dams)	Stormwater Management Personnel, Field Staff & Design Personnel	Ongoing	Training consistent with LID and other training/conferences as they become available
Training completed:	All stormwater management, design, and lead field staff have passed the comprehensive soil erosion and sedimentation control exam through the MDEQ, except for 1 field staff, who is scheduled to take the test in September 2016. That staff member is currently a construction stormwater operator. In addition, several field and design staff are trained as construction stormwater operators.		

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

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
<p>Training completed:</p>	<p>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 every pre-construction meeting. Site specific stormwater pollution prevention and soil erosion control items are also discussed for each project.</p>		
<p>LID</p>	<p>Stormwater Management Personnel, Field Staff & Design Personnel</p>	<p>Ongoing</p>	<p>Provide copies of the SEMCOG Low Impact Design manual. Provide opportunities for training and attendance of webinars and other conferences. The following videos are also available for their use;</p> <p>Reduce Runoff: Slow It Down, Spread It Out, Soak It In - DVD from USEPA RiverSmart Homes: Getting Smart about Runoff - DVD from USEPA Building Green: A Success Story in Philadelphia - DVD from USEPA After the Storm - DVD from USEPA BMP Tour of GVSU Campuses – Walking Tour</p>
<p>Training completed:</p>	<p>In addition to the training noted, staff attended West Michigan's Soil Erosion Control Network's Best of the BMPs training on March 3, 2016. Since LID is now the default street design in the City, it is discussed in connection with all street reconstructions.</p>		
<p>IDEP</p>	<p>All Employees</p>	<p>Ongoing</p>	<p>Items will be maintained on City intranet and periodic announcements made. These items will include various brochures and include;</p> <p>WaterPollutionReportForm.doc Article_City_Employees.doc</p>

Training Topic Area	Employee Group to Receive Training	Training Frequency Goal	Potential Training Type
<p style="text-align: center;">Training completed:</p>	<p>In-person training was given to a majority of the City field staff including Streets and Refuse, Building Inspection, Traffic and Safety, Utility Field Operations, Meter Reading, and Parks and Recreation. In total, 159 were trained in person. A video of the training session with a registration and quiz was created during this reporting year and was posted online. An additional 4 staff were trained using the online video.</p>		
<p>General Storm Water Education</p>	<p>Top Management</p>	<p>Annually</p>	<p>“Back to Basics” Storm Water Training – Live Presentations (in 2011 the Six Minimum Control Measures were highlighted)</p>
<p style="text-align: center;">Training completed:</p>	<p>Top Management was trained on June 10, 2016.</p>		

Part 2E - Post Construction Controls Activities

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.

A total of 169 Land Use Development Services permits were issued during this reporting period.

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.

Of the permits issued, 60 of the sites required and/or implemented LID.

Operation and Maintenance

In 2010, the City had a draft stormwater ordinance that included long term operation and maintenance of post-construction controls. As outlined in the 2015 City of Grand Rapids MS4 Phase 1 Permit Application, the post construction long term operation and maintenance of the BMPS will be initiated through the completion of a maintenance agreement, permittee certification, and periodic inspections of the facilities. Inspections and any maintenance of the BMPs will be tracked and tied to the property address and parcel number. Upon receipt of the new permit which is not expired, the stormwater ordinance will be revisited within 6 months of permit approval.

In preparation for the draft ordinance, however, a method for tracking and inspecting the post construction controls was established. Without the ordinance for authorization, the City cannot enter private property to inspect it. However, all post construction controls are inspected, to the extent they can be and limited to the access we have from the public right of way consistent with the approved SWPPI.

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

Currently, there are 177 sites in monitor status that are due to be inspected every other year, provided that they can be inspected from public property. Inspections on 106 sites were performed this reporting period.

Permittee: City of Grand Rapids

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

During this reporting period, no enforcement activities were required as a result of post-construction inspections.

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

Under our current ordinance, long-term operation and maintenance agreements are not required.

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 increasing open spaces

Requiring post development runoff to equal pre-development runoff is an incentive to use properties already developed, as retention/detention costs can be high. When re-using a site that is already developed, stormwater control costs can be minimal, if they are needed at all.

PART 3 - PEP

Regional PEP

The updated 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, 2015, and July 31, 2016.

Public Education Committee

The LGROW Stormwater Education Committee was formed in 1999 to begin development and implementation of the PEP. Since that time the committee has met on a regular basis to discuss and plan activities scheduled for implementation in the PEP. The 2015/2016 Public Engagement Committee consists of the following participants:

Agency	Representative
City of Wyoming	Aaron Vis
MDEQ	Amanda St. Amour
GVMC	Andrea Faber
Ottawa Co. Water Resources Commissioner's Office	Angela Walachovic
Steelcase	Betsy Hernandez
Annis Water Resource Institute, GVSU	Betty Gajewski
GVMC	Bonnie Broadwater
Ottawa Conservation District	Carla Kocher
City of Grand Rapids	Carrie Rivette
City of Grand Haven	Cheryl Davidson
Village of Spring Lake	Christine Burns
Kent Conservation District	Connie Redding
MDEQ	Dana Strouse
Grand Rapids Parks Department	David Marquardt
Trout Unlimited	Jamie Vaughan
City of Grandville	Jay Kwiatkowski
Ottawa County Road Commission	Jerry Olman
City of Hudsonville	Jill Frielink
Groundswell, GVSU	Joanna Allerhand
City of Kentwood	John Gorney
Cannon Township	Julie Lovelace
Jennison Public Schools	Kim Kiel
Kent County Resource Recovery	Megan Kretz
GVMC	Kristine Bersche
Kent County Drain Commissioner's Office	Lani Brown
Forest Hills Public Schools	Lea Sevigny*

Table 3. Public Engagement Committee Membership	
Agency	Representative
Village of Fruitport	Marjorie Stonecypher
Plainfield Charter Township	Mary Trapp-Gunst
City of Grand Rapids	Michael Staal
MDEQ	Michelle Storey
City of Rockford	Mike Bouwkamp
Trout Unlimited	Nichol DeMol
WMEAC	Ondrea Spychalski
City of Walker	Rachell Nagorsen
GVMC/GVSU	Rajesh Sigdel
The Right Place	Rick Chapla
Georgetown Township	Rod Weersing
Kent County Road Commission	Sean McKean
Grand Rapids Public Museum	Stephanie Ogren
Cascade Charter Township	Steve Peterson
GVMC	Wendy Ogilvie
*Chair of Committee	

PEP Implementation in Year 14

This section describes the public education activities implemented by the Permittees in the fourteenth year of PEP implementation, August 1, 2015 through July 31, 2016. The following report is from the updated PEP, which meets the requirements of the 2013 approved PEP. Target audiences, messages, and delivery mechanisms are described for each Public Education Topic.

Public Education Topic 1 - Personal Watershed Stewardship

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

Target Audience: Residents, visitors, and public employees

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

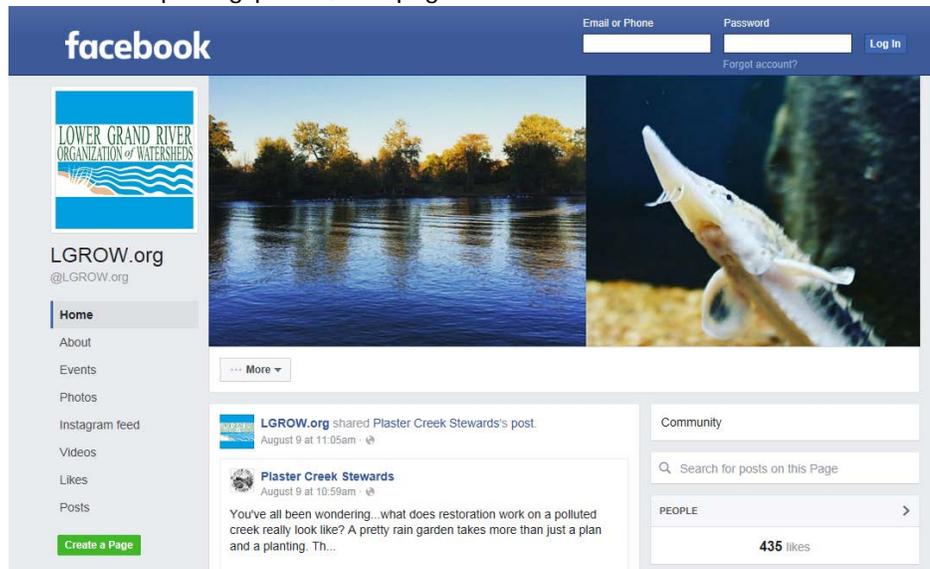
Delivery Method:

- Permittees' websites link to LGROW's website, www.lgrow.org. The watershed website provides information on non-point source (NPS) pollution, local watershed issues, water science education, and watershed management. Through the reporting period, LGROW's website has been accessed by an average of 524 unique visitors each month resulting in over 12,700 total hits to the website during the reporting period. Website traffic by month is displayed in Figure 2.

Figure 3. Pages Visits to LGROW.org by Month



- LGROW worked to promote participation through its Facebook page with a regular posting schedule including, Watershed Wednesdays, upcoming events, and volunteer opportunities. Throughout the reporting period, LGROW Facebook posts have had a total reach of over 21,000 people. As of the end of the reporting period, the page reached over 430 likes. Facebook user engagement has shown consistent growth over the reporting period with the average number of likes, shares, and comments. A total of 115 posts were created or shared during the reporting period.



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

Permittee: City of Grand Rapids

- 1000 Paint by number Watershed Maps
- 500 Keep Your Lakes Great and Your Rivers Grand Magnets
- 1000 Keep Your Lakes Great and Your Rivers Grand vinyl stickers
- 1000 Watershed Temporary Tattoos
- 1500 Household Stormwater Solution Brochures
- 1000 Septic System Care Brochures
- 2000 Troutie Coloring Books
- 500 Pet Waste Pledges
- 500 Pet Waste Bag Dispensers
- 500 Car Wash Pledges
- 500 Car Wash Shammies
- 1000 Reusable Water Bottles
- 500 Reusable Tote Bags
- 1000 LGROW Brochures
- 300 LGROW Custom Baseballs



- Many Permittees displayed lamppost banners first purchased in 2012 to advertise the presence of the Grand River, Rogue River, and Plaster Creek Watersheds. The banners featured the LGROW logo and the message “Yours to Protect.”
- Through cooperation of staff in permitted MS4 communities, Public Engagement committee participants, GVMC staff, and other members of LGROW, over 35 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 were coordinated through LGROW are discussed in the section following Table 4.

MS4 Community	Event/ Activity	Date
Cascade Charter Township	LGROW Spring Forum Host	5/6/2016
East Grand Rapids, City of	DPW Open House	5/18/2016
Ferrysburg, City of	Community Breakfast	7/4/2016
Forest Hills Public Schools	Classroom Programming	Ongoing
	Roselle River Festival	9/24/2016
Fruitport, Village of	Old Fashioned Days	5/27-29/2016
Georgetown Charter Township	Janison Public Schools	Ongoing

Table 4. LGROW and MS4 Participant Events		
MS4 Community	Event/ Activity	Date
	Collaboration	
Grand Haven, City of	Earth Day Festival	4/16/2016
	Party for the Planet	5/7/2016
	Coast Guard Festival	7/26 - 8/7/2016
	Salmon Festival	9/16-16/2016
Grand Rapids, City of	WhiteCaps Game	8/7/2015
	Home Show	3/2-5/2016
	River City Water Festival	3/11/2016
	Party for the Planet	5/7/2016
	WhiteCaps Game	7/7/2016
	Water Resource Recovery Facility Tours	Ongoing
Grand Rapids Charter Township	Partner with FHPS	Ongoing
Grandville, City of	DPW Open House	5/18/2016
Hudsonville, City of	Women's Expo	4/16/2016
	DPW Open House	5/19/2016
Kent County Drain Commissioner	Party for the Planet	5/7/2016
Kent County Road Commission	Facility Tours	Ongoing
Kentwood, City of	Touch A Truck	6/29/2016
Ottawa County Administration and Water Resources Commissioner	Ottawa County Water Quality Forum	11/13/2015
Ottawa County Road Commission	Partner with Georgetown Township & Jenison Public Schools	Ongoing
Plainfield Charter Township	Rain Barrel Workshops	4/12, 5/10, 6/21, 7/19, 8/16/2016
	River City Water Festival	3/11/2016
	Grand River Water Festival	6/26/2016
Rockford, City of	Rogue River/ TU Macro Sampling	5/7/2016
Sparta, Village of	Nash Creek Cleanup	4/30/2016
Spring Lake, Village of	Heritage Festival	6/13-18/2016
	WhiteCaps Concourse Table	7/7/2016
Walker, City of	Quiet Water Symposium	3/5/2016
	Walker Reading Carnival	6/13/2016
	Grand River Water Festival	6/26/2016
Wyoming, City of	STEM Week at Grand Rapids Public Museum	2/29-3/5/2016
	DPW Open House	5/16/2016

- The Quiet Water Symposium promotes non-motorized outdoor recreation and a shared concern for our Great Lakes environment. The 21st annual symposium was held on March 5th, 2016, and had over 2,600 attendees. LGROW hosted a booth with several watershed displays and distributed information and giveaways focused on storm drain awareness and watershed awareness messaging. 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. The symposium also featured the LGROW educational video produced by Drew Mason. This year MGROW and LGROW are partnering to utilize the new storm drain markers designed by the LGROW Public Engagement Committee.



- LGROW was pleased to participate again this year at the River City Water Festival on March 11, 2016. Approximately 530 students were in attendance. LGROW hosted two brand new activities



this year. The first was a variation on the interactive corn hole game. After a brief lesson on macroinvertebrates as indicators of stream health, students had to match one of three types of macroinvertebrates; sensitive, moderate, or tolerant with the correct habitat. Stickers featuring the new storm drain marker design and temporary tattoos were given out as prizes for participation. Students

loved the game and had many great questions about both macroinvertebrates and water quality. The second activity was a scavenger hunt based on the 2015 Art prize entry "The Stream of Life" by Sara Grzegorski, in which LGROW assisted. After an introduction to the concepts of both a watershed and nonpoint source pollution, participants received a scavenger hunt card with a list of items that impact or are impacted by water quality



to find in the mural. The cards, which students were able to take home, also included

information on nonpoint source pollution, a photo of the mural and the location of the actual mural at Sixth Street Bridge Park. LGROW encouraged students to visit the mural to see the items up close. Participants also received an LGROW reusable water bottle to take home.

- LGROW hosted a table at the first annual 2016 Conservation Collective on March 31, 2016. 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, upcoming LGROW events, and distributed stormwater educational materials. The event was well attended with over 80 participants and 12 community organizations.



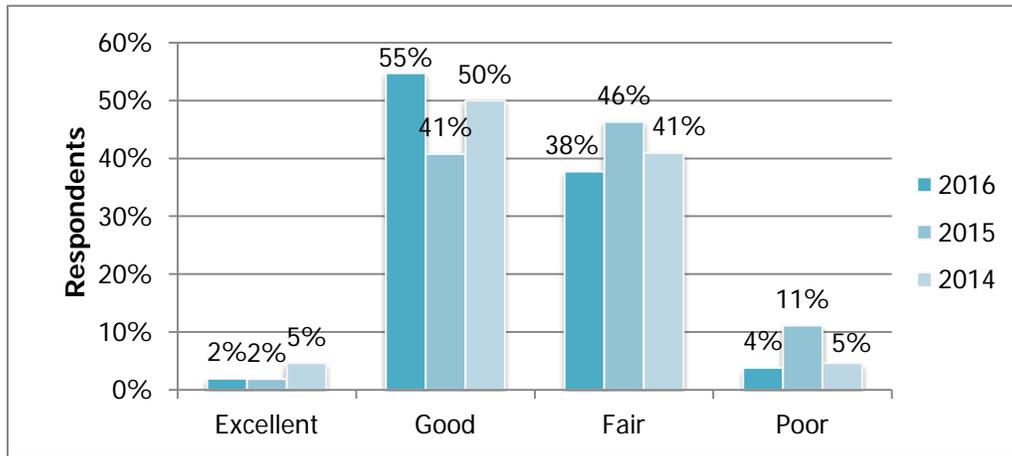
- The 13th Annual Grand River Forum on May 6, 2016, was put on by LGROW at the Wisner Center in Cascade Township. The event offered 100 attendees a regional perspective on emerging issues and accomplishments from around the Watershed. This year's keynote speaker, Mark Coscarelli of Public Sector Consultants, discussed Michigan Infrastructure issues including funding gaps and the need for sewer and water infrastructure statewide. Next, John Weiss (GVMC) moderated a Panel Discussion on Infrastructure issues and collaborative efforts in the Lower Grand River Watershed with panelists Eric DeLong, Deputy City Manager of the City of Grand



Rapids; Joellen Thompson, P.E., Water System Manager of City of Grand Rapids; and Myron Erickson, P.E., Deputy Director of Public Works of the City of Wyoming. The remainder of the forum focused on emerging watershed issues including presentations by Marc Miller (MDNR) on the Grand River Water Trail; Eric Nordman (GVSU), and Nichol DeMol (Trout Unlimited) presented the Rogue River Economic Impact Study; and, Marty Holtgren (MDNR), Stephanie Ogren (Grand Rapids Public Museum), and Matt Chapman (Grand Rapids Whitewater), spoke about Lake Sturgeon Populations and Habitat Improvements in the Grand River. The Forum concluded with a video

presentation from various subwatershed groups. 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 2 shows that from last year to this year, the majority of respondent identified the water quality in the Grand River as good in 2016, instead of Fair in 2015.

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



- The Party for the Planet was held at John Ball Zoo on Saturday, May 7, 2016. The event brought the public together with environmentally conscious groups from West Michigan. Approximately 2,400 people visited the Zoo on the day of the event. LGROW, the City of Grand Rapids, and Groundswell coordinated for the event with a theme of stormwater education. LGROW provided paint-by-number watershed maps, temporary tattoos, and coloring books. Our volunteers collected car wash pledges in exchanges for Shammies, ran the stormwater themed corn hole board game, gave away prizes to participants, and wore the Major Runoff costume to draw visitors into the exhibits. The City of Grand Rapids collected pet waste pledges and distributed pet waste bag dispensers. Informational brochures, tote bags, stickers and water bottles were also distributed. Interaction was largely required for the public to receive give-away items. Public feedback was overwhelmingly positive with many children eager get a



photo with Major Runoff, participate in a game, or engage in one of our water-themed art projects. Many parents visiting our booth elected to take one or both of the pledges offered or discuss household activities that support clean water while they were waiting on their children.

- LGROW sponsored the Grand River Water Festival on June 29, 2016, at Riverside Park, which was attended by approximately 2,000 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. Volunteers at the LGROW booth helped attendees create native, wildflower seed bombs to encourage the use of native plants. This was another new public education idea developed by the Public Engagement Committee. The seed bomb station was busy for most of the day and several other groups have expressed interest in utilizing this activity at other events. Landscaping for water quality booklets and other informational items about stormwater were distributed to participants as well. During the water festival Wendy Ogilvie gave a brief presentation on LGROW and its activities within the watershed, including the status of the Grand River Revitalization and Rapids Restoration project.



- LGROW hosted concourse tables at two WhiteCaps games during this reporting period. The first was on Sunday August 9, 2015. GVMC sponsored the game in cooperation with the Clean Air Action Coalition and titled the event "Clean Air Clean Water at 5/3 Ballpark". LGROW participated in a live radio interview, Major Runoff, the stormwater mascot, threw out the first pitch at the game, and over 15 volunteers from MS4 permitted communities helped conduct the public education survey. The survey, developed by the Public Engagement Committee during the previous reporting period, consisted of 12 questions and took about 5 minutes to complete. Survey participants received LGROW baseballs as a thank you gift. Approximately 300 surveys were collected the day of the game. The results of this survey are detailed in a later in this section. Participants also put a pushpin in the



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Watershed map to identify their location and watershed temporary tattoos were distributed. The second table was hosted on Thursday July 7, 2016. Stormwater educational materials and giveaways were distributed to attendees. Each game had an attendance of approximately 4,000.

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 wastewater 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.

Delivery Method:

- Permittees installed the plastic storm drain markers designed by the Public Engagement Committee. The new drain markers carry the messages "Keep your Lakes Great and your Rivers Grand". Many 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 over 450 drain markers were installed at locations throughout the watershed.



- Permittees utilized a variety of stormwater displays including the drop toss game, the watershed pushpin map, the LGROW banners on non-point source pollution, and the "Grand River Yours To Protect" informational poster board at a variety of events and locations throughout the Watershed. The PEP Questionnaire details when and where these displays were used by individual Permittees. The Public Engagement Committee worked with a local artist, Sara Grzegorski, in cooperation with Groundswell on her ArtPrize Entry "River of Life". This mural was later incorporated into an

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interactive outreach banner which utilized the scavenger hunt developed during the Art Prize Voting period.

- Synchronized ads featuring the message “Only Rain in the Drain” highlighting concepts of “this community maintains separate storm sewers” and “anything entering a storm drain goes to the Grand River” were run at the following locations:
 - Interior panels in five Harbor Transit busses and trollies between Memorial Day and Labor Day. Ridership during this period is estimated at approximately 25,000 people.
 - Interior panels were also placed on all 21 Rapid busses (bus #50) in the fleet that run between the GVSU campus and downtown for 6 months ending at the close of the reporting period on July 31. Ridership on the buses during this time is estimated at approximately 1.5 million.
 - Johnny Ads were placed in March and April at a total of 150 locations throughout Kent and Ottawa Counties with an estimated 750,000 views.



Permittee: City of Grand Rapids

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.

Delivery Method:

- Permittees distributed copies of the *"Citizen Report Form"* to their residents. This form included information on how to report illicit discharges and connections to one's community. Permittees individually customized these brochures for their residents.
- Permittees distributed the article *"How you as an Employee Can Help Reduce Pollution Entering the Grand River"* to their employees. This article encourages employees to report stormwater discharges to their community's stormwater coordinator.
- Permittees distributed copies of USEPA's *"Do your Part- Be Septic Smart!"* brochure to their residents. This brochure describes what a septic system is, how it works, and how to maintain it.
- Permittees distributed the newsletter article *"Do You Know Where Your Septic System Is?"* to their residents via their webpage, community newsletter, or a link to LGROW.org. This article encourages residents to regularly pump their septic tanks, warning signs of a failing drain field, and the environmental consequences of a failed or improperly maintained septic system.



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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*".
- Several communities hosted rain barrel events as detailed in their PEP Questionnaires.
- Permittees collected pet waste pledges from dog owners in exchange for a free pet waste bag dispenser to hook to the pet's leash. The pledges also provide information on dog parks in the Watershed and discuss the connection between picking up pet waste and protecting stormwater. This brochure was adapted, with permission, from a similar program in Portland, Oregon.



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

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Public Education Topic 5 - Waste Management Assistance

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

Target Audience: Residents, visitors, and public employees

Content of Message: 1) Protect your family's health: dispose of unwanted paints, solvents, and cleaners at your county collection center. 2) Recycle used oil and automotive fluids. Just one gallon of used motor oil dumped down a catch basin can contaminate one million gallons of your drinking water. 3) Education on types of HHW and available alternatives. 4) Education on disposal locations of HHW, travel trailer/ boating sanitary wasters, chemicals, motor vehicle fluids and unused medications.

Delivery Method:

- Several communities utilized the pre-recorded "*Water Spots*" on the topic of properly disposing of household hazardous waste to keep it out of the storm drains, as a hold message on their phone systems.
- Permittees and LGROW.org shared the newsletter article "*How You Can Help Reduce Pollution Entering The Grand River*". 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*", 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. This year Kent County continued to expand their 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.

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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 buffers, filter strips, conservation easements, and bioengineering techniques.

Delivery Method:

- Permittees distributed the brochure "*What Every Landscaper Should Know,*" to their subcontractors and facilities staff. These brochures detail BMPs for fertilizer and pesticide application, lawn care, and native plantings.
- Attendees at the Grand River Water Festival created native seed bombs and received a copy of the booklet "*Landscaping for Water Quality*" at the LGROW booth. Booth volunteers discussed the importance of native plantings and their role in water quality with attendees at the Festival
- LGROW planned a green infrastructure conference which was held on August 4-5, 2015. Many of the speakers, as well as a tour of local green infrastructure, focused on the importance of native vegetation in protecting water quality. Several Permittees participated in the planning and preparation for this event. Attendance and specific content were detailed in the training section of the report.

School Outreach Summary

Since the organization was formed, educators and administrators consistently look to LGROW for guidance and technical support in engaging students in watershed education projects to enhance and support the long-term goal of a healthier Lower Grand River watershed. LGROW offers experiences and education through classroom demonstrations and hands-on projects that support educational programming around nonpoint source water pollution and stormwater management.

The key objectives of the environmental education programming are as follows:

- Connect schools and classrooms with existing municipal issues, efforts, and projects, in accordance with the PEP, with a focus on nested school districts as a priority;
- Develop tools to track progress and success in environmental education programs identified in the Lower Grand River Watershed Management Plan; and,
- Build and maintain collaborative partnerships to educate students in our region through meaningful, place-based service learning projects located in their communities.

In the 2015/2016 school year, LGROW environmental educational programming served over 500 students in eight (8) schools in Kent and Ottawa Counties. Through partnerships with school districts, area intermediate school districts, community partners, and local units of governmental units, LGROW provided students and teachers with technical assistance in classrooms and field experience, including but not limited to:

- Introduction to Stormwater, Nonpoint Source Pollution, and Best Management Practices: Students were introduced to the Lower Grand River Watershed. LGROW staff discussed stormwater pollutants and ways to reduce them, as well as green infrastructure and best management practices to minimize stormwater discharge. Finally, students were presented with maps and diagrams of the local stormwater sewer system and catch basins, as well as how it connects to the Grand River.
- Catch Basin Markings: Students cleaned storm drains and marked catch basins in their communities. LGROW worked with local units of government to identify the best place for students to install markers to bring awareness to the communities on the impacts to surface



water through stormwater discharge. Overall, students installed over 300 storm drain stickers in their neighborhoods. Furthermore, students distributed over 150 door hangers in the residential neighborhoods around their schools. These door hangers were researched and designed with students in one of the MS4 nested school districts and used throughout the region.

- Green Infrastructure Tour: Students from a local high school joined LGROW, partner organizations, and local municipalities on a Green Infrastructure tour. Students received a first-hand look at the following sites in and around Grand Rapids:
 - Grand Rapids Water Resource Recovery Facility: Native landscaped rain garden
 - The Rapid Operations Center: Green roof and live wall
 - Joe Taylor Park: Underground stormwater treatment and infiltration; porous concrete parking lot
 - Plainfield Avenue: Native landscaped bioswales
 - Whiskey Creek: Native landscaped bioswale

- Water Quality Monitoring: Students analyzed water quality in points along Indian Mill Creek, Brandywine Creek, Maplewood Lake, and other tributaries to the Grand River using various methods of data collection. Water quality kits were used to measure multiple chemical components, including pH, phosphorus, dissolved oxygen, and nitrates. Other students collected and counted macroinvertebrates using dip nets along stream side, as well as leaf packets that were installed and retrieved six weeks later. Using these methods, students were able to draw conclusions about the health of the surface water and possible impacts through land use practices.



Evaluation Measures

This section includes a description of the quantitative and qualitative evaluation measures of PEP effectiveness implemented between August 1, 2014, and July 31, 2015.

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 brochures were the Household Solution to Water Pollution. In total, materials were distributed at over 50 events (Table 4) and at various locations throughout the watershed. The information collected from the pet waste pledges included the pledger's zip code. Pledge participants' zip codes are shown in Figures 4 and 6. The majority of responses for both pledges were from residents within the watershed. These pledges represent more than simply an educational outreach effort; these are a commitment to a behavioral change which has an important impact on water quality. This program was very popular with over 500 pledge forms requested and 161 pledges completed during the reporting period.

Figure 6. Pet Waste Pledges by Zip Code

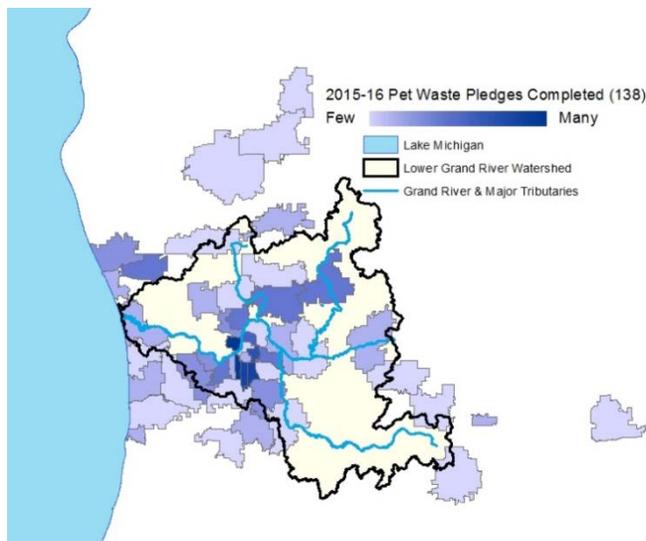
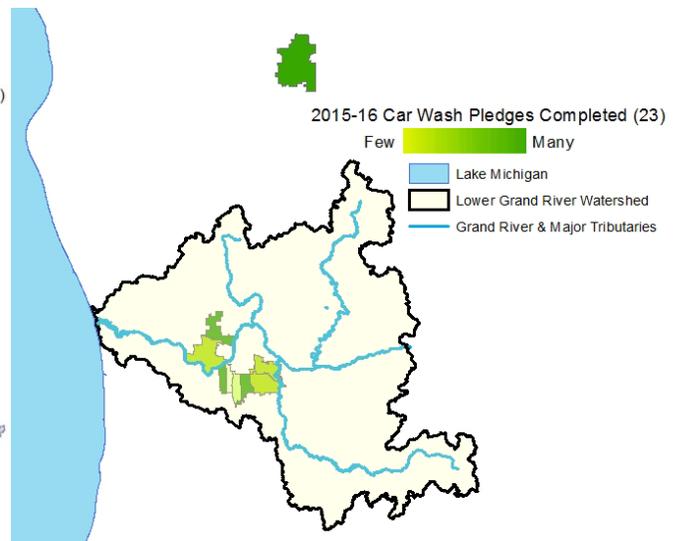


Figure 5. Car Wash Pledges by Zip Code



2015 Public Education Survey

During the previous reporting period, the Public Engagement Committee developed a 12 question survey to be administered at a WhiteCaps Ballgame during this reporting period on August 9, 2015. The survey was designed to gauge the awareness of the public on each of the six objectives outlined in the approved 2013 PEP. Respondents were asked to provide their zip codes and age to help identify residents of the watershed and connect their location with other available census data. Evaluating responses has provided insights to help refine and expand the future Lower Grand River Watershed educational efforts.

The Lower Grand River Watershed covers over 100,000 square miles encompassing 69 zip codes. LGROW received 369 survey responses from 84 zip codes. Of the responses, 180 participants in 44 zip codes were residents of the Lower Grand River Watershed. Respondent zip codes represented 64% of the land area and 82% of the population of the watershed based on 2010 Census Data. The 18-36 and 37-55 year old ranges were the largest groups of responders comprising, together, 61% of the respondents.

Figure 7. Tell us your age

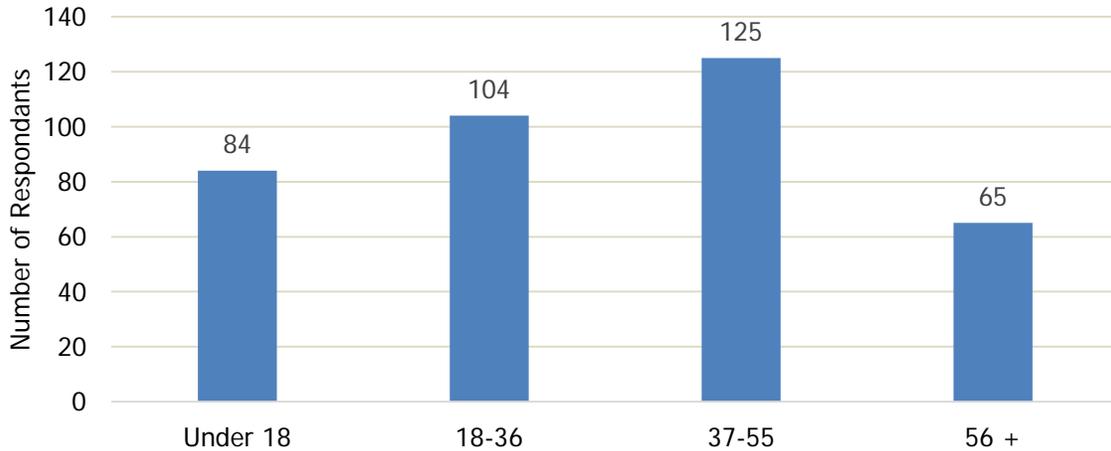
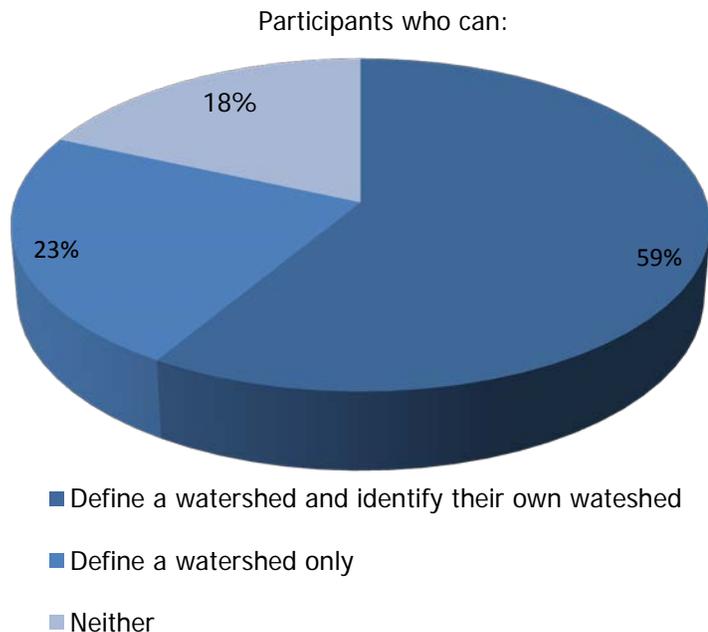


Figure 8. What is a watershed & which one do you live in?

In evaluating PEP Objective 1, personal watershed stewardship, the survey first asked participants to identify the correct definition of a watershed. Of those surveyed, 82% of respondents answered correctly. Of those that answered incorrectly, 10% chose a wrong selection and 8% said they did not know the answer. Next, participants were asked if they could identify the watershed in which they lived. Of those surveyed, 72% were able correctly identify their subwatershed. The remainder named

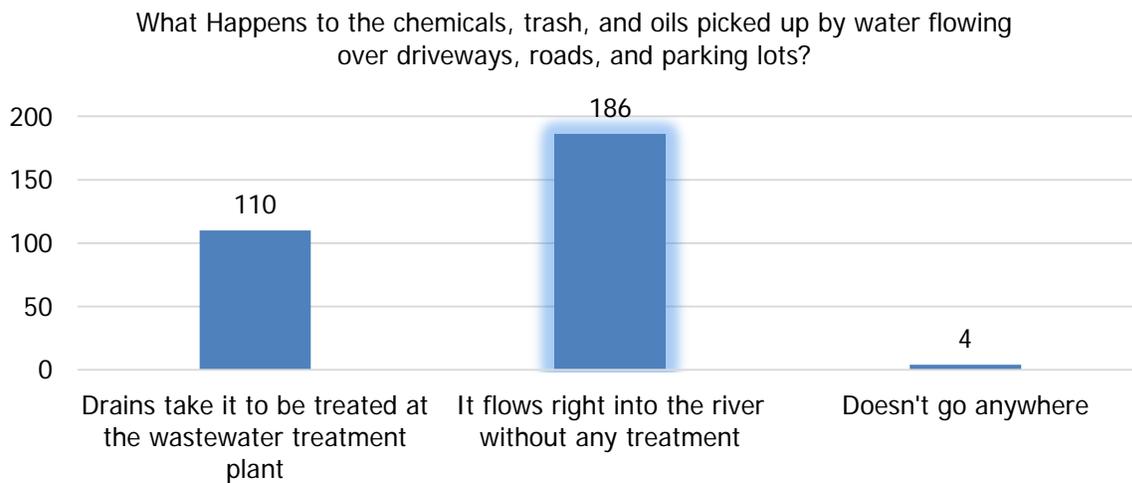


a geographic area instead of a watershed. These results exceed the third year (2015) milestones approved in the plan.

Of the respondents who correctly identified the definition of a watershed, 91% were also able to correctly name their home watershed. This suggests that for participants who understand what a watershed is, they also have a strong grasp of how this translates to their personal watershed. Future efforts should target educating those who do not already grasp the meaning of a watershed. Once that concept is clear many will seek out how this relates to them personally in the form of identifying their subwatershed.

PEP Objective 2 focuses on ultimate stormwater discharge location and potential impacts. Survey participants were asked what happens to the chemicals, trash and oils picked up by water flowing over driveways roads and parking lots. Over 60% of respondents were aware of where storm water ends its journey, which exceeds the PEP objective of 25%.

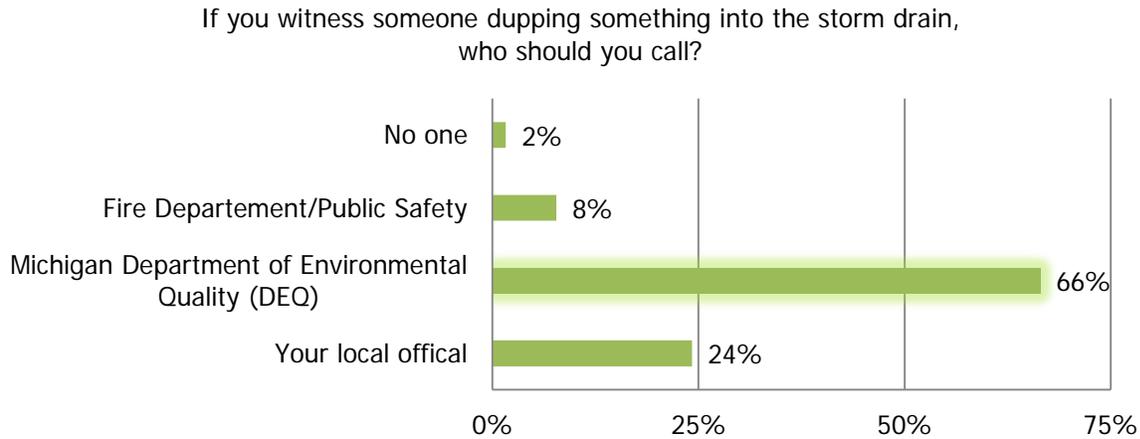
Figure 9. Where does stormwater end up?



The City of Grand Rapids has focused significant resources during the 2015-16 reporting period on educating the public about the early completion of their Combined Sewer Overflow separation project through a regional ad campaign. This effort, when combined with the education and outreach efforts of the Lower Grand River Permittees, including storm drain marking detailed in this report, may yield even greater awareness during the next round of surveys.

PEP Objective 3 focuses on the prevention and reporting of illicit discharges and by extension, septic system maintenance. The survey first asked participants how to respond if they witness an illicit discharge occurring.

Figure 10. Reporting Illicit Discharges



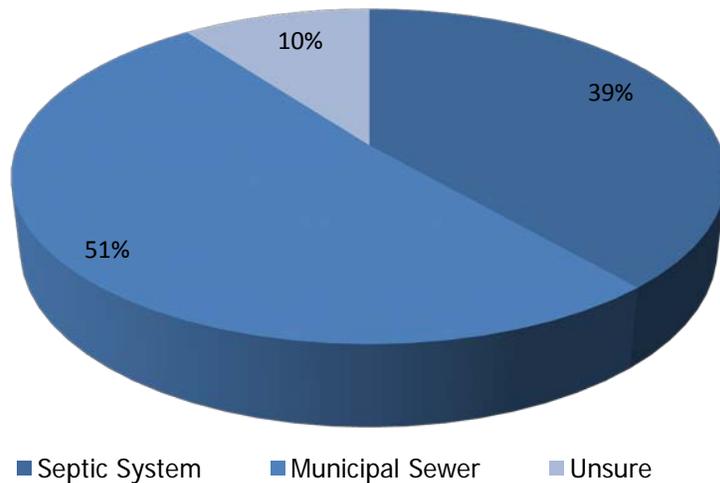
With multiple correct responses, 98% of respondents chose to report the discharge, while only 2% said that they would call no one if they witnessed someone dumping into the storm drain. Of the respondents who would report, approximately 66% identified MDEQ as the agency to contact. While this is correct, it does suggest that future educational efforts should focus on how and why to contact communities about illicit discharges.

The PEP objective identifies an overall 9% increase in illicit discharge reports each year in each community as the 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 9% increase since an increase in reports may or may not also indicate an increase in dumping. Cumulatively, the reporting MS4s had 28 illicit discharges reported during the 2014-15 reporting period and 61 illicit discharges reported during the 2015-16 reporting period, a 54% increase. The number of illicit discharges reported in each community, however, varied widely between 0 and 16, with about half of the permittees receiving zero reports. Looking at the number on a watershed-wide scale shows a steady upward trend in reporting that far exceeds the goal of a 9% increase set in the PEP.

The public education plan also identifies people with septic systems as a target audience for Objective 3. The focus of the public education initiative is on people who have a septic system and within that group, those who are unsure of what maintenance is necessary. Of survey respondents, about half are connected to municipal sewer. This is consistent with the state average according to Michigan Municipal League Data.

Figure 11. Where is your home's wastewater discharged?

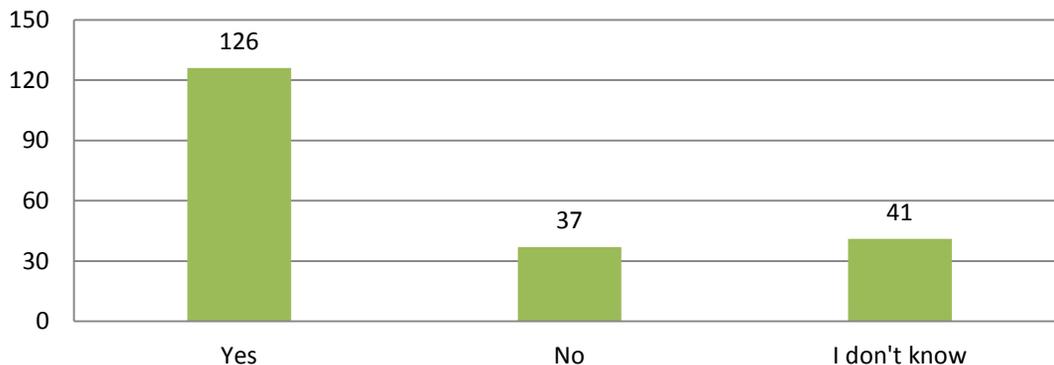
Of those who took the survey, 10% did not know if they were connected to municipal sewer or a septic system. So, by extension, those who are unsure where their waste is discharged are not actively maintaining a septic field if they do have one.



Survey participants who are connected to a septic were next asked if they conduct regular maintenance. Of those, 61% of the responses indicated that they conducted regular septic system maintenance which exceeds the PEP Objective of 9%. Only 18% of respondents reported that they do not regularly pump their septic systems and 21% were unsure if regular maintenance was occurring. The DEQ estimates between 10-20% of septic systems in Michigan are improperly functioning or failing. Regular maintenance and inspection play a critical role in identifying and correcting these failing systems. In subsequent years adding additional messaging about identifying signs of trouble in your septic system in addition to regular maintenance guidelines may help target those who have a failing septic field that could be repaired before it fails completely.

Figure 12. Septic System Maintenance

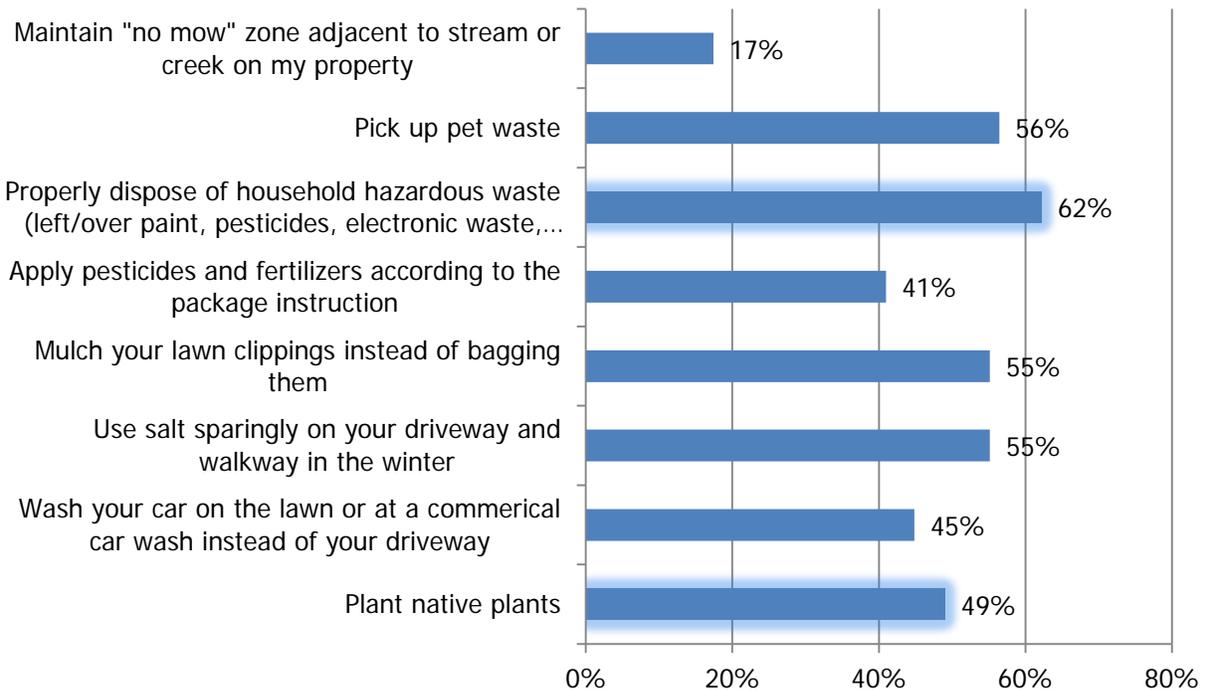
"If you have a septic system at home, is the tank pumped out every few years?"



US Census data estimate that approximately 25% of residences in the Watershed are rental properties. Therefore, a portion of those who responded that they were unsure may be renters who are not responsible for maintaining their own systems.

PEP Objective 4 evaluates personal actions that can impact the watershed. Survey participants were asked to select from a list all items in which they are participating. Of the 369 total responses, only 5 selected no actions from the list. In other words, 98% of the participants could name one or more actions they were taking which exceeds the objective of 80% in the PEP plan. The actions with the highest percentages of respondents participating were proper disposal of household hazardous waste at 62% and picking up pet waste at 56%.

Figure 13. What Actions are you doing to protect Water Quality?



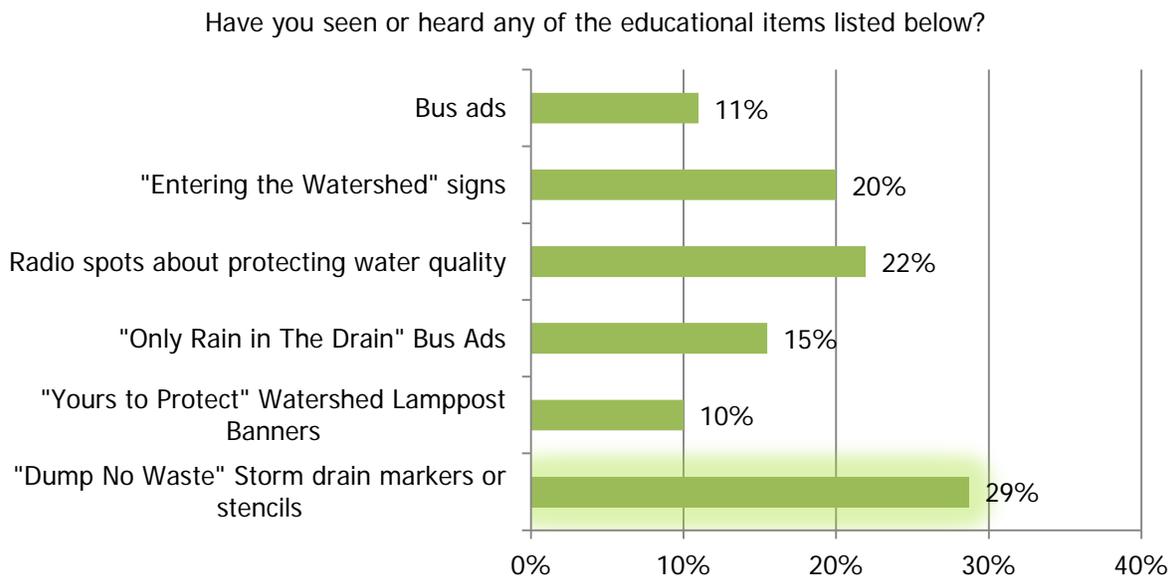
PEP objective 5 is waste management assistance and sets a 9% increase in the number of watershed residents dropping off HHW during collection events as the third year milestone. In 2015, Kent County switched their household hazardous waste collection from an appointment only system to regularly scheduled 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, a 25% increase which exceeds the PEP objective. Going forward, this year's utilization data should serve as the new 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. Properly disposing of household hazardous waste was also the most frequently selected response to the question: "What are some things you are doing to protect water quality?" With 64% of respondents selecting this activity, this indicates that that many residents are utilizing this option throughout the watershed.

PEP objective 6, management of riparian lands sets a 9% increase in the number of watershed residents surveyed who are planting native plants, stream buffers, rain gardens or shoreline stabilization techniques. Survey responses included 17% maintaining a "no mow" buffer zone, and over half of those surveyed reported using native plants, exceeding the PEP Objective.

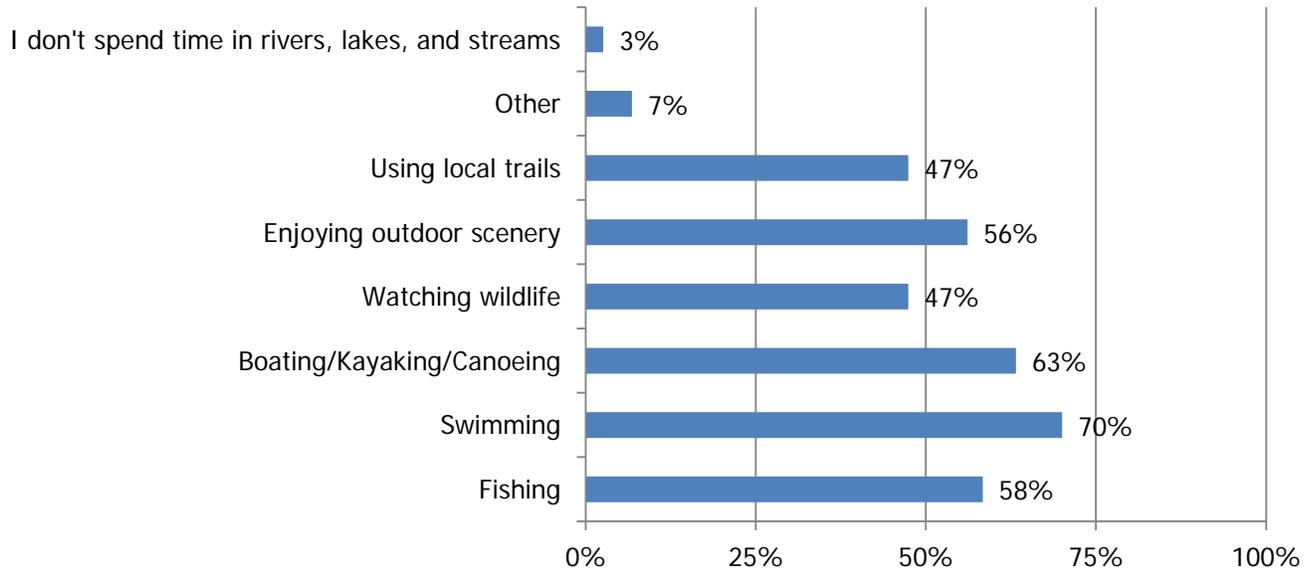
This survey was also an opportunity to evaluate which of the different outreach items/methods were the most visible. The three most visible outreach tools were the drain markers, radio spots, and entering the watershed signage. When broken out by age groups, drain markers were the most frequently observed in every age range below 56, while radio spots were selected with the highest frequency for those 56 and up. The website and Facebook were the least visible across all age groups. The Public Engagement Committee did select several new outreach methods for the reporting period following this survey so in subsequent evaluations these will be added to the list for comparison.

Figure 14. Comparing PEP outreach methods



The final two survey questions asked about the importance of water quality and how participants spent time in rivers, lakes and streams. Responses show that 98% of participants consider protecting clean water to be somewhat or very important and 97% of participants enjoy one or more of the activities listed below.

Figure 15. How do you spend your time in lakes, rivers, and streams?



Based on survey results, the Lower Grand River has exceeded the established evaluation measures for each of the six PEP objectives outlined in the approved 2013 Public Education Plan as shown in Table 5.

Table 5. PEP Objective	Evaluation Measure	
	Meets	Exceeds
1. Personal watershed stewardship		X
2. Ultimate stormwater discharge		X
3. Public reporting of illicit discharges		X
4. Personal actions impact the watershed		X
5. Waste Management assistance		x
6. Management of riparian land		X

2016 Stormwater Public Education Plan (PEP) Questionnaire

Reporting Period of August 1, 2015, to July 31, 2016

Please complete this questionnaire to provide an evaluation of the stormwater education activities you have implemented between **August 1, 2015, and July 31, 2016**. GVMC will include this information, along with watershed-wide measures of effectiveness, in your 2016 Progress Report.

Please return this form to GVMC by August 15, 2016.

Community Name: City of Grand Rapids

Brochures, Flyers, and Give-a-ways

1. Have brochures, flyers, and give-a-ways been distributed?

- Yes: all in progress
 No

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

- Government office Library Community event Other Brochures and give-a-ways were provided at the 2016 West Michigan Home and Garden Show, 2016 River City Water Festival, 2016 Party for the Planet, Think Green Job Fair, 2016 Earth Day event at City High School, and many tours of the Grand Rapids Water Resource Recovery Facility. Door hangers were distributed to approximately 106 homes along 11 blocks

3. Approximately how many people did you interact with during the distribution of the materials? 500, plus facility tours

4. What was the most popular give-a-way from the materials distributed in your community? Dog Bag Dispenser

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

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

Illicit Discharge Reporting

(brochure available at: http://www.lgrow.org/uploads/files/Citizens_Reporting_Brochure_withnote.pdf)

6. How many "Citizens Reporting Brochures" were customized and distributed to your residents? A link to this brochure is posted on the Environmental Services website.

Was the "Citizens Reporting Brochure" posted to your city website? Yes, at <http://www.grcity.us/enterprise-services/Environment-Services/Pages/IDEP.aspx> (url) No

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

How many complaints were received from the general public regarding illicit discharges? 5

Lamppost Banners

7. Did you display your lamppost banners provided to you in 2009- 2013?

- Yes, at North Park St (street names/ location) on since 2011 (dates). Please describe any public feedback generated _____
- No, but we will display our banners at _____ (street names/ location) on _____ (dates)
- We did not order lamppost banners

Newsletter Articles (available at: <http://www.lgrow.org/MS4articles>)

8. Did you distribute newsletter articles to your residents?

- Yes, on _____ (date); Via: print web other

Topic(s): Septic brochures were mailed to homes as noted in Appendix 2A. Other newsletters are posted to our website and social media accounts periodically. We did run a billboard public education campaign this fall about cleaning the leaves off catch basins.

- No, but we will on _____ (date)

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

10. If applicable, list the newsletter name or webpage address used to distribute stormwater information to the public www.grcity.us/esd

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

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

Stormwater Interactive Displays

13. Did you set up the stormwater poster board display?

- Yes, on _____ (dates) at _____ (location).

No, but we set up our own display at the West Michigan Home and Garden Show and the Groundswell Student Showcase. (photo attached)

14. Did you use an EnviroScope interactive stormwater model to educate the public on stormwater pollution?

- Yes, on April 22 at City High School No

Approximately how many people participated in a demonstration? 50. Please see attached presentation.

15. Did you use a watershed map with pushpins at an event?

- Yes, on _____ (dates) at _____ (location); No However, this was part of the group LGROW display at Party for the Planet and the Whitecaps Baseball game.

Approximately how many participants pinpointed their location in the watershed? _____

16. Did you use the stormwater mural banner & scavenger hunt at an event?

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

Approximately how many participants completed the scavenger hunt? _____

17. Did you utilize Major Runoff the stormwater mascot at an event?

- Yes, on 8/9/2015 (dates) at Clean Air Clean Water at the West Michigan Whitecaps (location); No

Approximately how many participants interacted with Major Runoff? Several hundred people were at the game when Major Runoff threw out the first pitch. Major Runoff interacted with many others in and around the concourse.

18. Did you utilize interactive Corn Hole Game Board at an event?

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

If yes, which game did you host?

- Drop toss: stormwater matching
- Match the Macro with their habitat

Pet Waste Pledges

19. Did your community collect pet waste pledges distributed with the public education materials?

- Yes, 100 (approximate number)
- No

20. Please describe any interest, comments, or discussion generated from the pledges and the associated giveaway:

Car Wash Pledges

21. Did your community collect car wash pledges distributed with the public education materials?

- Yes, (approximate number)
- No

22. Please describe any interest, comments, or discussion generated from the pledges and the associated giveaway:

N/A

Storm Drain Awareness Activities

22. Did you implement a storm drain awareness activity between August 1, 2015, and July 31, 2016?

- Yes _____ (streets) on _____ (dates)
- Yes, we held a storm drain stenciling event on _____ (dates) and stenciled _____ (streets)
- Yes, we have approximately 400 (no.) pre-marked catch basin backs/grates with the message "No dumping, drains to waterway" All new catch basins have this marking, unless the catch basin is to be installed in a historic area.
- Yes, we hung door knob flyers on Boltwood St NW, Fruitwood Dr NW, Isabella Ct SE, Eastern Ave SE, Hall St SE, Humbolt St SE, Marshall Ave SE, Van Haaften Place SE, Kalamazoo Ave SE, Davis Ave NW, McReynolds Ave NW, 12th St NW (streets) on October 27 and December 8. Please see example of door knob flyer in attachments.
- No, but we plan to implement _____ (activities) on _____ (dates)

23. Please describe any interest, comments, or discussion generated from the activities above

None

24. Have you noticed a reduction in storm drain dumping?

- Yes, if so, please describe _____;
- No, if so, please describe This year we had 16 illicit discharge, which is more than the previous year. This shows that people are more aware of the effects of dumping in the storm drain, and they are reporting the illicit discharges to us.

Additional Efforts

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

- Rain Barrel Workshop Date: / / The City of Grand Rapids sponsors this WMEAC event which distributed 102 rain barrels during several events this reporting year.
- Rain Garden Installation Roosevelt Park Rain Garden Date: 5/21/2016 Number of Attendees: 1 staff attendee
- Rain Garden Installation Tremont Green Space Rain Garden Date: 8/19/2015 Number of Attendees: 6 staff attendees and 30 staff volunteers. Please see attached article from WZZM news about the installation of

this rain garden.

- River Clean Up (Location): _____ Date: 9/19/2015 Number of Attendees: 1,100 volunteers. Please see attached River Clean Up report.
- Clean Air- Clean Water @ the West Michigan WhiteCaps 8/9/2015 -1 staff attendees
- Healing Our Waters Conference 9/29-10/1/2015 – 2 staff attendees
- Ottawa County Water Quality Forum 11/13/2015 – 6 staff attendees
- MWEA Watershed Seminar 12/2/2015 – 2 staff attendees including 1 presenter
- Quiet Water Symposium 3/5/2016
- River City Water Festival 3/11/2016 – 2 staff attendees
- MWEA Watershed Summit 3/29/2016 – 2 staff attendees
- 13th Annual Grand River Spring Forum 5/6/2016 – 5 staff attendees
- John Ball Park Party for the Planet 5/7/2016 – 1 staff attendee
- Grand River Water Festival 6/26/2016
- West Michigan WhiteCaps Concourse Table 7/6/2016 – 1 staff attendee
- Other: EPA Charrette Date: 10/6/2015 Number of Attendees: 7 staff attendees Sponsored and hosted multiple other municipality staff as well.
- Other: WMSECN Best of the BMPs Training Date: 3/3/2016 Number of Attendees: 5 staff attendees
- Other: West Michigan Home and Garden Show Date: 3/3/2016-3/6/2016 Display with 18 staff attendees over 4 days
- Other: WEF Great Water Cities Date: 5/10/2016 Number of Attendees: 1 staff attendee
- Other: Student Green Infrastructure Tour Date: 5/19/2016 Number of Attendees: 2 staff attendees led 40 students on tours of 3 GI areas through City.
- Other: Neighborhood Association Stormwater Presentation Date: 6/23/2016 Number of Attendees: 1 staff attendee
- Other: Rotary Club of Kentwood Presentation Date: 7/13/2016 Number of Attendees: 2 staff presenters
- Other: WM Hispanic Chamber of Commerce Date: 7/21/2016 Number of Attendees: 2 staff presenters
- Other: Facebook: Multiple social media campaigns were launched during this year. These campaigns engaged approximately 14,344 people and reached thousands more.
- Other: Billboard Advertising Campaign Date: 11/9/2015-12/6/2015 Number of Attendees: 30 Billboards were be viewed by 80% of Grand Rapids' population an average of 16 times over the course of the 5 weeks. Please see attached example billboard and map of billboard locations.
- Other: Adopt a Basin Brochures Distribution Date: 11/9/2015-12/6/2015 Number of Attendees: We dropped off stacks of Adopt a Basin brochures to 10 stores that carry City of Grand Rapids yard waste bags.

Describe any materials distributed, number of attendees, messages distributed : Please see below

26. If applicable, please describe any other stormwater public education activities your community implemented beyond the events described above. (Submit any relevant documentation): Water Resource Recovery Facility Tours that discuss stormwater and native vegetation were conducted for 1,176 people from 8 years old to adults. The tour also includes one of our rain gardens at the facility. Please see the attached list of tours. "Leaf Me Alone GR" billboards were displayed in the Grand Rapids area from November 9, 2015, to at least December 6, 2015, although many were up longer. The billboard graphic and a distribution map are provided in the additional documentation.

We also have a Stormwater Oversight Commission comprised of 9 private citizens that oversee stormwater asset management and policy recommendations. The Stormwater Oversight Commission annual report is provided in the attachments of this report.

PART 4 – IDEP

Regional IDEP Activities

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

The IDEP is being implemented under a cooperative program administered by the Grand Valley Metropolitan Council (GVMC) and involving the county agencies and municipal units participating in the Watershed Approach. The approved IDEP utilizes an alternative approach which includes the sampling of all storm sewer outfalls to Waters of the State within the urbanized area for the following parameters: surfactants, temperature, ammonia, and pH. Cooperative agreements were signed by participating communities to ensure that any illicit discharges detected would be traced upstream to their point of origin within the approved timeline whether or not they crossed jurisdictional boundaries.

Outfall sampling was conducted during the summers of 2013 and 2014 for regulated communities in Kent and Ottawa County respectively. Outfall sampling was conducted for the Village of Fruitport in Muskegon County during the summer of 2016. In total, over 2,000 outfalls were sampled in the urbanized area of the Lower Grand River Watershed. Of those outfalls, only 13, or 0.5% required high priority or immediate follow-up. By comparison, 61 illicit discharges not associated with outfall testing were identified either by public reporting or staff identification during the reporting period and 28 illicit discharges were identified during the last reporting period. Recognition and reporting training for both the public and the staff of permitted communities is more than twice as effective at eliminating illicit discharges as outfall sampling during a screening year. Additionally, illicit discharge reporting is an ongoing initiative while outfall sampling provides only a snapshot in time. A detailed description of the IDEP activities undertaken on an individual basis is included below. The IDEP activities include dry-weather screening of discharge points, locating possible sources of contamination, responding to reported incidents, correcting the problems, and preventing new illicit connections.

Permittee: City of Grand Rapids

Community IDEP Activities

Please describe any dry-weather screening conducted during the reporting period and the findings of that screening.
None. This is scheduled for 2018

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.

44 Coldbrook St NW – On July 13, Auto Die reported that the storm sewer beneath their building (vacated right of way) at 44 Coldbrook St NW was backing up into the manholes inside their facility. Blockages in the line were discovered while trying to televise the main beneath their building. The blockage appears to be concrete or flowable fill. As of July 30, the lines were cleared to the extent that limited televising could be conducted. Upon review of the footage, which showed potential cross connections, it was recommended that samples be collected for fecal coliform analysis. Samples were collected on July 30 and analysis indicated high levels of fecal coliforms. The following timeline shows the actions taken to correct this problem.

7/13/15 Storm Backup at Auto Die reported to City. Crew sent to address. Found blockages in line.

7/30/15 Lines had been cleared and televised. Cross Connections suspected. Sample collected.

8/3/15 Confirmed fecal coliforms at >15,000 #/100mL

8/3/15 Reported to Amanda St. Amour.

8/4/15 Contacted Auto Die to notify them of the problem.

9/9/15 Meeting with Auto Die to discuss compliance plan.

9/21/15 Dye testing performed by City with assistance from Auto Die. Inconclusive results.

9/25/15 Report from Auto Die indicating that there was no evidence that Auto Die was responsible for the cross-connection.

10/6-10/16/15 Additional sampling occurred indicating that cross connection was prior to Auto Die.

10/30/15 Televising indicated that the combined sewage lateral went from the combined manhole outside of the Auto Die building to the storm manhole inside the building. GIS indicated that it connected to the sanitary manhole inside.

12/10/15 Request for bids went out to make necessary corrections.

1/8/2016 Sanitary lateral from 921 N Division was disconnected from the combined sewer and a new lateral was installed to connect it to the sanitary manhole inside the building. This makes the former combined sewer a separate storm sewer, as 921 N Division was the only sanitary connection to it.

417 Ann St NW – On August 11, Carrie Rivette was contacted by the Grand Rapids Fire Department (GRFD) at 11:10 am and notified of the release. After speaking with SET Environmental (hazardous waste hauler) and Haviland and contacting Amanda St. Amour, Carrie Rivette arrived onsite at approximately 11:50 am.

Carrie checked in with the GRFD HAZMAT team and met with Josh Mueller of Haviland near the catch basin that the caustic soda was released to.

Our GIS indicated that the outfall was due south of the manhole where the plug was inserted. Upon further inspection and after Haviland had shown Carrie the outfall where they had found impact, it was determined that the original outfall was abandoned. By this time, though, the plug had been inserted.

After inspection of the outfall, we requested permission to place sand bags in the area beyond the outfall and contacted staff to bring them onsite. MDEQ granted permission at about the time the bags arrived onsite.

The Haviland lab manager collected pH samples from the pooled area and downstream. While readings of the pooled area indicated a pH of 12 (maximum for the paper), within 30 feet downstream, readings were down to 6-7. This information was collected and relayed to Amanda upon her request so that she knew that advisories did not need to be issued for the creek.

Haviland had been pumping from the impacted catch basin into a tote before Carrie arrived onsite. After this was completed, the plug was inserted in the downstream manhole, and SET had setup to pump from the manhole, flushing with hydrant water began. Two rounds of approximately 1,500 gallons were performed. Readings from the pH paper indicated pH of 12 both rounds. At this time, the tanker needed to empty, which it did to tanks/containment areas at the facility for treatment.

While the tanker was emptied, the lab manager performed titrations. It was determined that the concentration was 0.6% after the first flushing and 0.16% after the second. As such, it was determined that citric acid could be safely mixed with the hydrant flush when we could begin pumping again. After the first round with the acid, the pH had not changed. However, with the manhole plugged, it was assumed to take longer for the treatment to reach the manhole. After the second treatment, the pH was down to 5.5-7.

We left it on the acidic side to handle the last 2 pipe sections that had not been flushed. When the plug was removed, either a slug of pH 12 came through or the slug scoured the settled sediments to make the sand bagged area caustic again. Some of this did overflow the sand bags. This was [at 9:30 pm](#), though, and it was no longer safe to get up and down the wooded bank to the outfall. So, sand bags were left in place to keep as much as possible from mixing with the creek. City staff left the site at approximately 10 pm.

The morning of August 12, the area appeared to have settled again. Haviland found a pH of 7.5 in the sand bagged area. Carrie recommended that they skim the residual from that area again and test downstream near the Turner bridge to be safe. They indicated that they would and that their HAZMAT team will be removing the sand bags for proper disposal this morning.

We did not get further information from Haviland, but Carrie was copied on the email from Ryan Grant to Haviland, and assumed that he has taken over now that he has returned. Given that this is an industrial permitted site, we will leave enforcement action up to the MDEQ.

1329 Turner Ave NW - At 5:51 pm on August 16, an anonymous caller reported the homeowner at 1329 Turner Ave NW depositing pears into the catch basin. Given that it was not due to rain and the

non-hazardous nature of the contaminant, an after-hours truck was not called in.

A Collection System Asset Technician (CSAT) reported at 2:17 pm on August 17 that he had been to the basin in question. The fruit was noted in the basin. While cleaning the basin, the homeowner came out. He admitted to putting the pears in the basin. He asked if that was wrong to do. The CSAT informed him that it was wrong and that there could be severe consequences if he dumped anything into the catch basin in the future. The homeowner promised that it would not happen again.

According to the CSAT, the basin was in need of cleaning before the fruit was put into it. As such, we are not going to fine the homeowner or charge them for our services. The incident is in our database, though, so if there are additional incidents reported, he will be penalized further.

1024 Ken-O-Sha Industrial Park Dr SE - On Monday, November 23, 2015, Carrie Rivette received notification from the MDEQ that the stream which the storm sewer outfall from Ken O Sha Industrial Park Drive flows into was showing some peculiarly high levels of fluoride, sulfate, phosphate and rather low DO and pH. Mike Staal and Kayla Johnson visited on site and popped all storm manholes in that reach of sewer. We tested pH and DO in all manholes, and none of the tests appears out of the ordinary. One item that was noted during this inspection was that most of the flow in the storm sewer was coming from one lateral, which led towards Pearson Foods. From talking with the City's Industrial Pretreatment Program Staff we found out that Pearson Foods has a mechanism to be able to manually switch between storm and sanitary discharges in their treatment processes. Therefore, we scheduled with the MDEQ to perform sampling at the outfall and in the storm manhole in Pearson Foods system. The tests appeared to only show elevated levels of chemicals in the City of Grand Rapids potable water which Pearson Foods was allowed to discharge in their MDEQ industrial storm water permit. In a follow-up e-mail from the MDEQ, the MDEQ reported that they found a white mold build-up and a few seeded sprouts. Therefore, we decided to conduct another round of sampling. When the sampling team performed a preliminary investigative trip to see what equipment would be needed, they found the white mold/ slimy buildup in the Pearson Foods lateral entering the City-owned manhole. The MDEQ was notified of the illicit discharge, and since this facility has a MDEQ industrial storm water permit, all further action was turned over to them.

216 Boltwood Dr NE- We received a complaint late in the afternoon on Wednesday, December 2 from a resident at 216 Boltwood Dr. NE that someone was dumping kitty litter into the storm drain. We dispatched a vactor truck to clean it up on Thursday morning, December 3. No evidence of any dumping of kitty litter was noticed in the area, but the operator still cleaned out the catch basin in front of 216 Boltwood Dr. NE. Mike Staal distributed educational brochures to this block of Boltwood Dr. on December 8. When he was on site, he noticed evidence of kitty litter being dumped into the catch basin. Mike requested that a vactor truck be re-dispatched this morning to clean it up.

Mike talked to the person suspected of dumping the kitty litter in the drain on December 9, and she pointed the finger back at the person who filed the complaint saying that her animals were just all taken away. There appears to a fight going on between the neighbors. Unfortunately, we don't know who dumped the kitty litter, but both parties know now that it shouldn't be done.

902 Leonard St NW – March 14, 2016. This case was turned over to MDNR law enforcement.

1025 Ken-O-Sha Industrial Park Dr SE- On the afternoon of March 22, two staff went to open manholes in Ken O Sha Industrial Park due to our upcoming sampling from the Pearson Foods case. From a video inspection of the sewer main, they noted that a lateral going in the manhole in the parking lot of G.A. Richards was also sending a significant amount of water into the gravity main, and there appeared to be suds on top of the water. When they opened the manhole cover, the flow was minor. However, while staff tried to perform some measurements, the flow quickly increased and appeared to have many suds in it. Since quick increases in flow aren't typical in the storm sewer during non-rain events, they investigated and found that Ever Fresh Transportation appeared to have a truck washing facility, and Ever Fresh was not doing a good job containing their wash water. A stream was flowing from their wash bay into the storm sewer. City staff talked to the manager of the truck washing building. They informed him of the problem, and although he seemed somewhat resistant to the problem, he said he would look into engineering controls to fix the problem. Since this is an industrial stormwater permittee, all future action has been turned over to the MDEQ.

Fulton St Outfall – On the evening of April 10, a Water Resources Recovery Facility (WRRF) operator was inspecting our pumping station across from 660 Market Ave SW and noted a diesel odor and a sheen on the river. Carrie Rivette was contacted at 6:55 pm. WRRF personnel were instructed to try to track the source before it became too dark to see. At approximately 7:15 pm, Carrie was informed that the outfall at Fulton Street on the east side of the river was the source.

At that point, Collection System Asset Technicians (CSATs) were contacted to come in. Carrie arrived at the site at approximately 7:45 pm and then went to get booms to stop the release. The CSATs were onsite by 8:15 pm and began trying to track the source. By 8:54 pm, booms had been placed around the outfall.

Staff then continued trying to track the source and also inspected around the various construction sites noted in the area. They did not see any leaks in the construction sites. The odor was noted in all of the areas checked, both north and south of the main. As such, we determined that it was not likely one source, but runoff from the entire sewershed and possibly contaminated groundwater that had risen. The search ended at approximately 9:45 pm.

On the morning of April 11, the outfall was checked at 8:30 am. No sheen or odor was present, so the booms were removed for proper disposal.

Grand River Riverwalk - After notification by Mike Worm at approximately 2:55 pm April 28 of a potential soil release to the Grand River at 1101 Monroe Ave NW, Carrie Rivette inspected the site. This is a City-owned construction site. At approximately 3:30 pm, Carrie discovered that there had been a release. Controls were noted to be in place as of a Friday, April 22, inspection, so the release was likely caused by the rain on 4/25 and 4/26.

The contractor was issued a Corrective Action Order, with associated fee of \$700. They were onsite on April 29 to do corrective action. Staff worked with the design engineer to establish improved temporary soil erosion control. Daily inspections have also been enforced per the soil erosion permit.

135 Quigley Blvd SW - At approximately 3:07 pm on Friday, May 6, we received a complaint about someone dumping chemicals into a storm drain behind 135 Quigley Blvd SW on Thursday, May 5. The complainant stated that a Miracle Shine Cleaning Services van was in the alley behind his house, only for the purpose of dumping dirty water from a cleaning machine tank into the storm drain. We

dispatched a vactor to this address, and the operator noted no visible sheens or residuals in the catch basin. The vactor operator cleaned the catch basin just to ensure there were no residuals left. The cleaning was completed by 3:25 pm. The complainant has supplied City of Grand Rapids with video of the incident. We contacted the van owner and discussed the problems with dumping dirty water into the catch basin. We informed him of proper disposal methods and that if he performed additional incidents with the storm system, he will be penalized further.

552 E. Fulton St SE- On the morning of June 9, one of our inspectors found concrete wash out going to catch basins in the above area. The responsible party is being tracked down by our sidewalk department, as it was unpermitted sidewalk work being performed.

A vactor was dispatched to the site to clean the impacted basins. We will be billing the contractor when they are located. If it is a repeat offender, they will be issued a civil infraction.

516 Winter Ave SW- At 3:43 pm on June 10, Carrie Rivette was informed of a contractor dumping sludge into a catch basin and provided with a photo of a CSX truck. She arrived onsite at approximately 4:05 pm. CSX staff were shoveling mud from work in the parkway back onto the parkway. It was clear that some of the mud had been washed to the catch basin.

Carrie explained that they could not wash anything into the basin, not even the potable water they were using. They were told that a silt sack must be used to prevent soil from entering the basin during work. They asked where they could get the silt sack and how to install it so that they could be in compliance in the future.

A vactor truck was dispatched to the site and the basin was cleaned by 4:59 pm.

320 Brown St SW- Carrie Rivette received an email and photo (attached) June 29 at 2:51 from Code Compliance stating the following:

There is used cat litter and old charcoal being dumped in the storm drain. Officer Weiss and Carrie spoke with the resident and he did not deny doing it.

A vacuum truck was dispatched June 30 to clean the basin. Carrie got a contact number for the location to inform them that dumping to the catch basin is illegal, he will be charged for our cleanup and that if he dumps to the catch basin again, he will be issued a Civil Infraction that carries a fine of over \$1,000.

523 Grand Ave NE – On July 13 at 11:12 a.m., we received a call from a citizen that the stream that runs in Highland Park was looking milky. City staff arrived at the site after 1:30 p.m. checking the stream and looked in multiple manholes upstream of the stream. The milky discharge was not found in the stream or any of the storm manholes.

1373 Kendall St SE - At 9:49 a.m. on July 20, we received notice from other City staff that there was a

<p>possible illicit discharge at 1373 Kendall St SE. Mike Staal arrived onsite shortly before 11 a.m., and found a hole in the front yard of this property. Water was running out of the hole onto the sidewalk, down the next driveway, and into the nearest catch basin. This water appeared to be coming from a water service line providing City water to this residence. Mike worked with the Water department to shut off the water, and the catch basin was cleaned. The homeowner will be required to fix the lateral before the water service is turned back on.</p>
<p>Dorchester Ave SE at Oxford St SW- On July 22, staff was reviewing videos and as-builts for a street project that we are doing, we identified a cross connection where sanitary could overflow into storm sewer. The storm line that this discharges to has been clogged for several years, so sewage could not have discharged through the outfall in recent history. The connection between the storm and sanitary will be filled with concrete during construction this summer.</p>
<p>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.</p>
<p>With the exception of the cross connection at Dorchester Ave SW and Oxford St SW, all illicit discharges have been eliminated. Construction crews will soon fill that connection with concrete.</p>
<p>Please describe actions taken when indications of illicit discharges have been identified, if any.</p>
<p>Please see above.</p>
<p>Please provide:</p> <ul style="list-style-type: none">• An estimated quantification of the number of discharges eliminated, and• An estimated quantification of the volume of illicit flow eliminated (For large spills or, where the amount discharged is possible to estimate).
<p>16 illicit discharges were eliminated this year. Only one of the discharges was quantifiable. The discharge at 417 Ann St NW was estimated to be approximately 200 gallons.</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 failed or failing septic fields were noted this year.</p>
<p>Describe the effectiveness of the program to prevent illicit discharges and the method used to assess effectiveness.</p>
<p>The City has completed five cycles of dry weather monitoring, and all that could be identified in this manner have been eliminated. As such, dry weather screening should be discontinued.</p>
<p>The periodic monitoring of the Grand River and tributaries has proven effective in identifying illicit discharges and should be continued.</p>

Permittee: City of Grand Rapids

None of the illicit discharges identified this year could have been detected by dry weather sampling.

PART 5 - New Point Source Discharges of Stormwater

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

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

Is your stormwater discharge point map attached or provided electronically?

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

Is your stormwater discharge point list attached or provided electronically?

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

Comments:

Map and list were submitted to MDEQ as Appendix 2 in Illicit Discharge Elimination Plan revision, July 30, 2013. Updated lists were submitted to the MDEQ as part of the 2016 MS4 Permit Application which is currently under review. The information pertaining to the newly identified stormwater discharge point is summarized in the attachments.

PART 6 - Nested Drainage System Agreements

Please list all nested jurisdictions with whom you have a cooperative agreement:		
Name of Nested Jurisdiction	Agreement previously provided to MDEQ	Agreement attached
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Comments: The City of Grand Rapids does not have any nested jurisdictions.</p>		

PART 7 - Other Actions

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

The Mayors' 12th Annual Grand River Clean-up took place on September 19, 2015, and had nearly 1,100 participants. 19,200 pounds of trash from 40 miles of stream bank along the lower Grand River, Mill Creek, and Plaster Creek were removed.

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

- The City continues to provide a rain garden plant nursery for WMEAC.
- Grand Rapids participates in LGROW, GLSLCI, West Michigan Take Back the Meds, and West Michigan Soil Erosion Control Network
- In September of 2015 updates to the City's Zoning Ordinance for new requirements regarding enhancing the tree canopy within the City and providing for additional tree protection and tree canopy coverage as it relates to new construction or redevelopment of sites were adopted.

PART 8 - Revisions to the SWPPI

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

No, the SWPPI does not need any revisions

The following revisions to the SWPPI could be considered:

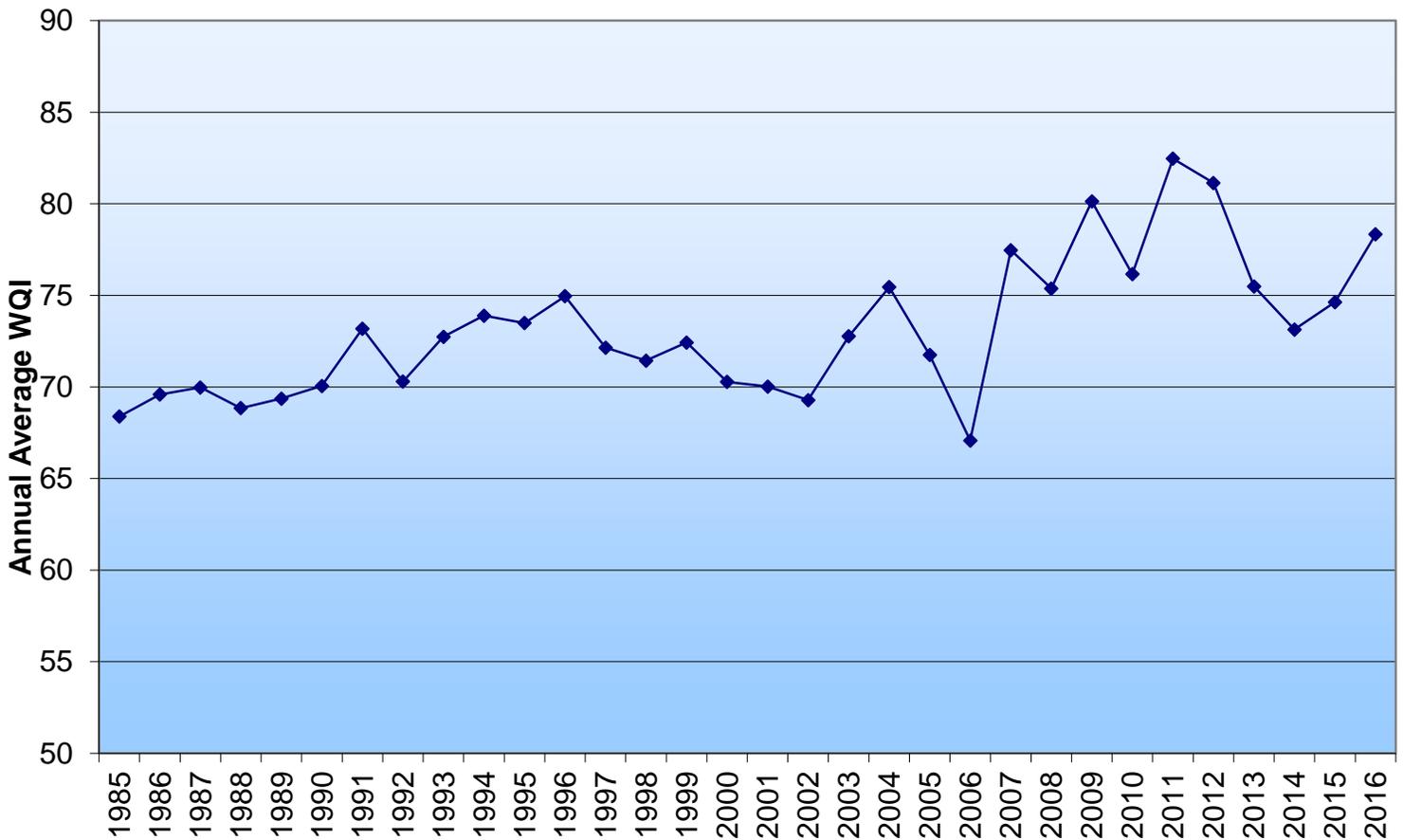
Original SWPPI Section/Subsection	Revision

Part 9 – 2016 Stormwater Special Reporting

a. Environmental Impacts [40 CFR 122.42(c)(7)]

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

**Grand River, Water Quality Index
Railroad Bridge North**



RIVER SURVEY REPORT

DATE: 09/16/2015

CITY OF GRAND RAPIDS EPSD

LOCATIONS	TIME	TEMP	DO	pH	BOD	TSS	FC	EC	CHLORIDE	CON	TP	NH3-N	NO2-N	NO3-N
Grand River														
201503628 Northland Drive Bridge (250120)	08:25	19.6	8.5	8.27	<2.0	4.8	52	68	45	631	0.060	<0.20	0.010	1.0
201503629 Wealthy Street Bridge (250090)	09:11	19.9	9.1	8.29	<2.0	6.8	240	248	58	651	0.073	<0.20	0.012	0.3
201503630 Railroad Bridge South (250070)	09:30	19.5	8.5	8.26	<2.0	7.2	310		63	696	0.077	<0.20	0.011	0.6
201503631 Railroad Bridge North (250071)	09:22	19.8	8.5	8.30	<2.0	4.8	202	248	56	694	0.082	<0.20	0.014	0.2
201503632 M-11, Wilson Avenue (250062)	09:06	19.7	8.4	8.40	<2.0	6.0	158	276	58	691	0.082	<0.20	0.015	0.2
201503633 Eastmanville (250040)	08:20	19.4	8.8	8.33	<2.0	6.0	90	133	66	719	0.086	<0.20	0.014	0.6
Streams														
201503634 Rogue River at West River Drive	08:07	15.8	9.1	8.45	<2.0	4.6	155		40	612	0.039	<0.20	0.010	0.8
201503635 Mill Creek at West River Drive	07:45	14.5	10.0	8.36	<2.0	3.2	250		54	727	0.035	<0.20	0.009	0.1
201503636 Indian Mill Creek at Turner Aven	07:29	14.5	9.5	8.16	<2.0	3.2	660		113	999	0.029	<0.20	0.012	1.0
201503637 Silver Creek at Croften/Roy	06:52	17.2	9.2	8.33	<2.0	1.0	390		197	1250	0.043	<0.20	0.011	1.0
201503638 Plaster 1 at Burton	07:06	16.8	7.1	8.01	<2.0	3.8	290		200	1270	0.050	0.42	0.065	<0.1
201503639 Plaster 2 at Market	09:40	17.0	9.1	8.03	<2.0	1.4	2200		202	1360	0.038	<0.20	0.045	0.6
201503640 Buck Creek at Chicago Drive	07:24	16.6	8.4	8.20	<2.0	2.8	460		155	1200	0.023	<0.20	0.022	<0.1
201503641 Deer Creek	08:31	16.6	8.0	8.17	<2.0	3.8	370		46	650	0.138	<0.20	0.026	<0.1
201503642 Coldbrook Storm Drain	07:12	17.2	9.8	8.29	<2.0	1.4	300		190	1100	0.039	<0.20	0.027	<0.1

LOCATIONS	Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI	Miscellaneous Information and Test Descriptions:
Grand River										
201503628 Northland Drive Bridge (250120)	<5	<1	190	<0.2	<5	<0.5	<5	276	81.0	Weather conditions: Clear/sunny.
201503629 Wealthy Street Bridge (250090)	<5	3	270	<0.2	<5	<0.5	<5	285	77.5	Air Temperature: 21 °C
201503630 Railroad Bridge South (250070)	<5	3	250	<0.2	<5	<0.5	<5	282	76.0	Comments:
201503631 Railroad Bridge North (250071)	<5	2	180	<0.2	<5	<0.5	<5	238	78.2	River Flow: 2100 cfs
201503632 M-11, Wilson Avenue (250062)	<5	3	240	<0.2	<5	<0.5	7	269	78.2	Field Technicians: Brian Frazier / Kala Johnson / Paul Kuklewski / Jim Soper
201503633 Eastmanville (250040)	<5	3	170	<0.2	<5	<0.5	<5	241	80.0	
Streams										
201503634 Rogue River at West River Drive	<5	2	180	<0.2	<5	<0.5	<5	258	76.3	Time samples (hh:mm) Nitrites as nitrogen (mg/L)
201503635 Mill Creek at West River Drive	<5	2	140	<0.2	<5	<0.5	<5	278	75.7	Sample temperature (°C) Nitrates as nitrogen (mg/L)
201503636 Indian Mill Creek at Turner Aven	<5	3	170	<0.2	<5	<0.5	<5	324	69.5	Dissolved oxygen (mg/L) Total chromium (µg/L)
201503637 Silver Creek at Croften/Roy	<5	4	110	<0.2	5	<0.5	16	349	70.9	pH (pH units) Total Copper (µg/L)
201503638 Plaster 1 at Burton	<5	4	330	<0.2	<5	<0.5	51	350	70.5	BOD-5 (mg/L) Total iron (µg/L)
201503639 Plaster 2 at Market	<5	5	200	<0.2	<5	<0.5	25	401	66.5	Total suspended solids (mg/L) Total mercury (µg/L)
201503640 Buck Creek at Chicago Drive	<5	3	300	<0.2	<5	<0.5	<5	422	72.5	Fecal coliform (#FC/100mL) Total nickel (µg/L)
201503641 Deer Creek	<5	5	350	<0.2	<5	<0.5	<5	282	74.1	E. coli (#EC/100mL) Total silver (µg/L)
201503642 Coldbrook Storm Drain	<5	5	220	<0.2	<5	<0.5	<5	327	73.9	Chlorides (mg/L) Total zinc (µg/L)
										Conductivity (µS/cm) Hardness (mg/L CaCO3)
										Total phosphorous (mg/L) Water Quality Index (percent)
										Ammonia as nitrogen (mg/L)

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RIVER SURVEY REPORT

DATE: 11/18/2015

CITY OF GRAND RAPIDS EPSD

LOCATIONS	TIME	TEMP	DO	pH	BOD	TSS	FC	EC	CHLORIDE	CON	TP	NH3-N	NO2-N	NO3-N
Grand River														
201504335 Northland Drive Bridge (250120)	08:10	9.2	11.0	8.65	<2.0	3.0	28	32	47	673	0.012	0.04	0.010	0.6
201504336 Wealthy Street Bridge (250090)	08:59	9.3	10.9	8.65	<2.0	2.0	65	36	49	682	0.011	0.03	0.010	0.7
201504337 Railroad Bridge South (250070)	09:35	10.0	8.3	8.28	<2.0	2.4	125		55	706	0.014	0.04	0.012	0.5
201504338 Railroad Bridge North (250071)	09:25	9.7	7.9	7.88	<2.0	2.4	127	93	55	709	0.016	0.06	0.011	0.7
201504339 M-11, Wilson Avenue (250062)	08:56	10.4	8.3	8.33	<2.0	2.2	127	109	55	709	1.04	0.06	0.021	0.8
201504340 Eastmanville (250040)	08:13	10.3	8.3	8.30	<2.0	3.8	137	84	60	728	0.023	0.09	0.015	1.0
Streams														
201504341 Rogue River at West River Drive	07:50	9.7	10.2	8.41	<2.0	4.2	127		37	621	<0.009	0.04	0.012	0.4
201504342 Mill Creek at West River Drive	07:31	10.6	9.9	8.50	<2.0	3.0	>15000		52	717	0.009	0.04	0.017	0.5
201504343 Indian Mill Creek at Turner Aven	07:19	11.1	9.3	8.14	2.9	11.4	320		106	901	0.035	0.07	0.015	0.5
201504344 Silver Creek at Croften/Roy	07:00	13.8	8.2	8.16	2.2	5.4	4600		187	1180	0.055	0.05	0.011	0.6
201504345 Plaster 1 at Burton	07:21	10.9	7.5	7.46	<2.0	2.0	460		171	1130	0.056	0.09	0.009	0.1
201504346 Plaster 2 at Market	09:08	11.2	9.3	8.10	<2.0	1.4	3800		176	1210	0.022	0.09	0.010	0.3
201504347 Buck Creek at Chicago Drive	07:43	11.4	7.9	7.93	<2.0	2.4	700		132	1100	0.010	0.09	0.008	<0.1
201504348 Deer Creek	08:23	8.9	7.5	7.52	<2.0	2.2	145		47	732	0.056	0.07	0.022	0.7
201504349 Coldbrook Storm Drain	07:08	12.0	9.8	8.28	2.8	3.4	680		170	1090	0.078	0.06	0.010	0.4

LOCATIONS	Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI	Miscellaneous Information and Test Descriptions:
Grand River										
201504335 Northland Drive Bridge (250120)	<5	<1	170	<0.2	<5	<0.5	<5	277	83.0	Weather conditions: Light rain.
201504336 Wealthy Street Bridge (250090)	<5	<1	130	<0.2	<5	<0.5	<5	261	80.1	Air Temperature: 15 °C
201504337 Railroad Bridge South (250070)	<5	<1	150	<0.2	<5	<0.5	<5	299	76.9	Comments:
201504338 Railroad Bridge North (250071)	<5	<1	140	<0.2	<5	<0.5	<5	275	76.7	River Flow: 2550 cfs
201504339 M-11, Wilson Avenue (250062)	<5	<1	140	<0.2	<5	<0.5	<5	281	68.8	Field Technicians: Kurt Anderson / Jim Soper / Greg
201504340 Eastmanville (250040)	<5	<1	220	<0.2	<5	<0.5	<5	294	74.8	Reno / Kala Johnson
Streams										
201504341 Rogue River at West River Drive	<5	<1	230	<0.2	<5	<0.5	<5	303	79.3	Time samples (hh:mm) Nitrites as nitrogen (mg/L)
201504342 Mill Creek at West River Drive	<5	<1	200	<0.2	<5	<0.5	6	315	59.5	Sample temperature (°C) Nitrate as nitrogen (mg/L)
201504343 Indian Mill Creek at Turner Aven	<5	4	520	<0.2	<5	<0.5	23	336	70.8	Dissolved oxygen (mg/L) Total Chromium (µg/L)
201504344 Silver Creek at Croften/Roy	6	3	820	<0.2	5	<0.5	28	315	59.3	pH (pH units) Total Copper (µg/L)
201504345 Plaster 1 at Burton	<5	<1	230	<0.2	<5	<0.5	32	243	71.2	BOD-5 (mg/L) Total Iron (µg/L)
201504346 Plaster 2 at Market	<5	<1	270	<0.2	<5	<0.5	35	370	64.3	Total suspended solids (mg/L) Total mercury (µg/L)
201504347 Buck Creek at Chicago Drive	<5	<1	270	<0.2	<5	<0.5	<5	305	70.2	Fecal coliform (#FC/100mL) Total nickel (µg/L)
201504348 Deer Creek	<5	<1	230	<0.2	<5	<0.5	<5	251	76.0	E. coli (#E. coli/100mL) Total silver (µg/L)
201504349 Coldbrook Storm Drain	<5	2	350	<0.2	<5	<0.5	17	303	67.2	Chlorides (mg/L) Total zinc (µg/L)
										Conductivity (µS/cm) Hardness (mg/L CaCO3)
										Total phosphorous (mg/L) Water Quality Index (percent)
										Ammonia as nitrogen (mg/L)

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RIVER SURVEY REPORT

DATE: 03/23/2016

CITY OF GRAND RAPIDS EPSD

LOCATIONS	TIME	TEMP	DO	pH	BOD	TSS	FC	EC	CHLORIDE	CON	TP	NH3-N	NO2-N	NO3-N
Grand River														
201600724 Northland Drive Bridge (250120)	08:28	7.1	11.8	8.08	<2.0	7.4	10	19	40	594	0.039	<0.20	0.013	1.5
201600725 Wealthy Street Bridge (250090)	09:25	7.0	11.8	8.56	<2.0	9.6	2	18	40	601	0.042	<0.20	0.012	1.4
201600726 Railroad Bridge South (250070)	09:36	7.2	11.4	8.22	<2.0	9.4	12		51	648	0.063	<0.20	0.014	1.5
201600727 Railroad Bridge North (250071)	09:31	7.1	11.6	8.20	<2.0	9.2	8	20	42	611	0.046	<0.20	0.013	1.5
201600728 M-11, Wilson Avenue (250062)	07:41	7.3	11.5	8.42	<2.0	9.2	25	20	44	622	0.054	<0.20	0.020	1.4
201600729 Eastmanville (250040)	08:38	7.3	11.3	8.28	<2.0	11.2	10	28	48	645	0.052	<0.20	0.014	1.5
Streams														
201600730 Rogue River at West River Drive	08:06	6.4	11.6	8.46	<2.0	4.6	27		35	596	<0.009	<0.20	0.010	0.9
201600731 Mill Creek at West River Drive	07:45	6.5	11.5	8.43	<2.0	1.8	18		46	667	<0.009	<0.20	0.010	0.9
201600732 Indian Mill Creek at Turner Aven	07:30	7.4	10.6	8.09	<2.0	3.0	45		103	927	<0.009	<0.20	0.019	0.9
201600733 Silver Creek at Crofton/Roy	07:13	9.7	10.4	8.31	<2.0	1.2	73		213	1260	<0.009	<0.20	0.006	1.7
201600734 Plaster 1 at Burton	07:25	7.3	10.2	8.17	<2.0	2.8	45		247	1340	0.012	<0.20	0.010	0.3
201600735 Plaster 2 at Market	09:38	7.2	10.4	7.76	<2.0	4.8	560		237	1400	0.022	<0.20	0.012	0.3
201600736 Buck Creek at Chicago Drive	07:53	8.1	10.3	8.24	<2.0	3.8	100		155	1140	0.012	<0.20	0.008	0.4
201600737 Deer Creek	08:49	6.2	11.2	8.35	<2.0	5.2	73		44	655	0.045	<0.20	0.019	2.2
201600738 Coldbrook Storm Drain	07:19	8.4	11.3	8.08	<2.0	5.8	230		225	1140	0.046	<0.20	0.006	<0.1

LOCATIONS	Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI	Miscellaneous Information and Test Descriptions:				
Grand River														
201600724 Northland Drive Bridge (250120)	<5	<5	450	<0.2	<5	<5	<10	260	84.7	Weather conditions: Air Temperature: 5 °C				
201600725 Wealthy Street Bridge (250090)	<5	<5	390	<0.2	<5	<5	<10	270	85.2	Comments:				
201600726 Railroad Bridge South (250070)	<5	<5	450	<0.2	<5	<5	<10	260	82.4	River Flow: 7770 cfs				
201600727 Railroad Bridge North (250071)	<5	<5	430	<0.2	<5	<5	<10	250	84.3	Field Technicians: Kurt Anderson / Paul Kuklewski / Brian Frazier / Greg Reno				
201600728 M-11, Wilson Avenue (250062)	<5	<5	420	<0.2	<5	<5	<10	260	80.4					
201600729 Eastmanville (250040)	<5	<5	460	<0.2	<5	<5	<10	250	82.3					
Streams														
201600730 Rogue River at West River Drive	<5	<5	200	<0.2	<5	<5	<10	260	82.6	Time samples (hh:mm) Nitrites as nitrogen (mg/L)				
201600731 Mill Creek at West River Drive	<5	<5	170	<0.2	<5	<5	<10	280	83.8	Sample temperature (°C) Nitrites as nitrogen (mg/L)				
201600732 Indian Mill Creek at Turner Aven	<5	<5	240	<0.2	<5	<5	<10	330	81.5	Dissolved oxygen (mg/L) Total chromium (µg/L)				
201600733 Silver Creek at Crofton/Roy	<5	<5	150	<0.2	7	<5	30	330	73.7	pH (pH units) Total Copper (µg/L)				
201600734 Plaster 1 at Burton	<5	<5	340	<0.2	<5	<5	10	320	79.2	BOD-5 (mg/L) Total iron (µg/L)				
201600735 Plaster 2 at Market	<5	<5	370	<0.2	<5	<5	10	350	71.5	Total suspended solids (mg/L) Total mercury (µg/L)				
201600736 Buck Creek at Chicago Drive	<5	<5	400	<0.2	<5	<5	<10	360	78.5	Fecal coliform (#FC/100mL) Total nickel (µg/L)				
201600737 Deer Creek	<5	<5	430	<0.2	<5	<5	<10	270	75.7	E. coli (#EC/100mL) Total silver (µg/L)				
201600738 Coldbrook Storm Drain	<5	<5	230	<0.2	<5	<5	<10	250	74.1	Chlorides (mg/L) Total zinc (µg/L)				
										Conductivity (µS/cm) Hardness (mg/L CaCO3)				
										Total phosphorous (mg/L) Water Quality Index (percent)				
										Ammonia as nitrogen (mg/L)				

Printed: 4/15/2016 09:12:42

RIVER SURVEY REPORT

DATE: 05/18/2016

CITY OF GRAND RAPIDS EPSD

LOCATIONS	TIME	TEMP	DO	pH	BOD	TSS	FC	EC	CHLORIDE	CON	TP	NH3-N	NO2-N	NO3-N
Grand River														
201601116 Northland Drive Bridge (250120)	08:44	13.8	9.4	8.70	<2.0	11.0	40	62	37	581	0.074	<0.05	0.015	1.3
201601117 Wealthy Street Bridge (250090)	09:22	13.9	9.6	8.21	<2.0	13.0	35	46	36	573	0.084	<0.05	0.014	1.0
201601118 Railroad Bridge South (250070)	10:10	13.6	9.7	8.23	<2.0	11.6	93		41	601	0.089	0.14	0.018	1.2
201601119 Railroad Bridge North (250071)	10:05	13.6	9.8	8.29	<2.0	12.4	65	60	37	582	0.080	<0.05	0.018	1.3
201601120 M-11, Wilson Avenue (250062)	09:43	13.4	9.7	8.46	<2.0	12.0	107	51	38	586	0.109	0.11	0.015	1.2
201601121 Eastmanville (250040)	09:00	13.5	9.6	8.28	<2.0	14.2	55	68	41	595	0.093	<0.05	0.018	1.3
Streams														
201601122 Rogue River at West River Drive	08:24	11.9	9.8	8.60	<2.0	4.0	82		31	548	0.033	<0.05	0.013	0.5
201601123 Mill Creek at West River Drive	08:03	10.8	10.2	8.38	<2.0	2.8	200		44	665	0.034	<0.05	0.010	0.7
201601124 Indian Mill Creek at Turner Aven	07:48	10.8	9.3	8.23	<2.0	1.8	1340		94	871	0.033	<0.05	0.018	0.6
201601125 Silver Creek at Croftten/Roy	07:15	12.6	9.8	8.27	<2.0	0.6	155		191	1200	0.047	<0.05	0.010	1.4
201601126 Plaster 1 at Burton	07:25	12.7	8.9	8.11	<2.0	9.0	300		149	845	0.077	0.19	0.019	0.3
201601127 Plaster 2 at Market	09:35	12.9	8.4	8.10	<2.0	11.4	250		95	1040	0.081	0.09	0.019	0.7
201601128 Buck Creek at Chicago Drive	07:45	13.0	9.1	7.88	<2.0	6.4	164		137	1040	0.035	0.05	0.010	0.3
201601129 Deer Creek	09:12	12.3	8.6	8.19	<2.0	8.4	182		36	631	0.122	0.09	0.032	1.7
201601130 Coldbrook Storm Drain	07:25	13.7	9.7	8.42	<2.0	2.6	220		184	996	0.051	<0.05	0.009	<0.1

LOCATIONS	Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI	Miscellaneous Information and Test Descriptions:				
Grand River														
201601116 Northland Drive Bridge (250120)	<5	<5	480	<0.2	<5	<5	<10	270	77.8	Weather conditions: Clear, calm.				
201601117 Wealthy Street Bridge (250090)	<5	<5	490	<0.2	<5	<5	20	270	82.0	Air Temperature: 14 °C				
201601118 Railroad Bridge South (250070)	<5	<5	480	<0.2	<5	<5	<10	270	77.6	Comments:				
201601119 Railroad Bridge North (250071)	<5	<5	600	<0.2	<5	<5	<10	270	78.1	River Flow: 9080 cfs				
201601120 M-11, Wilson Avenue (250062)	<5	<5	500	<0.2	<5	<5	<10	270	75.8	Field Technicians: Greg Reno / Mike Bussey / Brian Frazier / Jim Soper				
201601121 Eastmanville (250040)	<5	<5	600	<0.2	<5	<5	<10	260	78.2					
Streams														
201601122 Rogue River at West River Drive	<5	<5	220	<0.2	<5	<5	<10	260	79.1	Time samples (hh:mm)	Nitrites as nitrogen (mg/L)			
201601123 Mill Creek at West River Drive	<5	<5	210	<0.2	<5	<5	<10	310	76.2	Sample temperature (°C)	Nitrates as nitrogen (mg/L)			
201601124 Indian Mill Creek at Turner Aven	<5	<5	280	<0.2	<5	<5	<10	360	68.2	Dissolved oxygen (mg/L)	Total chromium (µg/L)			
201601125 Silver Creek at Croftten/Roy	<5	9	130	<0.2	<5	<5	20	340	73.0	pH (pH units)	Total Copper (µg/L)			
201601126 Plaster 1 at Burton	<5	<5	670	<0.2	<5	<5	<10	290	73.8	BOD-5 (mg/L)	Total iron (µg/L)			
201601127 Plaster 2 at Market	<5	<5	560	<0.2	<5	<5	<10	300	74.2	Total suspended solids (mg/L)	Total mercury (µg/L)			
201601128 Buck Creek at Chicago Drive	<5	<5	530	<0.2	<5	<5	<10	370	77.8	Fecal coliform (#FC/100mL)	Total nickel (µg/L)			
201601129 Deer Creek	<5	<5	570	<0.2	<5	<5	<10	290	72.4	E. coli (#E.C./100mL)	Total silver (µg/L)			
201601130 Coldbrook Storm Drain	<5	6	220	<0.2	<5	<5	<10	270	74.7	Chlorides (mg/L)	Total zinc (µg/L)			
										Conductivity (µS/cm)	Hardness (mg/L CaCO3)			
										Total phosphorous (mg/L)	Water Quality Index (percent)			
										Ammonia as nitrogen (mg/L)				

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RIVER SURVEY REPORT

DATE: 06/14/2016

CITY OF GRAND RAPIDS EPSD

LOCATIONS	TIME	TEMP	DO	pH	BOD	TSS	FC	EC	CHLORIDE	CON	TP	NH3-N	NO2-N	NO3-N
Grand River														
201601329 Northland Drive Bridge (250120)	09:44	20.8	7.4		<2.0	4.8	12	20	47	675	<0.009	<0.05	0.011	0.8
201601330 Wealthy Street Bridge (250090)	10:11	20.5	7.7		<2.0	6.2	130	105	49	680	<0.009	<0.05	0.009	0.9
201601331 Railroad Bridge South (250070)	10:00	20.9	8.0		<2.0	7.4	192		63	751	0.013	<0.05	0.016	0.8
201601332 Railroad Bridge North (250071)	09:51	20.5	8.3		<2.0	7.2	440	162	63	754	0.020	0.07	0.015	1.0
201601333 M-11, Wilson Avenue (250062)	09:30	20.6	8.1		<2.0	6.2	100	93	58	742	0.015	0.06	0.015	0.9
201601334 Eastmanville (250040)	08:48	20.9	9.1		<2.0	8.8	107	66	64	759	<0.009	<0.05	0.024	1.0
Streams														
201601335 Rogue River at West River Drive	09:27	16.4	8.4		<2.0	7.6	164		39	606	<0.009	<0.05	0.013	0.9
201601336 Mill Creek at West River Drive	08:47	14.9	8.9		<2.0	9.0	460		50	674	0.019	0.07	0.018	0.8
201601337 Indian Mill Creek at Turner Aven	07:48	15.9	9.0		8.4	93.0	4200		97	832	0.242	0.39	0.030	0.6
201601338 Silver Creek at Crofton/Roy	07:24	15.6	9.0		8.6	19.8	7200		173	1040	0.153	0.35	0.047	1.4
201601339 Plaster 1 at Burton	07:34	16.7	7.2		<2.0	6.6	470		230	1420	0.019	0.45	0.069	0.8
201601340 Plaster 2 at Market	10:24	16.7	7.4		4.1	13.0	4000		215	1340	0.038	0.35	0.055	0.8
201601341 Buck Creek at Chicago Drive	08:20	16.6	8.6		<2.0	18.8	1400		149	1170	0.020	0.08	0.017	0.5
201601342 Deer Creek	08:57	17.5	6.7		<2.0	18.0	840		38	702	0.150	0.11	0.040	1.2
201601343 Coldbrook Storm Drain	07:16	17.1	8.2		8.0	34.5	>15000		158	901	0.191	0.53	0.032	0.4

LOCATIONS	Cr	Cu	Fe	Hg	Ni	Ag	Zn	Hard	WQI	Miscellaneous Information and Test Descriptions:
Grand River										
201601329 Northland Drive Bridge (250120)	<5	<5	200	<0.2	<5	<5	<10	300	86.6	Weather conditions: Rain.
201601330 Wealthy Street Bridge (250090)	<5	<5	220	<0.2	<5	<5	<10	290	78.1	Air Temperature: 22 °C
201601331 Railroad Bridge South (250070)	<5	<5	260	<0.2	<5	<5	<10	310	77.5	Comments: pH results rejected. WQI's calculated without pH data.
201601332 Railroad Bridge North (250071)	<5	<5	240	<0.2	<5	<5	<10	300	72.6	River Flow: 2410 cfs
201601333 M-11, Wilson Avenue (250062)	<5	<5	220	<0.2	<5	<5	<10	300	79.2	Field Technicians: Kurt Anderson / Paul Kuklewski / Jim Soper / Greg Reno
201601334 Eastmanville (250040)	<5	<5	270	<0.2	<5	<5	<10	310	77.2	
Streams										
201601335 Rogue River at West River Drive	<5	<5	290	<0.2	<5	<5	<10	280	76.1	Time samples (hh:mm) Nitrites as nitrogen (mg/L)
201601336 Mill Creek at West River Drive	<5	<5	320	<0.2	<5	<5	<10	300	70.4	Sample temperature (°C) Nitrates as nitrogen (mg/L)
201601337 Indian Mill Creek at Turner Aven	6	18	2800	<0.2	6	<5	90	340	53.6	Dissolved oxygen (mg/L) Total chromium (µg/L)
201601338 Silver Creek at Crofton/Roy	6	17	1100	<0.2	7	<5	80	300	49.0	pH (pH units) Total iron (µg/L)
201601339 Plaster 1 at Burton	<5	<5	270	<0.2	<5	<5	30	370	64.7	BOD-5 (mg/L) Total mercury (µg/L)
201601340 Plaster 2 at Market	<5	<5	570	<0.2	<5	<5	40	400	54.3	Total suspended solids (mg/L) Total nickel (µg/L)
201601341 Buck Creek at Chicago Drive	<5	<5	1000	<0.2	<5	<5	<10	400	65.6	Fecal coliform (#FC/100mL) Total silver (µg/L)
201601342 Deer Creek	<5	<5	1100	<0.2	<5	<5	<10	310	63.0	E. coli (#E.C./100mL) Total zinc (µg/L)
201601343 Coldbrook Storm Drain	<5	16	1800	<0.2	5	<5	70	250	49.3	Chlorides (mg/L) Conductivity (µS/cm) Hardness (mg/L CaCO3)
										Total phosphorous (mg/L) Water Quality Index (percent)
										Ammonia as nitrogen (mg/L)

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Permittee: City of Grand Rapids

- b. All 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 Technical Reference Manual that emphasizes green infrastructure and will be implemented upon revising our City ordinance. The ordinance revision process has begun. Proposed changes were presented in the permit application submitted in March of 2015...
- 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. Pertinent sections of the Vital Streets annual report presentation are attached. Funding levels have been increased due to low impact development funding through the streets 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 2015.
- e. Annual Budget [40 CFR 122.42(c)(5)]

Activity	FY16 Expenditures	FY17 Budget
Stormwater Management (General Fund)	\$579,135.28	\$808,723
Stormwater Maintenance (Local and Major Streets Funds)	\$904,665.21	\$1,043,594
Street Sweeping (Refuse and Vital Streets Funds)	\$910,412.48	\$1,009,073

Capital Improvement Plan

Kent County Drain Commission Special Assessments	\$45,000
Drainage Improvements and Emergency Repairs	\$80,000
Burton-Breton Branch of Plaster Creek- Enlargement of Culverts	\$168,000
Private Partnerships/Grant for Green Infrastructure	\$76,000
Richmond Park Daylighting	\$36,673
CIPP Rehab of Storm Sewers – Various Sites	\$100,000

Summary of Enforcement Actions and Inspections

Activity	2015-2016 Reporting Cycle
Stormwater Inspections	2554
Notices of Violations	84
Corrective Action Orders	18

Summary of Street Sweeping

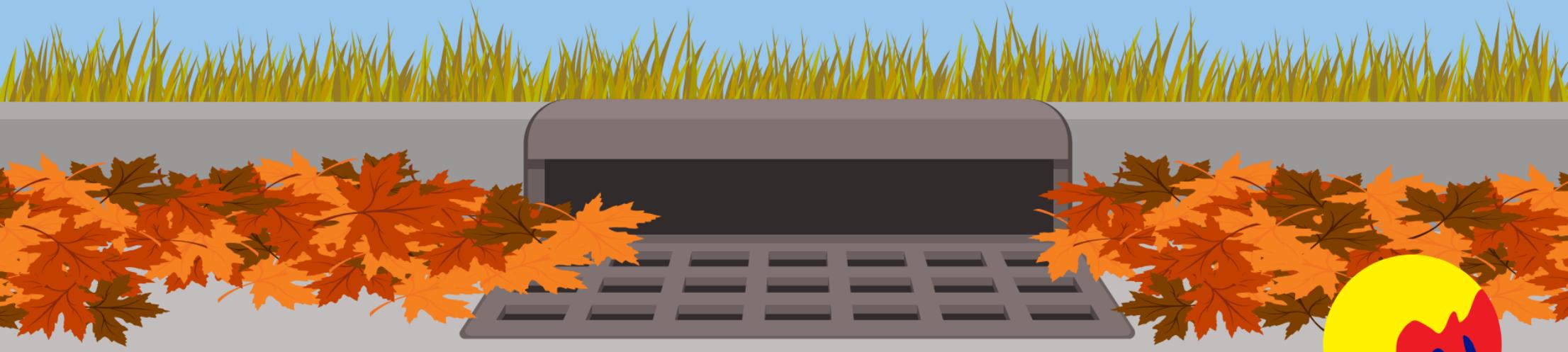
The City has disposed of 3,493 cubic yards of waste from street sweeping this reporting year at a cost of over \$45,500. This has prevented approximately 3,200 tons of materials from entering the stormwater system.

Permittee: City of Grand Rapids

Additional Documentation

Leaf me alone, GR.

Do NOT rake leaves to the street.



CALL 311 or 456-3000

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**FY2015 Annual Report
Stormwater Oversight Commission**

February 2016



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

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1. INTRODUCTION

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

1. Support and advocate for the goals and objectives established in the 2013 Stormwater Asset Management Plan.
2. Monitor the community's changing stormwater needs and recommend program priorities to address those needs.
3. Be an advisory body of the City.
4. Report on and make recommendations to the City Manager and City Commission on stormwater performance, review expenditures and capital investment strategies.
5. Monitor achievement of stormwater outcomes.
6. Review the City's annual (Stormwater) Progress Report.
7. Make recommendations to the City Manager and City Commission regarding policies.
8. Plan for achieving Stormwater Management Level of Service "C" as provided in the 2013 Stormwater Asset Management Plan.
9. Review, recommend and approve changes to the Stormwater Technical Reference Manual and report all changes to the City Commission and City Manager.
10. Annually review and recommend changes to the established criteria within the 2013 Stormwater Asset Management Plan for facility improvements, land acquisition, capital renovation or development.
11. Annually review the investments of the income tax extension designated for Vital Streets.
12. Advise the Environmental Services Manager regarding the effect of budgetary decisions on the stormwater system and interpretation of policy as needed.
13. Assist the Environmental Services Manager in the evaluation of stormwater programs and facilities and make recommendations for improvements.

Members of the SOC are:

- Elaine Isely – Chairperson 2015
- William Byl – Vice Chairperson 2015
- Jack Barr
- Kristine Bersche

- Duriel Cohen, Sr. (Resigned on August 3, 2015)
- Edgar L. Davis
- Elizabeth Hernandez
- Joshua Lunger
- Randal Meyering

The SOC began meeting in August of 2014. The meetings in 2014 focused on general stormwater education and state and federal regulation governing stormwater. The meetings in 2015 have been focused on achieving Level of Service “C” in asset management, developing new technical references for future changes to stormwater technical reference manual, and creating new ideas for green infrastructure development. Agendas for the FY2015 meetings can be found in Appendix A. Minutes are included on the SOC website [here](#).

2. STORMWATER PERFORMANCE

2.1 Report

The City's stormwater performance is governed by the Michigan Department of Environmental Quality (MDEQ). The annual progress report for the MS4 program was submitted to the MDEQ in September 2015. This report details the City's stormwater work including but not limited to stormwater public education, stormwater maintenance, and soil erosion sedimentation control permit reviews. The City's 2015 annual report submission was confirmed as received by MDEQ on September 25, 2015. A copy of the report and the MDEQ response letter can be found [here](#).

2.2 Recommendations

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

3. STORMWATER EXPENDITURES

3.1 Report

The SOC reviewed expenditures at the end of FY2015 and also has approved the FY2017 budget submission. Tables 1 and 2 summarize stormwater management and stormwater maintenance budget expenditures. The FY2015 stormwater management budget was \$582,342 with \$37,532.40 of the revenue coming from a reimbursement from the FEMA due to 2013 flood volunteer reimbursement. 71% or \$413,898 of the budget was expended in the fiscal year. This percentage is largely due to the low expenditures in contractual services.

Table 1. FY2015 Stormwater Management Expenditures

	Budget	Expenditures	Percent of Budget
Stormwater Management	\$582,342*	\$413,898	71%
- Contractual Services	\$229,424	\$63,270	28%
- SESC Permits	\$280,000	\$230,000	82%

*Reimbursed \$37,532.40 from 2013 Flood Volunteer Reimbursement

The FY2015 stormwater maintenance budget was \$780,926, of which \$674,650 was expended in the fiscal year. The expenditures in the contractual services category exceeded the forecasted budget due to the Vital Streets contract, which is detailed below.

Table 2. FY2015 Stormwater Maintenance Expenditures

	Budget	Expenditures	Percent of Budget
Stormwater Maintenance	\$780,926	\$674,650	86%
- Personnel	\$240,724	\$123,539	51%
- Contractual Services	\$119,237	\$221,590	185%
- Electricity	\$35,683	\$39,263	110%

In FY2015, the City of Grand Rapids installed over 4,400 tons of porous pavement, increased the tree canopy by 599 trees, installed 91 infiltration basins, planted 9 rain gardens, and constructed a large underground stormwater treatment facility. These stormwater and green infrastructure investments were funded by both the sewer fund and the vital streets income tax investment. Tables 3 and 4 layout the breakdown of cost for each project type below. Full project descriptions are listed in Appendix C. There were 4 sewer fund projects in FY2015 that had stormwater and green infrastructure implementation associated with them. Out of the total project cost of \$17.7 million, \$2.6 million was stormwater and green infrastructure cost and almost \$360,000 was Vital Streets cost.

Table 3. FY2015 Projects Funded by the Sewer Fund

No	Project Name	Infiltration Practice	Total Stormwater/ Green Infra. Cost	Total Vital Streets Cost	Total Project Cost	Contract Completion Date
1	Eastside Sewer Improvements Program Separation Project - Contract No. 22	Removed 6 trees; 7 trees planted 19 infiltration basins; 1525 sf porous pavement;	\$151,333	\$231,000	\$3,636,000	7/8/2015
2	Improvements to the Parking Lot at the Westside Complex	Removed 12 trees, 4 trees planted, underground detention system	8,312	N/A	347,755	8/22/2014
3	Eastside Sewer Improvements Program Separation Project Contract No. 26C – Mary Waters Park	Underground Stormwater Treatment Facility	\$1,694,000	N/A	\$1,694,000	5/31/2016
4	Eastside Sewer Improvements Program Separation Project - Contract No. 27	Removed 46 trees; 298 trees planted, 17 Infiltration basins, 9 rain gardens, bulbouts, 2350 tons of porous pavement in parking lanes	\$715,967	\$126,900	\$12,065,960	11/15/2016
TOTAL			\$2,569,612	\$357,900	\$17,743,715	

According to the stormwater investment guidelines, approximately \$1.8 million was estimated for expenditure on stormwater and green infrastructure in FY2015. According to Table 4, almost \$1.3 million of that budget was expended. With the initial focus of Vital Streets being resurfacing, the opportunities for implementing green infrastructure are limited. Therefore, the expenditures are only approximately 71% of the budget.

Table 4. FY2015 Projects Funded by the Vital Streets Income Tax Investment

No	Project Name	Infiltration Practice	Total Stormwater/ Green Infra. Cost	Total Vital Streets Cost	Total Project Cost	Contract Completion Date
5	Buchanan Ave /Burton St Resurfacing	39 trees planted	\$18,072	\$932,708	\$1,439,834	6/20/2015
6	Carlton Ave Resurfacing	22 trees planted	\$9,476	\$745,000	\$1,690,967	7/15/2015
7	Water Main Replacement in	None	N/A	\$814,000	\$1,916,497	7/15/2015

	Richmond St					
8	Turner Ave Resurfacing	Removed 4 trees; 27 trees planted	\$12,529	\$204,000	\$683,863	11/20/2015
9	Bartlett St/Finney Ave/Williams St Resurfacing	Porous pavement in parking lanes, bioswales, planters, 78 additional trees and landscaping	\$212,919	\$759,201	\$3,210,000	5/31/2016
10	Bridge St/Summer Ave/Winter Ave Reconstruction	Porous pavers installed in parking lane and trees planted	\$48,142	\$519,000	\$1,426,000	1/29/2016
11	Improvements to Cherry, Roosevelt, Westown Commons and Wilcox Parks	None	N/A	N/A	\$2,054,000	8/15/2015
12	College Ave Reconstruction	25 trees planted and 4 infiltration basins installed	\$38,399	\$372,714	\$802,899	7/29/2016
13	Improvements to Fuller, Garfield, Highland, and Lincoln Parks	Rain Garden at Garfield Park	N/A	N/A	\$1,874,065	8/15/2015
14	Jefferson Ave Reconstruction	20 trees planted, bulbouts and 350 tons of porous pavement in parking lanes	\$73,600	\$1,374,457	\$3,083,000	10/31/2016
15	Water Main Replacement in Lafayette Ave and Woodward Ave	None	N/A	\$129,290	\$1,338,465	10/30/2015
16	Livingston Reservoir Second Transmission Watermain Contract No. 1A	Removed 19 trees; placed 20 trees; 210 tons of porous pavement; 16 infiltration basins;	\$125,362	\$673,965	\$3,804,585	10/31/2015

17	State St/ Bostwick Ave Reconstruction	141 tons of porous pavement; 24 trees planted; 18 porous tree grate; 2547 sf of porous sidewalk pavers	\$179,216	\$96,617	\$2,089,468	6/25/2017
18	Pearl St Reconstruction	8 infiltration basins installed	\$48,760	\$778,465	\$1,266,000	9/18/2015
19	Livingston Reservoir Second Transmission Watermain Contract No. 1B	Remove 22 trees; 5 infiltration basins; 103 trees planted	\$241,788	\$1,348,370	\$9,000,990	9/30/2017
20	Kalamazoo Ave Resurfacing	19 infiltration basins	\$43,470	\$706,000	\$973,666	10/30/2015
21	Fulton Street Resurfacing	None	N/A	\$537,735	\$824,520	7/31/2016
22	Fuller Ave Resurfacing	None	N/A	\$535,715	\$1,224,000	10/23/2015
23	Burton St/Fuller Ave/Michigan St/Monroe Ave Resurfacing	35 trees planted	\$13,794	\$830,000	\$2,174,316	7/15/2015
24	Monroe Ave Resurfacing	Removed 37 trees; 2 trees planted; 3 infiltration basins; 1301 tons of porous pavement	\$196,744	\$2,402,000	\$4,856,250	7/15/2015
25	Grand River Walkway Construction- Canal St to Leonard St.	38 trees planted	\$15,296	N/A	\$1,389,661	
26	Michigan St Resurfacing	Removed 2 trees; 4 trees planted	\$3,249	\$398,500	\$580,000	10/31/2015
	TOTAL		\$1,280,815	\$14,157,737	\$47,703,176	

3.2 Recommendations

Given that the total expenditures for both stormwater management and stormwater maintenance are under the FY2015 budget, the SOC recommended two new positions in FY2017 for stormwater staff, including an Engineering Assistant I, and a Collection System Asset technician.

The Engineering Assistant I will be a soil erosion sedimentation control (SESC) inspector. The annual funding requirement for an Engineering Assistant I is \$79,783, which will be funded from revenue from SESC permits. With the expected increase in development in Vital Streets, Restore the Rapids, and GR Forward, the limited resources the City has in SESC inspectors will be in greater demand. With the expected increase in permits, the revenues should exceed approximately \$310,000 and be able to adequately support

the additional expenditures in the personnel budget. Adding the engineering assistant I will allow the City to adequately cover all expected construction permits in 2017.

The Collection System Asset Technician (CSAT) will allow the stormwater maintenance team to better reach the Level of Service “C” standards. The annual funding requirement for a CSAT is \$79,783 and will be funded 50% from the sewer fund, and 50% from the local and major streets fund. We will also have to procure a combination truck at the cost of \$110,000. 25% of the CSAT’s work load will be lift station wet well cleaning. This work has been contracted out in FY15 and FY16. In FY15, the contract for lift station wet well cleaning cost \$84,466 and in FY16, it cost \$110,000. If this work is done in-house, it would cost approximately \$45,000 annually. With this cost savings and the available money in the budget, the City of Grand Rapids will be able to adequately cover the additional expenditures in the personnel budget.

4. CAPITAL INVESTMENT STRATEGY

4.1 Report

The capital investment strategy is to plan to achieve Level of Service “C” as outlined in the 2013 Asset Management and Capital Improvement Plan. Level of Service “C” is defined in Appendix B. FY2015 was a successful year for finishing capital projects.

Five capital projects were completed this year.

- Indian Mill Creek NW: A 30” outfall to Indian Mill Creek from Jeanette Ave NE had separated underwater, and the stream bank was eroded. The outfall of the storm sewer was replaced, the erosion was repaired, and the bank was stabilized.
- Brooklyn Avenue SE: A 36” reinforced concrete storm sewer outfall had failed between 3261 and 3247 Brooklyn Avenue. 16’ of storm sewer was replaced with a new end treatment, and the slope was stabilized to prevent future erosion to the outfall.
- Eastcastle Drive SE: A 12” outfall from Eastcastle Drive had failed and the adjacent slope just west of Breton Avenue had eroded away. 8’ of the 12” storm sewer was replaced with a new 12” precast concrete headwall. The slope was repaired and stabilized.
- Colton Drive SE: The drainage ditches on both sides of Colton Drive between Conlon Avenue and Covington Drive and Conlon Avenue south of Colton Drive were in disrepair. The ditches were regraded, and new infiltration trenches were installed in sections of Colton Drive and Conlon Avenue. The storm sewer under Ardmore Street was replaced, and a humped driveway repaired.
- Waterford Court NE: There was flooding in the backyards of homes along Waterford Court NE due to water coming from the outfall of the City’s storm sewer. An infiltration basin was installed in this area to help infiltrate the water back into the soil as opposed to discharging it behind homes.

Capital Improvement Funding has been planned out through 2021 to match the investment strategy in the plan, as shown in Tables 5 through 9 below.

Table 5. FY2017 Capital Projects

Drainage Improvements and Emergency Repairs	Capital Reserve Fund	\$ 80,000
Kent County Drain Commission Special Assessments	Capital Reserve Fund	\$ 45,000
Moerland and Longmeadow Stormwater Improvements	Capital Reserve Fund	\$ 117,470
Burton-Breton Branch of Plaster Creek - Enlargement of Culverts	Capital Reserve Fund	\$ 168,000
Private Partnerships/Grant for Green Infrastructure	Capital Reserve Fund	\$ 76,000
Richmond Park Daylighting	Capital Reserve Fund	\$ 36,673
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	\$ 100,000
FY2017 TOTAL		\$ 623,143

Table 6. FY2018 Capital Projects

Drainage Improvements and Emergency Repairs	Capital Reserve Fund	\$ 204,712
Kent County Drain Commission Special Assessments	Capital Reserve Fund	\$ 45,000
Oakleigh Ave in Hogadone District - Channelizing and Cleaning	Capital Reserve Fund	\$ 45,000
Richmond Park Bioswales	Capital Reserve Fund	\$ 60,000
Richmond Park Daylighting	Capital Reserve Fund	\$320,000

CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	\$ 100,000
FY2018 TOTAL		\$ 774,712

Table 7. FY2019 Capital Projects

Drainage Improvements and Emergency Repairs	Capital Reserve Fund	\$ 131,489
Kent County Drain Commission Special Assessments	Capital Reserve Fund	\$ 45,000
Indian Mill Creek Dredging	Capital Reserve Fund	\$ 65,400
Oakleigh Ave in Hogadone District - Channelizing and Cleaning	Capital Reserve Fund	\$ 221,850
Coldbrook Drain Rehabilitation - Michigan and Fuller	Capital Reserve Fund	\$ 37,500
Shawmut Hills Baseball Diamond and Channel Stormwater Improvements	Capital Reserve Fund	\$ 74,300
Capilano Stormwater Improvements	Capital Reserve Fund	\$ 41,400
Water Quality Improvement from Green Opportunity Plan	Capital Reserve Fund	\$ 209,347
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	\$ 100,000
FY2019 TOTAL		\$ 926,286

Table 8. FY2020 Capital Projects

Indian Mill Creek Dredging	Capital Reserve Fund	\$ 370,600
Maple Grove Detention Pond	Capital Reserve Fund	\$ 78,300
Plaster Creek Bank Erosion	Capital Reserve Fund	\$ 75,975
Coldbrook Drain Rehabilitation - Michigan and Fuller	Capital Reserve Fund	\$ 212,500
Drainage Improvements and Emergency Repairs 2020+	Capital Reserve Fund	\$ 195,482
Kent County Drain Commissioner Special Assessments 2020+	Capital Reserve Fund	\$ 45,000
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	\$ 100,000
FY2020 TOTAL		\$ 1,077,857

Table 9. FY2021 Capital Projects

Burton-Breton Branch of Plaster Creek - Channelization and Cleaning	Capital Reserve Fund	\$ 37,995
Maple Grove Detention Pond	Capital Reserve Fund	\$ 443,700
Plaster Creek Bank Erosion	Capital Reserve Fund	\$ 430,525
Drainage Improvements and Emergency Repairs 2020+	Capital Reserve Fund	\$ 97,209
Water Quality Improvement from Daylighting Plan	Capital Reserve Fund	\$ 75,000
Kent County Drain Commissioner Special Assessments 2020+	Capital Reserve Fund	\$ 45,000
CIPP Rehab of Storm Sewers – Various Sites	VSOC Streets	\$ 100,000
FY2021 TOTAL		\$ 1,229,429

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

4.2 Recommendations

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

5. STORMWATER TECHNICAL REFERENCE MANUAL

5.1 Changes

The SOC has not yet begun a formal review of the Technical Reference Manual, which will be performed in conjunction with ordinance review for the MS4 permit issuance. However, the SOC has started compiling technical documents that will provide data and reference for the recommendations to the Stormwater Technical Reference Manual. These documents include the [*Hydrologic Design Standards under Future Climate for Grand Rapids, Michigan*](#), [*Green Infrastructure Guidance Manual*](#), and Green Infrastructure Technical Specifications.

The *Hydrologic Design Standards under Future Climate for Grand Rapids, Michigan* was developed to provide future climatic conditions based on state-of-the-art climate change information. For example if the current design standards call for sizing stormwater controls based on a 10-year 24-hour event (3.77 inches) what is the future rainfall depth of a 10-year 24-hour storm based on anticipated climate change scenarios? The specific objective is first to update the NOAA Atlas 14 precipitation frequency data, which is currently used for design, and secondly to update the 90th percentile rainfall event to reflect the estimated future climate change information.

The *Green Infrastructure Guidance Manual* is a planning level document that is intended as a starting point for incorporating green infrastructure into a site or within the street right-of-way. The document is targeted towards developers, engineers, and city officials. Traditionally, the intent of stormwater management was to drain stormwater quickly away from urban areas into nearby water bodies for designated storm sewer areas. Stormwater management has now evolved into incorporating green infrastructure as an alternative to, or in combination with, the traditional “gray” infrastructure practices.

The Green Infrastructure Technical Specifications is a manual currently in process that will be provided to developers and engineers with technical information on how green infrastructure will need to be designed in the City of Grand Rapids. This document is expected to be completed in 2016.

5.2 Recommendations

Once the MS4 permit is issued in 2016, recommendations for the Stormwater Technical Reference Manual will be evaluated.

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

6.1 Facility Improvements

During FY2015, the focus of facility improvements has been on asset management. In order to determine what facilities need improvement, the facilities need to be assessed through cleaning and televising. The 2013 stormwater asset management and capital improvement plan has set the goal to attain Level of Service “C”. The SOC has requested monthly updates on progress made of stormwater assets that have been cleaned and/or inspected. Table 10 summarizes the annual cleaning and inspection data for the FY2015.

Table 10. FY2015 Asset Management Data

Asset	Annual Goal	FY2015 Totals
Storm Main Cleaned (ft)	200,000	22,510
Storm Main Televised (ft)	86,400	30,701
Catch Basins Cleaned (ea)	4,500	3,688

Due to a lack of investment in stormwater infrastructure in the past, the FY2015 totals are only a fraction of the annual goals. The Level of Service “C” annual goal is based on a 5 year cycle of preventative maintenance. The cleaning and televising portion of the stormwater asset management program started in 2013 after many decades of no maintenance. Through those years where no preventative maintenance was performed; sediment, debris, and other materials were still collecting in the storm pipes. Therefore, it has taken the vacator trucks much longer to clean several decades of material buildup out of the pipes as opposed to 5 years of material buildup. The initial 5 year cycle of preventative maintenance may take 8 years to complete, but once the initial cleaning is complete, the Level of Service “C” goals will be attainable. The maintenance log for other Level of Service “C” criteria was taken from the annual Lower Grand River Watershed Progress Report submitted to the MDEQ and is attached in Appendix D. Please note that since the MDEQ reporting year and the City of Grand Rapids fiscal year start in different months, some of the numbers in Appendix D will not match this report.

The FY2015 data for stormwater sewer repairs is shown in Table 11. Due to an increase in storm sewer cleanings and inspections, as well as the implementation of the 311 customer service center, these values are not comparable to previous years. The lack of past investment led to a lack of preventative maintenance, but now that this maintenance is being performed, the corrective maintenance issues are being identified and reported at a higher frequency. With the implementation of the 311 customer service center, our citizens have better communication with us, and we have been able to address their problems quickly. The FY2015 data will be used as baseline data for comparison in future years.

Table 11. FY2015 Stormwater Repair Data

Maintenance Type	Quantity
Storm Main Repaired/Replaced (ft)	94
Storm Lateral Replaced (ft)	87.5
Storm Sewer Lined (ft)	778
Storm Manholes Repaired/Replaced (ea)	9

In FY2015, the green infrastructure maintenance was performed by two environmental service department interns. They inspected and maintained many of the City of Grand Rapids’ green infrastructure assets. Maintenance included cleaning up trash, sediment, and vegetative debris out of the rain gardens and bioswales, as well as pruning the vegetation to optimize plant life. Porous pavement areas were inspected for sediment or debris build up and any structural issues that may have to be maintained. If needed, Cityworks work orders were input for the regenerative air sweeper to clean excess sediment on the porous pavement. Table 12 shows the maintenance performed on the green infrastructure assets. Due to the interns’ inability to drive City vehicles, all of the green infrastructure assets were not inspected and/or maintained. The interns focused their efforts to maintain the green infrastructure at the Water Resource Recovery Facility, and when city staff was available to drop them off and pick them up in a neighborhood, they would work on green infrastructure throughout the City.

Table 12. FY2015 Green Infrastructure Asset Management Data

Asset Type	Total No. Of Assets	Assets Inspected/Maintained	Percent Complete
Rain Garden	24	18	75%
Bioswale	7	7	100%
Porous Pavement	19	17	89%

In the spring of 2015, an intern created a green infrastructure maintenance plan, which describes the type and frequency of maintenance required on any of the City’s green infrastructure assets. The maintenance plan also included inspection criteria and was input into Cityworks.

In FY2015, City staff maintained 8 stormwater pumping stations for use during a major rainfall events. These stations pump stormwater to the river during times where the river level is too high to allow a gravity discharge. All of the lift stations are not designed to be in constant use, but because they are critical infrastructure as they provide flood relief in the system during high river levels, reliable operation is mandatory. In order to maintain these stormwater pump stations, regular maintenance and inspections are necessary. Table 13 shows the type of work orders utilized to properly operate these facilities.

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

Table 13. FY2015 Stormwater Station Maintenance Data

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

6.2 Land Acquisition

No land acquisitions were considered during FY2015.

6.3 Capital Renovation or Development

During FY2015, the SOC compiled several ideas for capital development. These ideas included large scale [green infrastructure opportunities](#), [stream daylighting opportunities](#), and river water quality monitoring opportunities.

The large scale green infrastructure opportunities were developed to help the city cost-effectively incorporate green infrastructure on publicly-owned property. In this study, the focus was on parks, which were prioritized based on potential drainage area to a green infrastructure practice, soil type, and available open space within the park. Both surface and subsurface projects were considered, and costs for the conceptual designs as well as typical operation and maintenance costs were estimated.

The stream daylighting opportunities assessment was another project focused on identifying green infrastructure opportunities in the City of Grand Rapids. Available data on enclosed portions of intermittent and permanent watercourses in the city were reviewed to identify and provide a conceptual design and opinion of cost of the locations that were most suited for daylighting. All watercourses that were considered were owned by the City of Grand Rapids or the Kent County Drain Commissioner and located within the City of Grand Rapids. Public and private sites were considered. This report documents the conditions of the watercourses (enclosed versus open channel drainage), opportunities to daylight water courses, and the costs and benefits associated with specific opportunities.

The river water quality monitoring opportunities were developed as the SOC wanted to know how the Lower Grand River Watershed truly reacts to stormwater. The conceptual strategy for river water quality monitoring was to install 8 real time water quality monitoring units on a variety of the stormwater contributors to the Grand River. 2 units would be installed on the upstream and downstream ends of the Grand River in the City of Grand Rapids, 2 units would be installed on rural tributaries, 2 units would be installed on urban tributaries, and 2 units would be installed on stormwater outfalls to the Grand River. If this strategy were executed, the City would be able to better focus its efforts on stormwater pollution reductions.

As of January 4, 2016, two sites on the upstream and downstream ends of the Grand River within the City of Grand Rapids have been designed, and permits have been submitted to the MDEQ. The upstream site is proposed to be in a maintenance building in Riverside Park. This building is the most northern City-owned building near the river and will be able to track the Grand River water quality as it enters the city limits. The downstream site is proposed to be in the Market Avenue Pumping Station. This site will be able track the Grand River water quality as it exits the city limits. This combination of water quality monitoring units will give the SOC a baseline of water quality to see the total impact the City of Grand Rapids has on the Grand River water quality.

7. RECOMMENDATIONS REGARDING STORMWATER POLICY

In March 2015, the permit application for the discharge of storm water to surface waters of the state from a municipal separate storm sewer system (MS4) was submitted to the Michigan Department of Environmental Quality. Changes to the stormwater code will be required to address requirements under the new MS4 permit. However, it is unknown exactly what changes may need to be made until we receive comments back on our permit application. As of January 4, 2016, the City of Grand Rapids has only received preliminary comments on the City's own stormwater practices and not on regulating new construction and reconstruction sites. While we will work on our preferred changes to stormwater code, final recommendations will not be made until we have come to an agreement with the MDEQ on the final requirements.

Appendix A. FY2015 Meeting Agendas



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
August 28, 2014 – 10:30 am

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes – None.
5. Correspondence - None.
6. Reports – Environmental Services Department.
 - a. Transformation Plan, Sustainable Asset Management.
 - b. Sustainably Managing Stormwater in Grand Rapids – A review of the WMEAC report of the Grand Rapids Community Based Stormwater Planning Initiative.
 - c. Stormwater Master Plan.
 - d. Stormwater Asset Management and Capital Improvement Plan (Level “C”).
 - e. Investment Guidelines from the Sustainable Streets Task Force.
 - f. Stormwater Audit.
7. Old Business – None.
8. New Business.
 - a. Review of Bylaws
 - b. Election of the Chairperson and Vice Chairperson of the SOC.
 - c. Meeting Schedule.
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting.
11. Public Comment
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
September 25, 2014 – 10:30 am

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence.
6. Reports – Environmental Services Department.
 - a. Stormwater Audit.
 - b. Annual Report.
 - c. Lower Grand Organization of Watersheds (LGROW).
 - d. Catch Basins.
 - e. Planning for Stormwater Mitigation, Green Infrastructure and Climate Change Project
7. Old Business.
8. New Business.
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
October 23, 2014 – 10:30 am

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence.
6. Reports – Environmental Services Department.
 - a. Asset Management and Capital Improvement Plan.
 - b. Draft FY 2016 Capital Budget.
 - c. Draft FY 2016 Personnel Budget.
7. Old Business.
8. New Business.
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
November 20, 2014

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence.
6. Reports – Environmental Services Department.
 - a. Audit letter
 - b. Revised FY 2016 Capital Budget.
 - c. Revised FY 2016 Personnel Budget.
 - d. Asset Management – Grey Infrastructure.
 - e. Draft Operations and Maintenance Budget.
 - f. New MS4 Permit Application - Post Construction Controls.
 - g. Annual Report Format.
 - h. Update on Tetra Tech Project – Daylighting.
7. Old Business.
8. New Business.
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
December 18, 2014

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence.
6. Reports.
 - a. Dr. Haris Alibasic – [Sustainability](#) and [Climate Resiliency](#) Reports.
 - b. [MDEQ Annual Progress Report](#) Review.
 - c. A Day in the Life.
 - d. [Current Stormwater Regulations](#).
7. Old Business.
 - a. Operations and Maintenance Budget.
8. New Business.
 - a. SOC Annual Report Format.
 - b. 2015 Meeting Schedule.
9. Agenda Items for Next Meeting.
 - a. Election of Officers
10. Date and Time of Next Meeting.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
January 29, 2015

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence.
6. Reports.
 - a. James Sullivan – Fishbeck, Thompson, Car & Huber – FEMA and the Floodwalls.
 - b. Permit Update.
 - c. CSO 27.
 - d. Update on Mary Waters Park.
 - e. Intern – Green Infrastructure Maintenance
7. Old Business.
 - a. Final Operations and Maintenance Budget.
 - b. SOC Annual Report.
8. New Business.
 - a. Election of Officers.
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting – February 26, 2015 at 10:30 am.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
February 26, 2015

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence.
6. Reports.
 - a. Kent County Drain Commissioner – Bill Byl.
 - b. GR Forward – Suzanne Schulz.
 - c. Permit Update.
7. Old Business.
 - a. Budget – City Manager March 11.
 - b. SOC Annual Report.
8. New Business.
 - a. Election of Officers.
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting – March 26, 2015, at 10:30 am.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
March 26, 2015

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence.
6. Reports.
 - a. TetraTech – Dan Christian, Valerie Novaes, Pete Daukss
 - i. [Daylighting](#)
 - ii. [Climate Change](#)
 - b. National Disaster Resilience Competition Grant – Mike Lunn
 - c. Presentations to City Commission & Vital Streets Oversight Commission
 - d. Asset Management Progress
 - e. [Permit](#) Update
7. Old Business.
8. New Business.
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting – April 23, 2015, at 10:30 am.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
April 23, 2015

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Correspondence – Comments on Daylighting and Climate Change.
6. Reports.
 - a. TetraTech – Dan Christian, Valerie Novaes, Pete Daukss
 - i. Green Infrastructure Standards
 - ii. Green Infrastructure Guidance Manual
 - b. Vital Streets Request for Proposals
 - c. Asset Management Progress
 - d. 2015 Capital Projects
7. Old Business.
 - a. Daylighting
 - b. Climate change
8. New Business.
 - a. Stormwater Tour
9. Agenda Items for Next Meeting.
10. Date and Time of Next Meeting – May 28, 2015, at 10:30 am.
11. Public Comment.
12. Adjournment.



Stormwater Oversight Commission
Wastewater Treatment Plant Ottatorium
1300 Market Avenue SW
June 25, 2015

AGENDA

1. Meeting Called to Order.
2. Roll Call.
3. Approval of Agenda.
4. Approval of Minutes.
5. Introduction of New Staff – Michael Staal, Project Engineer.
6. Correspondence.
 - a. Comments on Daylighting and Climate Change
 - b. Comments on Green Infrastructure Guidance
7. Reports.
 - a. Budget
 - b. List of Streets for Maintenance/Reconstruction
 - c. Asset Management Progress
8. Old Business.
 - a. Daylighting
 - b. Climate Change
 - i. Citywide Green Infrastructure
 - ii. Citywide Soils Map
 - iii. Pipes and Ages
 - c. Green Infrastructure Guidance
 - d. Vital Streets Proposal Progress
9. New Business.
10. Agenda Items for Next Meeting.
11. Date and Time of Next Meeting – July 23, 2015, at 10:30 am.
12. Public Comment.
13. Adjournment.

Appendix B. Level of Service “C” Parameters

Level of Service C

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

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

Table 4-3 Level of Service C Definition

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

Appendix C. Full Project Names

Project No.	Project Name
1	Eastside Sewer Improvements Program Separation Project – Contract No. 22 – Reconstruction of Union Avenue from Cherry Street to Fountain Street, Fulton Street from College Avenue to 130’ East of Union Avenue, Lake Drive from Union Avenue to 160’ Southeast of Union Avenue and Stanley Terrace (Pvt.) from Union Avenue to East End
2	Improvements to the Parking Lot at the Westside Complex
3	East Side Sewer Improvements Program Separation Project Contract No. 26C – Storm Water Storage and Treatment Improvements at Mary Waters Park and in College Avenue from 70’ North to 190’ North of Coldbrook Street
4	Eastside Sewer Improvements Program Separation Project Contract No. 27 – Reconstruction of Spencer Street from Plainfield Avenue to College Avenue; Curtis Street from North Avenue to College Avenue; Fernando Street from North Avenue to College Avenue; Ames Street from Berlin Place to North Avenue; Quimby Street from Plainfield Avenue to College Avenue; Marietta Street from North Avenue to College Avenue; Carman Avenue from Page Street to Spencer Street; Buffalo Avenue from Page Street to Quimby Street; Lafayette Avenue from Page Street to Plainfield Avenue; Maude Avenue from Page Street to Spencer Street; North Avenue from Page Street to Sweet Street; Berlin Place from Ames Street to Quimby Street; and Cole Avenue from Marietta Street to Sweet Street. Improvements in Forrest Avenue from Quimby Street to Sweet Street; Fern Avenue at Florence Street; Hanover Street at Fern Ave; Plainfield Avenue Alley (E) from Hanover St to Hanover St Alley (N). Elimination of Overflow W-21 in Grove Street and Plainfield Avenue
5	Resurfacing of Buchanan Avenue from Alger Street to Stewart Street and of Burton Street from Towner Avenue to Division Avenue
6	Rotomill/Resurfacing of Carlton Avenue from Lake Drive to Fulton Street
7	Water Main Replacement in Richmond Street from 300’ to 100’ west of Muskegon Avenue; from 50’ east of Muskegon Avenue to Seward Avenue and from Broadway Avenue to 200’ east of Turner Avenue, and Resurfacing of Richmond Street from Alpine Avenue to 200’ east of Turner Avenue
8	Rotomill/Resurfacing of Turner Avenue from Ann Street to Southbound US-131 Ramps
9	Reconstruction of Bartlett Street from Market Avenue to Grandville Avenue, Finney Avenue from Wealthy Street to Williams Street and Williams Street from Market Avenue to Grandville Avenue in Connection with Founders Brewing Company Expansion (TEDF-A)
10	Reconstruction of Bridge Street from Winter Avenue to Summer Avenue, Summer Avenue from Douglas Street to Bridge Street and Winter Avenue from 100’ South of Bridge Street to Bridge Street
11	Improvements to Cherry, Roosevelt, Westtown Commons and Wilcox Parks

12	Reconstruction of College Avenue from Cottage Grove Street to Oakdale Street and Abandonment of Water Main in Paris Avenue (Vacated) from Cottage Grove Street to 270' South of Oakdale Street
13	Improvements to Fuller, Garfield, Highland and Lincoln Parks
14	Reconstruction of Jefferson Avenue from Burton Street to Cottage Grove Street and Resurfacing of Jefferson Avenue from Cottage Grove Street to 200' South of Hall Street
15	Water Main Replacement in Lafayette Avenue from Coit Avenue to Boltwood Drive and in Woodward Avenue from Burton Street to
16	Livingston Reservoir Second Transmission Watermain (Contract No. 1A) including Reconstruction of Livingston Avenue from Newberry Street to Livingston Pumping Station; Newberry Street from Livingston Avenue to Coit Avenue; Coit Avenue from Newberry Street to Bradford Street; Bradford Street from Coit Avenue to Lafayette Avenue and Lafayette Avenue from 500' South of Bradford Street to
17	Reconstruction of State Street from Jefferson Avenue to Lafayette Avenue and Reconstruction of Bostwick Avenue from Lyon Street to Crescent Street
18	Reconstruction of Pearl Street from Mount Vernon Avenue to Front Avenue
19	Livingston Reservoir Second Transmission Watermain (Contract No. 1B) including Reconstruction of Lafayette Avenue from Bradford Street to Leonard Street; Leonard Street from Lafayette Avenue to Ashland Avenue and Cedar Street from Clancy Avenue to Lafayette
20	Resurfacing of Kalamazoo Avenue from Burton Street to Fuller Avenue
21	Rotomill/Resurfacing of Fulton Street from Wallinwood Avenue to 400' East of Woodward Lane
22	Resurfacing of Fuller Avenue from Leonard Street to Knapp Street
23	Resurfacing of Burton Street from Plymouth Avenue to Breton Avenue; Fuller Avenue from Malta Street to Leonard Street; Michigan Street from Lafayette Avenue to College Avenue and Monroe Avenue from Louis Street to I-196
24	Resurfacing of Monroe Avenue from Ann Street to North Park Street
25	Construction of the Grand River Walkway (Canal Street Park to Leonard Street Non-Motorized Trail)
26	Resurfacing of Michigan Street from College Avenue to Eastern Avenue

**Appendix D. Lower Grand Rapids Watershed Progress Report
Maintenance Log**

Part 2B - Stormwater Controls Inspection, Maintenance and Effectiveness

Property Name: City Wide				
Structural Storm Water Control	Inspection Frequency	Maintenance Schedule	Inspection and Maintenance Conducted and Location of Log (if applicable)	Effectiveness of Control and Support Documentation
Stormwater Manholes	Complaint Based	N/A	159 cleaned 12 Manholes repaired 2 manholes replace Logs are maintained in CityWorks	Identified problems were fixed and pollutants were removed.
Stormwater Catch basins	Complaint Based	Clean annually 2,500	3,110 catch basins were cleaned Logs are maintained in CityWorks	1,836 tons of solids were removed from the stormwater sytem and kept from the waterways.
Discharge Points	Complaint Based	N/A	250 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	1,589 ft storm lateral cleaned 3 laterals repaired 9 laterals replaced Logs are maintained in CityWorks	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	All 11 wet wells were cleaned as a result of inspections. Inspections occur once every 3 weeks from May through October and once every 4 weeks from November through April	Given that the shortest gap between cleaning was two months, inspection every 2 to 4 weeks appears to be sufficient.
Stormwater Gravity Mains	Complaint Based	N/A	22,764 ft cleaned 1,442 ft were rootsawed and cleared.	Identified problems were fixed and pollutants removed.

			65 ft were replaced	
Infiltration Basins (underground)	Complaint Based	10 yr. Inspection cycle	Inspection in CityWorks for 2019	The basin appears to function well.
Detention Basins	Complaint Based	Maintain & Inspect three times annually	The one pond that is operated by the City was inspected every 2-8 weeks.	The basin appears to be function well.
Hydro Separators	Complaint Based	Clean twice year	5 hydroseparator cleanings were performed.	The hydro separators were cleaned in April 2015 and scheduled to be cleaned in October. We will evaluate next year after a full cycle of cleanings has been performed.
Siphons	Complaint Based	Clean annually	9 siphons were cleaned this year	Some of the siphons were noted to be in good working order upon arrival. One siphon needed a good cleaning, so annual cleaning appears to be appropriate.
Creek gates	Complaint Based	Clean annually	60 cleanings were performed 134 inspections were performed 1 creek gate was repaired	Responding to complaints ensures that the worst areas are addressed more often
Open Ditches	Complaint Based	N/A	200 feet of open ditch was cleared and restored along Lakeside Dr costing \$11,000.	There are complaints related to neighborhood open drains. Funds were budgeted to address the most problematic areas.

WIN!!
HOME
R!

Green Infrastructure

At-Grade Best Management Practices



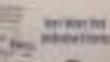
With Stormwater Retention



Permeable Pavement



Green Roofs



Green Infrastructure

Utility of the Future

Investment in the Grid and Smart Meter Infrastructure



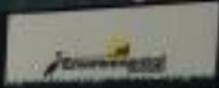
Energy Recovery for Wastewater Treatment



Real Time Controls for Stormwater



Smart Meters - Green Infrastructure



Commercial Protection TIP #1

Prevent Stormwater from Entering Storm Drains



GreenSource
www.greensource.com

Commercial Protection TIP #2

Prevent Stormwater from Entering Storm Drains



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Commercial Protection TIP #3

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Commercial Protection TIP #4

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Commercial Protection TIP #5

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Commercial Protection TIP #6

Prevent Stormwater from Entering Storm Drains



GreenSource
www.greensource.com

Event table with promotional materials:

- GreenSource brochures and pamphlets
- Water bottles
- Snacks (granola bars, fruit)
- Signs and informational cards

**TABLE 1
KNOWN SEPTIC SYSTEMS**

Number	Street	City	Zip Code	Number	Street	City	Zip Code	Date Added	Brochure Sent
1041	28TH ST SE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
823	3 MILE RD NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
829	3 MILE RD NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1350	3 MILE RD NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1406	3 MILE RD NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1512	3 MILE RD NE	Grand Rapids, MI	49505	1029	28TH ST SE	Grand Rapids, MI	49508	4/5/2013	6/30/2015
1516	3 MILE RD NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1520	3 MILE RD NE	Grand Rapids, MI	49505					4/5/2013	6/30/2015
1560	3 MILE RD NE	Grand Rapids, MI	49505					4/5/2013	6/30/2015
1600	3 MILE RD NE	Grand Rapids, MI	49505					4/4/2014	7/26/2016
1637	3 MILE RD NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1344	36TH ST SE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
820	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
840	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
880	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
890	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
912	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
924	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
940	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1000	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1002	4 Mile Rd NE	Grand Rapids, MI	49525					6/3/2013	7/26/2016
1006	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1010	4 Mile Rd NE	Grand Rapids, MI	49525					6/3/2013	7/26/2016
1016	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1020	4 Mile Rd NE	Grand Rapids, MI	49525					6/3/2013	7/26/2016
1024	4 Mile Rd NE	Grand Rapids, MI	49525					6/3/2013	7/26/2016
1030	4 Mile Rd NE	Grand Rapids, MI	49525					6/3/2013	7/26/2016
1040	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1054	4 MILE RD NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1830	4TH ST NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1707	8TH ST NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1713	8TH ST NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1611	ABERDEEN ST NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2160	ABERDEEN ST NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2170	ABERDEEN ST NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
745	ALGER ST SW	Grand Rapids, MI	49509					2/18/2014	7/26/2016
749	ALGER ST SW	Grand Rapids, MI	49509					2/18/2014	7/26/2016
3586	AUBURN AVE NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
3161	BAKER PARK DR SE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
3185	BAKER PARK DR SE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
1725	BATCHAWANA ST SE	Grand Rapids, MI	49508	10	ORCHARD ST	Passaic, NJ	07055	2/18/2014	7/26/2016
1351	BEECHWOOD ST NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
3540	BRADFORD ST NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
3801	BRETON AVE SE	Grand Rapids, MI	49512					8/1/2013	7/26/2016
1515	BRISTOL AVE NW	Grand Rapids, MI	495044					2/18/2014	7/26/2016
2221	BURTON ST SE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
4440	BURTON ST SW	Grand Rapids, MI	49534					2/18/2014	7/26/2016
1825	CARLTON AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
3108	CHENEY AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2107	CLOVER DR NW	Grand Rapids, MI	49525					2/18/2014	7/26/2016
2150	CLOVER DR NW	Grand Rapids, MI	49525					2/18/2014	7/26/2016

**TABLE 1
KNOWN SEPTIC SYSTEMS**

Number	Street	City	Zip Code	Number	Street	City	Zip Code	Date Added	Brochure Sent
2151	CLOVER DR NW	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1017	COTTAGE GROVE ST SE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
20	COVELL AVE SW	Grand Rapids, MI	49525					2/18/2014	7/26/2016
28	COVELL AVE SW	Grand Rapids, MI	49534					2/18/2014	7/26/2016
36	COVELL AVE SW	Grand Rapids, MI	49534	4053	BUCKBRIDGE LANE	Ann Arbor, MI	48103	2/18/2014	7/26/2016
52	COVELL AVE SW	Grand Rapids, MI	49503					2/18/2014	7/26/2016
60	COVELL AVE SW	Grand Rapids, MI	49525					2/18/2014	7/26/2016
102	COVELL AVE SW	Grand Rapids, MI	49508					2/18/2014	7/26/2016
110	COVELL AVE SW	Grand Rapids, MI	49525					2/18/2014	7/26/2016
118	COVELL AVE SW	Grand Rapids, MI	49525					2/18/2014	7/26/2016
126	COVELL AVE SW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
134	COVELL AVE SW	Grand Rapids, MI	49503					2/18/2014	7/26/2016
142	COVELL AVE SW	Grand Rapids, MI	49534					2/18/2014	7/26/2016
3285	DAWES AVE SE	Grand Rapids, MI	49534					2/18/2014	7/26/2016
3290	DAWES AVE SE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
2146	DEAN LAKE AVE NE	Grand Rapids, MI	49503					2/18/2014	7/26/2016
2310	DUCOMA DR NW	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2734	DURHAM AVE NE	Grand Rapids, MI	49534					2/18/2014	7/26/2016
3112	EASTERN AVE SE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
3220	EASTERN AVE SE	Grand Rapids, MI	49534					2/18/2014	7/26/2016
1120	EKHART ST NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1124	ELMDALE ST NE	Grand Rapids, MI	49525	260	PETTIS AVE NE	Grand Rapids, MI	49301	2/18/2014	7/26/2016
1168	ELMDALE ST NE	Grand Rapids, MI	49525	PO Box925		Ada, MI	49301	2/18/2014	7/26/2016
1252	ELMDALE ST NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1330	ELMDALE ST NE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
1340	ELMDALE ST NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
827	FAIRVIEW AVE NE	Grand Rapids, MI	49503					2/18/2014	7/26/2016
835	FAIRVIEW AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2048	FULLER AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2820	FULLER AVE NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
2830	FULLER AVE NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
2836	FULLER AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2844	FULLER AVE NE	Grand Rapids, MI	49501					2/18/2014	7/26/2016
2902	FULLER AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
3091	FULTON ST E	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1910	FULTON ST W	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1920	FULTON ST W	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1942	FULTON ST W	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1950	FULTON ST W	Grand Rapids, MI	49505					2/18/2014	7/26/2016
399	GARFIELD AVE SW	Grand Rapids, MI	49504	PO BOX 1808		Grand Rapids, MI	49504	2/18/2014	7/26/2016
180	GREENWICH RD NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
1757	HANCHETT AVE NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1632	IRA AVE NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1643	IRA AVE NW	Grand Rapids, MI	49508					2/18/2014	7/26/2016
1720	IRA AVE NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1721	IRA AVE NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
3230	KALAMAZOO AVE SE	Grand Rapids, MI	49505	155	MORNINGSIDE DR SE	Grand Rapids, MI	49506	2/18/2014	7/26/2016
831	KENDALWOOD ST NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
901	KENDALWOOD ST NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
945	KENDALWOOD ST NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016

**TABLE 1
KNOWN SEPTIC SYSTEMS**

Number	Street	City	Zip Code	Number	Street	City	Zip Code	Date Added	Brochure Sent
968	KENDALWOOD ST NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1760	KNAPP ST NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
3026	LAKE MICHIGAN DR NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
3030	LAKE MICHIGAN DR NW	Grand Rapids, MI	49504	1115	ALLISON AVE NW	Grand Rapids, MI	49534	2/18/2014	7/26/2016
3100	LAKE MICHIGAN DR NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
3134	LAKE MICHIGAN DR NW	Grand Rapids, MI	49505					2/18/2014	7/26/2016
3233	LAKE MICHIGAN DR NW	Grand Rapids, MI	49505	530	BAYBERRY POINTE DR NW	Grand Rapids, MI	49534	2/18/2014	7/26/2016
936	LAMBERTON ST NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
1516	LEONARD ST NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
2442	LEONARD ST NE	Grand Rapids, MI	49504	3419	SHADY PLACE NE	Grand Rapids, MI	49525	2/18/2014	7/26/2016
2005	LEONARD ST NW	Grand Rapids, MI	49301					2/18/2014	7/26/2016
2221	LEONARD ST NW	Grand Rapids, MI	49506					2/18/2014	7/26/2016
2231	LEONARD ST NW	Grand Rapids, MI	49546					2/18/2014	7/26/2016
2614	LITTLEFIELD DRV NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
2660	LITTLEFIELD DRV NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
2700	LITTLEFIELD DRV NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
2740	LITTLEFIELD DRV NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
2760	LITTLEFIELD DRV NE	Grand Rapids, MI	49506					2/18/2014	7/26/2016
1134	MAPLEGROVE DR NW	Grand Rapids, MI	49505					2/18/2014	7/26/2016
11	MARYLAND AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
943	MARYLAND AVE NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1135	MARYLAND AVE NE	Grand Rapids, MI	49505					1/2/2014	7/26/2016
1143	MARYLAND AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1631	MATILDA ST NE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
429	MAYNARD AVE NW	Grand Rapids, MI	49546					2/18/2014	7/26/2016
449	MAYNARD AVE NW	Grand Rapids, MI	49508					2/18/2014	7/26/2016
505	MAYNARD AVE NW	Grand Rapids, MI	49508					2/18/2014	7/26/2016
1962	MICHIGAN ST NE	Grand Rapids, MI	49503	2060	MICHIGAN ST NE	Grand Rapids, MI	49503	2/18/2014	7/26/2016
2725	MIDDLEBORO LN NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1715	MILLBANK ST SE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1805	MILLBANK ST SE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
1813	MILLBANK ST SE	Grand Rapids, MI	49508					2/18/2014	7/26/2016
1230	MONROE AVE NW	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1241	N DORROLL ST NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1313	N DORROLL ST NE	Grand Rapids, MI	49534					2/18/2014	7/26/2016
1048	N PARK ST NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1841	OAKLEIGH RD NW	Grand Rapids, MI	49504					2/18/2014	7/26/2016
1062	PARMELEE AVE NW	Grand Rapids, MI	49534					2/18/2014	7/26/2016
1118	PARMELEE AVE NW	Grand Rapids, MI	49534					2/18/2014	7/26/2016
1142	PARMELEE AVE NW	Grand Rapids, MI	49534					2/18/2014	7/26/2016
1757	PERKINS AVE NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
3085	PLAINFIELD AVE NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
4243	PLYMOUTH AVE SE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
847	PROSPECT AVE NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1821	RANCH DR NW	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1706	RICHMOND ST NW	Grand Rapids, MI	49503					2/18/2014	7/26/2016
2988	RICHMOND ST NW	Grand Rapids, MI	49509					2/18/2014	7/26/2016
3339	RICKMAN AVE NE	Grand Rapids, MI	49509					2/18/2014	7/26/2016
714	RITZEMA CT SW	Grand Rapids, MI	49505					2/18/2014	7/26/2016

**TABLE 1
KNOWN SEPTIC SYSTEMS**

Number	Street	City	Zip Code	Number	Street	City	Zip Code	Date Added	Brochure Sent
3403	SALERNO DR NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
3743	SENORA AVE SE	Grand Rapids, MI	49503					2/18/2014	7/26/2016
3744	SENORA AVE SE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
1155	STOKES ST NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
520	TWIN LAKES DR NE	Grand Rapids, MI	49504					2/18/2014	7/26/2016
524	TWIN LAKES DR NE	Grand Rapids, MI	49525	3033	BANNOCKBURN DR SE	Ada, MI	49301	2/18/2014	7/26/2016
551	TWIN LAKES DR NE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
620	TWIN LAKES DR NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
2861	VINELAND AVE SE	Grand Rapids, MI	49525					2/18/2014	7/26/2016
685	WELLS ST NE	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1617	WILLIS AVE NW	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1632	WILLIS AVE NW	Grand Rapids, MI	49505					2/18/2014	7/26/2016
1632	WILLIS AVE NW	Grand Rapids, MI	49505					2/18/2014	7/26/2016
850	FREEMAN ST SW	Grand Rapids, MI	49503					4/4/2014	7/26/2016
901	FREEMAN ST SW	Grand Rapids, MI	49503					4/4/2014	7/26/2016
760	HUBERT ST NE	Grand Rapids, MI	49503					4/4/2014	7/26/2016
2860	PLAINFIELD AVE NE	Grand Rapids, MI	49505					4/4/2014	7/26/2016
3319	SHADYSIDE DRV NE	Grand Rapids, MI	49525					4/4/2014	7/26/2016
1651	VANDERJAGT DRV NE	Grand Rapids, MI	49525					4/4/2014	7/26/2016
279	EAST BELTLINE AVE NE	Grand Rapids, MI	49506					5/6/2014	7/26/2016
281	EAST BELTLINE AVE NE	Grand Rapids, MI	49506					5/6/2014	7/26/2016
2808	LITTLEFIELD DRV NE	Grand Rapids, MI	49506					5/8/2014	7/26/2016
102	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
105	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
121	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
129	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
130	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
135	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
140	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
149	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
165	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
200	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
225	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
233	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
239	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
240	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
248	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
253	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
264	ALEWA DR NW	Grand Rapids, MI	49504					5/9/2014	7/26/2016
304	ALEWA DR NW	Grand Rapids, MI	49504	This property is owned by 264 Alewa Dr NW				5/9/2014	7/26/2016
2830	PLAINFIELD AVE NE	Grand Rapids, MI	49505					3/25/2015	6/30/2015
2840	PLAINFIELD AVE NE	Grand Rapids, MI	49505					3/25/2015	6/30/2015
2853	PLAINFIELD AVE NE	Grand Rapids, MI	49505					3/25/2015	6/30/2015
2863	PLAINFIELD AVE NE	Grand Rapids, MI	49505					3/25/2015	6/30/2015
2881	PLAINFIELD AVE NE	Grand Rapids, MI	49505					3/25/2015	6/30/2015
2910	PLAINFIELD AVE NE	Grand Rapids, MI	49505					3/25/2015	6/30/2015
1121	BROOKVIEW DRV NE	Grand Rapids, MI	49505					2/1/2016	7/26/2016
710	KENDALWOOD ST NE	Grand Rapids, MI	49504					2/1/2016	7/26/2016
801	KENDALWOOD ST NE	Grand Rapids, MI	49504					2/1/2016	7/26/2016

**TABLE 1
KNOWN SEPTIC SYSTEMS**

Number	Street	City	Zip Code	Number	Street	City	Zip Code	Date Added	Brochure Sent
3110	Dorias Drive NE		49525	14221	Dallas Parkway, Ste 1000	Dallas, TX	75254	Original	6/30/2015
3114	Dorias Drive NE		49525					Original	6/30/2015
3115	Dorias Drive NE		49525					Original	6/30/2015
3120	Dorias Drive NE		49525					Original	6/30/2015
3129	Dorias Drive NE		49525					Original	6/30/2015
3135	Dorias Drive NE		49525					Original	6/30/2015
3139	Dorias Drive NE		49525	1345	Monroe Ste 324	Grand Rapids, MI	49505	Original	6/30/2015
3140	Dorias Drive NE		49525					Original	6/30/2015
3143	Dorias Drive NE		49525					Original	6/30/2015
3155	Dorias Drive NE		49525					Original	6/30/2015
3160	Dorias Drive NE		49525					Original	6/30/2015
3167	Dorias Drive NE		49525					Original	6/30/2015
3205	Dorias Drive NE		49525					Original	6/30/2015
3210	Dorias Drive NE		49525					Original	6/30/2015
3215	Dorias Drive NE		49525					Original	6/30/2015
3218	Dorias Drive NE		49525					Original	6/30/2015
3225	Dorias Drive NE		49525					Original	6/30/2015
3226	Dorias Drive NE		49525					Original	6/30/2015
3232	Dorias Drive NE		49525					Original	6/30/2015
3235	Dorias Drive NE		49525					Original	6/30/2015
3240	Dorias Drive NE		49525	1427	Pinecrest	Grand Rapids, MI	49506	Original	6/30/2015
3245	Dorias Drive NE		49525					Original	6/30/2015
3248	Dorias Drive NE		49525					Original	6/30/2015
3255	Dorias Drive NE		49525					Original	6/30/2015
3256	Dorias Drive NE		49525					Original	6/30/2015
3262	Dorias Drive NE		49525					Original	6/30/2015
3265	Dorias Drive NE		49525					Original	6/30/2015
3300	Dorias Drive NE		49525					Original	6/30/2015
3303	Dorias Drive NE		49525	2361	Morse	Columbus, OH	43229	Original	6/30/2015
3308	Dorias Drive NE		49525					Original	6/30/2015
3311	Dorias Drive NE		49525					Original	6/30/2015
3353	Dorias Drive NE		49525					Original	6/30/2015
3400	East Ridge Court NE		49525					Original	6/30/2015
3420	East Ridge Court NE		49525					Original	6/30/2015
3504	East Ridge Court NE		49525					Original	6/30/2015
1761	Garfield Ave NW		49504	1723	Garfield	Grand Rapids, MI	49504	Original	6/30/2015
1801	Garfield Ave NW		49504	2727	Michigan	Grand Rapids, MI	49506	Original	6/30/2015
1644	Lamberton Lake Drive NE		49525					Original	6/30/2015
1651	Vanderjagt Drive NE		49525					Original	6/30/2015
1658	Vanderjagt Drive NE		49525	13862	Lazy Lane	Fort Myers, FL	33905	Original	6/30/2015
1659	Vanderjagt Drive NE		49525	924	Oakleigh Road NW	Grand Rapids, MI	49504	Original	6/30/2015
1661	Lamberton Lake Drive NE		49525	543	Greenwood	Grand Rapids, MI	49506	Original	6/30/2015
3387	Michigan Street NE		49525					Original	6/30/2015
3391	Michigan Street NE		49525	3401	Michigan St NE	Grand Rapids, MI	49525	Original	6/30/2015
3401	Michigan Street NE		49525					Original	6/30/2015
3403	Michigan Street NE		49525					Original	6/30/2015
3407	Michigan Street NE		49525	3400	Eastridge Ct	Grand Rapids, MI	49525	Original	6/30/2015

WRRF Tour Ledger

Number of Guests

Sum 1176

NAME	Tour Date	Group	Address	Phone	E-mail	Age Group	# of Guests
<input type="checkbox"/> y Nielsen	7/31/2016 07:00 AM	Forest Hills Northern	3912 whispering	6164308377	ashley.nielsen21@yahoo.com	15/16 grade 10	3
Amanda Asfour	7/27/2016 01:00 PM	Great Escape Day	1627 West Lakewood	616-307-2672	aia35@students.calvin.edu	6th and 7th	12
Kelly Ellis	7/26/2016 01:45 PM	Base Camp Urban	730 St. Clair NW	616-745-8734	kelellis@aol.com	6th-8th	33
sean moeller	7/18/2016 10:00 AM	City Employees	ESD	616-456-3479	smoeller@grcity.us	adults	4
robb bajema	6/21/2016 01:30 PM	aquinas college	1607 robinson rd	6322182	mailto:bajemrob@aquinas	college	12
Dean Ritsema	6/6/2016 12:30 PM	Hudsonville Christian	3925 Van Buren	W (616) 669-7487 Dean's	mailto:dritsema@4hcs.org	7th graders (12-13)	48
Dean Ritsema	6/6/2016 10:00 AM	Hudsonville Christian	3925 Van Buren	W (616) 669-7487 Dean's	mailto:dritsema@4hcs.org	7th graders (12-13)	48
Sue McCrory	6/1/2016 01:30 PM	Zion Christian	7555 Byron Center Ave.	616-878-9472	smccrory@zionchristian.net	fifth grade	24
Jonathan Selbig	5/25/2016 08:30 AM	West Michigan	4463 Leonard St.	616-791-7454	jonathanselbig@choicesc	3rd Grade	30
Rick Gritters	5/16/2016 10:00 AM	Heritage Christian	6340 Autumn Drive	616 669-1773	rgritters@hchr.org	5th grade	50
Mr. Mitchell Ziomkowski	5/3/2016 01:30 PM	San Juan Diego	San Juan Diego	616.970.5568	mziomkowski@sanjuandiego	11-12/ 6th Grade	21
Samantha Bodine	4/22/2016 11:00 AM	Trinitas Classical	1465 Three Mile Rd	616 328 1285	sbodine1@gmail.com	4	12
Norman Pelak	4/22/2016 09:00 AM	Wyo-Ben Inc.	226 Woodside	406-670-0331	npelak@wyoben.com	57	1
Mike Cowin	4/14/2016 08:45 AM	Rocford High School	4500 Kroes Rockford, MI	6167234169	mcowin@rocfordschools.kfordschools.grps.org	9th Graders	30
Amy Holubeck	4/13/2016 10:00 AM	Gerald R. Ford	851 Madison AVE SE	616-633-7009	Holubecka@grps.org	8th Grade	23
Karla Williams	4/11/2016 01:00 PM	FunSchooling in GR-	440 Baltimore Dr	6162064852	karlamarie1975@yahoo.com	8-15	20
Joe Hesse	3/30/2016 06:30 PM	GRCC	Bostwick Grand	234-4259	mailto:jhesse@grcc.edu	adult	20
Joe Hesse	3/30/2016 01:30 PM	GRCC	Bostwick Grand	234-4259	mailto:jhesse@grcc.edu	adult	20
Judith Froot	3/29/2016 07:15 PM	GRCC	143 Botswick Ave NW,	235-0161/334-	mailto:jfroot@grcc.edu	18 and older	23
Mr. Libbett	3/22/2016 12:30 PM	Southeast Career	1356 Jefferson	616-819-2666	Forbese@grps.org	9th through 12th	20
Ms. Robin Savino	3/21/2016 12:30 PM	Holy Trinity School	1304 Alpine Church Road	231-510-2384 Cell#	rsavino@holotrinitycp.org	grades 3 and 4	45
Patty Chapman	3/11/2016 02:00 PM	Grand Haven Residents	12966 Schmidt Dr	616-846-6312	chapmanwood@yahoo.com	adult	20
Stuart Surmann	3/3/2016 08:30 AM	Knape & Vogt/Johns	859 Hollywood St	248-943-1565	stuart.surmann@kv.com	Age: 25	1
Juli Brode	2/29/2016 01:00 PM	Kendall College of	17 Fountain St NW	541.232.8564	JuliBrode@ferries.edu	28	4
robb bajema	1/28/2016 03:30 PM	aquinas college	1607 robinson rd	6322182	mailto:bajemrob@aquinas	college	13
robb bajema	1/26/2016 03:30 PM	aquinas college	1607 robinson rd	6322182	mailto:bajemrob@aquinas	college	13
robb bajema	1/25/2016 03:30 PM	aquinas college	1607 robinson rd	6322182	mailto:bajemrob@aquinas	college	13
sandy buchner	1/4/2016 05:30 PM	community	1300 market	456-4587	mailto:sbuchner@grcity.us	families	25
sandy buchner	12/21/2015 01:00 PM	community	1300 market	456-4587	sbuchner@grcity.us	families	10
Stephanie Sherman	12/15/2015 11:00 AM	West Michigan	4463 Leonard St.	616-791-7454	stephaniesherman@choicesc	9th grade - 14-15 years old	20
Judith Froot	12/8/2015 07:00 PM	GRCC - GL 105	230 Science Building,	Cell: 334-7009	mailto:jfroot@grcc.edu	college	19
Matthew Winters	12/7/2015 02:00 PM	Lacks Enterprises	5675 Kraft Ave SE	616.956.7211	m.winters@acksenterpris	25+	15

Jennifer Cymbola	11/30/2015 03:30 PM	Grand Valley State	1 Campus Drive	616-331-2858	cymbolje@gvsu.edu	college	25
Jennifer Cymbola	11/30/2015 12:30 PM	Grand Valley State	1 Campus Drive	616-331-2858	mailto:cymbolje@gvsu.edu	college	25
Jennifer Cymbola	11/30/2015 09:30 AM	Grand Valley State	1 Campus Drive	616-331-2858	mailto:cymbolje@gvsu.edu	college	25
Bobbijo Zoerhof	11/20/2015 10:00 AM	CA Frost	1460 Laughlin	616-366-6850	zoerhof4@ol.com	11	10
Klara Patrick	11/17/2015 09:20 AM	Northern Trails School	Leonard NE 3777	493-8990	mailto:kpatrik@fhps.net	5th grade	31
Klara Patrick	11/16/2015 09:20 AM	Northern Trails School	Leonard NE 3777	493-8990	kpatrik@fhps.net	5th grade	31
Kara Wood	11/12/2015 09:00 AM	City of Grand Rapids	300 Monroe NW	456-3196	kwood@grcit.y.us	35-45	6
Doug Everse	11/10/2015 09:30 AM	Forest Hills Eastern H.S.	2200 Pettis Ada MI	616-493-8830	deverse@fhps.net	11th & 12th	45
Rosemary Lucchese	11/5/2015 12:45 PM	City High Middle	1720 Plainfield ave	616-819-3921	mailto:lucchese@grps.or	7th	30
James Rasmussen	10/30/2015 10:00 AM	Aquinas College	Robinson	6166322180	jlr003@aquinas.as.edu	college	12
Rosemary Lucchese	10/29/2015 12:45 PM	City High Middle	1720 Plainfield ave	616-819-3921	mailto:lucchese@grps.or	7th	30
Joe Hesse	10/28/2015 06:30 PM	GRCC	Bostwick Grand	234-4259	mailto:jhesse@grcc.edu	college	20
Joe Hesse	10/28/2015 01:30 PM	GRCC	Bostwick Grand	234-4259	mailto:jhesse@grcc.edu	college	20
Joe Hesse	10/28/2015 09:30 AM	GRCC	Bostwick Grand	234-4259	mailto:jhesse@grcc.edu	college	20
Rosemary Lucchese	10/22/2015 12:45 PM	City High Middle	1720 Plainfield ave	616-819-3921	mailto:lucchese@grps.or	7th	30
Darcy Black	10/20/2015 12:00 PM	Central Woodlands	400 Alta Dale	616-493-8790	dblack@fhps.net	6th grade	27
Darcy Black	10/20/2015 10:00 AM	Central Woodlands	400 Alta Dale	616-493-8790	dblack@fhps.net	6th grade	27
Rosemary Lucchese	10/15/2015 12:45 PM	City High Middle	1720 Plainfield ave	616-819-3921	mailto:lucchese@grps.or	7th	30
Rosemary Lucchese	10/8/2015 12:45 PM	City High Middle	1720 Plainfield ave	616-819-3921	mailto:lucchese@grps.or	7th	30
Rosemary Lucchese	10/1/2015 12:45 PM	City High Middle	1720 Plainfield ave	616-819-3921	lucchese@grps.org	7th	30
Alyssa Downey	8/17/2015 10:00 AM	AppleTree Learning	2142 3 Mile Road	616-735-4600	walker_director2@appletr	6-11	20

From: [Johnson, Kayla](#)
To: [Staal, Michael](#)
Subject: Adopt A Catch Basin Brochures
Date: Thursday, October 29, 2015 11:34:39 AM
Attachments: [OutlookEmoji-.png](#)

Mike,

On October 29, 2015 I dropped off Adopt a Catch Basin brochures to the following stores:

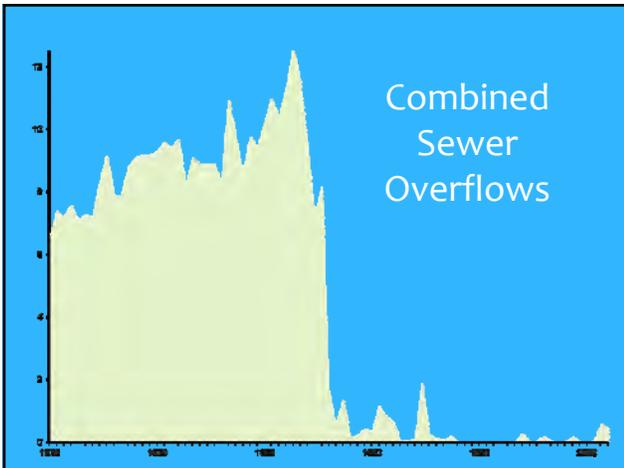
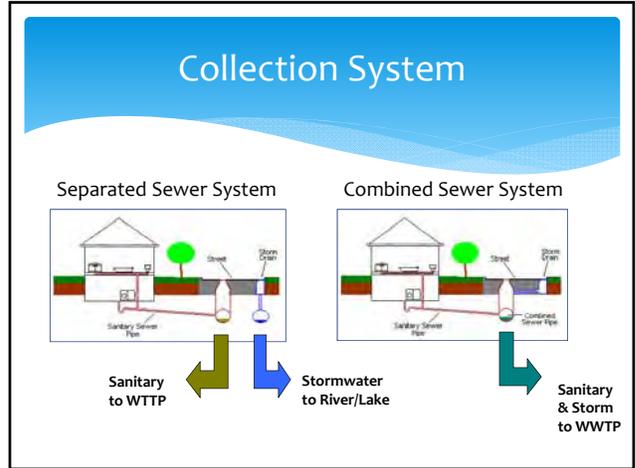
STORE	ADDRESS
Forest Hill Foods	4668 Cascade St SE
Family Fare	4325 Breton Rd SE
D&W Fresh Foods	1814 Breton Rd SE
Duthler's Market	1226 Madison SE
Family Fare	1415 Fulton St E
Rylee's Ace Hardware	1234 Michigan NE
Kingma's Market	2224 Plainfield Ave NE
Walker Pharmacy	1181 Walker Ave NW
Rylee's Ace Hardware	1205 Fulton St. W
Ball Park Party Store	1157 Fulton St. W

Sincerely,

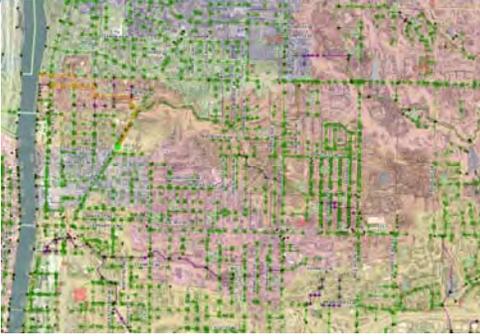
Kayla Johnson 😊

WATER IS LIFE
How Stormwater is connected
to you

Carrie Rivette – Stormwater Engineer
esd@grcity.us



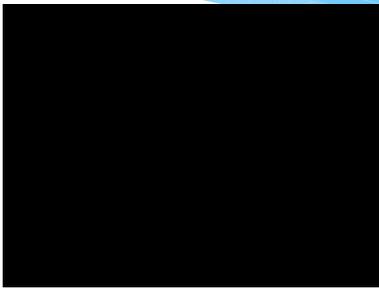
Palmer and Sweet Street Watershed



Stormwater Travel



Stormwater Drainage



City of Grand Rapids Water Cycle



Pollution Sources

Pollution to the River

Washed Down

- Grass Clippings
- Animal Waste
- Dirt
- Fertilizers
- Oil
- Beverages
- Cigarette Butts
- Trash
- Vehicle Fluids
- Car Washing Soap

Pollution Effects

Why should we care?

- Swimming
- Fishing
- Drinking
- Recreation
- Health
- Safety
- Biodiversity

GREY to GREEN

GREY INFRASTRUCTURE

- Impervious Streets
- Combined Sewers
- No Green Space

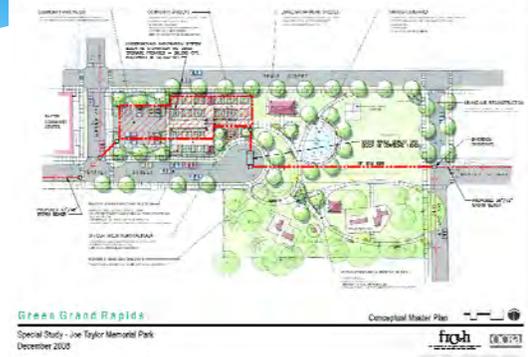
Low Impact Development



LOW IMPACT DEVELOPMENT

- Pre-development Runoff
- Minimize Impervious Surfaces
- Onsite Stormwater Management

Joe Taylor Park



Pervious Pavement



Grand Rapids Average Annual Rainfall: 37 inches

Green Roofs



Rain Water Reuse

Rain Barrels

- Partnership
 - City of GR ESD
 - WMEAC
 - Coca-Cola
- Workshops
- Keep Stormwater on Site



Bio Retention



Rain Gardens

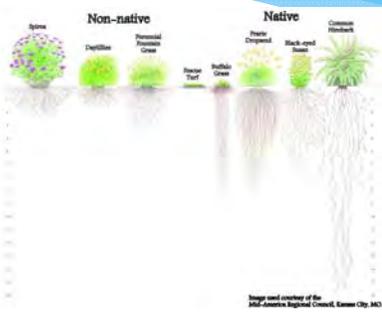


ESD RAIN GARDENS

- River of Stars
 - Maintenance
- River of Dreams
 - Ideal Rain Garden
 - 75' x 75'
 - 1.5 MG/yr.
 - 29 Native Species
- River of Two Cities
 - LEED Credits (pending)



Native Plant Species



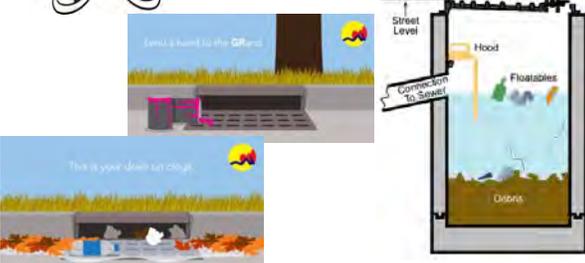
Native Benefits

- Deeper Roots
- Hardier
- Food Source to native animals
- Water Needs



Basin Buddy

GRCity.us/Basin Buddy



YOUR PART

EVERYONE SHARES A WATERSHED

- Adopt a catch basin
- Watch what you put down the drain
- Don't litter or pour liquids on pervious surfaces
- Pick up animal waste
- Report Pollution GR CITY 311
- Install a rain barrel and reuse storm water
- Plant a rain garden
- Use Native Species
- Share your knowledge and enthusiasm for our water!






Sustainable City Platform

Phase I
Sustainable Operations
2010-2015

Public Safety

Streets and Infrastructure

Quality of Life

Transparency, Accountability and Communications

Transforming City Operations

Citizen Engagement and Customer Service

Phase II
Sustainable Asset Management
2014-2030

GREEN

- Parks and Recreation
- Pools and Water Playgrounds
- Urban Forestry

MOBILITY

- Vital Streets
- Sidewalks
- Bike Lanes

PUBLIC

- Street Lighting
- Stormwater Management
- Public Facilities

Phase III
Continuous Improvement & Innovation
2015-2020

ECONOMIC

- Economic Opportunity

SOCIAL

- Great Neighborhoods
- Social Equity
- Safe Community

ENVIRONMENT

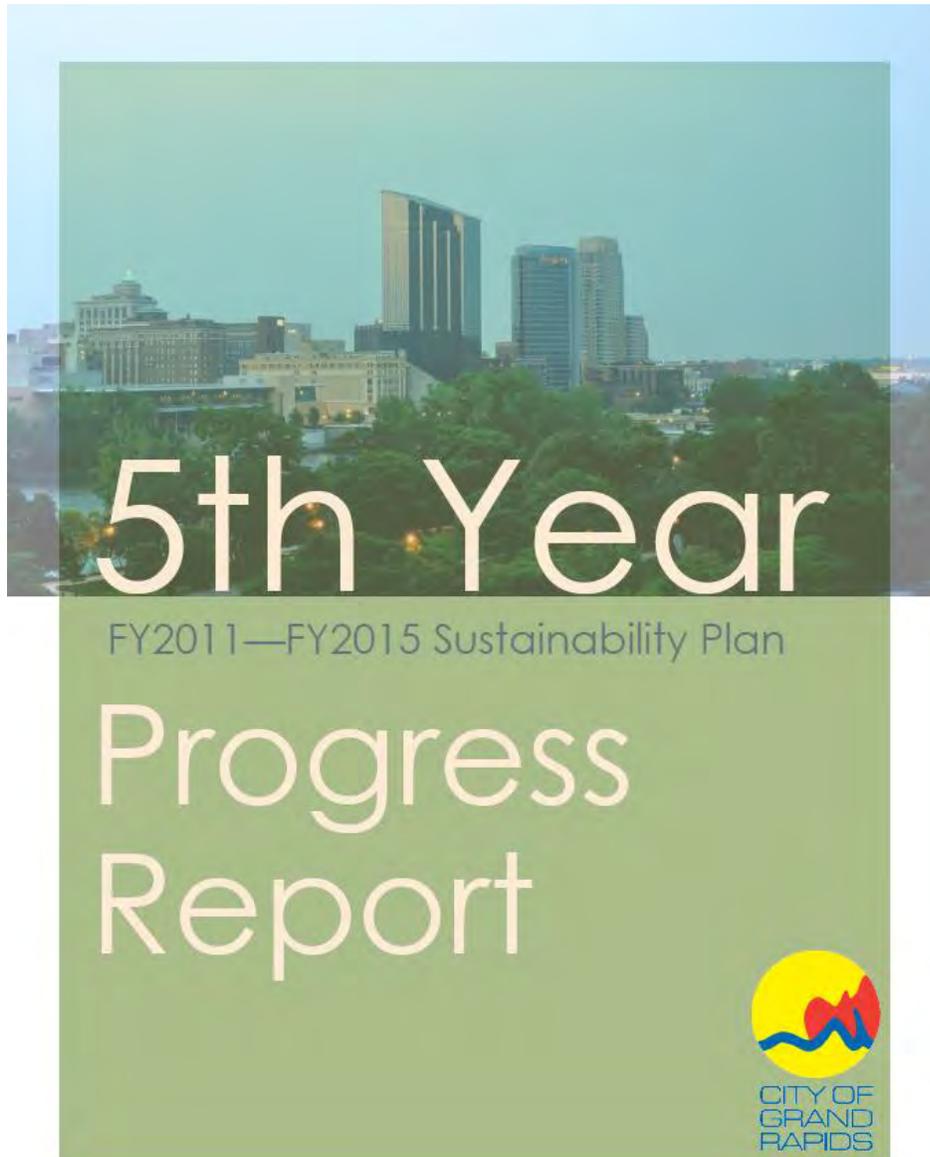
- Resilient Systems
- Balanced Transportation
- Sustainable Assets

GOVERNANCE

- Fiscally Resilient
- Transparent / Accessible
- Good Government

FINANCIAL RESILIENCY

SUSTAINABILITY PLAN PROGRESS REPORT



*Addressing our city's current needs,
while preparing for our bright future*

November 10, 2015

Office of Energy and Sustainability
Haris Alibašić

FY2015 SUSTAINABILITY PLAN PROGRESS REPORT



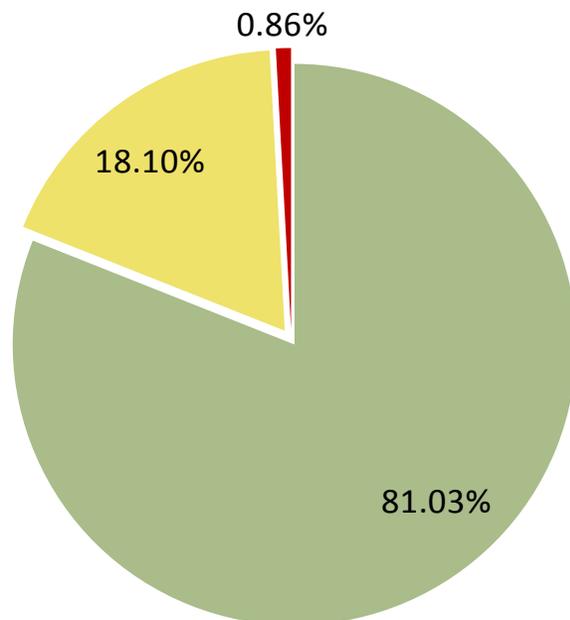
The City of Grand Rapids established its FY11 – FY15 Sustainability Plan in the spring of 2010 with specific economic, social, and environmental outcomes and targets. The following report outlines the progress that has been made throughout the past five years of implementation.

OVERALL PROGRESS

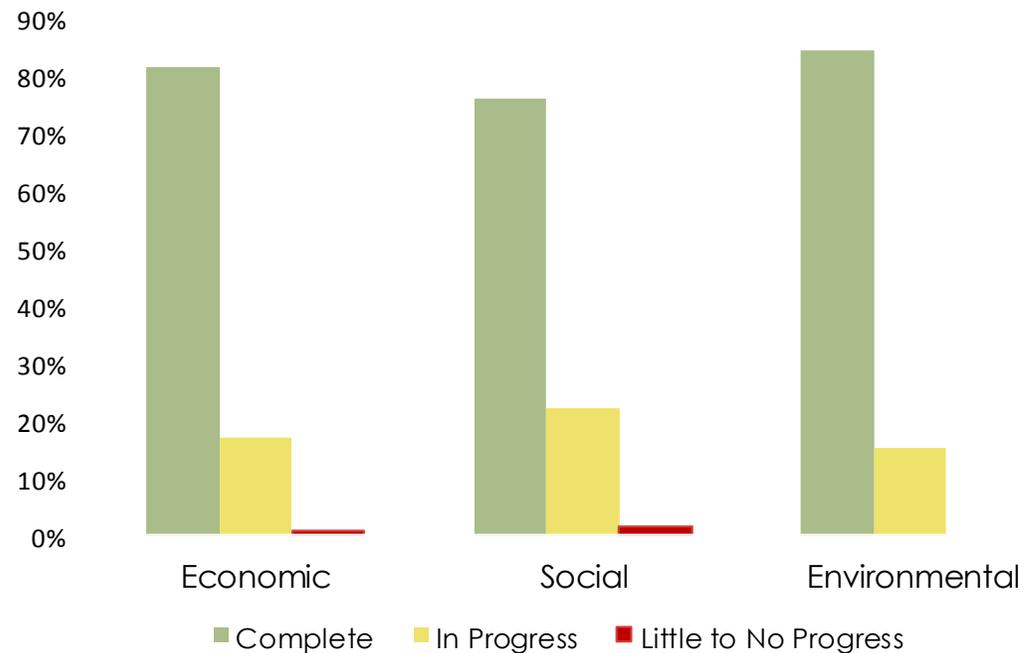
99.1% of our Sustainability Targets have been achieved or made progress after the final year of plan implementation.

- 81.0% of all targets are now completed, compared to last year's 66.5%— a 14.5% increase.

FY2015 Overall Results



FY2015 Results by Theme



TYPICAL PAGE LAYOUT

ECO 1: A STRONG ECONOMY

ECO 1.2: Create a nurturing environment for small and mid-sized companies

TARGET	PROGRESS 2010-2015
<p>1. Increase collaboration with Entrepreneurial Support Organizations (ESO) partners by increasing the number of referrals which result in assistance being provided by 50% by 2015.</p> 	<p>Progress has continued with this target for the last 5 years. With the Emerge web portal and with the work of Neighborhood Ventures under its contract with the City, each year has consistently provided more referrals. In FY2015, Neighborhood Ventures made 297 referrals to various ESO partners.</p>
<p>2. Commit 75% of our resources to second stage companies by June 30, 2015.</p> 	<p>In FY15, 10 of 17 projects that assisted companies were with Stage 2 or smaller businesses (58.8%). Between FY11 and FY15, 77 of 101 projects that assisted companies were with Stage 2 or smaller businesses (76.2%).</p>
<p>3. Refer at least five local companies or entrepreneurs annually to organizations that provide access to start-up or expansion capital (SBA loans, micro loans, venture capital, traditional financing, etc.).</p> 	<p>Annually, this target has been consistently met. Through its contract with the City, Neighborhood Ventures was able to assist 7 companies with obtaining startup or expansion capital in FY2015.</p>
<p>4. Decrease public investment per job created by 25% by June 30, 2013.</p> 	<p>The progress of this target has fluctuated throughout the years. Public Investment per job was steadily declining from FY11 (\$7,842) and FY12 (\$7,741) to FY13 (\$6,131 per job), but experienced an increase in FY14 (\$41,222) and also in FY15 (\$58,217). This change was largely due to the addition of privately owned ramped or underground parking as a brownfield eligible activity.</p>

ECONOMIC OUTCOMES



KEY:

-  Target Met
-  Target in Progress
-  Little to No Progress

PAGE LAYOUT BY THEME

ECO 1: A STRONG ECONOMY

ECONOMIC OUTCOMES

ECO 1.1: Increase business investment

TARGET	PROGRESS 2010-2015
1. Increase private business investment by \$400 million between July 1, 2011 and June 30, 2015.	In Fiscal Year 2015 (FY15), Economic Development projects approved by the City Commission committed investment of \$348,362,957. Between FY12 and FY15, the total private investment committed to projects has been \$675,894,513, exceeding the target.
2. Increase the number of new businesses locating in the City of Grand Rapids by 30 between July 1, 2011 and June 30, 2015.	In the final year of Sustainability Plan implementation five new businesses were located in the City with the assistance of Economic Development. This brings the total to 35 new businesses that received assistance from the City between FY11 and FY15. To read more about this year's projects, visit page 9 and 13 .
3. 80% of jobs created or retained with incentives will be permanent, full time employment with benefits annually.	In FY15, 742 new jobs were committed by companies receiving assistance from Economic Development. Of those, 589, or 79.3%, were to be full-time permanent jobs with benefits. During the full length of the plan (FY11–FY15) a total 5,702 of 7,081 new jobs, or 80.5% were created as full-time permanent jobs with benefits, meeting the target.
4. 10% of jobs created or retained with incentives will be in green or applied clean technology industries between July 1, 2011 and June 30, 2015.	One job created was self-identified as a green or applied clean technology job. This was an industry that the City and its partners believed may have developed into a new cluster stemming from the previous years of decline in manufacturing; however, little progress has been made. This does not mean that jobs in the green or applied clean technology sector are not growing in Grand Rapids, instead it means they are not being created with assistance from the City's Economic Development department.
5. At least 50% of jobs created or retained annually will pay \$19/hour or more (approximately 250% of minimum wage).	In FY15, only 201 of 742 (27%) newly created jobs paid greater than \$19/hr. However during the last 5 years of the Sustainability Plan 1,536 of 3,076 jobs committed by employers were committed to pay \$19/hr or more, reaching the overall 50% goal.
6. \$30million in private funds will be invested in the restoration of vacant, blighted or contaminated land annually.	In FY15, \$272,359,219 of private investment was committed for projects on obsolete, vacant or contaminated land. The total between the full length of Sustainability Plan implementation, FY11 and FY15, was \$615,515,035.

ECO section (blue)
Pages 7-34

SOC 1: GREAT NEIGHBORHOODS

SOCIAL OUTCOMES

SOC 1.1: Increase housing choices for all residents and decrease homelessness

TARGET	PROGRESS 2010-2015
1. Increase access to permanent housing by 500 households annually	In FY2015, 1,382 households completed an Intake Assessment as the first step to creating a plan to resolve homelessness. Of those completing the assessment, 1,216 increased their knowledge about actions they can take to begin to address their housing crisis.
2. Decrease the number of residents experiencing housing related legal matters by 5% annually.	This has varied throughout the last 5 years, with a great increase in FY12. FY11: 205 persons FY12: 446 persons, FY13: 138 persons, FY14: 169 persons and in FY 2015, 185 persons resolved their housing-related legal matter with regard to a housing crisis, improvement of housing quality, increased knowledge of the legal system, and/or removal of barriers to obtain or retain housing.
3. Increase the number of people by an additional 100 over FY12 results who resolve their housing crisis and remain housed for at least six months by June 30, 2015	Due to limited availability of CDBG Public Service funds and continued decline in demand for foreclosure assistance, funding for Home Repair Services' Foreclosure Intervention Program was discontinued in FY 2014. Prior to the discontinuation of the program, over 1158 people successfully resolved their foreclosure crisis between FY12-FY15.
4. Increase the number of affordable housing units by 200 by June 30, 2015	As of June 30, 2015, 165 homes have been developed and sold to income-eligible homebuyers. Additional units are underway and planned to complete this 200 housing unit goal.
5. Increase the number of rehabilitated and/or repaired housing units by at least 1,800 by June 30, 2015	As of June 30, 2015, 2,875 owner-occupied homes have been rehabilitated to maintain safety, livability, and affordability.

SOC section (yellow)
Pages 35-51

ENV 1: ENERGY & CLIMATE PROTECTION

ENVIRONMENTAL OUTCOMES

ENV 1.1: Reduce GHG emissions (carbon footprint) & impact on climate change

TARGET	PROGRESS 2010-2015
1. After meeting the obligations of the US Mayors Climate Protection Agreement for greenhouse gas emissions reductions by June 30, 2013, continue to reduce GHG at annual rate of 1%.	Energy and water conservation efforts taken by the City are estimated to have reduced City GHG emissions by an average of 2.6% annually since 2013.
2. Reduce parking exit time by 10% by June 30, 2015.	Pay in the Lane equipment is maintained and emptied daily. For large events pay on entry is utilized so exit is extremely fast and only constrained by street traffic. For large daytime events, booths are staffed and transactions go quickly. If an unexpected "load out" (group of vehicles all leaving at the same time) occurs, shift supervisors, customer service representatives, and management will go and assist customers at the pay on exit machines.
3. Reduce total direct and indirect CO2 emissions by an additional 2,000 metric tons over FY12 results by June 30, 2015.	GHG emissions have been reduced by over 890 metric tons since FY14 due to efficiency improvements, waste reduction, and renewable energy production. FY15: 890 metric tons FY14: 550 metric tons (reduced energy usage) FY13: ~3,000 metric tons (new solar roofs, increased renewable energy purchase, installed electric vehicle charging stations). Total: 4440 metric tons
4. Increase miles of on-street bike lanes to 70 miles by June 30, 2015	As of June 30, 2015 there were 72.5 miles of on-street bike facilities including first separated bike lanes (cycle track) on Monroe avenue from Guild street to North Park Street. In addition, the City Commission has updated city ordinances to provide clarity in rules of the road for bicycles, including affording cyclists a 5' safe passing zone, the first such rule to be adopted by a Michigan community.
5. Develop an additional 2 miles of new sidewalks over FY12 results by June 30, 2015.	The original target of 4 miles of new sidewalk was completed in FY12. No new sidewalk was constructed during FY13-15 due to lack of funds however the new vital streets sidewalk investment will facilitate reaching the extended goal in the 2016 construction season.
6. Increase the number of non-motorized trails to 12 miles by June 30, 2015.	The City now has 16.5 miles of non-motorized trails. The latest construction occurred on the Seward Avenue Bikeway, which added .5 miles of non-motorized trail to the inventory. This trail was built on former railroad property from Leonard Street to Richmond Street. 1 mile was added on the River Edges Trail from Canal Park to Leonard Street in FY13. 1.3 miles was added from Leonard to Ann street in FY12. The Oxford Street Bridge and trail were added in FY11.

ENV section (brown)
Pages 52-70

At a Glance...

Economic Outcomes:

82% of targets have been met

17% of targets are in progress

1% of targets have little to no progress

Social Outcomes:

76% of targets have been met

22% of targets are in progress

1% of targets have little to no progress

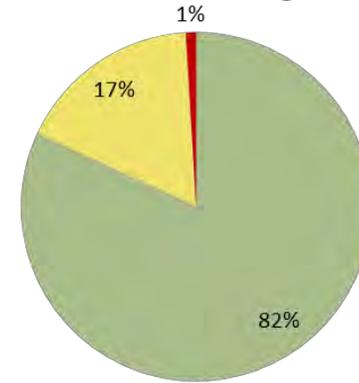
Environmental Outcomes:

85% of targets have been met

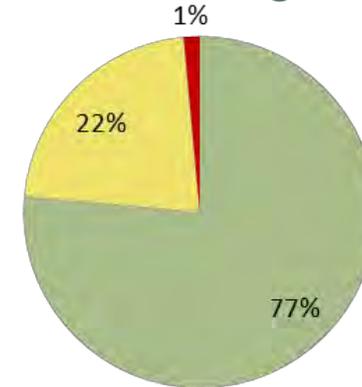
15% of targets are in progress

0% of targets have little to no progress

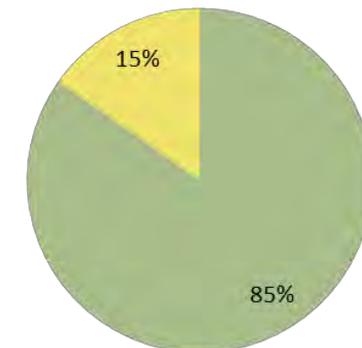
Economic Progress



Social Progress



Environmental Progress



SUSTAINABILITY HIGHLIGHTS

The progress report highlights various areas of sustainability, including:

- Transformation
- Climate Resiliency
- Economic Highlights
 - Brownfield Redevelopment Projects
 - LEAD Youth Employment Program
 - Water Protection & Conservation (savings & awards)
- Social Highlights
 - Smoke Alarm Program
 - Volunteerism
 - Fire Department Self-Contained Breather Apparatus AFG grant
- Environmental Highlights
 - Mobility
 - Electricity Usage/Energy Conservation
 - Electric Vehicle Charging Stations
 - Combined Sewer Overflows
 - Mayor's Tree of Year/Urban Forestry Initiatives



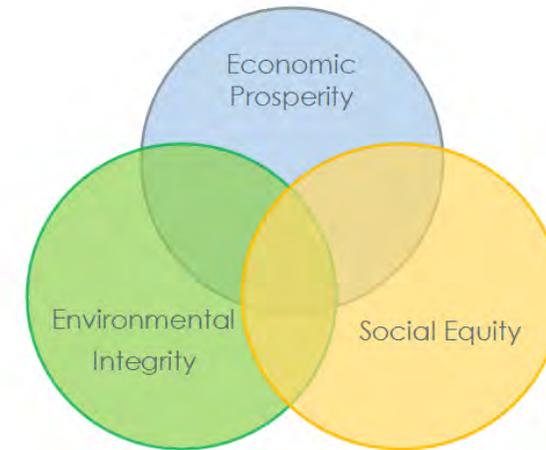
TBL SUCCESSES

The Triple Bottom Line (TBL) refers to initiatives undertaken in each of the areas of economic prosperity, social equity and environmental integrity. Noteworthy successes include:

Energy-

Grand Rapids is aimed to increase energy efficiencies, reduce energy demand, and increase the amount of energy produced by renewable sources to save taxpayer money and help protect the environment. In the last 5 years:

- 27% renewable energy, and the City is committed to 100% renewables by 2020
- Better Buildings for Michigan, saving approximately 297,667 kilowatt-hours and reducing 998 metric tons of CO2 in homes
- Implemented a solar project at LEED certified administration building (2012)
- Implemented geothermal projects at Grand Rapids fire stations
- Created and released an RFP for Butterworth Landfill Solar Project
- Installed plug-in Electric Vehicle (PEV) Charging stations
- Participated in 2030 Energy District Development (2015)
- Researched Energy Disclosure policies (2015)
- Wastewater Treatment Plant installed motion sensors and fluorescent lamps (2011)
- LEED Certified designation for Technical Services Building (2015)
- Hach Real-Time Control System at Wastewater treatment plant, saving 735,000 kWh annually (2013)



TBL SUCCESSES

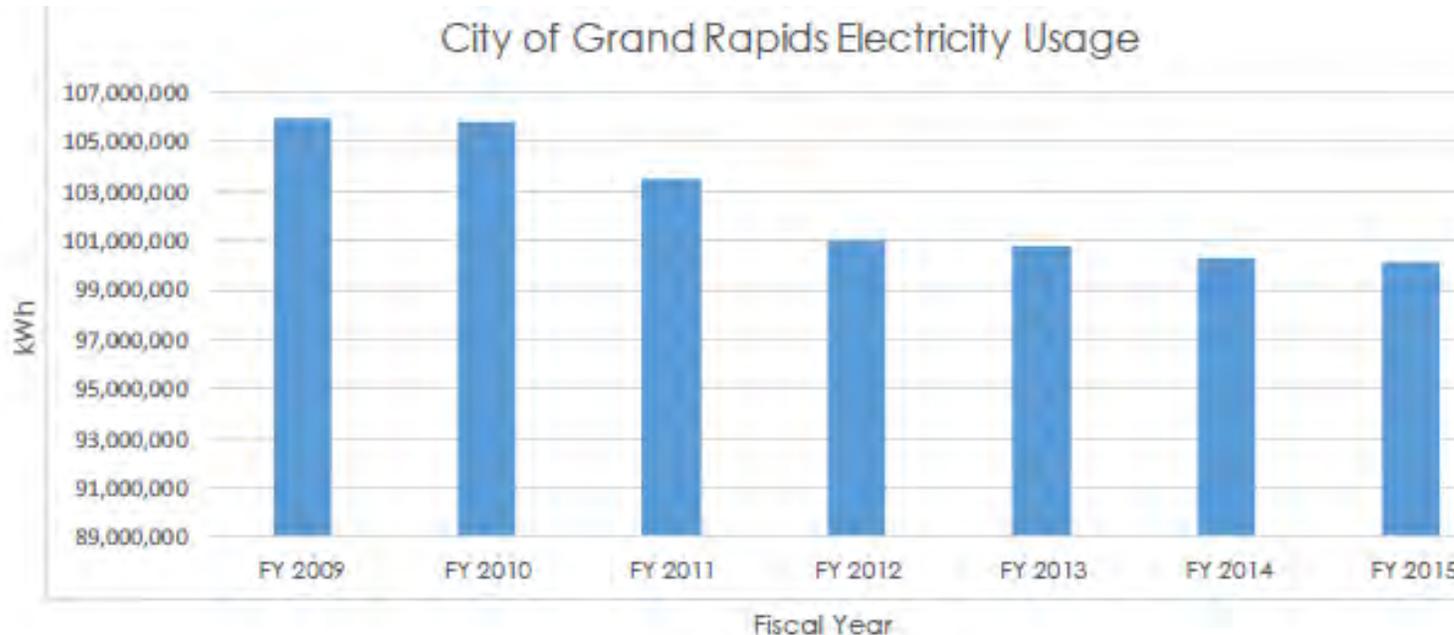
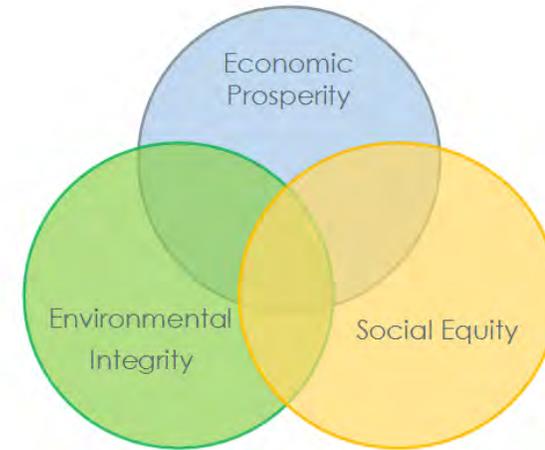
Energy- Reduction

Since FY2009, the City has reduced electricity usage by 5.53%, a reduction of over 5,800,000 kWh.

2. Continue to target the City's annual electrical usage to be at or below 103,000 MWh by June 30, 2015.



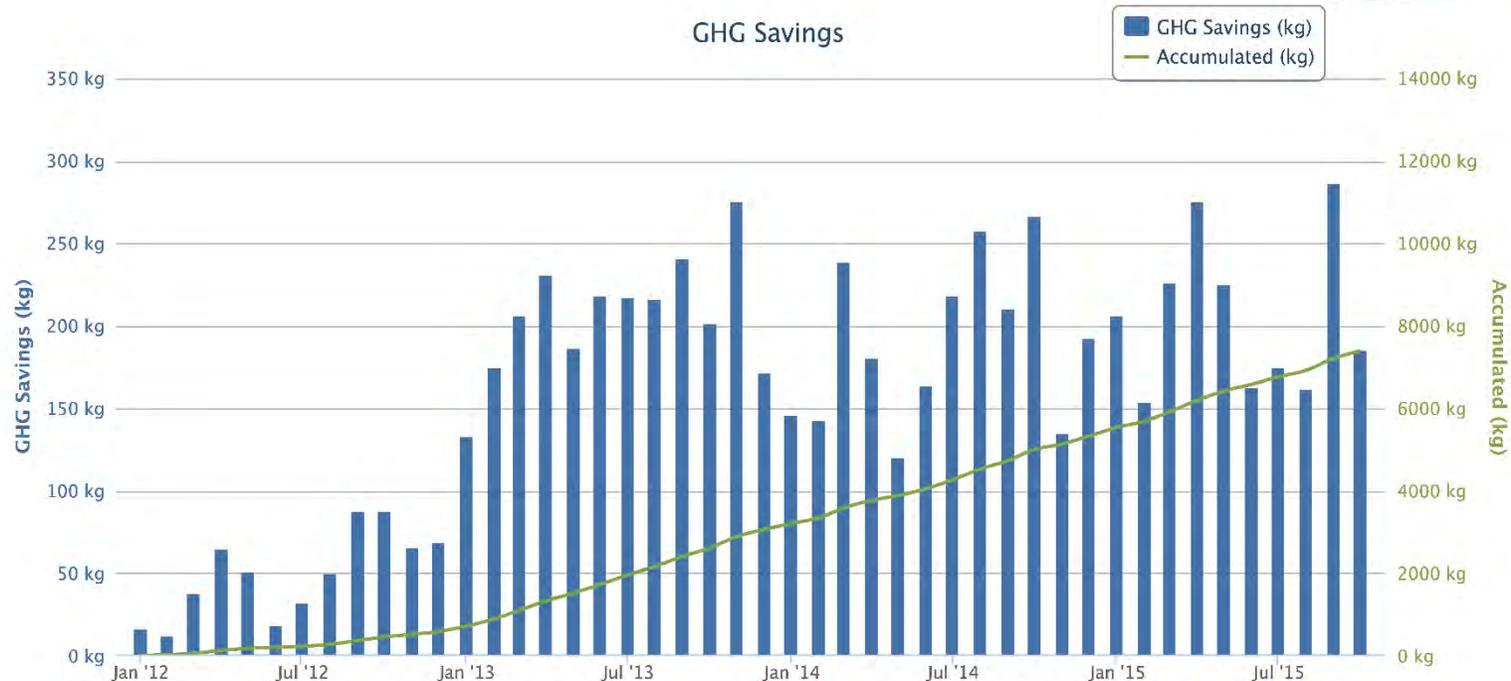
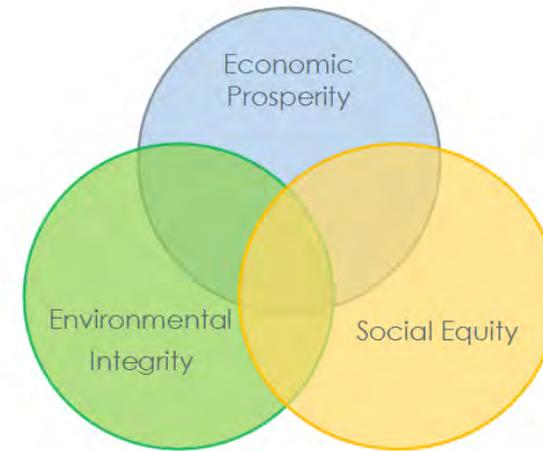
The City's electrical consumption levels are at an annual level below 103,000 MWh. In FY2015 the usage was at 100,131 MWh.



TBL SUCCESSES

Energy- Charging Stations

Electric Vehicle charging infrastructure continues to be used throughout the City. Accumulated GHG savings amount to almost 8,000 kg CO₂e.



TBL SUCCESSES

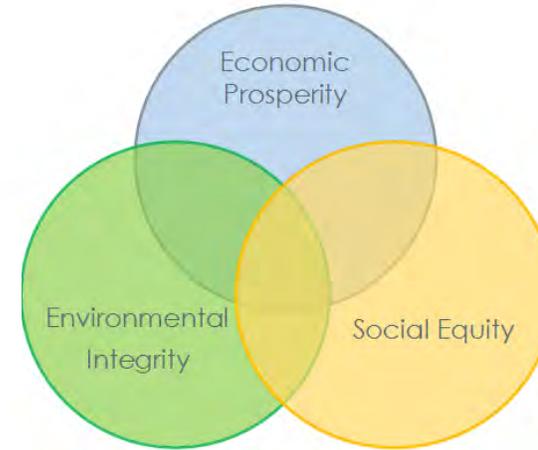
Energy- Renewable

The Water Facility building's Solar Photovoltaic System has generated over 418,579 kWh of energy since May 2012, offsetting 237,330 kg CO₂e.

4. Achieve at least 30% of energy use from renewable sources such as hydro, wind, solar, and geothermal by June 30, 2013



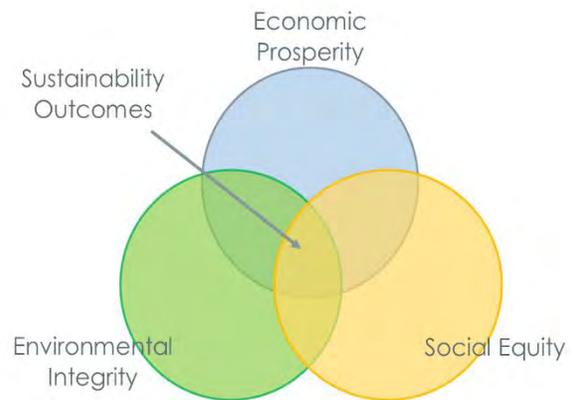
Currently, the city has over 27% renewable energy in its portfolio, with further renewable energy projects planned that will help to increase the usage of renewable sources over the 30% target.



City of Grand Rapids is ranked **16th on EPA's Top 30 Local Government** list, which represents the largest green power users among local government partners within the Green Power Partnership.

NEXT STEPS

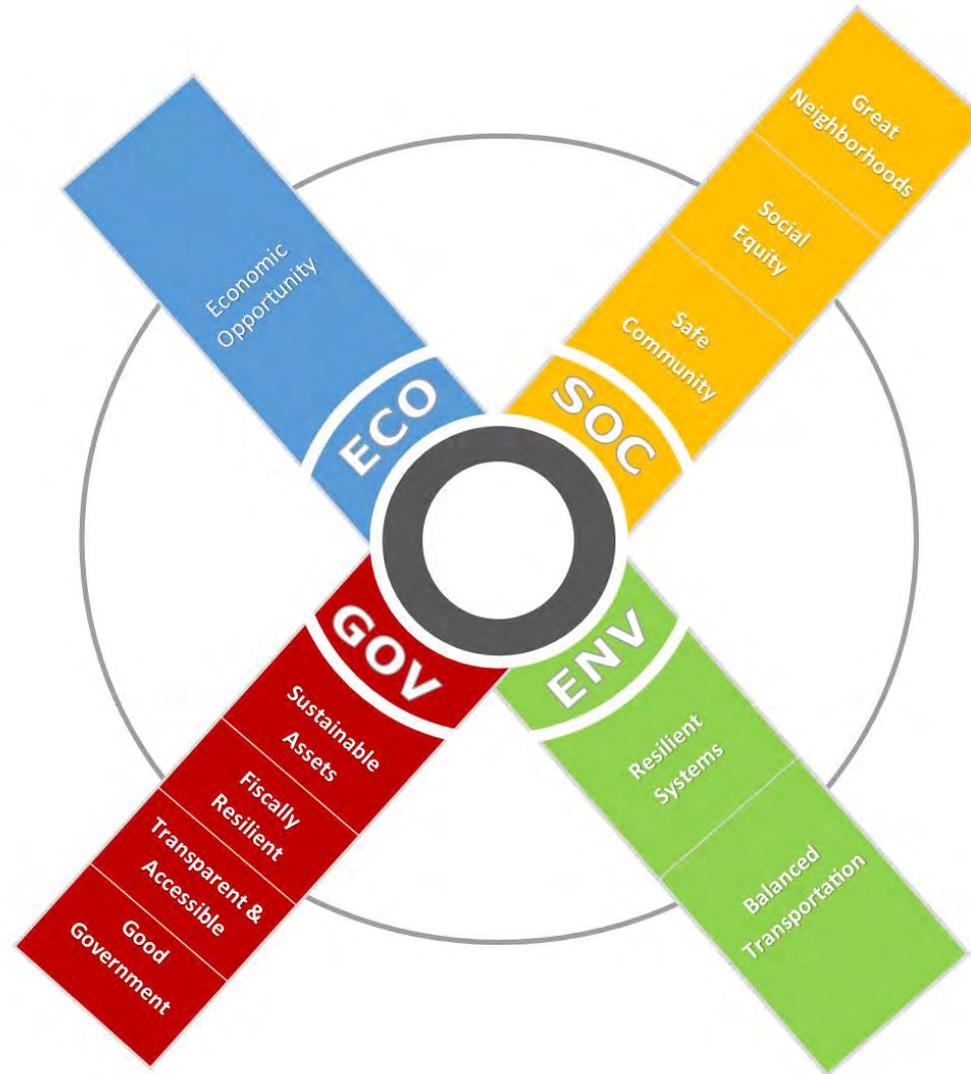
Triple Bottom Line → Quadruple Bottom Line



NEXT STEPS

Quadruple Bottom Line

Sustainability
Plan 2015-2020
Themes
(consistent with Phase III
of Transformation Plan)



NEXT STEPS- NEW SUSTAINABILITY PLAN

Meeting the targets in the FY11-15 Sustainability Plan were due in large part to the intensive work undertaken in support of the Transformation Investment Plan (TIP) initiatives.

Continue to focus on Transformation Investment Plan activities, ensuring that the new Sustainability Plan targets tie into the same themes outlined in Phase III of the TIP.



(TIP overarching themes)

NEXT STEPS- NEW SUSTAINABILITY PLAN

Already been done:

- FY11-15 Sustainability Plan target progresses were compared year to year to reveal which targets lacked significant progress.
- FY11-15 Sustainability Plan targets were reviewed and put into one of 4 categories:

1. targets that need to be reworded or expanded
2. targets that require new methods of measurement
3. targets that ought to be deleted (no longer applicable)
4. new targets.

	Target	FY11	FY12	FY13	FY14	FY15
Economic Targets						
ECO 1.1	INCREASE BUSINESS INVESTMENT					
	1. Increase private business investment by \$400 million between July 1, 2011 and June 30, 2015.	Kara Wood				
	2. Increase the number of new businesses locating in the City of Grand Rapids by 30 between July 1, 2011 and June 30, 2015.	Kara Wood				
	3. 80% of jobs created or retained with incentives will be permanent, full time employment with benefits annually	Kara Wood				
	4. 10% of jobs created or retained with incentives will be in green or applied clean technology industries between July 1, 2011 and June 30, 2015	Kara Wood				
	5. At least 50% of jobs created or retained annually will pay \$19/hour	Kara Wood				

(Annual target comparison document)

- Targets received a “Transformation Plan Tie In” – corresponding each SP target with an existing TIP goal, as well as a Climate Resiliency Report.

	Target	Outcome Champion	Comments - SG	Transformation Plan Tie In	Climate Resiliency Report Tie In
ENV 1.1	REDUCE GHG EMISSIONS (CARBON FOOTPRINT) & IMPACT ON CLIMATE CHANGE				
	1. After meeting the obligations of the US Mayors Climate Protection Agreement for greenhouse gas emissions reductions by June 30, 2013, continue to reduce GHG at annual rate of 1%.	Haris Alibasic	Need to set one quantifiable GHG reduction goal. Should it be annual, or overall? Additionally percentage or CO2e?	REDUCTION OF ENERGY FOOTPRINT	#7 Reduce GHG emissions through the U.S. Conference of Mayors Climate Protection Agreement

NEXT STEPS- NEW SUSTAINABILITY PLAN



CITY OF GRAND RAPIDS



FY 2011 through FY 2015
(7/1/2010 – 6/30/2015)

SUSTAINABILITY PLAN

As Amended April, 2013

*Managing the Economic, Social, and Environmental
Resources of the City through a Framework
of Sustainability Outcomes and Targets*

SUSTAINABILITY PLAN

FY2015– FY2020



CITY OF
GRAND
RAPIDS



ACKNOWLEDGEMENTS

A special thank you to all of the staff involved in providing data for the FY10-15 Sustainability Plan Progress Report throughout the duration of this plan. This report would not have been possible without your time and expertise being dedicated to this important work.

Thank you also to Mayor George Heartwell, the City Commission, and City Manager Greg Sundstrom for continued support and commitment to sustainability and sustainable practices and to Deputy City Manager Eric DeLong for his leadership and guidance.

OFFICE OF ENERGY AND SUSTAINABILITY INTERNS

Daria Gosztyła
Benjamin Dubois
Steven Gilbert

PHOTOGRAPHS TAKEN BY

Steve Guitar, Communications Director
Daria Gosztyła, Sustainability Reporting Assistant
Cover Photo courtesy of Skyler Mills



CITY OF
GRAND
RAPIDS

If you have any questions about this report or sustainability and energy related issues, please contact:

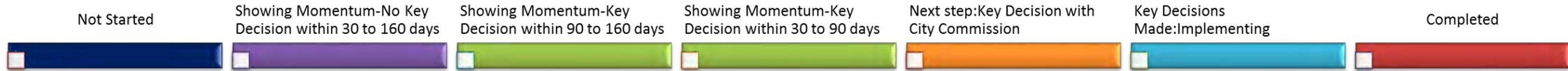
Office of Energy and Sustainability

Dr. Haris Alibašić
halibasic@grcity.us
300 Monroe Avenue NW
Grand Rapids, MI 49503

Website: www.sustainablegr.org

Transformational Update Phase II





- 08-08 DeVries
- 08-09 DeVries
- 08-12 DeLong
- 08-13 DeLong

- △ 08-14 Almonte
- 09-11 Almonte

- 08-06 DeVries
- 09-12 Sundstrom

- 07-02 DeLong
- 07-04 DeClercq/Bohatch
- 07-05 DeClercq/Bohatch
- 07-06 DeClercq/Bohatch
- 07-07 DeClercq/Bohatch
- 07-08 Bohatch
- 07-09 Bohatch
- 07-10 Bohatch
- 07-11 Bohatch
- 08-03 DeLong
- 08-04 DeLong
- 08-07 McCaul/Hayes
- 08-10 Lunn
- 08-11 Zull
- 09-02 Lunn
- 09-03 Lunn
- 09-04 Zull
- 09-05 Zull
- 09-06 Zull
- 09-07 Zull
- 09-08 Zull/Ritsema
- 09-09 Reimer
- 09-10 Reimer

- ☑ 07-01 Sundstrom
- ☑ 07-03 Bohatch
- ☑ 08-01 DeLong
- ☑ 08-02 DeLong
- ☑ 08-05 DeLong
- ☑ 09-01 Buhrer

Key

- Current Status of Value Stream
- △ Work Ongoing
- ☑ Value Stream has been addressed

***Status
Report***

GREEN

Parks and
Recreation

Pools and Water
Playgrounds

Urban Forestry



PHASE II UPDATE: GREEN VALUE STREAMS

11/10/2015



IMPLEMENT GREEN DESIGN AND CONSTRUCTION STANDARDS FOR PARKS



Roosevelt Park



Pleasant Park

REPAIR OR REPLACE INOPERABLE, OUTDATED, AND INACCESSIBLE PARK EQUIPMENT



Fuller Park



Westtown Commons



Garfield Park



Wilcox Park

ENSURE RESTROOMS AND DRINKING FOUNTAINS ARE OPERATIONAL



Roosevelt Park



Fuller Park



Belknap Park

TRANSFORM POOL OPERATIONS AND EXPAND USE OF WATER PLAYGROUND FEATURES



REPLACE OBSOLETE WADING POOLS WITH WATER PLAYGROUNDS



Wilcox Park



Cherry Park



Fuller Park



CREATE AND IMPLEMENT A SUSTAINABLE FORESTRY MAINTENANCE PROGRAM



Wilcox Park



Highland Park



Garfield Park

PLANT TREES TO REACH THE CITY'S 40% CANOPY GOAL



Mayor Heartwell
and GR residents;
Lookout Park
10/30/2015

ASSET MANAGEMENT PLAN FOR PARKS: PLANNING AND IMPLEMENTATION



MLK Boiler



Roosevelt Park



Garfield Park locker room demolition

GREEN TRANSFORMATION COMMUNITY UPDATE



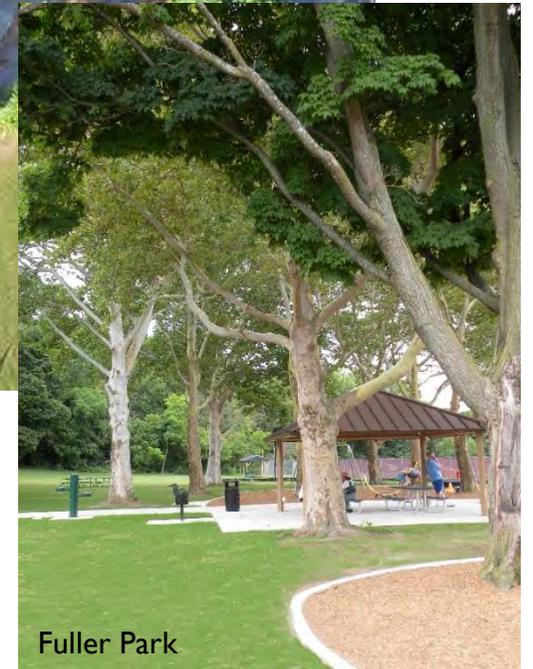
Westtown Commons Park



Cherry Park



Pleasant Park



Fuller Park



***Status
Report***

MOBILITY

Vital Streets

Sidewalks

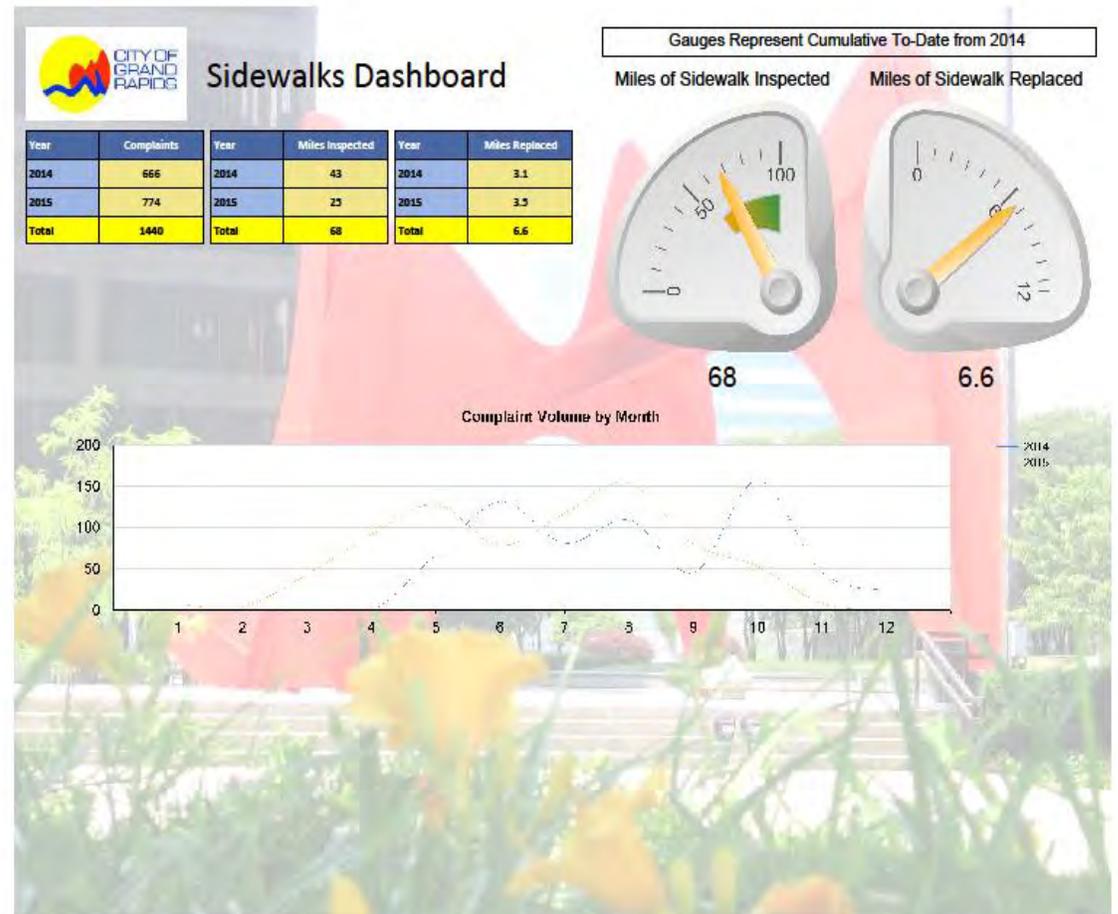
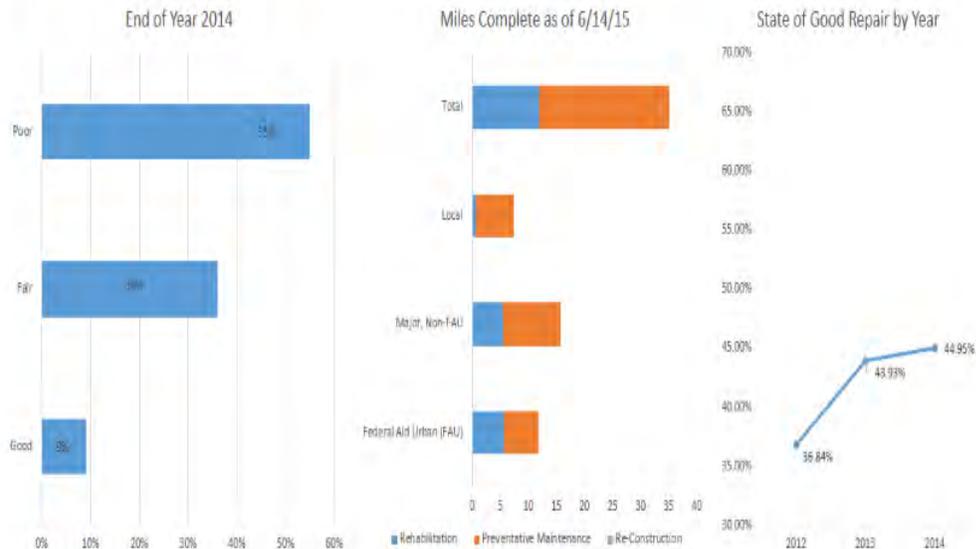
Bike Lanes

Vital Streets/Sidewalks Dashboard

% in State of Good Repair

45%

Goal: 70% of all streets in a State of Good Repair (either Good or Fair Condition) by 2030.



Pearl Street



Steele Avenue



Straight Avenue



Oakwood Avenue



Fuller Avenue



College Avenue



Sherman Street



Temporary Paving and Capesealing



Fuller Avenue Sidewalk Connector Hutchinson / City of GR Partnership



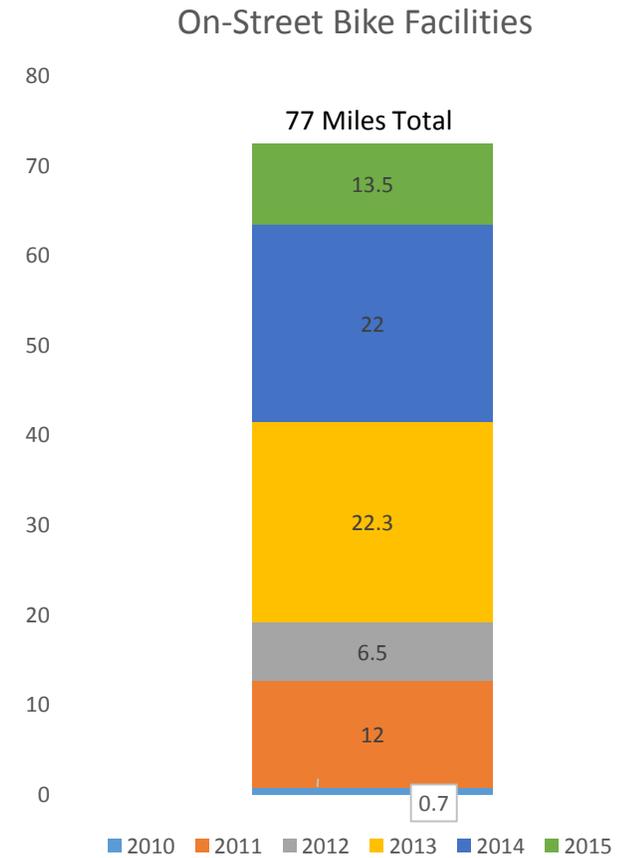
28th Street Sidewalk



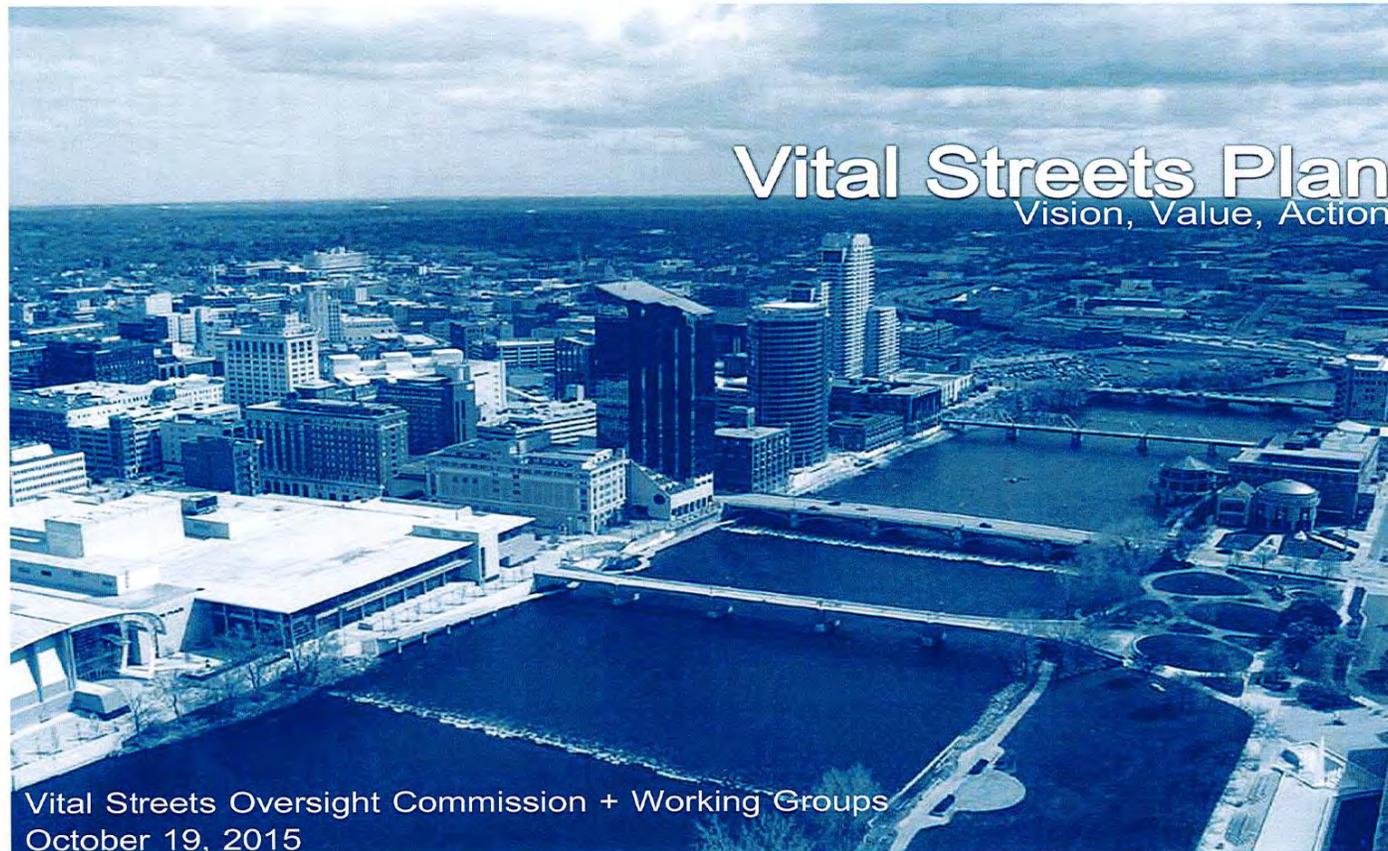
Green Infrastructure



On-Street Bike Facilities



Vital Streets Plan



Vital Streets Oversight Commission + Working Groups
October 19, 2015

***Status
Report***

PUBLIC

Street Lighting

Stormwater
Management

Public Facilities

PUBLIC FACILITIES



Phase II value streams

- 09-09 DEVELOP AN ASSET MANAGEMENT PLAN FOR CITY'S BUILDINGS
- 09-10 IMPLEMENT AN ASSET MANAGEMENT PLAN FOR CITY'S BUILDINGS



Sustainable Asset Management Plan

Facilities Management Department

201 Market Ave.
Grand Rapids, MI 49503

p. 616-456-3870
f. 616-456-3871

kmjohnson@grcity.us
www.grcity.us

PUBLIC FACILITIES INVENTORY

Public Facilities Breakdown

- 48 facilities totaling over 1.81 million square feet
- Total replacement value of nearly \$324 million
 - Administrative Services Facilities
 - Court Services Facilities
 - Fire Services Facilities
 - Police Services Facilities
 - Neighborhood Services Facilities
 - Public Services Facilities
 - Public Museum Facilities

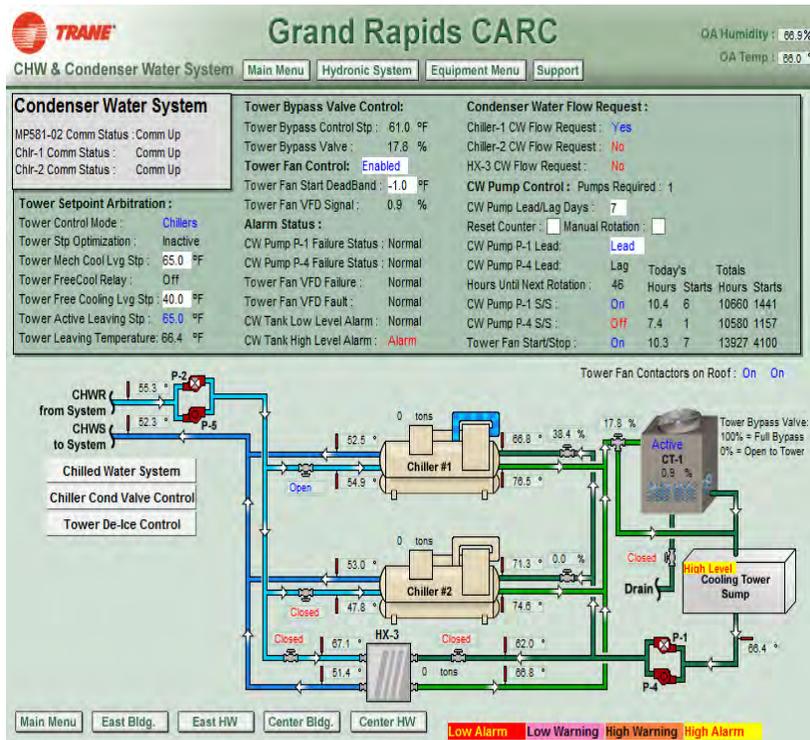
Areas of Investment

Results..... Savings realized from the successful implementation of Phase I of the Transformation Plan has resulted in over \$5 million being re-invested in our public facilities in FY15 and 16.

- **Areas of Investment**
 - HVAC and energy improvements
 - Exterior façade waterproofing and structural repairs
 - Elevator upgrades
 - Roof replacement and restorations
 - Security and customer service improvements
 - Parking lot improvements

COMPLETED PROJECTS

HVAC and Energy Improvements



COMPLETED PROJECTS

HVAC and Energy Improvements



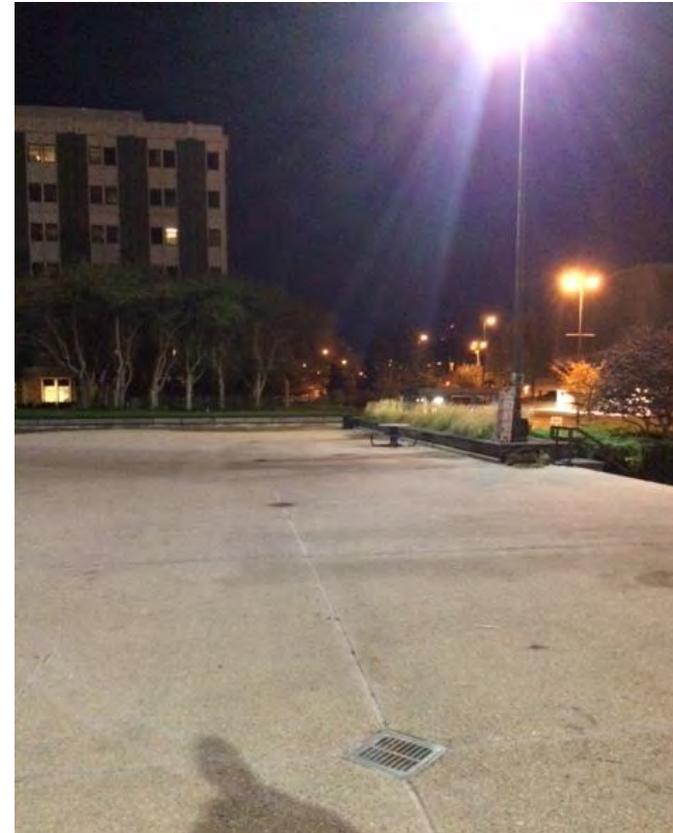
COMPLETED PROJECTS

HVAC and Energy Improvements



COMPLETED PROJECTS

HVAC and Energy Improvements



COMPLETED PROJECTS

HVAC and Energy Improvements



COMPLETED PROJECTS

HVAC and Energy Improvements



COMPLETED PROJECTS

HVAC and Energy Improvements



COMPLETED PROJECTS

Exterior Facade Waterproofing and Structural Repairs



COMPLETED PROJECTS

Exterior Facade Waterproofing and Structural Repairs



COMPLETED PROJECTS

Elevator Upgrades



COMPLETED PROJECTS

Roof Replacement and Restorations



COMPLETED PROJECTS

Security and Customer Service Improvements



COMPLETED PROJECTS

Security and Customer Service Improvements



COMPLETED PROJECTS

Parking Lot Improvements



Transformational Update: Phase III



Not Started	Showing Momentum-No Key Decision within 30 to 160 days	Showing Momentum-Key Decision within 90 to 160 days	Showing Momentum-Key Decision within 30 to 90 days	Next step:Key Decision with City Commission	Key Decisions Made: Implementing	Completed
<ul style="list-style-type: none"> • 10-12 Wood • 10-14 Jelks • 11-03 Nbhd Coord • 11-04 Nbhd Coord • 11-05 Nbhd Coord • 11-12 Schulz • 11-24 Nbhd Coord • 11-27 O'Neal • 11-29 Nbhd Coord • 13-10 Buhrer • 13-11 Klimas • 13-13 Guitar • 13-14 Buhrer • 13-15 Buhrer • 13-16 Buhrer • 13-17 Merren • 13-18 Buhrer • 13-20 Buhrer • 13-21 Buhrer • 13-23 Buhrer • 13-31 Nbhd Coord 	<ul style="list-style-type: none"> • 10-05 Wood • 10-11 DeLong • 11-06 Schulz • 11-11 Schulz • 11-15 Mish • 11-16 Mish • 11-19 Caudill • 11-22 Thomas • 11-25 Rahinsky • 11-36 Rahinsky • 11-37 Rahinsky • 11-44 Knapp • 11-45 Knapp • 12-01 Alibasic • 12-02 Alibasic • 12-03 Alibasic • 12-05 Alibasic • 12-07 Reimer • 12-08 Alibasic • 12-16 Alibasic • 12-20 Ritsema • 12-22 Schulz • 12-23 Sundstrom • 12-25 Ritsema • 12-26 Ritsema • 12-27 Ritsema • 12-31 Marquardt • 12-32 Marquardt • 13-03 Buhrer • 13-05 Dood • 13-06 Dood • 13-07 Dood • 13-08 Almonte • 13-12 Mish • 13-19 Reimer • 13-27 Guitar • 13-28 Klimas • 13-30 Rahinsky • 13-39 Reimer • 13-42 Marquardt • 13-43 Marquardt • 13-46 Klimas • 13-47 DeLong • 13-49 Caudill • 13-53 Jelks • 13-57 Jelks • 13-58 Jelks 	<ul style="list-style-type: none"> • 10-01 Wood • 10-04 DeLong • 10-09 Wood • 10-10 DeLong • 10-13 Wood • 10-16 Thomas • 11-01 Schulz • 11-08 Wood • 11-10 Wood • 11-13 Jelks • 11-14 Jelks • 11-21 Caudill • 11-26 Jelks • 11-42 Knapp • 12-11 DeLong • 12-12 Lunn • 12-13 Hurt • 12-14 Hurt • 12-21 Ritsema • 12-24 Ritsema • 13-25 Guitar • 13-29 Guitar • 13-33 Glover • 13-34 Globensky • 13-36 Guitar • 13-44 Meyer • 13-45 Meyer • 13-52 Jelks 	<ul style="list-style-type: none"> • 11-02 Schulz • 11-09 Bohatch • 11-18 Caudill • 11-30 Mish • 12-09 Lunn • 12-10 Lunn • 12-18 Lunn • 12-19 Lunn • 12-28 Buhrer • 12-33 Marquardt • 13-24 Almonte • 13-37 Almonte • 13-48 DeLong • 13-50 Jelks • 13-51 Jelks • 13-54 Jelks • 13-55 Jelks • 13-56 Jelks • 13-60 Jelks 	<ul style="list-style-type: none"> • 11-11 Schulz • 11-17 Caudill • 11-20 O'Neal • 11-23 Almonte • 11-31 Kiddle • 11-33 Sundstrom • 11-38 Rahinsky • 12-17 Schulz • 12-30 DeLong • 13-01 Buhrer • 13-02 Buhrer 	<ul style="list-style-type: none"> • 10-02 Wood • 10-03 Wood • 10-06 Wood • 10-07 Wood • 10-08 Zull • 10-15 Wood • 11-01 Schulz • 11-07 Wood • 11-20 O'Neal • 11-32 Rahinsky • 11-33 Sundstrom • 11-34 Bohatch • 11-40 Knapp • 11-41 Zull • 11-43 Knapp • 11-46 Knapp • 12-04 Thompson • 12-06 Zull • 12-15 Lunn • 12-23 Sundstrom • 13-04 Klimas • 13-09 Almonte • 13-22 Globensky • 13-35 O'Neal • 13-38 Klimas • 13-40 Zull • 13-41 Lunn • 13-59 Sundstrom 	<ul style="list-style-type: none"> • 11-28 Mish • 11-35 Rahinsky • 11-39 Rahinsky • 12-29 McCaul • 13-26 Mish • 13-32 Koeze

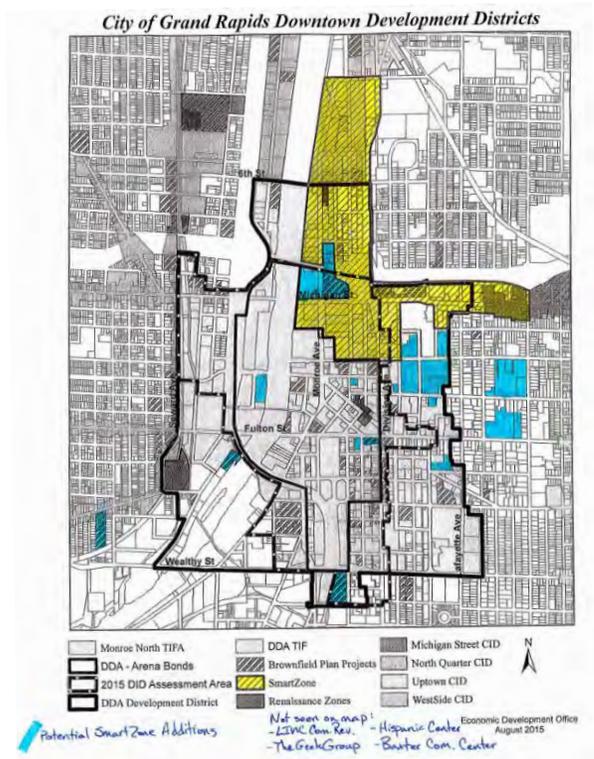
***Status
Report***

ECONOMIC

Economic
Opportunity

Innovation and Entrepreneurship

- SmartZone Tax Increment Financing & Development Plan Amendment



Innovation and Entrepreneurship

- MSU Grand Rapids Research Facility Development



Neighborhood Economic Development

- Madison Square Corridor Improvement Authority District

Amendment

- Grandville/South Division Planning &

Corridor Organizing



GRANDVILLE AVENUE

HISTORY, FAMILY. HOSPITALITY.
It all intersects at Grandville Avenue, the first stop for generations of families moving to Grand Rapids. From 19th century Dutch settlers to today's Latin American entrepreneurs, waves of newcomers have contributed to a vibrant melting-pot culture—and a one-of-a-kind business and residential community.

HISTORIA, FAMILIA. HOSPITALIDAD.
Todo se cruza en la Avenida Grandville, la primera parada por generaciones de familias que se desplazan a Grand Rapids. Desde las Colonias Holandesas del siglo 19 a los empresarios Latinoamericanos de hoy, ondas de recién llegados han contribuido a una cultura vibrante y única y una comunidad empresarial y residencial única en su tipo.

BUSINESS DIRECTORY

**STREET OF CULTURE AND CUISINE
CALLE DE CULTURA Y COCINA**

The graphic features a collage of images including green limes, a 'TAVERN' sign, and various street scenes. It includes the Grandville Avenue logo and a blue box with the text 'BUSINESS DIRECTORY'.

Neighborhood Economic Development

- Multicultural Entrepreneurship

Programming Support

- Corridor Improvement District/Business Improvement

City Investment



Economic Development

- Great Housing Strategy/MI Street Plan/GR Forward Policy
Recommendations
- Workforce & Housing Investment-based Incentive Framework
- Food Innovation District Strategy

Property Management

- 201 Market Relocation and Disposition
- Vacant Property Disposition

TITLE: Relocation & Disposition of 201 Market

BACKGROUND



Current State:

- Asking Price: \$35,000,000
- Cost to City for acquisition of a new 20-acre site, estimated at \$63.9 million (*Public Service Center Relocation Study*)
- City relocation expected to take 18–24 months

ANALYSIS:

- Included in Transformation Phase II (D10–1) project with financial and logistical planning required to relocate facilities deployed on the 201 Market property and the marketing of the site for redevelopment
- Market conditions have improved for CBD real estate development
- Relocatory with City of GR boundaries
- Direct access to US 131
- BRT station at Rapid Central, one block from the site
- Amtrak Station site is vacant
- Parks could be relocated separately if it makes sense
- Opportunity to increase green space in the downtown and make public infrastructure improvements to the riverfront
- Other development in area—former dance club, Fountain expansion, etc.
- Current zoning allows for development "to maintain and enhance the visibility of downtown, reinforce its intense development pattern, provide services in close proximity to one another, slow down cars,..."
- Relocation and other costs minimized by use of sales proceeds combined with tax increment increases
- Relocation of Water North Storage Yard, Street lighting pole yard, or Castorock storage bldg. included in the consolidation
- Reservation for public park land
- Green GR and GR Forward Plans

Countermeasure: Evaluate options based upon consultant recommendations

CURRENT STATE:

Site Characteristics:

- 18.92 acres of land (includes NAPA bldg.)
- 1,542 ft frontage on Grand River
- Houses underground fuel storage tanks, car washing, soy, hazardous materials, 11 USFs, monitoring wells, flood protection, soil urban fill—managing according to site care plan
- Believed to be a "facility as defined by Section 201, of Act 451 of 1994, as amended"
- Zoned CC—City Center (*Zoning Ord. 5-6-02A*)
- Abuts CSR Railroad
- Access to Market Ave./US 131
- Next to U.S. 131 off ramp (MDOOT ROW)
- Close proximity to other City service on Market Ave / Bicycle Ctr / WTE Ctr / Butterworth Landfill/Domtar site
- Active and passive security
- Narrow 3' sidewalk
- Significant above ground and underground utility lines traverse the site, existing pole corridor

Access to the Grand River:

- Line of 16 sites along the river on the list to receive enhanced flood protection and improved public access
- Green GR/GR Forward have missed private development, including a large-scale programmatic open space for this site if the City relocates its operations

SITE SUMMARY (Current Campus) 2015

Circulation	221,101sf
Landscaping (estimated)	30,000
Site Requirements Parking (estimated)	174,240
Buildings (footprint)	273,748
Total SQ FT	699,089
Sub Total (Acres)	16.05

Vacant Building Sq.Ft. in Acres 0.77

Staffing	FY2016 FTE
Public Ser.	77
Parks	31 (+100 seasonal)
Facilities/	35/12
Total	155



TARGET/GOALS

1. Implement the vision of Green GR & GR Forward
2. Create new jobs & investment
3. Optimize tax revenue generated from the site
4. Limit or eliminate City risk
5. 201 Market redevelopment becomes a stimulus for economic activity in area
6. Improve efficiency of facility

RECOMMENDATION:

Transformation Fund request to hire a real estate consulting firm to assist the City with evaluating current state of operations/provide lean assessment, site relocation evaluation and RFP development and evaluation along with real estate acquisition & disposition assistance and reimburse the EDC for prior costs with the expectation that the proceeds of sale will reimburse the Transformation Fund in full for the costs.

The full cost to the Transformation Fund will be reimbursed through sale proceeds.

Consultant \$235,000
Real Estate Consulting \$60,000 (\$/mo.) 100% credited with transaction fee proceeds

FOLLOW UP:

1. Track and report to EDPT progress on plan implementation monthly.
2. Track and report to CC city jobs, investment, property tax & income revenue generated from the site annually for five years.

Work Stream	Task	Duration	
1: Site Selection for City Operations	Future Site Needs / Lean Assessment	6 weeks	
	Establish and Confirm Site Selection Criteria	3 weeks	
	Site Alternatives Identification	2 weeks	
	Site Evaluation and Ranking	2 weeks	
	Strategy Development and Implementation	4 weeks	
	Due Diligence / Contingency Management and Closing	6+ weeks	
	Step 1: Analysis		
	Market Analysis	2 weeks	
	Site Assessment	2 weeks	
	Regulatory Review	2 weeks	
Step 2: Synthesis			
2: 201 Market Avenue Site Disposition	Project Visioning - Prepare / Analyze Development Scenarios	2 weeks	
	Property Valuation	2 weeks	
	Step 3: Recommendation		
	Develop High Level Implementation Strategy	2 weeks	
	Step 4: Brokerage / Monetization		
	Develop Comprehensive Solicitation Document	4 weeks	
	Marketing Period	12 weeks	
	Evaluate Purchaser / Partner Proposal Submissions	6+ weeks	

Status Report

SOCIAL

Great
Neighborhoods

Social Equity

Safe Community



GREAT HOUSING STRATEGIES

ADDRESSING CURRENT AND FUTURE HOUSING NEEDS

Public Review and Outreach

10/5/15 – GHS presented to participants and released for public review

10/9/15 – GHS emailed to 248 participants/interested persons

10/12/15 – GHS discussed at Quarterly Neighborhood Partners meeting

10/13/15 – Public presentation at City Commission Committee of the Whole meeting

10/15/15 – Discussed/responded to caller questions on La Mejor GR Radio

10/29/15 – Proposed Zoning Ordinance amendments discussed at GR Neighborhood Partnership mtg

October – Various media articles, posted on City website (homepage and CD Dept)

11/2/15 – Proposed Zoning Ordinance amendments discussed at neighborhood association hosted mtg



Public Comment

10/22/15 – Planning Commission public hearing held on proposed Zoning Ordinance amendments

11/12/15 – Planning Commission 2nd public hearing scheduled for Zoning Ordinance amendments

11/17/15 – City Commission public hearing scheduled for draft GHS plan

11/20/15 – Deadline for written comments on GHS draft plan * communitydev@grcity.us

November – Housing Finance Workgroup to review proposed Econ Development policy changes

12/8/15 – City Commission public hearing for Zoning Ordinance amendments (to be scheduled)

Approval Timeline

12/8/15 – City Commission adopts GHS plan

12/8/15 – City Economic Development Team reviews proposed Econ Develop policy changes

12/15/15 – City Commission approves Zoning Ordinance and Economic Development policy changes

Other Initiatives and Partnerships

- **Regional Consolidated Housing and Community Development Plan**
Kent County, Grand Rapids and Wyoming – CDBG, HOME and ESG
- **Grand Rapids Area Coalition to End Homelessness**
Review of 10-Year Plan (Dyer-Ives, Steelcase and GR Community foundations)
Adopted 3-Year Plan in April 2015
- **Grand Rapids Jobs Initiative**
W.K. Kellogg Foundation – Inclusive Performance Strategies
- **Grand Rapids Seeking Safety Modification Demonstration Grant**
U.S. Department of Justice – Family Outreach Center – Research and Evaluation Associates

***Status
Report***

ENVIRONMENT

Resilient
Systems

Balanced
Transportation

Sustainable
Assets



- NOTES:
1. ARRAY IS COMPRISED OF QTY (9690) 310-WATT SOLAR MODULES DEPLOYED ON A 25 DEGREE FIXED TILT SINGLE TIER BALLASTED RACKING SYSTEM.
 2. SYSTEM INCLUDES QTY (3) SOLECTRIA 500KTM 500 KW INVERTERS AND QTY (1) SOLECTRIA 750 XTM INVERTER DEPLOYED AT QTY (2) ELECTRICAL EQUIPMENT PADS.
 3. 5 KV SWITCHGEAR WITH RELAYING AND OVERCURRENT PROTECTION LOCATED ON EQUIPMENT PAD AT SOUTHEAST CORNER OF THE ARRAY ALONG WITH UTILITY KWH METER ENCLOSURE.
 4. REFER TO DRAWING C-2 FOR ADDITIONAL DETAILS



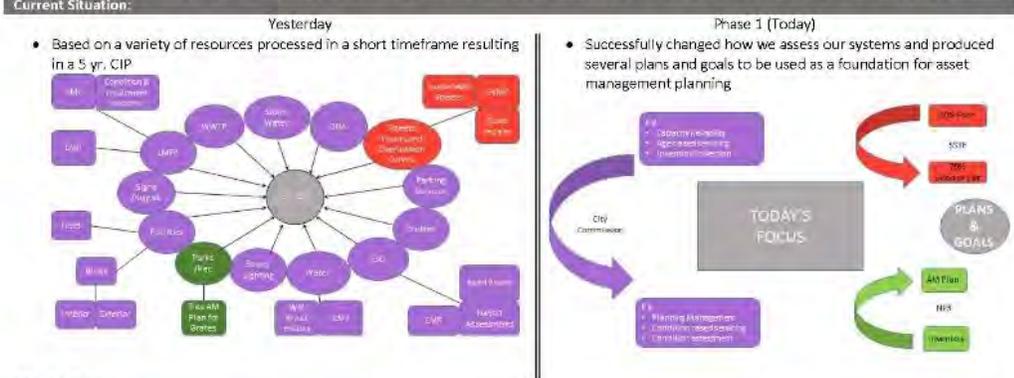
DRAWN BY	APPROVED BY	DESCRIPTION
JRS	DM	PRELIMINARY AREA PLAN
DATE	COPYRIGHT 2015 AMERICAN CAPITAL ENERGY INC. ALL RIGHTS RESERVED	
4/6/15		

Title/Theme: (A3-1) Build on Phase I of the Transformation Investment Plan, and develop a strategy for integrated investment decision making

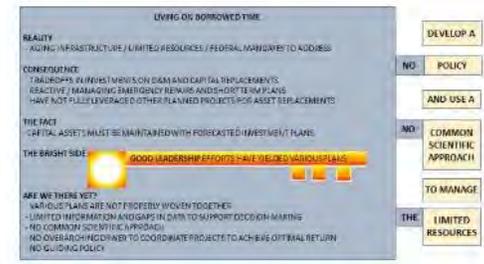
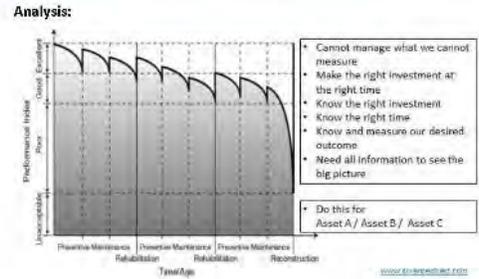
Background: Transformation Investment Plan (TIP)
Phase I (Sustainable Operations) + Phase II (Sustainable Asset Management) + Phase III (Continuous Improvement)
= Sustainable City Platform



Purpose: To build on the success of Phase 1 of the TIP and develop an integrated planning approach to Sustainable Asset Management (Phase II)



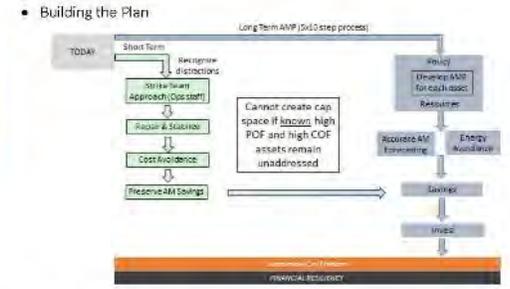
- Goal/Target:**
1. Maximize City Return on Investment
 - By investing **tactically and comprehensively**, and **investing for outcomes**
 2. Leverage/integrate across asset classes
 3. Create cap space
- Comprehensive: covering completely or broadly: \käm-pri-'hen(t)-siv,-prē-\
- Creating a common language for investment purposes, weaving plans together, working with similar background information and metrics, planning ahead, addressing all asset needs in proposed improvement areas, meeting previously defined expectations, and working within predetermined budgets to achieve an optimal return on investment



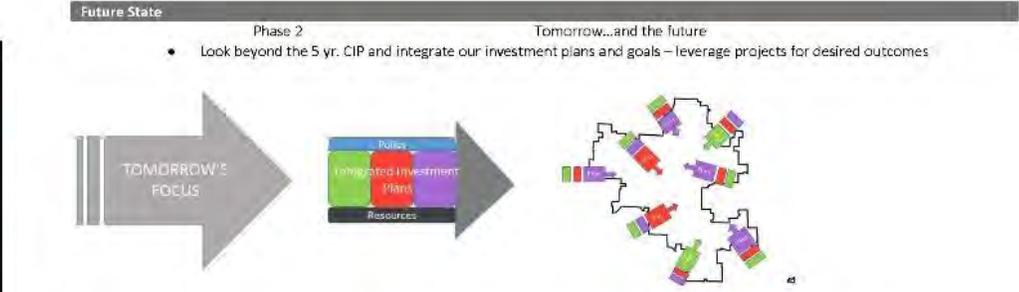
DRAFT

1/22/2014

- Countermeasures:**
1. Develop a standard City Asset Management (AM) process
 - a. Build AM plans where absent, find gaps in existing plans, and weave plans together
 - b. Find/Manage Resources
 - c. IMPLEMENT POLICY (IMPORTANT)
 - d. Invest according to AM plans
 2. Status Quo / Do nothing – Go back to yesterday – NO



• Triage - Reduce damage -> have potential to save - -> add value



Plan: Varying departmental knowledge of assets and asset management. Cannot weave or integrate plans if each management plan has not completely addressed industry's 5 core questions.

- Build team of AM (Gemba Group)
- Assess current state of AM for each asset class and start there



Follow up: PERFORMANCE MEASUREMENT and PDCA - A



- Report Performance Measures to City Commission and Community
- City Commission Action Item requesting adoption of an Asset Management Policy.

- Powered by:
- Lean Thinking (AS, SWIM)
 - Community Engagement
 - Present Value Analyses
 - Criticality Analyses
 - Checked Assumptions

***Status
Report***

GOVERNANCE

Fiscally Resilient

Transparent /
Accessible

Good
Government

FMS Update

November 10, 2015

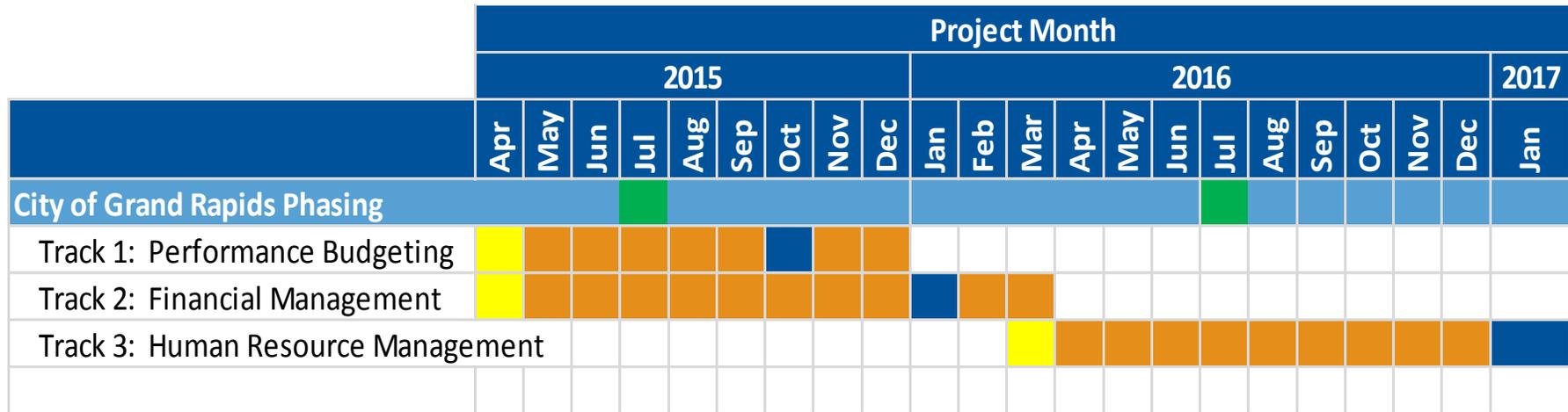
Sustainable City Platform and Phase III



FMS Solution Overview

<p>Replacing</p>	<ul style="list-style-type: none"> • GPFM • Vista HRM • Enterprise Reporting (ER Budget Module) • WebProcure
<p>FMS/Advantage360 Functionality</p>	<ul style="list-style-type: none"> • Performance Budgeting <ul style="list-style-type: none"> • Actuals for Positions, Salary, Benefits • Forecasting • Routing for Approval • Performance Management/KPI tracking • Finance <ul style="list-style-type: none"> • Projects/Grants • Debt Management • On-Base Integration • Fixed Assets Management • Robust Workflow • Procurement/Vendor Self Service • Accounts Payable/Receivable • General Ledger • HRM <ul style="list-style-type: none"> • Position/Personnel Management • Learning and Development • Payroll • Employee Relations • Robust Workflow

Project Tracks and High Level Scope Review



Module Start
 Implementation Activity
 Fiscal Year Start
 Go Live

Project Tracks for MMSA Advantage360 Implementations

Community / Module	Project Month																											
	2015												2016										2017					
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr
Grand Rapids																												
Financial Management																												
Performance Budgeting																												
Human Resource Management																												
Kent County																												
Financial Management																												
Performance Budgeting																												
Human Resource Management																												
Genesee County																												
Financial Management																												
Performance Budgeting																												
Human Resource Management																												
Kronos - pre HR alignment																												

Key
■ Fiscal Year Start
■ Module Start
■ Project Work
■ Module Go Live

Current Status

- Performance Budgeting
 - Go-Live October 26, 2015
 - 2017 budget will be completed in new system
 - Internal Service Funds – November
 - Operational Departments – Late December-January
- Financials
 - Go-Live January 4, 2016
 - Mock data load, integrated system testing, user acceptance testing, final data load, training.
 - Aggressive schedule with a lot of work remaining
- Human Resources, Payroll, Timekeeping
 - Go-Live January 2017
 - Implementation begins Early 2016

Current Status

- National User Conference
 - Attended by six project team members
 - Great net-working opportunities
 - Highly functional system
 - Significant national user-group support
 - Excitement around the Tool
 - SaaS solution is the next “big thing”
- Board representation
- Continue to focus on MMSA and expansion of the user-base
 - Additional grant dollars available for future communities
 - MMSA actively recruiting additional local governments, school districts, etc.

City of Grand Rapids

FY2015 Financial Results & Economic
Outlook

General Fund Results FY2015

Category	Amended Budget	Budget Estimate	Actual	Variance From Estimate – Favorable (Unfavorable)
Revenues	\$122,970,896	\$125,564,109	\$126,315,762	\$751,653
Expenditures	\$125,321,034	\$124,324,106	\$123,970,386	\$353,720
FY15 Change in Spendable Equity	(\$2,350,138)	\$1,240,003	\$2,345,376	\$1,105,373

City of Grand Rapids

Analysis of Operating Results

FY2015

City of Grand Rapids, Michigan General Operating Fund (GFGEN101) Analysis of Operating Results for the year ended June 30, 2015	
Actual Change in Spendable Equity	\$ 2,345,376
<u>Subtract Temporary and/or One-Time Revenues:</u>	
Principal Payment from Parking Ramp	\$ (1,420,000)
Interest Income from Parking Ramp	\$ (282,200)
<u>Subtract Transformation Fund Support:</u>	
Police (10 Officers)	\$ (1,164,316)
Fire	\$ (1,606,671)
<u>Subtract Grant Support:</u>	
SAFER Grant (17 Firefighters)	\$ (776,620)
<u>Add Temporary and/or One-Time Expenses:</u>	
Transfer Out to Budget Stabilization Fund	\$ 3,008,034
Net Temporary and/or One-Time Adjustments:	\$ (2,241,773)
Net Excess of Ongoing Revenues over Ongoing Expenditures:	\$ 103,603

General Fund Results

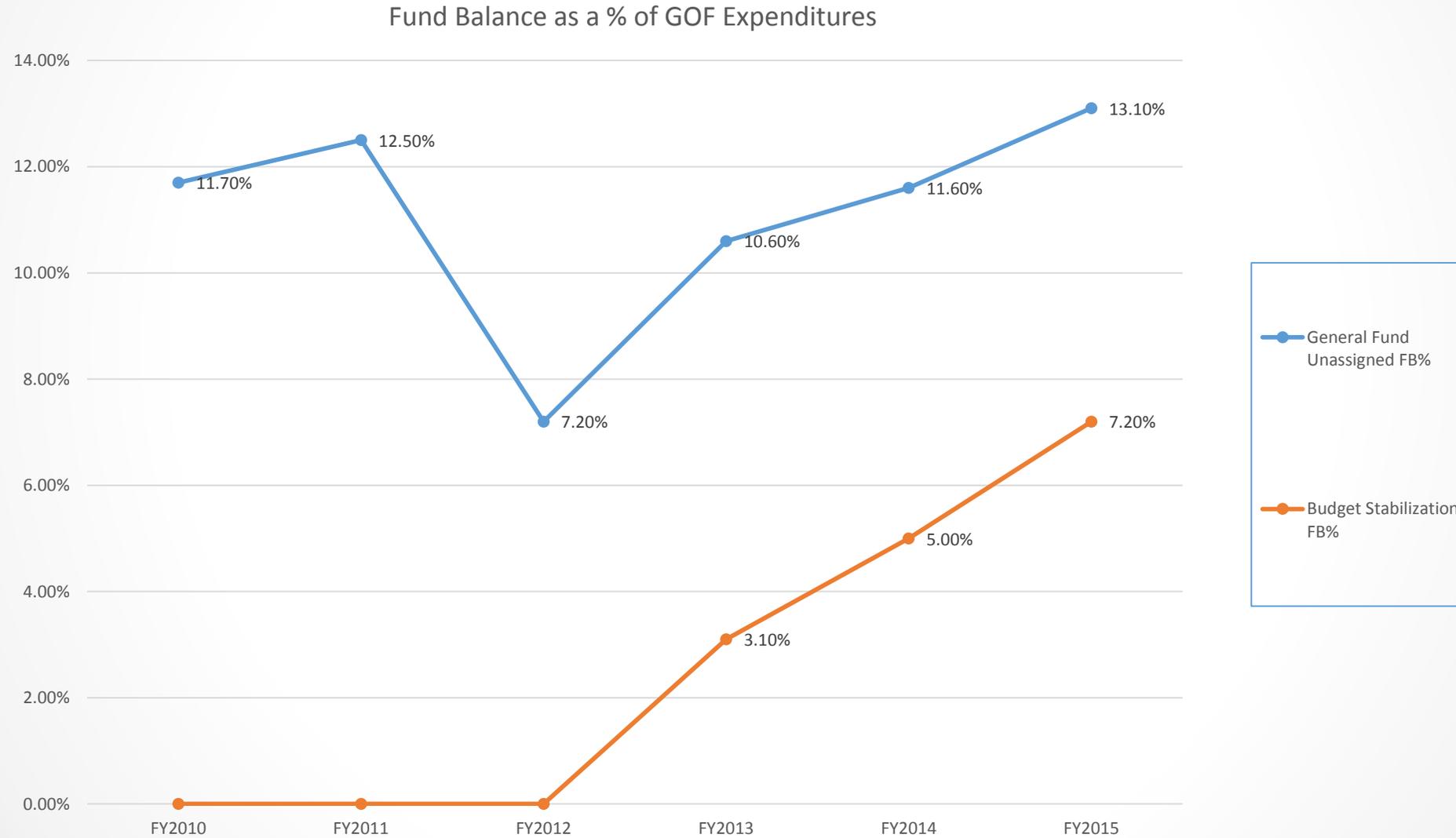
Including FY2015 Carry-Forwards & Re-Appropriations

Category	FY2015 Actual	FY2016 Re-appropriations & Carry-forwards	FY2016 Budget	Revised FY2016 Estimate	Change in Unassigned Fund Balance from FY2016 Fiscal Plan
Revenues	\$126,315,762	-0-	\$125,463,693	\$125,463,693	N/A
Expenditures	\$123,970,386	\$1,030,773	\$125,381,085	\$126,411,858	N/A
Change in Spendable Equity	\$2,345,376	\$(1,030,773)	\$ 82,608	\$ (948,165)	N/A
Beginning Unassigned Fund Balance	\$13,840,518	N/A	\$15,080,521	\$16,185,894	N/A
Ending Unassigned Fund Balance	\$16,185,894	N/A	\$15,163,129	\$15,237,729	\$ 74,600

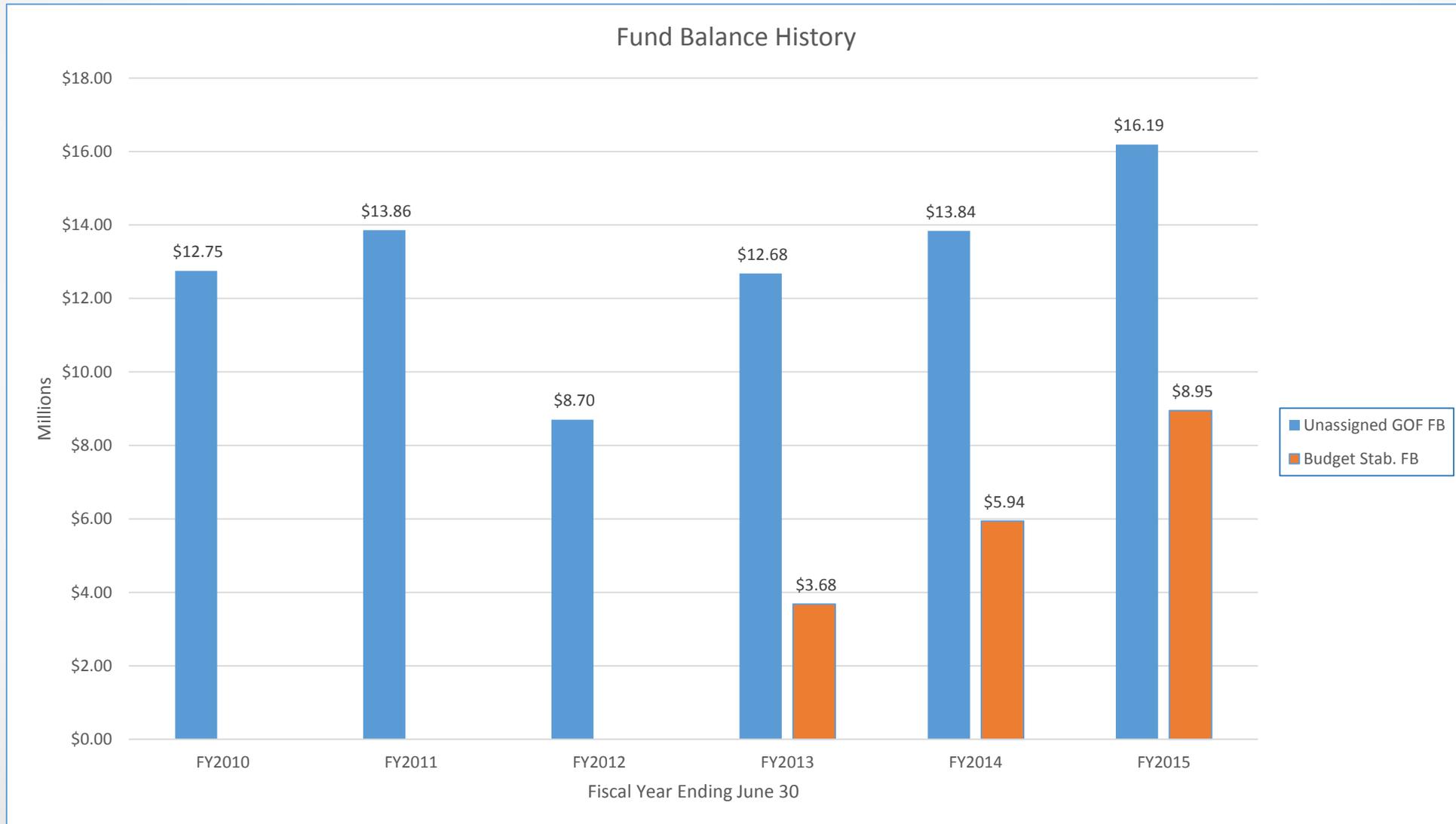
Unassigned Fund Balance Comparison June 30, 2015

Fund	FY2015 Actual	Target Goal	Target \$ (based on FY15 Actual)	Actual % of Op Expenses	% of Target Achieved	\$ Short
General Fund	\$16,185,894	15% of Operating Expenses	\$18,595,558	13.10%	87.04%	\$2,409,664
Budget Stabilization Fund	\$ 8,948,835	10% of Operating Expenses	\$12,397,038	7.2%	72.19%	\$3,448,203

Fund Balance History



Fund Balance History



General Fund Taxes FY2015

Category	FY2015 Estimate	FY2015 Actuals	Difference from Estimate
Income Taxes	\$67,383,538	\$67,582,177	\$198,639
Property Taxes	\$11,173,199	\$11,271,875	\$ 98,676
Property Tax Admin. Fee	\$1,760,000	\$1,755,345	\$(4,655)
Total Taxes	\$80,316,737	\$80,609,397	\$292,660

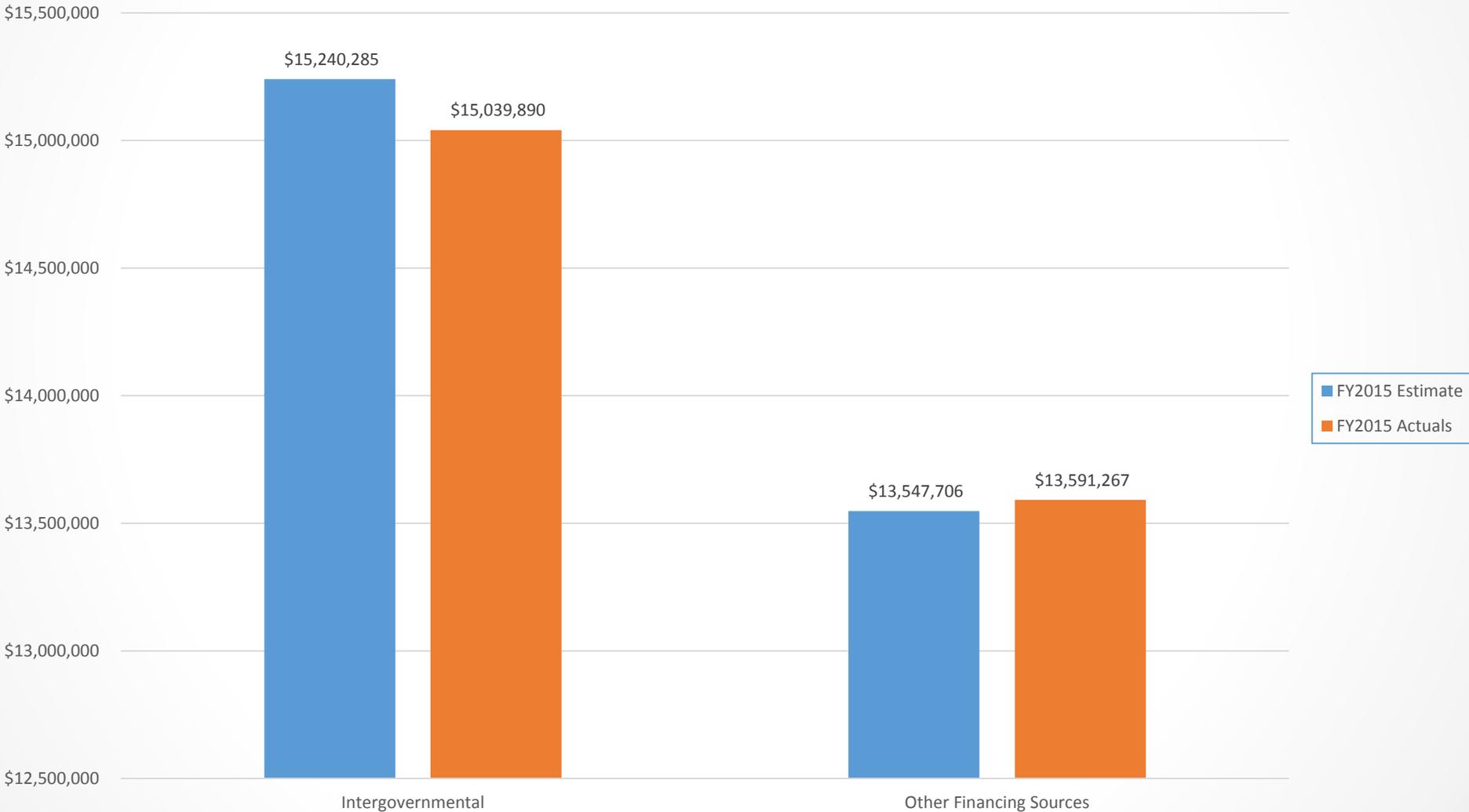
	FY2015 Budget (vs. FY2014 Budget)	2015 Estimate (vs. FY 2014 Estimate)	FY2015 Actual Trend
% Growth In Income Taxes	4.46%	5.5%	5.66%

Revenue Variances

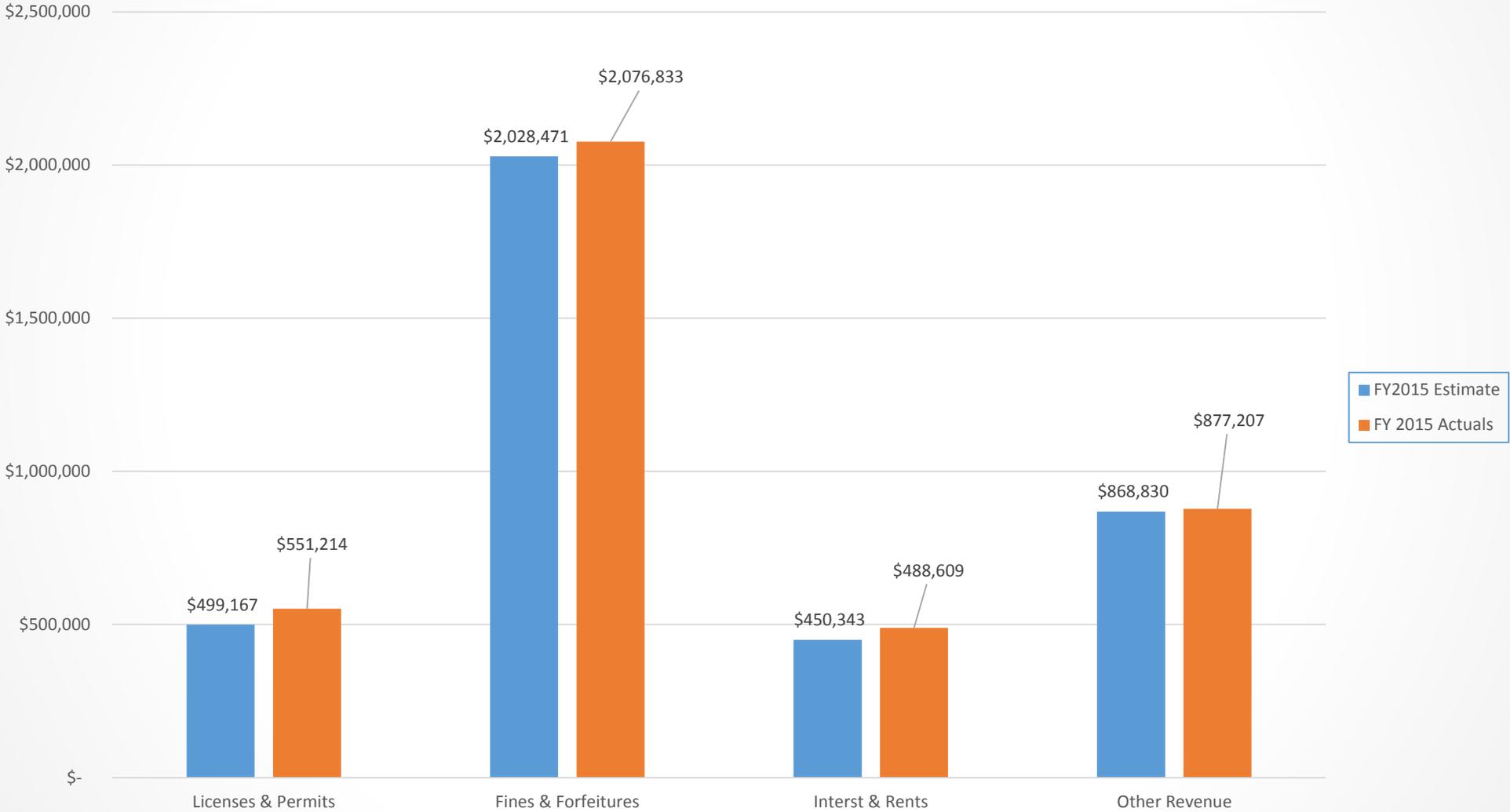
Charges for Services



Revenue Variances

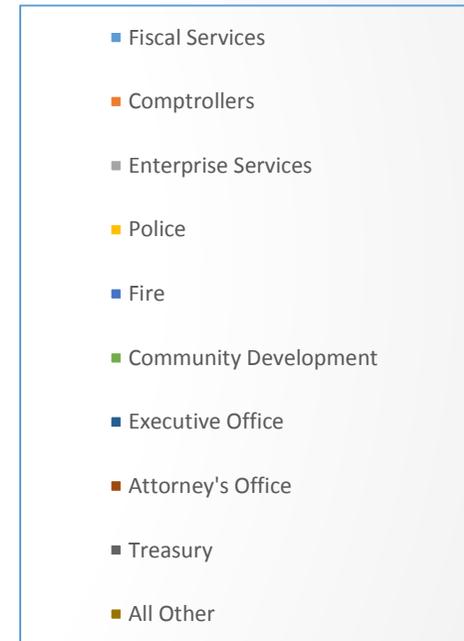
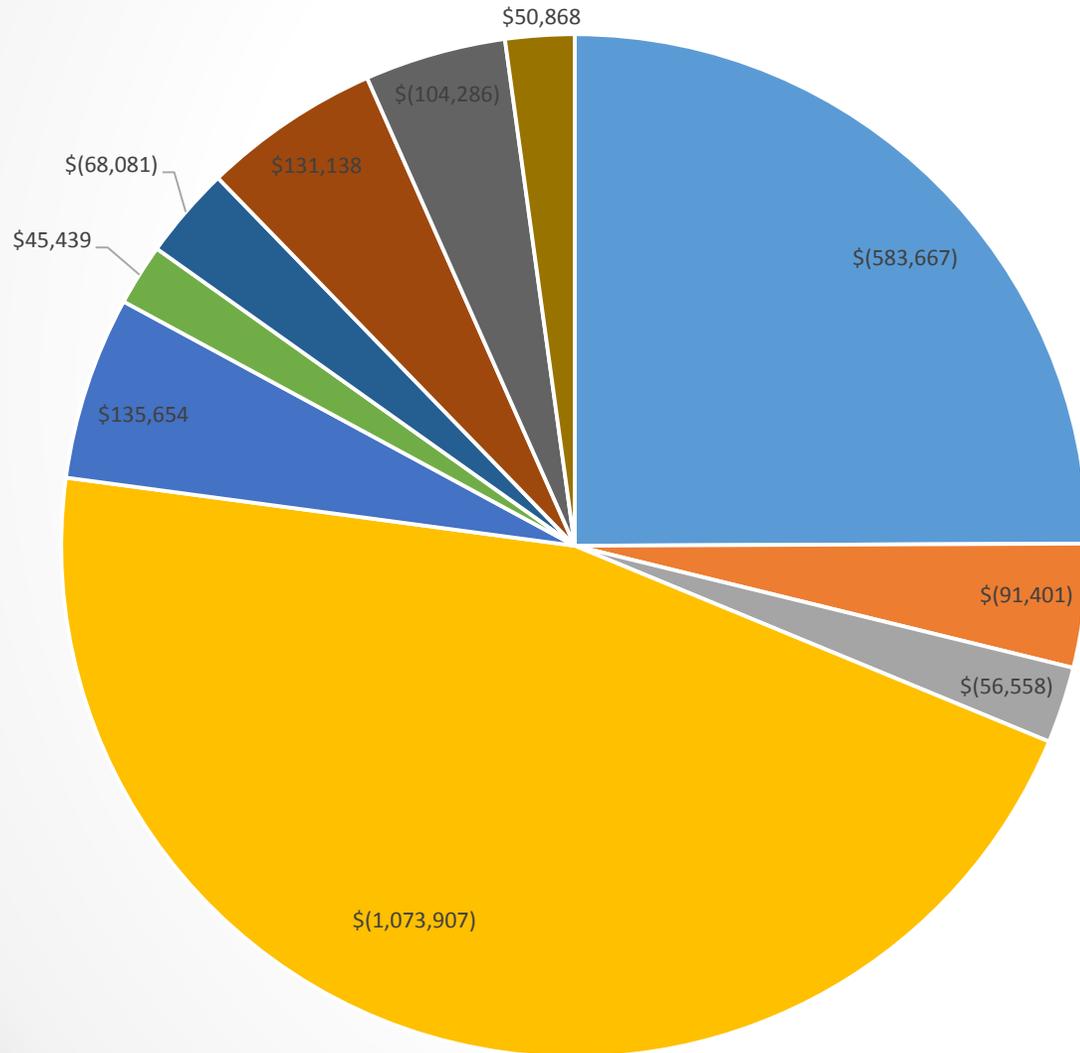


Revenue Variances



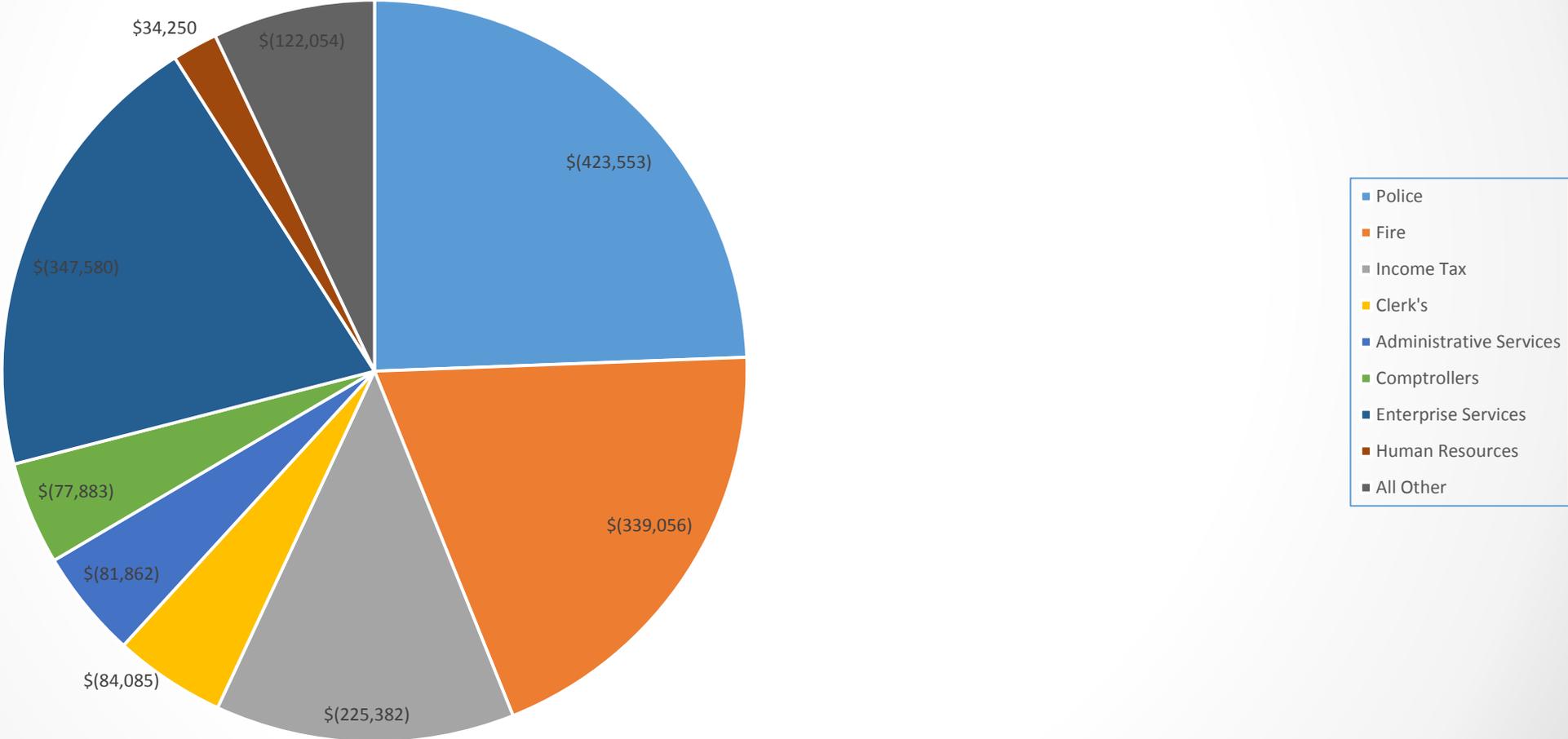
Expenditure Variances

General Fund Personal Services Variances

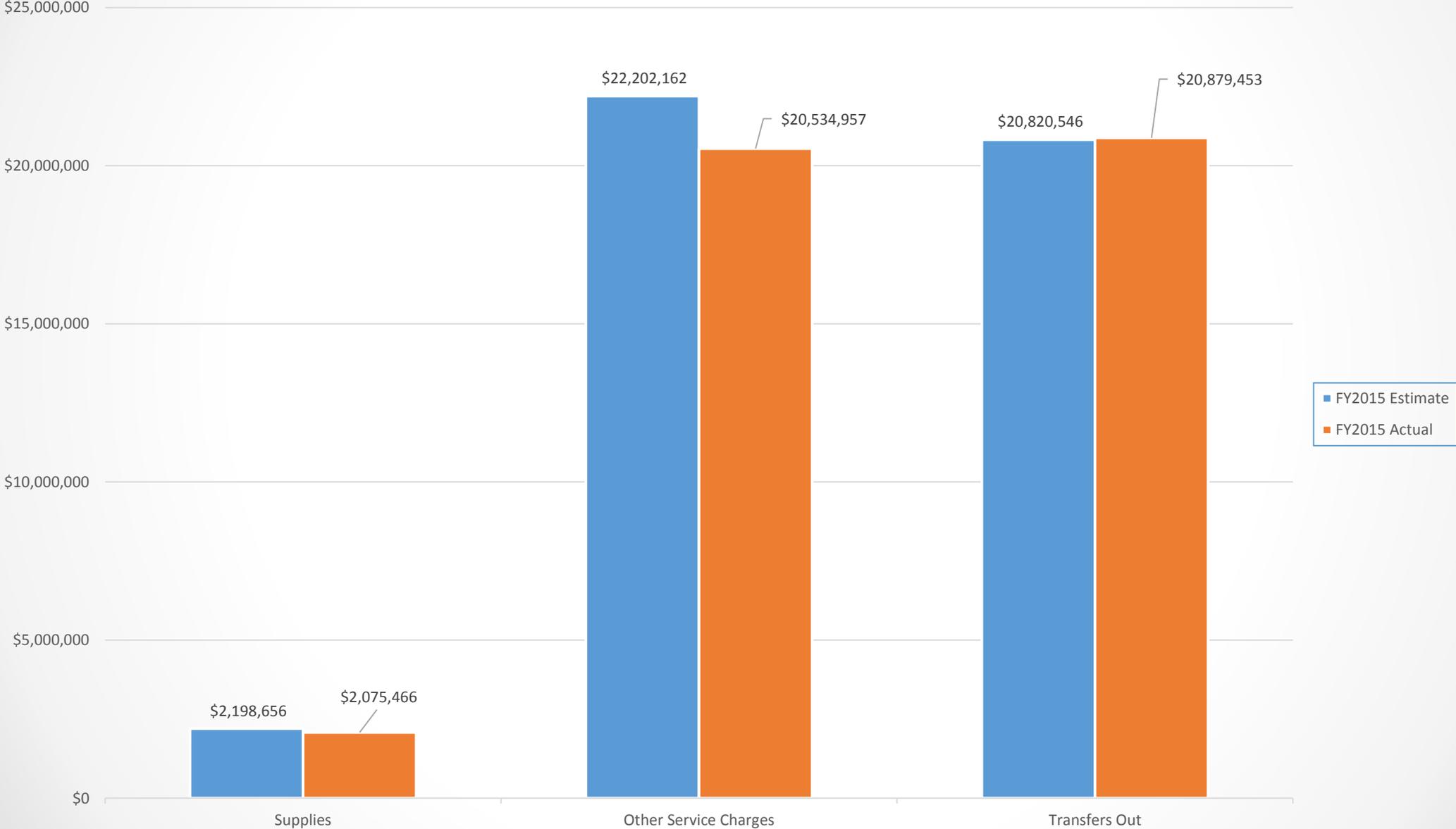


Expenditure Variances

General Fund Other Services & Charges Variances



Expenditure Variances



Other Financial Highlights

- Transformation Fund

- Actual income tax revenues \$10,892,450 (estimate of \$10,911,879)
- Approximately \$24 million in Fund Balance at the end of FY2015; however:
 - Exclusive of funds earmarked for future projects, forecasted fund balance of approximately \$2.8 million in FY2017.
- FY2015 Projects:
 - \$4,048,860 – Police & Fire Personnel
 - \$674,124 – Police Body Cameras
 - \$1,766,291 DC Pension conversion
 - \$138,140 – Public Library Sustainability
 - \$4,575,000 – FMS project

- Vital Streets

- Bond issue totaling \$17 million issued (\$15 million additional issued in FY2016) for advanced construction
 - Resulting in lower over-all costs
- Plan calls for \$22 million in annual investment to reach 70% good and fair for the entire street system over the 15 year income tax extension
- Plan calls for \$6 million annual increase in investment from the State of Michigan – Plan approved early November – Estimated annual increase of approximately \$9.5 million over current appropriation when fully phased in (2021)

Other Financial Highlights

- **Financial Management System**
 - Implementation going well
 - PB Go-Live on October 27
 - Internal Service Fund training complete
 - Finance Go-Live – January 4, 2016
 - Human Resources/Payroll/Timekeeping Go-Live January 2017
- **Parks**
 - 8 priority parks completed over the 2015 construction season
 - Over 40 parks impacted in some way
 - Fund deficit and continued investment solved:
 - \$1.2 million GOF loan
 - Additional CDBG investment
 - Promises kept
 - Following the plan

Other Financial Highlights

- Retiree Health Care

City of Grand Rapids Summary of Defined Benefit Retiree Health Care Funds Fiscal Year Ending June 30, 2015					
<i>Description</i>	<i>General</i>	<i>Police</i>	<i>Fire</i>	<i>Library</i>	<i>Total Funds</i>
Net Position a/o June 30, 2014	\$ 9,563,129	\$ 15,217,860	\$ 10,276,569	\$ -	\$ 35,057,558
Employer Contributions	\$ 4,979,276	\$ 5,472,019	\$ 3,717,718	\$ 141,091	\$ 14,310,103
Retiree Contributions	\$ 396,863	\$ 151,552	\$ 116,542	\$ 13,149	\$ 678,106
Net Interest Earnings	\$ 5,166	\$ 4,312	\$ 3,247	\$ -	\$ 12,725
Investment Earnings	\$ 233,329	\$ 504,031	\$ 330,437	\$ -	\$ 1,067,797
Miscellaneous Expenses	\$ (152,778)	\$ (74,265)	\$ (66,076)	\$ -	\$ (293,118)
Claims Paid	\$ 5,988,891	\$ 1,504,777	\$ 2,089,318	\$ 154,240	\$ 9,737,226
Net Position a/o June 30, 2015	\$ 9,036,095	\$ 19,770,732	\$ 12,289,118	\$ -	\$ 41,095,945
2015 DC contributions	\$ 605,916	\$ 165,637	\$ 47,783	\$ 67,245	\$ 886,581

Looking Ahead

Economic Outlook Assumptions

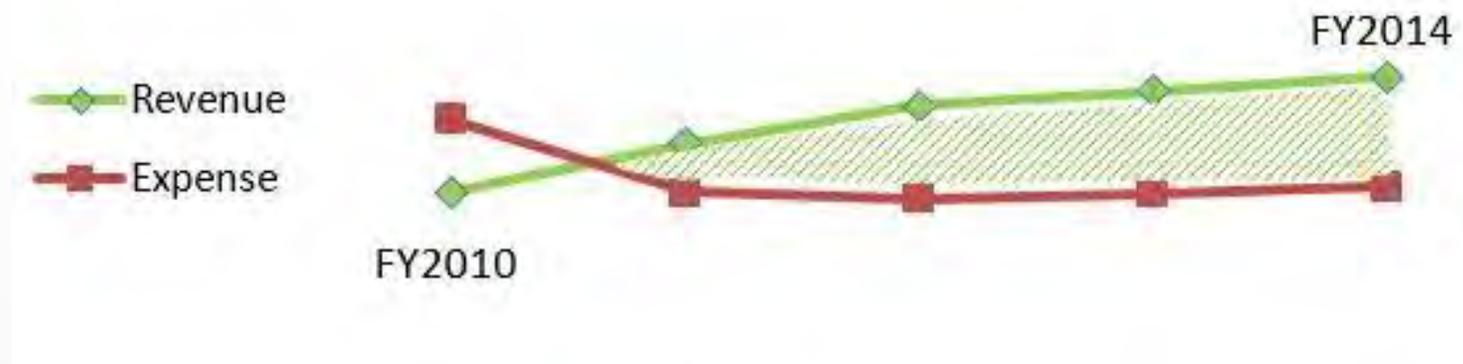
- **Property Taxes**
 - Slow growth of approximately 1% per year
 - Full effects of Personal Property Reform not yet known
- **State Shared Revenue**
 - Steady growth of 3% in FY2016 and 2.88% in FY2017-FY2020
 - Contingent upon the State slowly recovering along with the locals
 - Continue to deposit ½ of CVTRS revenues into the General Fund
- **Income Taxes**
 - Assumes 3% increase in FY2016 and 2.5% growth annually thereafter
- **Wages**
 - Contracts are negotiated through 6/30/16 with included pay increases that vary depending on the bargaining group.
No wage increases were forecasted in FY2017-2020
- **Healthcare**
 - Full effects of the Affordable Care Act not yet realized
 - Affordability tests
 - Excise Tax limitations
 - Additional fees already implemented
 - Increases continue to exceed the rate of inflation
- **Retiree Healthcare**
 - GASB standards necessitate new reporting requirements
 - Costs have become more predictable due to the switch to Defined Contribution type plans
- **Pension**
 - FY2015 was forecasted to be the highest contribution percentage year for the General Pension System with small decreases going forward. (FY2016 decreased from 25.53% to 21.82%)
 - Stock markets volatility will make this less predictable

Conclusions

- FY2015 finished \$1.1million better than estimated; but:
 - On-going revenues exceeded on-going expenditures when adjusting for one-time and/or temporary revenue streams but only by \$103,603.
 - Transformation is not complete
 - Phase II and III of the Transformation plan
 - Will require additional investment and improvements in customer service and employee development
 - Must focus on Key Performance Indicators to guide our progress
 - When New initiatives and/or new services are deemed essential, we need to pair such changes in services with cuts in other areas
 - The current economic recovery is fragile
 - Additional State investment will be required to meet the 70% good and fair goals of the Sustainable Streets Task Force
 - Fund Balance policy levels of 15% in GOF and 10% in the Budget Stabilization Fund are closer, but not yet fully realized
 - Reserves will be the City's only fall back position during the next economic downturn

Conclusions

- Plan-Do-Check-Act
 - 45 positions were added in FY2015 to meet current business needs
 - The City's budget is delicately balanced
 - Focus on our Transformational objectives
 - Maintain operational cap space
 - FY2017's primary focus will be that the desired outcomes are being achieved



City of Grand Rapids Sustainable City Platform



COMMUNITY AND POLICE RELATIONS RECOMMENDATIONS UPDATE

Chief David Rahinsky

Mari Beth Jelks

Patti Caudill

1. Review City Hiring Practices

Status: A Citizen's Committee, to oversee the remodeling of the City's hiring practices, has been formed. The Report stipulates that: *“the City should hire a consultant to work with the Citizen's Committee, NAACP's Greater Grand Rapids Branch, Grand Rapids Urban League, and LINC to develop new models to improve hiring outcomes to increase workforce diversity of minorities and women within the legal constraints imposed by Michigan law.”* The Citizen Review Committee has reviewed all HR major policies and practices – working on developing preliminary recommendations for discussion in December.

2. Strengthen the Connection between the Community and Police Department

Status: The Command Staff has worked hard to create additional opportunities for citizen engagement. Service Area Captains regularly schedule community meetings in their respective areas, which includes the popular “Coffee with the Captain” initiative.

2. Strengthen the Connection between the Community and Police Department

Expand Community Policing to include evening hours and five days of coverage.

Status: The Report stipulates that: “the redeployment of existing officers with the new Community Police Officers should be in place by September 8, 2015, or as quickly as additional police officers can be hired.” Two new officer positions were approved for Fiscal Year 2016. Attrition has presented a challenge with filling these positions in a timely manner.

2. Strengthen the Connection between the Community and Police Department

Improve Community and Police Department Communications.

Status: Two new sergeant positions were approved for Fiscal Year 2016. One position allowed for the creation of a full-time Public Information Officer. This position has been filled, and it is providing the media and the public with a conduit for information and two-way communication. The CRC Sub Committee along with the GRPD and the Communications Director have had discussions and will be meeting this month to develop a plan.

2. Strengthen the Connection between the Community and Police Department

Status: The Department continues to promote transparency. It utilizes www.CrimeMapping.com to provide the public with valuable information about crime activity by neighborhood. Our goal is to reduce crime through a better informed citizenry.

– Substantially Completed –

3. Additional In-Service Training

The City's Human Resources Department and Diversity and Inclusion should work with the Police Department to provide mandatory Cultural Competence Training and mandatory Implicit Bias Training for all police officers.

Status: A Request for Proposals for Implicit Bias Training has been issued. The Report stipulates that: *“the City should hire qualified trainers to begin by July 14, 2015, and be completed by December 8, 2015”.*

– In Progress –

4. Share our Strategic Plan

Status: The Department undertook an organizational review to identify its strengths and weaknesses, as well as opportunities for improvement. This report has been completed and disseminated.

– Substantially Completed –

5. Phase In Body Worn Cameras (BWC)

Status: After extensive research of the existing BWC options, a vendor was selected. This particular company, AXON, provides a “turnkey” to the various challenges faced with launching a BWC program. The contract with AXON has been signed for 298 BWCs. Delivery is anticipated to begin in November 2015. The Reports states that: *“After evaluating the first phase of the program, the Police Chief should make a progress report to the City Commission by December 8, 2015”*.

– Substantially Completed –

6. Develop Protocols for BWC

Status: The Department developed a policy of protocols that included data retention schedules, protection for citizens' privacy, and access to the data. *City of Grand Rapids Administrative Policy 15-01* was signed by the City Manager on March 10, 2015.

– Completed –

7. Retain a Consultant to Review Disparities in Arrest Percentages

Status: The City has committed to hiring a consultant who will conduct an independent study of the disparity of arrests of minority citizens in the city of Grand Rapids. The Study shall include a qualitative analysis of citizen and police officer interactions, to better understand if there is a disparity in treatment. The Report stipulates that: *“this study should be reported to the City Commission by December 8, 2015”*.

– In Progress –

8. Retain a Consultant to Conduct a Race-Based Review of Traffic Stops

Status: The City has committed to hiring a consultant to follow-up on the racial profiling stop study that was conducted in 2004. Discussion has taken place with the consultant who conducted the original study. The Report stipulates that: *“this study should be reported to the City Commission by December 8, 2015”*.

– In Progress –

9. Review the City's Diversity and Inclusion Practices

Status: All Reviews Completed: Approved by City Commission at the October 23rd Meeting

The City's Community Relations Commission has reviewed over 30 of Grand Rapids' Diversity and Inclusion policies and will bring agenda items to the City Commission in October recommending revisions to a number of City ordinances, and Administrative and City Commission policies. Revisions are suggested for a number of reasons, including:

- Making language and policies more inclusive of all citizens of Grand Rapids
- Correcting department names in policies
- Clarifying policies based on federal and state law

– Substantially Completed –

10. Develop and Acquisition and Use of New Technology Program

Status: The City has developed an *Acquisition and Use of Surveillance Equipment* administrative policy to protect citizen privacy, in balance with the increased use of new surveillance technology. *City of Grand Rapids Administrative Policy 15-03* was signed by the City Manager on March 24, 2015.

– **Completed** –

11. Develop Investigatory Protocols for Officer Involved Shootings

Status: *City of Grand Rapids Administrative Policy 15-02* was signed by the City Manager on March 23, 2015. The Policy stipulates that GRPD officer involved shootings shall be referred to the Michigan State Police for investigation.

– **Completed** –

12. Further Publicize the Role of the Civilian Appeals Board (CAB)

Status: The Report stipulates: “*The City Commission should provide a significant public education campaign to communicate with all citizens about their right to use the Civilian Appeals Board.*” The Department continues to report the outcomes of all appeals. In addition, media releases have been generated and reported on, that further explain the role of the CAB.

The City will continue to expand educational outreach regarding the Civilian Appeals Board.

- Substantially Completed -

Community and Police Relations Recommendations Update

The Grand Rapids Police Department is a police agency that other departments strive to emulate.

We invite outside analysis, secure in the knowledge that our practices and implementation are second to none. These steps will assure the community what we know to be true, that they are protected by the premier law enforcement agency in the state of Michigan.

City Commission Seven Areas of Interest

- | | |
|--|--------------|
| 1. Investing in Police Outcomes | Rahinsky |
| 2. Citywide Succession Planning | Jelks |
| 3. Citywide Diversity Efforts | Jelks |
| 4. City Cemeteries January 2016 | January 2016 |
| 5. SAFE and Strong Neighborhoods Recommendations | Completed |
| 6. FEES | Completed |
| 7. Street Funding | Completed |

Investing in Police Outcomes



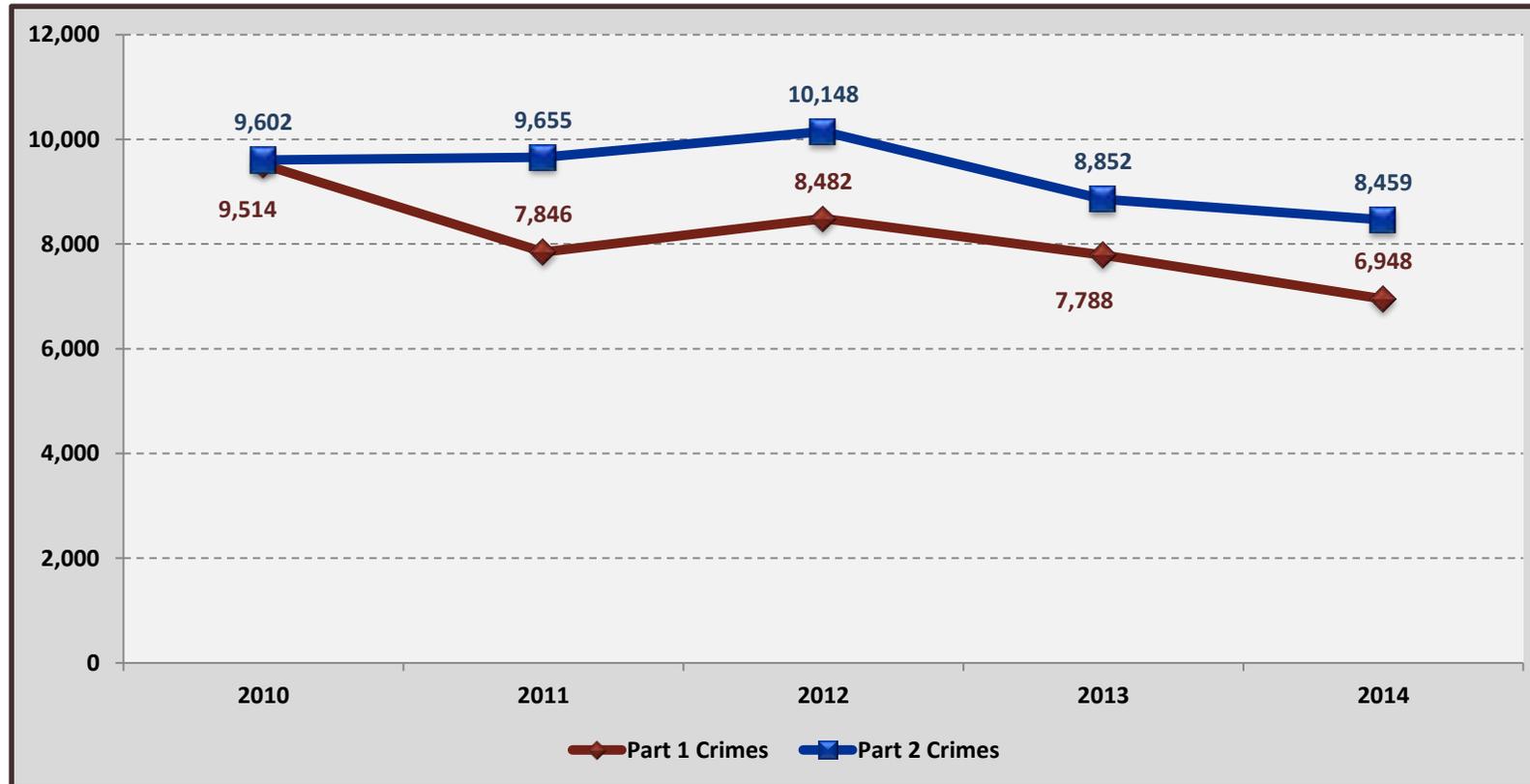
Chief David Rahinsky

November 10th, 2015

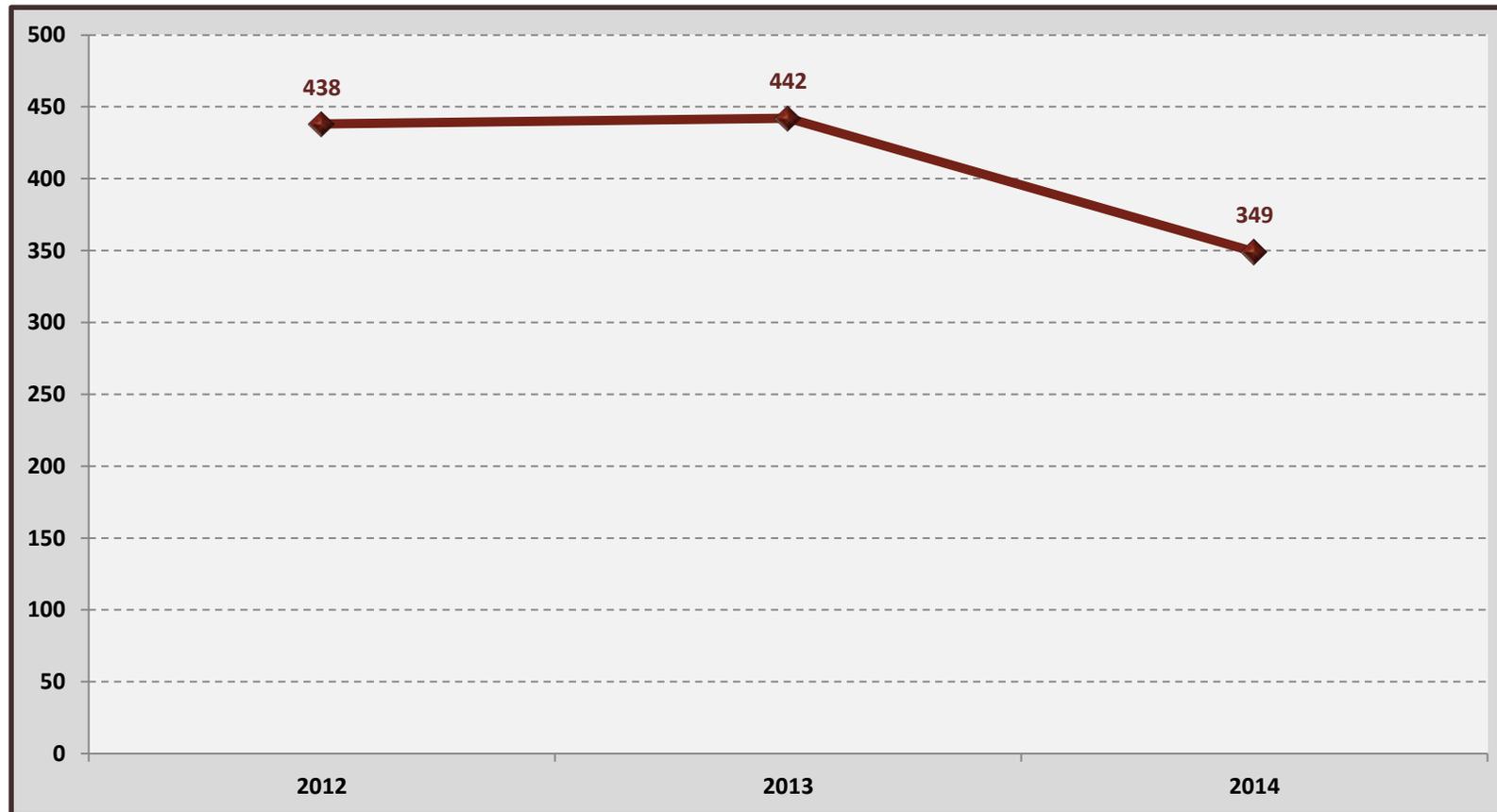
Traditional Outcomes

- ∞ Uniform Crime Report
- ∞ Number of Complaints

Uniform Crime Report



Number of Complaints



Defining Success

☞ Lower crime

☞ Safe neighborhoods

☞ A vibrant, livable city

Paradigm of Policing

- ☞ Keeping pace with growth
- ☞ The challenges of measuring prevention
- ☞ Value of staying above the criminal curve

Emerging Outcomes



**Building
Trust &
Legitimacy**

Promoting trust and ensuring legitimacy through procedural justice, transparency, accountability, and honest recognition of past and present obstacles



**Policy &
Oversight**

Developing comprehensive and responsive policies on key topics while also implementing formal checks/balances and data collection/analysis

Emerging Outcomes

**Technology
& Social
Media**

Balancing the embrace of technology and digital communications with local needs, privacy, assessments, and monitoring

**Community
Policing & Crime
Reduction**

Encouraging the implementation of policies that support community-based partnerships in the reduction of crime

Emerging Outcomes



Training & Education

Emphasizing the importance of high quality and effective training and education through partnerships with local and national training facilities



Officer Wellness & Safety

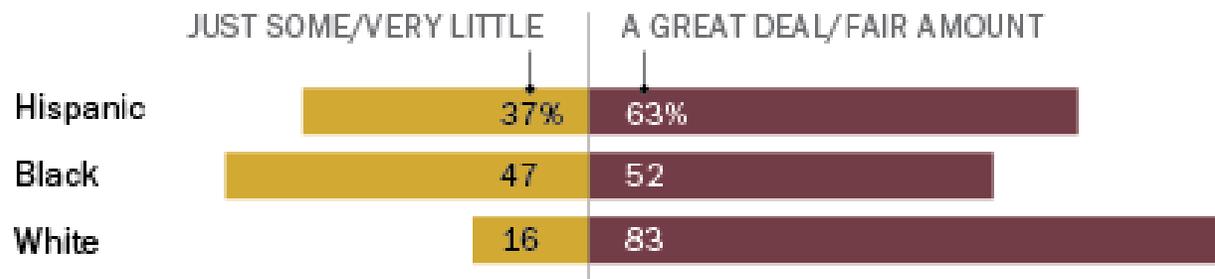
Endorsing practices that support officer wellness and safety through the re-evaluation of officer shift hours and data collection/analysis to help prevent officer injuries

PEW Study

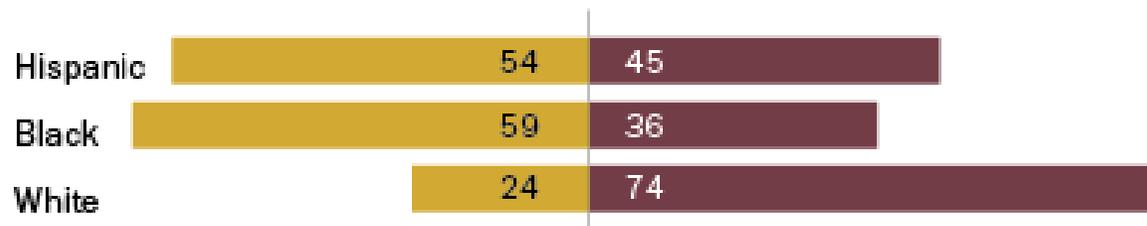
Good Cop, Bad Cop

How much confidence do you have in police officers in your community...

...to do a good job of enforcing the law?



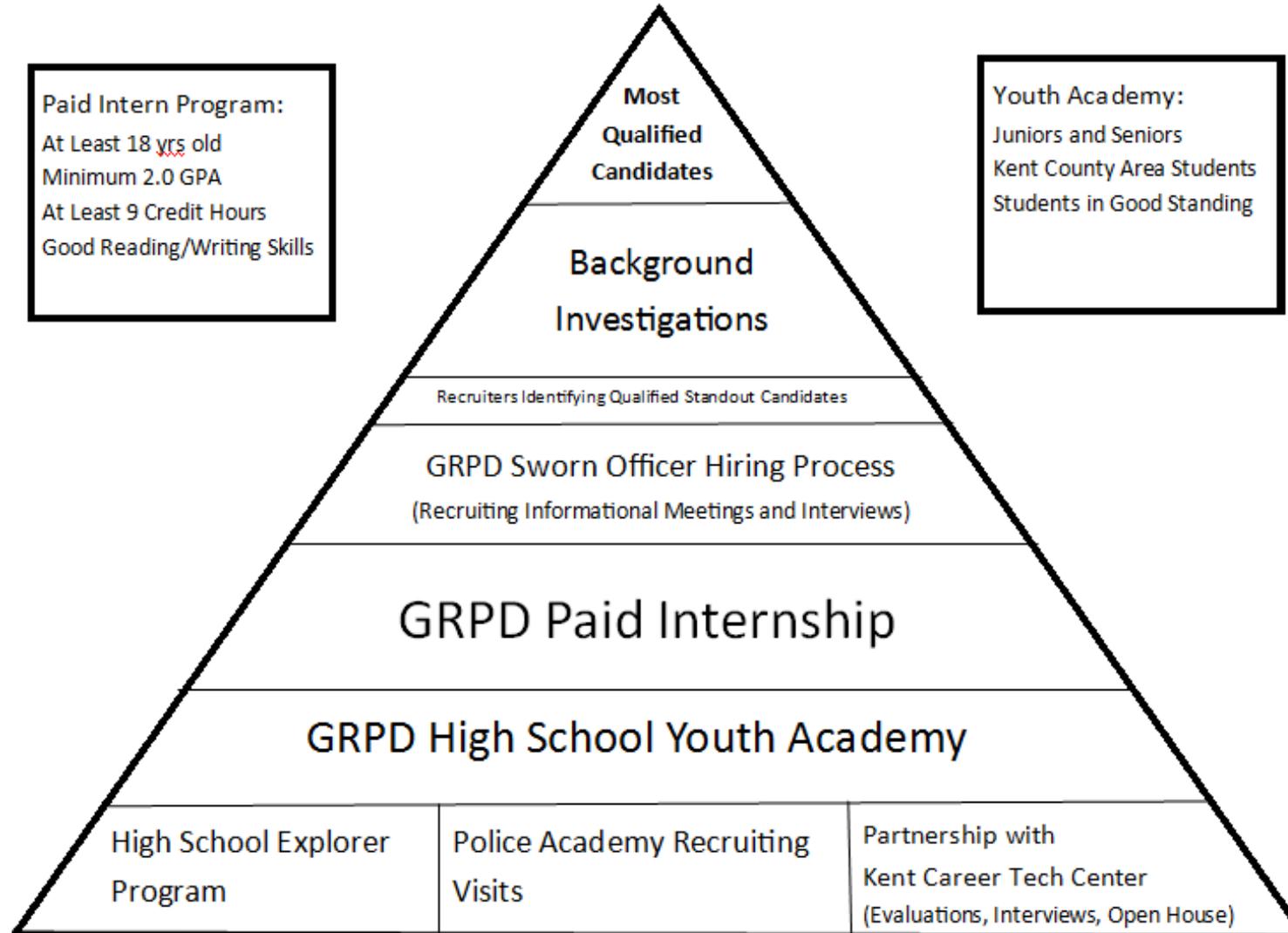
...to not use excessive force on suspects?



Diversifying our Workforce

- ☞ Partnerships with GRPS
- ☞ Police Explorer Program
- ☞ Youth Police Academy

Moving Forward – Recruiting for Diversity



Enhancing Trust

☞ Boys and Girls Club

☞ Camp O'Malley

☞ On Base

Boys & Girls Club of Grand Rapids

- ∞ **Basketball Program:** Teaches kids to set goals, and instills the mindset that they can do anything with hard work and practice. Also provides an opportunity to travel, allowing them to see things beyond what they might think their lives are limited to.
- ∞ **Relationships with Schools:** Building relationships with administrators, teachers, and students to help kids become a part of the program at a young age so they can develop the skills to graduate.
- ∞ **Healthy Life Skills:** Talks about the effects of drugs, promotes making decisions to live a healthier life, and promotes exercise with physical activities.



Increasing Engagement

- ∞ A law enforcement strategy that encourages interactive partnerships between law enforcement agencies and the people they serve.
- ∞ Developing community partnerships
- ∞ Engaging in problem solving
- ∞ Partnerships help communities find solutions to problems through collaborative problem solving and improved public trust.
- ∞ The public plays a role in public safety problems.
- ∞ CLEAR: Reduce recidivism



Community Policing



- ☞ Build partnerships with neighborhood and business associations
- ☞ Train Neighborhood Crime Prevention Organizers
- ☞ Coordinate Neighborhood Watch programs
- ☞ Address quality of life issues and crimes



Strong Neighborhoods – Neighborhood Associations

- ☞ 37 total Neighborhood Associations and neighborhood watch groups
- ☞ Conduct home and business security surveys
- ☞ Organize “National Night Out”
- ☞ Assist detectives in crime prevention strategies, and assist residents with community social programs
- ☞ Work with landlords, tenants, and other City departments in addressing quality of life and housing issues

Nonprofits & Service Providers



Partnerships

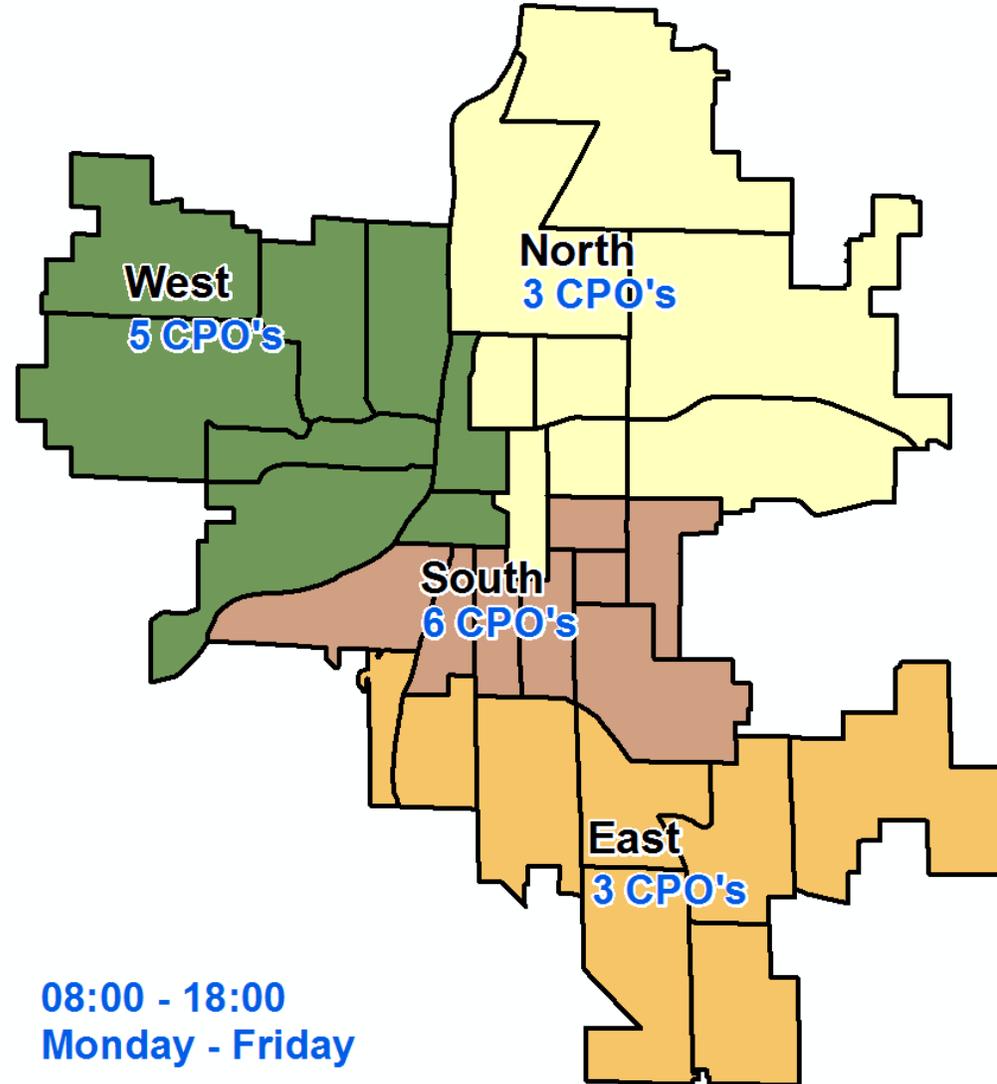


Capacity

∞ Every Officer is a Community
Police Officer

∞ Second shift of Community
Police Specialists

Community Police Officers



New Outcomes

☞ Short Term

- Improve relationships

☞ Mid-Term

- Build Trust

☞ Long Term

- A police department that mirrors the community it serves
- A collaborative effort between the police department and the community to improve neighborhood safety

The SAFE Task Force

- ∞ **P** – **P**revention Investments, aimed at the prevention of violence
- ∞ **E** – **E**liminate Violent Acts, focused on intervening and targeting those who commit violent acts
- ∞ **A** – **A**ctivate Economic Opportunities, enhancing the economic and income status of teens and young adults
- ∞ **C** – **C**ommunity Engagement, Education and Empowerment by promoting information and community engagement
- ∞ **E** – **E**ffective Positive Change in Public Institutions by revising City, State and Local policies

President's Task Force on 21st Century Policing

∞ Recommendations regarding:

- Communities
- Law Enforcement
- Local Government

Communities

- Engage with local law enforcement; participate in meetings, surveys, and other activities.
- Participate in problem-solving efforts to reduce crime and improve quality of life.
- Work with local law enforcement to ensure crime-reducing resources and tactics are being deployed that mitigate unintended consequences.
- Call on state legislators to ensure that the legal framework does not impede accountability for law enforcement.
- Review school policies and practices, and advocate for early intervention strategies that minimize involvement of youth in the criminal justice system.

Law Enforcement

- ☞ Review and update policies, training, and data collection on use of force, and engage community members and police labor unions in the process.
- ☞ Increase transparency of data, policies, and procedures.
- ☞ Call on the POST Commission to implement all levels of training.
- ☞ Examine hiring practices and ways to involve the community in recruiting.
- ☞ Ensure officers have access to the tools they need to keep them safe.

Local Government

- ☞ Create listening opportunities with the community.
- ☞ Allocate government resources to implementation.
- ☞ Conduct community surveys on attitudes toward policing, and publish the results.
- ☞ Define the terms of civilian oversight to meet the community's needs.
- ☞ Recognize and address holistically the root causes of crime.

A Collaborative Mission

∞ **Current Mission Statement:** “The members of the Grand Rapids Police Department are committed to providing the highest quality of professional police services. We strive to protect life, enforce and uphold the law, preserve order, and protect property. In partnership with citizens, city government, and other stakeholders, we commit ourselves to improving the quality of life in our community.”

Listening Tour

∞ Partner in identifying:

- Priorities
- Core values
- Desired outcomes

∞ Discussion of jointly constructed outcomes



CITY OF GRAND RAPIDS SUCCESSION PLANNING SNAPSHOT

New City Wide Succession Plan Development by December 2015

Administrative Services has been and is currently holding citywide Succession Planning Sessions with all top management and supervisory employees. The goal of these sessions is to complete a comprehensive and sustainable succession plan by December 31, 2015. This Succession Plan shall incorporate:

- (a) Standardization of the methodology used to formulate the succession plan, and
- (b) Individualize departmental succession plan module which can be modified and adapted based on the needs of the departments.

This methodology provides the best flexibility to meet the needs of the city as a whole and the departments within the city. The City's 2016 Succession Plan will effectively to achieve the internal and external department objectives and full implementation of the 2016 Succession Plan is anticipated for March, 2016. We give credit to the initiative of our departmental leaders as they are fully participating (99% attendance) and have begun implementation of their individual succession plans.

The City Wide Succession Planning Process is set up into (4) modules with each covering an important topic. They are,

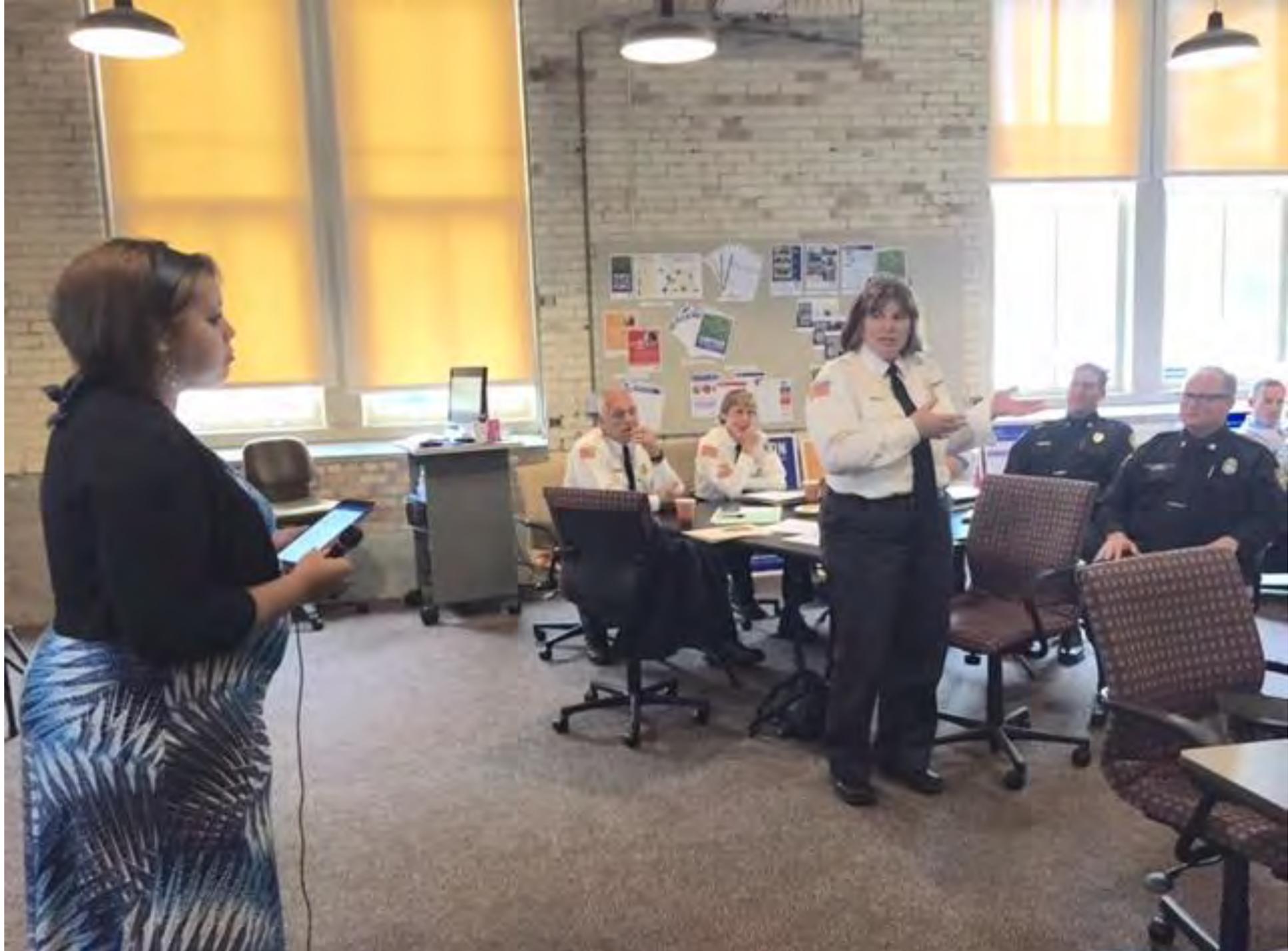
- > Turnover Demographics & Workforce Transitions
- > Diversity & Inclusion
- > Communications (internal & External)
- > Training

All modules include the following components:

EDUCATION	An educational presentation is provided on the Module topic through live presentations by (1) an external specialist and (2) an internal specialist. The external specialist outlines data regarding the topic modules from a macro prospective while the internal specialist outlines city-specific data and learning tools including articles and information.
INTERACTIVE TEAM WORK ASSIGNMENT	Following the Module topic presentations, the groups are engaged in a team work assignment that includes brainstorming, evaluation and report activities to further vet out the learnings of the module.
LEADERSHIP DEVELOPMENT FOR FUTURE INCORPORATION OF GOVERN GR MEMBERS	Special presentations by Govern GR have been incorporated into each module. Developing the next generation of leadership is a key component of organizational progress and is vital to any effective Succession Plan. Administrative Services has been the catalyst in the formation of this new association designed to : (1) develop and cultivate the professional talents of the newly hired employees; (2) to foster a strong intergenerational bond between the more recently hired employees and tenured employees; (3) to build an internal communications network ; and (4) to establish an intergenerational resource group to enrich workplace culture and communications
HOMEWORK ASSIGNMENT	At the end of each session departments are giving a common homework assignment related to the Module to identify best practices related which can/should be incorporated into their succession plan.





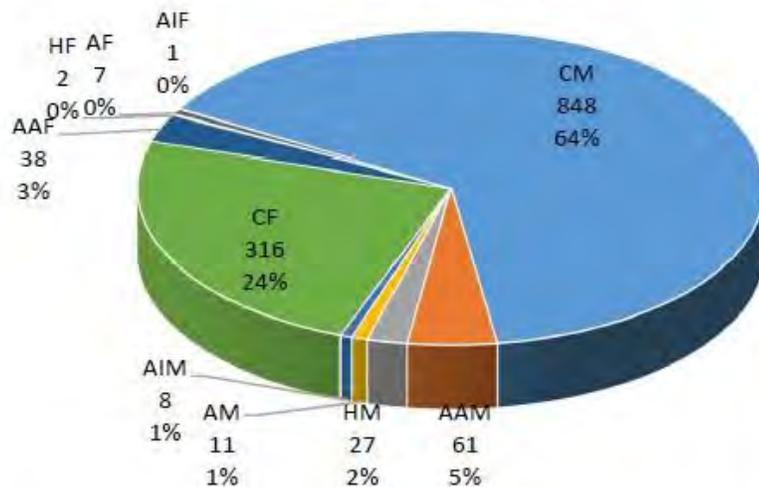




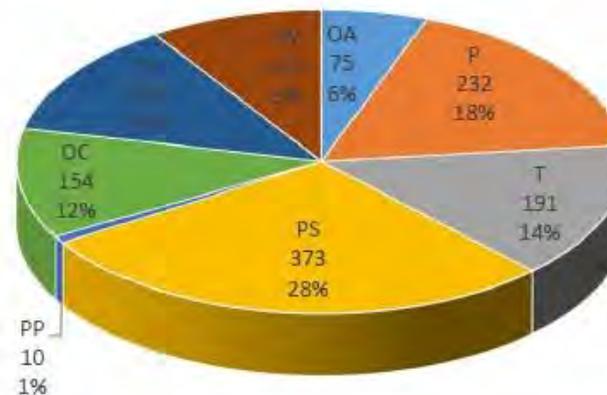
City of Grand Rapids Succession Planning Report Update

11/1/2015

Total Employees
By Race and Gender
1319 Employees



Total Employees
By EEO Code
1319 Employees

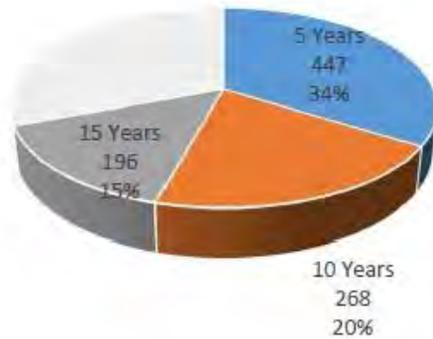


CM	Caucasian Male	CF	Caucasian Female
AAM	African Amer. Male	AAF	African Amer. Female
HM	Hispanic Male	HF	Hispanic Female
AM	Asian Male	AF	Asian Female
AIM	Amer. Indian Male	AIF	Amer. Indian Female

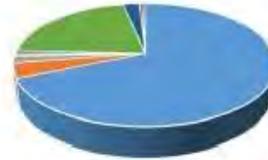
OA	Officials & Administrators
P	Professionals
T	Technicians
PS	Protective Services
PP	Paraprofessionals
OC	Office Clerical
SC	Skilled Craft
SM	Service Maintenance

City of Grand Rapids Succession Planning Report Update 11/1/2015

Total Employees
1319 Employees

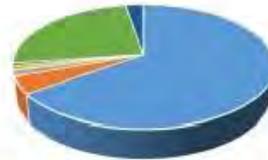


Potential Retirements 5 Years
by Race and Gender
447 Employees



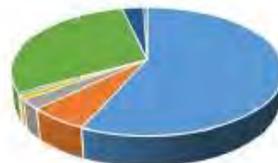
• CM • AAM • HM • AM • AIM • CF • AAF • HF • AF • AIF

Potential Retirements 10 Years
by Race and Gender
268 Employees



• CM • AAM • HM • AM • AIM • CF • AAF • HF • AF • AIF

Potential Retirements 15 Years
by Race and Gender
196 Employees



• CM • AAM • HM • AM • AIM • CF • AAF • HF • AF • AIF

Potential Retirements 5 Years
by EE0 4 Category
447 Employees



• OA • P • T • PS • PP • OC • SC • SM

Potential Retirements 10 Years
by EE0 4 Category
268 Employees



• OA • P • T • PS • PP • OC • SC • SM

Potential Retirements 15 Years
by EE0 4 Category
196 Employees



• OA • P • T • PS • PP • OC • SC • SM



City of Grand Rapids Diversity & Inclusion Snapshot

New Diversity Plan developed in 2014

The Diversity & Inclusion Strategic Plan was unveiled in 2014 "21st Century Diversity & Inclusion Pathways to Possibilities" which reflect the transformation diversity plans, objectives, strategies, outcomes and metrics. This comprehensive plan includes short and long term solutions including but not limited to:

- Developing Leadership Curriculum regarding Diversity & Inclusion training including: Developing Cultural Competence, ICARE standards, Interviewing Skills and Policy review
- Increase diversification of City Boards and Commissions
- Inclusion of diversity all interview panels for hiring and promotions
- Increasing training and education opportunities for City employee
- Developing practical recruiting strategies for City employment

Diversity Hiring Outreach Initiatives

The outreach focus for both internal and external customers /stakeholders centers on casting a "wide net" across the community and hiring environment.

- Evaluate hiring & recruitment materials advertisement for bilingual inclusion
- Participating in various recruiting partnership opportunities including the Diversity Partnership on Human Resources Recruiting Consortium w/ Grand Rapids Public Schools
- Coordinate and assisting Human Resources recruiting fairs including but not limited to: College Recruiting, Veterans Recruiting, and diversity recruiting
- Staff Liaison to the City Manager's Community and Police Relations Committees regarding Policy Review, Communications, City Hiring Practices and oversight committee

Diversity & Inclusion Enhancement of City Communications

Effective communication is key to responsive government. The transformation of the Diversity and Inclusion Office has provided enhanced communications for both internal and external customers. These enhancements include but are not limited to:

- Development of a monthly Community-Wide Calendar of Diversity events
- Marketing other city departments program materials to diverse community groups
- Development of a quarterly newsletter regarding Diversity and Inclusion activities
- Increase social media (Facebook and twitter) presence of the City of Grand Rapids and the Grand Rapids Community Relations Commission
- Participation in community engagement events representing the Diversity and Inclusion office.

Diversity & Inclusion of Business Opportunities

Specific focus on the cultivation of business opportunities for small business in Grand Rapids continues to be a priority of the City Commission

- Continued collaboration with the Monday Group to cultivate and enhance the partnership between Prime and Sub contractors
- Updates to the Equal Business Opportunity programs to enhance the availability and variety of bid discounts offered by the City
- Enhanced engagement with the City's various Chambers including the Grand Rapids Chamber, Hispanic Chamber and the Black Chamber.
- Assessment and review of performance metrics for current programs

A Strategic Conversation About the High Cost of Disparities

From Current State to Future State

Background

West Michigan Leadership Collaborative report:

- Validates that racial disparities exist throughout the region in three sectors
 - 1) Economic Development
 - 2) Education
 - 3) Health Equity
- Confirms there is a negative economic impact if these disparities are not addressed



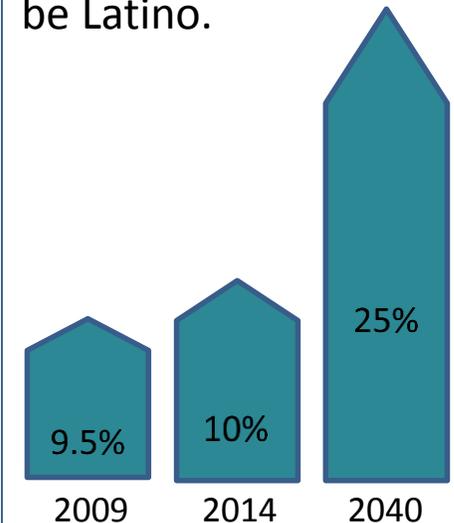
Background - A Demographic Transformation is Underway

Kent County population percent change by race:

RACE	2009 POPULATION	2014 POPULATION	PERCENT CHANGE
White	459,291	465,123	▲ 1%
Black	56,485	59,316	▲ 5%
Hispanic	57,317	63,484	▲ 10%
Asian	13,850	15,628	▲ 13%
Two or More Races	12,228	14,699	▲ 20%
American Indian/ Alaskan Native	2,096	2,188	▲ 4%
Native Hawaiian/ Pacific Islander	179	150	▼ 16%

Source: MLive

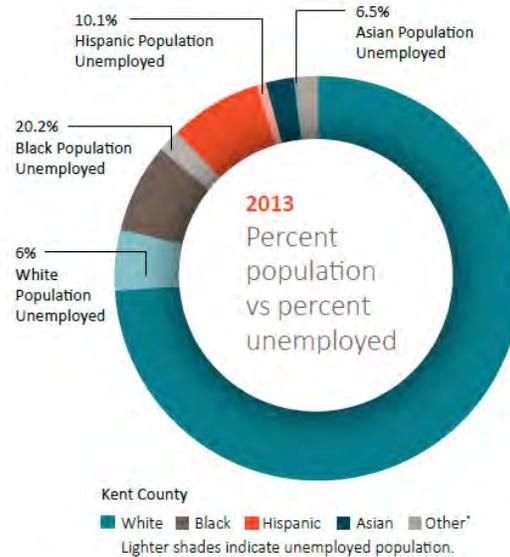
In Grand Rapids, Dr. Manuel Pastor projected that by 2040, nearly ¼ of the city's population will be Latino.



--Pastor is Professor of Sociology and American Studies & Ethnicity at the University of Southern California

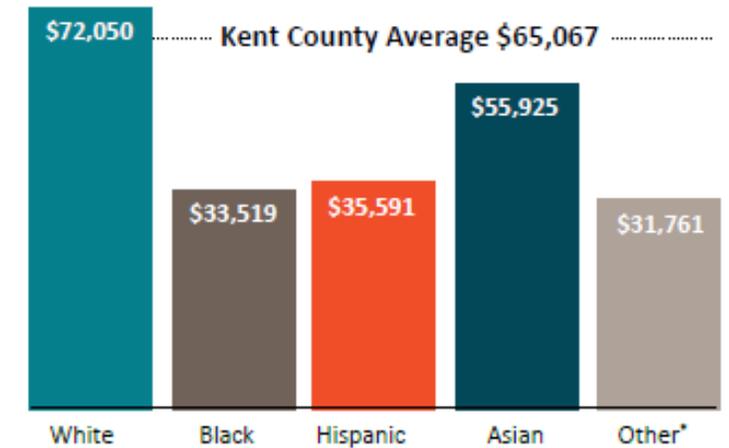
Current State Indicators: Unemployment and Income

- Wealth Gap
- Unemployment
- Housing
- College Attainment



Median family income

The median income for individuals is based on individuals 15 years old and over with income. The median divides the income distribution into two equal parts: one-half of the cases falling below the median income and one-half above the median.



2013 Post-secondary education's and relevance to home ownership

It is vital to not only measure median income and unemployment when we consider community economic development. We must expand our view to consider how these indicators intersect with educational attainment as well as home ownership.

RACE	POST-SECONDARY ATTAINMENT**	HOMES OCCUPIED	PERCENT OF HOMES OWNER OCCUPIED
White	46.1%	186,387	76.5%
Black	19.1%	21,194	34.8%
Hispanic	14.0%	14,782	46.1%
Asian	35.5%	3,669	69.3%
Kent County	49.1%	229,373	70.1%

SOURCES: U.S. Census Bureau, American Community Survey (2009-2013 1-year estimates) Table S2501; American Community Survey, One Year Estimates, 2013; U.S. Census prepared by Mark Woltman at K-Connect; U.S. Census Bureau, American Community Survey (ACS 2013 5-year estimates) Table B25003(B, C, D, E, F, G, H & I)

* Other is defined as the median family income for Other race, Native American Races and Two or More Races

** Associates or Higher degree

Current State Indicators: Education

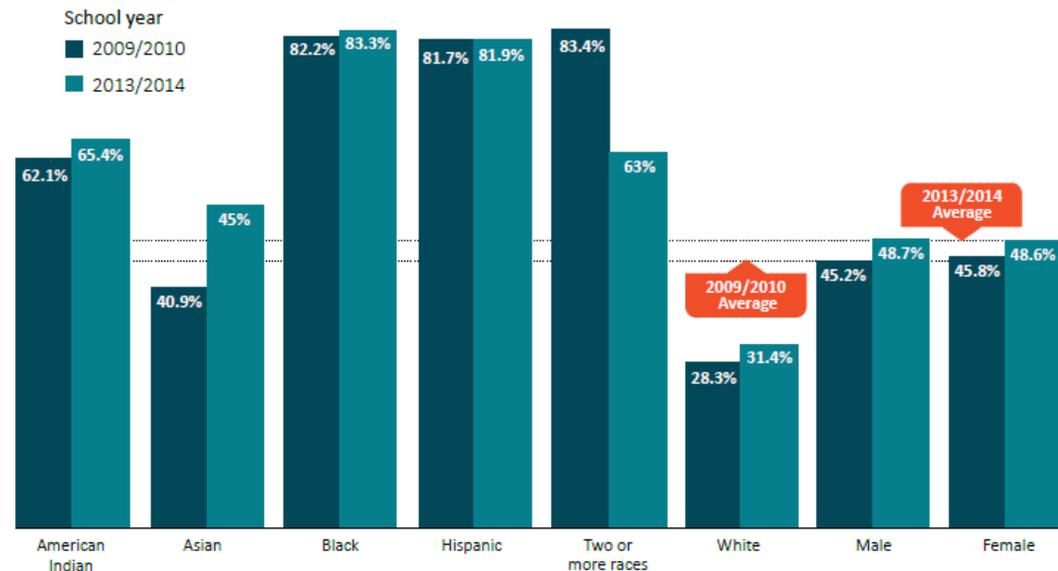
- Number of Students receiving Free & Reduced Lunch

- Graduation rate in Kent ISD

RACE/ETHNICITY	ISD GRAD RATE		PSA GRAD RATE		LEA GRAD RATE	
	2010	2014	2010	2014	2010	2014
American Indian	43.8%	50%	0%	0%	43.8%	54.6%
Asian	77.1%	83.4%	66.7%	72.7%	77.4%	83.9%
African American	48.2%	53.4%	30.4%	26.6%	48.5%	59.7%
Pacific Islander	57.1%	100%	0%	0%	57.1%	100%
White	84.5%	84%	75.8%	51.4%	84.6%	87.3%
Hispanic	56.7%	61.3%	33.3%	44.4%	57.1%	62.9%
Two or More Races	52.6%	67%	0%	50%	52.6%	69.8%
TOTAL	75%	76.2%	63.6%	43.6%	75.2%	80.1%

Kent ISD free and reduced lunch

Students from families with incomes below 185 percent of the poverty level are eligible for free or reduced prices in the federal School Lunch Program. Students from families reporting income between 130 and 185 percent of the federal poverty line are eligible for reduced priced meals, while children from families with incomes below 130 percent of poverty are eligible for a fully subsidized or “free” meal.



SOURCES: Michigan Department of Education, Student Count; Michigan Department of Education, Food and Nutrition Services, Office of Nutrition, for 1990-95; Center for Educational Performance Information (CEPI) web site since 1996 (www.michigan.gov/cepi)

Current State Indicators: Health Equity

- No Personal Health Care Provider
- No Health Care Access Due to Cost
- No Health Care Insurance
- Health in Homes—environmental

Health status

Perceived Health Status or “self-rated general health status is useful in determining unmet health needs, identifying disparities among subpopulations, and characterizing unmet health needs.” Below shows those in Kent County who said that their health, in general, was fair or poor.



RACE	2008	2014	PERCENT CHANGE
White	10.0%	10.1%	▲ 0.1%
Black	19.9%	32.4%	▲ 12.5%
Hispanic	11.5%	29.7%	▲ 18.2%
Non-Hispanic	10.7%	11.7%	▲ 1.0%
Kent County Average	10.8%	13.7%	▲ 2.9%
State Average	14.5%	17.7%	▲ 3.2%

Limited health care coverage

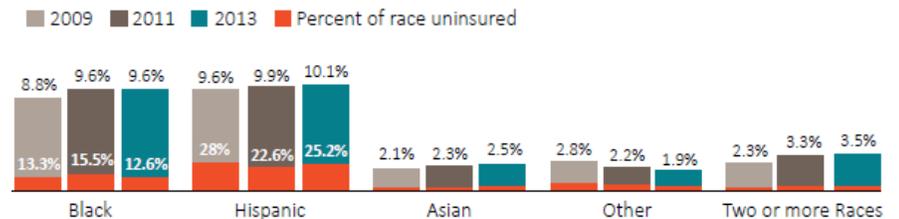
An estimated 14.3% of Kent County adults do not have a personal doctor or health care provider—a figure virtually at par with the 2008 survey results, and notably lower than the statewide and nationwide rates. Below shows respondents in Kent County with no personal health care coverage due to cost.

RACE	2008	2014	PERCENT CHANGE
White	10.9%	10.4%	▼ 0.5%
Black	20.9%	22.9%	▲ 2.0%
Hispanic	20.7%	20.1%	▼ 0.6%
Non-Hispanic	11.9%	10.9%	▼ 1.0%
Kent County Average	12.7%	11.7%	▼ 1.0%
State Average	12.3%	15.5%	▲ 3.2%



Percent population vs percent uninsured

You can see in the graph that Hispanic Americans in Kent County have the highest rate of being uninsured with more than 25%. While just over 12% of African Americans were uninsured last year, this is an improvement from 2013 where more than 15% were uninsured. (Data reflects civilian noninstitutionalized population)



Imagining a Future State

What are the outcomes of an improved Future State?

- Reducing inequity would increase People of Color's income
- Higher income means greater tax revenues
- Reducing inequality would mean a \$1.1 billion tax boost

Source: Lynch, R. & Charting New Trends and Imagining an All-In Nation: Economic benefits of reducing racial and ethnic inequality: Michigan. Center for American Progress.

Imagining an Improved Future State

- What would improvement look like?
- Where do you want to be in 5 years?



Potential Outcome Areas

Community Economic Development Indicators

- Wealth Gap – Income of Residents by Race/Ethnicity
- Unemployment of Residents by Race/Ethnicity
- Housing
- College Attainment by Race/Ethnicity

Health Equity Indicators

- No Personal Health Care Provider by Race/Ethnicity
- No Health Care Access Due to Cost by Race/Ethnicity
- No Health Care Insurance by Race/Ethnicity
- Health In Homes - Asthma

Education Indicators

- Enrollment by Race/Ethnicity
- Number of Students receiving Free and Reduced Lunch by Race/Ethnicity
- Graduation Rate by race/Ethnicity
- Chronic Absenteeism—engagement

Source: West Michigan Leadership Collaborative; *The High Cost of Disparities*, 2015, pg. 18

Potential Countermeasures to Achieve an Improved Future State

What are your top two countermeasures (strategies)?

Resources:

- Transformation Plan
- Safe Alliances for Everyone (SAFE)
- Strong Neighborhoods, Strong City
- Great Housing Strategies



References

- The High Cost of Disparities, West Michigan Leadership Collaborative 2015
- VoiceGR Survey Results, Johnson Center
- The Business Case for Racial Equity in Michigan, W.K. Kellogg Foundation
- Two Challenges, One Solution: Strategies to Address the Talent Gap and Access to Employment for 16- to 24-year-old Disconnected Young Adults in Grand Rapids, MI Grand Rapids Urban League, published by W.K. Kellogg Foundation



Sustainable City Platform

Phase I
Sustainable Operations
2010-2015

Public Safety

Streets and Infrastructure

Quality of Life

Transparency, Accountability and Communications

Transforming City Operations

Citizen Engagement and Customer Service

Phase II
Sustainable Asset Management
2014-2030

GREEN

- Parks and Recreation
- Pools and Water Playgrounds
- Urban Forestry

MOBILITY

- Vital Streets
- Sidewalks
- Bike Lanes

PUBLIC

- Street Lighting
- Stormwater Management
- Public Facilities

Phase III
Continuous Improvement & Innovation
2015-2020

ECONOMIC

- Economic Opportunity

SOCIAL

- Great Neighborhoods
- Social Equity
- Safe Community

ENVIRONMENT

- Resilient Systems
- Balanced Transportation
- Sustainable Assets

GOVERNANCE

- Fiscally Resilient
- Transparent / Accessible
- Good Government

FINANCIAL RESILIENCY

Grand Rapids

Hold Listing

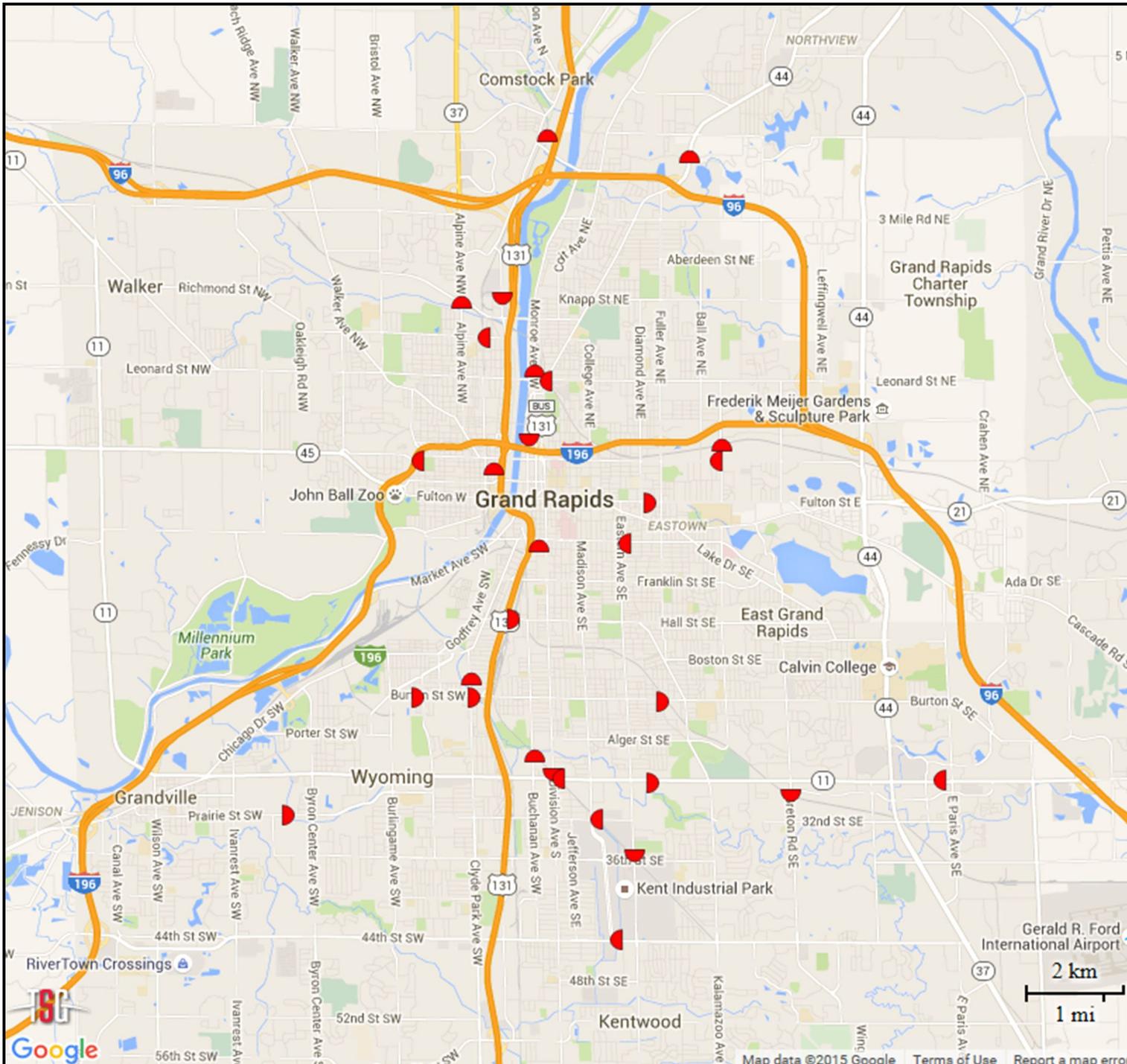
Client: **GR Leaf / Environmental Svcs**

AE: Arnest, Stephen E.

Start: 11/09/2015

End: 12/06/2015

Units: 30



● Posters (30)



2 km

1 mi

Table 1 New Outfalls and Discharge Points

IDEP Name	Receiving Water	Jurisdiction Change	Direct outfall to Waters of the State	Sampled Previously	TMDL	Zoning	Longitude	Latitude	Priority
L20	Unnamed Tributary to Lambertson Creek	N/A	Yes	No	No	LDR	-85.63109462	43.01315699	Medium Low

SQL Server Query Tool



Identify Bottlenecks & Wait Types. DBA Tools. Download Trial Today!



G.R. workers create West Side green space



G.R. workers create West Side green space

WZZM 9:09 p.m. EDT August 19, 2015

GRAND RAPIDS, Mich. (WZZM) -- Some Grand Rapids city employees have decided to pitch in to make one neighborhood more green.

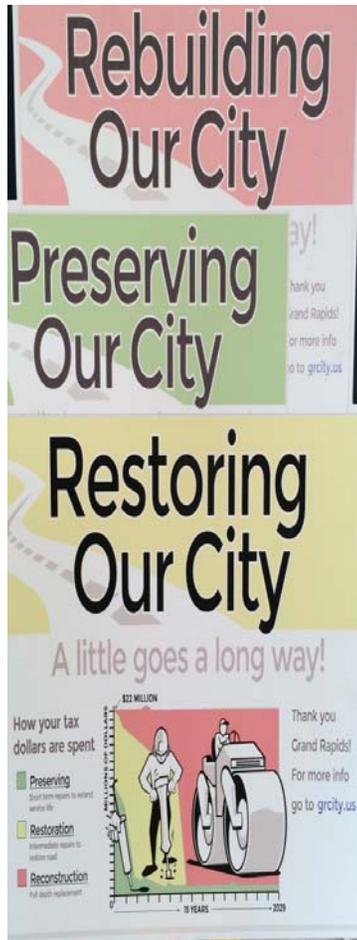
About 20 members of govern:GR and other city employees planted perennials at Tremont Green Space on the city's West Side. The city created the green space after tearing down homes either on or near that site, which is along Tremont southwest of the Covell Ave. and 7th St. intersection. Repeated flooding problems prompted the homes' demolition.

"The plants are going to be used to help take care of a water problem that they had in this area," said GR Environmental Services intern Megan Knight. "There was a lot of flooding going on for quite a long time, and the plants are going to help soak up a lot of that water and keep this area from having that problem again."

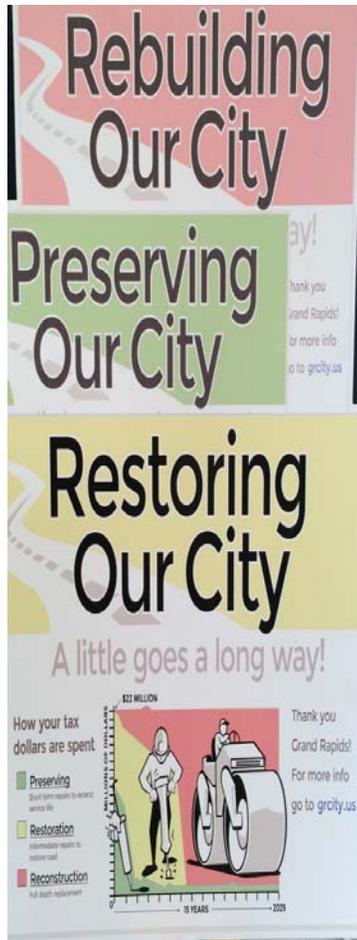
A federal grant helped fund the removal of the homes.

The plantings will help remove standing water, reduce mosquito breeding, and create a new habitat for birds and butterflies.

Read or Share this story: <http://www.wzzm13.com/story/news/local/grand-rapids-west/2015/08/19/gr-workers-create-west-side-green-space/32029779/>



2016 ANNUAL REPORT OF THE VITAL STREETS OVERSIGHT COMMISSION



VITAL STREETS OVERSIGHT COMMISSION
Tammy Helminski - Chairperson
Josh Leffingwell - Vice Chairperson
Cindy Irving - Past Chairperson

EXECUTIVE OFFICE
Eric DeLong - Assistant City Manager
Alicia Bernt - Assistant to the Deputy City Manager

PLANNING
Suzanne Schulz - Managing Direction, Design and Development
Layla Aslani - Community Engagement Facilitator

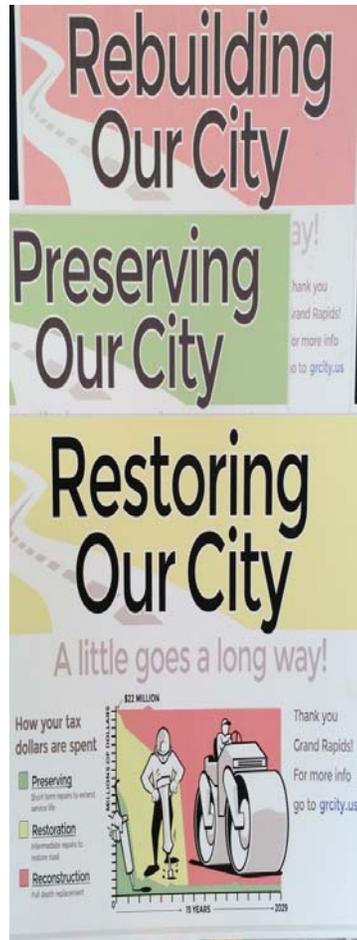
ENGINEERING
Rick DeVries - Assistant City Engineer
John Hayes - Sidewalks
Breese Stam - Project Manager
Tracy Hover - Financial Analyst

FISCAL SERVICES
Scott Buhner - Chief Financial Officer
Jeff Dood - Deputy Chief Financial Officer

PUBLIC SERVICES
James Hurt - Public Services Director
Chris Zull - Traffic Safety Manager
Jason Carter - Public Services Superintendent
Carrie Rivette - Environmental Services

GUIDING PRINCIPLE #10 – PLAN

LOW IMPACT DESIGN



Low impact design will be the default design approach for street, sidewalk and right-of-way repair, improvement and reconstruction and shall be used unless clear engineering difficulties prevent its use in order to enable the City to achieve a minimum of Stormwater Management Level C investment by FY2022 as depicted in the 2013 Stormwater Asset Management Plan.

GUIDING PRINCIPLE #10 – DO LOW IMPACT DESIGN

Rebuilding Our City

Preserving Our City Thank you Grand Rapids! For more info go to grcity.us

Restoring Our City

A little goes a long way!

How your tax dollars are spent

\$12 MILLION

Thank you Grand Rapids! For more info go to grcity.us

15 YEARS

RECONSTRUCTION LEGEND

RECONSTRUCTION STORM SEWER

PEARL STREET

THE GRAND ROAD

GUIDING PRINCIPLE #10 – DO LOW IMPACT DESIGN

Rebuilding Our City

Preserving Our City

Restoring Our City

How your tax dollars are spent

Preserving
Restoration
Reconstruction

15 YEARS 2020

Green Infrastructure Details and Specifications.

CITY OF GRAND RAPIDS
Green Infrastructure
STORMWATER PLANTER

Description:
A stormwater planter is a vegetated green infrastructure practice relying on specified soils and vegetation to treat and absorb stormwater that drains to it. It is different from other vegetated practices as it typically has concrete vertical side walls allowing it to be incorporated into congested street corridors or attached to the perimeter of a building. Planter boxes are often categorized either as flow-through planter boxes or infiltrating planter boxes. Infiltrating planter boxes have an open bottom to allow infiltration into the underlying soils. Flow-through planter boxes are completely lined and have an underdrain system to convey flow that is not taken up by plants to drainage areas.

Green Objectives:

- Reduce stormwater run-off that would normally flow directly into the City's already burdened storm sewer system.
- Improve water quality by filtering pollutants.
- Reduce effective impervious area.
- Promote infiltration to the groundwater table.
- Increase the quantity of green infrastructure practices throughout the City, consistent with sustainability goals.
- Increase habitat for birds and butterflies.
- Increase native plantings and plant species diversity.

Key Considerations:

- If the stormwater planter walls are taller than curb height, place outside the reach of open car doors.
- Provide pedestrian walkways or "bumpers" from roadside parking to store fronts.
- Work around existing underground and above ground utilities.
- Ensure that ADA access is maintained if taking up sidewalk space.
- Do not locate a stormwater planter downstream of sediment sources (e.g., gravel shoulders, gravel driveways, dirt roads).

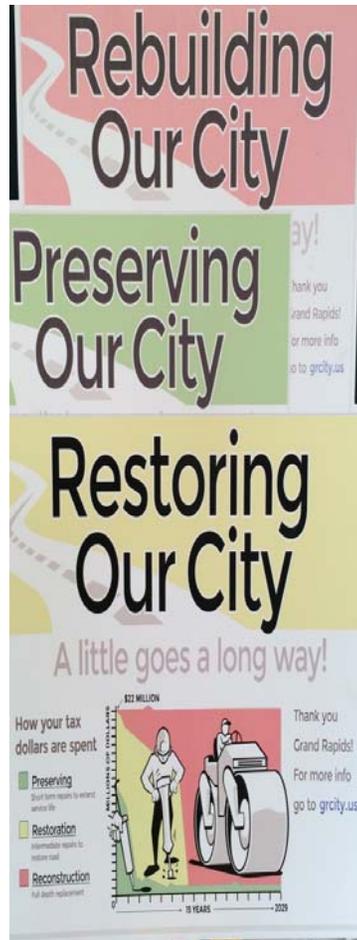
ITEM	MATERIAL	THICKNESS
SURFACE STORAGE	ASPHALT	2" MIN.
BUILD-UP	PER PAVING PLAN	...
BIORETENTION SOIL	REFER TO SPECIFICATIONS FOR BIORETENTION AND PLANT BED SOILS	...
CHECK LAYER	MOISTURE MANAGEMENT OR APPROVED EQUIVALENT	4 INCH
RESERVOIR AREA	MOISTURE MANAGEMENT OR APPROVED EQUIVALENT	...
FILTER LAYER	MOISTURE MANAGEMENT OR APPROVED EQUIVALENT	4 INCH
UNDERDRAIN	PERFORATED PVC (UNSATURATED VINYL) CALLED FOR PERFORATED PLATE CLEANED AT TERMINAL ELEVATION TO SEE PERFORATIONS AND PROTECT FROM CORROSION OR DIRT AND GRASS	4 INCH
UNDERDRAIN SPACING	CHECK SPACING UNIFORMITY ABOVE THE FILTER LAYER	...
GEOTEXTILE	NONWOVEN FABRIC LOCATED ON REEF OF PRACTICE ONLY	...
BARRETT	BARRETT SHALL BE FACED WITH SLOPEY SUBGRADE & NOT MINIMUM BEFORE INSTALLATION OF FILTER AND RESERVOIR LAYERS.	...
SOIL TREATMENT	REFER TO SPECIFICATIONS FOR SOIL TREATMENT PER PLAN.	...
INLET AND OUTLET	LOCATIONS PER DESIGN PLAN. REFER TO SPECIFICATIONS FOR DETAILS.	...
PLANTINGS	PER PAVING PLAN	...

NOTES:
1. SOIL OVER 20% (BY WEIGHT) WITH FINER PARTICLES (PASSING NO. 20) IS PROHIBITED. INSTALLATION MAY BE STANDARD CONCRETE SIDEWALK, 5000 PSI, 4" OR FINER (BY WEIGHT) OR SUBSEQUENT CONDITIONS.

CITY OF GRAND RAPIDS, MICHIGAN
LINEAR BIORETENTION ADJACENT TO ROADWAY - 2 WITH STEP-OUT ZONE

GUIDING PRINCIPLE #10 – CHECK

LOW IMPACT DESIGN



Stormwater Oversight Commission – Annual Report

- 17 Vital Streets Projects with Green Infrastructure
- \$1.3 Million Invested in Stormwater
- Over 300 Trees Planted
- 47 Infiltration Basins
- Over 2,000 tons of Porous Pavement
- Numerous Bioswales and Planters



GUIDING PRINCIPLE #10 – ACT LOW IMPACT DESIGN

FUTURE DESIGN

Green Infrastructure Facility Selection		Street Type							Project Applicability	
Location	Facility Type	Neighborhood Residential	Link Residential	Network Residential	Cross-town Connector	Neighborhood Business	Urban Street	Major / Industrial	Reconstruction / Major Project	Minor Street / Backlots
All Zones	Permeable Pavement	Street: Acceptable Parking: Acceptable Subway: Acceptable	Street: Acceptable Parking: Acceptable Subway: Acceptable	Street: Not Rec. Parking: Acceptable Subway: Acceptable	Street: Not Rec. Parking: Acceptable Subway: Acceptable	Street: Not Rec. Parking: Acceptable Subway: Acceptable	Street: Not Rec. Parking: Acceptable Subway: Acceptable	Not Recommended	Yes	No
Static Zone	Carb Extension Bio-retention (Corner and/or Midblock)	Preferred	Preferred	Preferred	Preferred	Preferred	Preferred	Not Recommended (typically larger housing units)	Yes	Yes
Static Zone	Stormwater Planter	Not Recommended			Preferred	Preferred	Preferred	Acceptable	Yes	Not typically
Static Zone	Linear Bio-retention / Median Bio-swales	Preferred	Preferred	Preferred	Preferred	Not Recommended due to on-street parking (Preferred in medians)	Not Recommended due to on-street parking (Preferred in medians)	Preferred	Yes	Yes
Static Zone	Leaching Catch Basin	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Yes	Yes
Varies	Subsurface Storage + Infiltration Chamber	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Yes	No
Varies	Linear Infiltration Trench (Surface or subsurface)	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Yes	No
Static Zone	Street Trees	Street trees are desired on ALL streets and should always be considered in combination with the succession management factors listed below to meet succession management targets.							Yes	Yes

Green Infrastructure Facility Selection		Quantity Functions					Quality Functions		Costs	
Location	Facility Type	Volume reduction for 100% (100')	Volume Red. for 10-year Protection (10-year)	Peak Flow Red. for 10-year Protection (10-year)	Peak Flow Red. for 100-year Protection (100-year)	Peak Reduction for Flood Control (10 to 100 year)	Sediment	Temperature	Installation Costs	Maintenance Costs
All Zones	Permeable Pavement	High	Med	Med	Low	Low	High	Med	Med	Med
Static Zone	Carb Extension Bio-retention (Corner and/or Midblock)	High	Med	Med	Low	Low	High	High	Med	Med
Static Zone	Stormwater Planter	High	Med	Med	Low	Low	High	High	High	Med
Static Zone	Linear Bio-retention / Median Bio-swales	High	Med	Med	Low	Low	High	High	Med	Med
Static Zone	Leaching Catch Basin	High	Med	Low	Low	Low	High	High	Low	Low
Varies	Subsurface Storage + Infiltration Chamber	High	High	High	Med/High	Med/High	High	High	Med/High	Med
Residential Zone	Linear Infiltration Trench (Surface or subsurface)	High	Med	Low	Low	Low	High	High	Med	Med

Michigan's Volunteer River, Stream and Creek Cleanup Program

Project Description

A. Project Goals and Objectives

The goals of this project are to:

1. Remove waste from the Grand River and its tributaries in order to promote regional water quality and increase West Michigan's aesthetic appeal.
Check.
2. Increase awareness of nonpoint source pollution and stormwater infrastructure, recognizing the potential of volunteers to serve as water quality advocates in their personal and professional lives.
Check. This was accomplished by incorporating "environmental action goals" for each volunteer to choose from, focusing on conservation, water quality, air quality and energy usage. Plaster Creek Stewards also had a presence within the Plaster Creek Watershed groups and delivered additional education to nearly 150 volunteers.
3. Bring community members together to experience the natural environment and to help improve it.
Check.
4. Make the Grand River and its tributaries safer and cleaner for West Michigan residents and tourists.
Check.
5. Continue to refine the process and logistics for coordinating and delivering watershed education at a large scale.
Check.

The objectives of this project include:

1. *Shift the geographic scope of the Cleanup.* The 2014, 1,018 volunteers removed 75 cubic yards of trash from 40 miles of streambank along the lower Grand River, Mill Creek, and Plaster Creek. Our trash pickup rate remained the same from last year, about 18 pounds per volunteer. We credit this outcome to adding four sites in Plainfield Township, where approximately 200 volunteers worked. With these four additional sites, we reached our capacity for the number of volunteers expected. We will continue to explore possible sites on Buck Creek in 2015.
This year, nearly 1,100 volunteers removed 19,200 pounds of trash from 40 miles of stream bank along the lower Grand River, Mill Creek, and Plaster Creek. Our trash pickup rate was slightly less than last year at around 17 pounds per person. This can be attributed to not adding any new sites on for this year. Additional sites will be scouted along Buck Creek and in Kentwood for 2016.
2. *Overtly deliver watershed education to Cleanup participants.* In 2014, we delivered watershed education to 30 site leaders, up significantly from the five in 2013. However, with ~1000 volunteers attending the Mayors' Grand River Cleanups, we need to continue to refine the model, particularly the logistics of delivering watershed education to such a large number of volunteers.
While growing the Mayors' Grand River Cleanup offers a bigger opportunity to deliver education, it also offers bigger challenges for successful delivery. This year, we not only successfully delivered stormwater education to 30 site leaders. We also implemented a new technique of engaging volunteers throughout the year by asking them to commit to an environmental action goal, focusing on water quality, air quality, conservation and energy usage.
3. *Increase the number of municipal partners involved in the Cleanup.* The 2014 Mayors' Cleanup successfully and productively added Plainfield Township as a municipal partner, where four cleanup sites were added. Kent County provided a dumpster for the Plainfield Township sites, in addition to providing recycling. As we continue to broaden our search for potential new sites, we will continue to seek out new municipal partners.
The 2015 Mayors' Cleanup continued to include 4 sites in Plainfield Township, of which Kent County again provided a dumpster and recycling for. We are hopeful to include the city of Kentwood for 2016.
4. *Increase the number of community partners involved in the cleanup.* Several cash sponsors participated at a higher level in 2014, compared to 2013. 30 organizations brought volunteer teams, 20 organizations participated as cash sponsors, and another five organizations provided in-kind support. This remains fairly steady from last year. However, the registration form was made available in Spanish,

Michigan's Volunteer River, Stream and Creek Cleanup Program

and the cleanup was covered in the bilingual newspaper La Voz and El Vocero. We will continue our outreach within the Hispanic sector of the City to better engage that segment of the regional population.

An increase in cash sponsors supported the 2015 Mayors' Cleanup, from 20 in 2014 to nearly 30 in 2015, with an additional 5 organizations providing in-kind support. We also significantly increased our community partnerships with over 50 organizations participating as a team, a significant increase from the 30 who participated in 2014.

5. *Expand the planning committee to oversee execution of the Mayors' Cleanup.* In 2014, five individuals served on the first Mayors' Grand River Cleanup planning committee. We have begun soliciting volunteers for this year's committee, and already have 3 new interested individuals. In 2015, seven individuals served on the Mayors' Grand River Cleanup planning committee. Five of those individuals were essential in organizing and executing the event. Specific successes of the committee include improvements to our water quality education approach, check-in process and identifying a third food vendor, as well as adding on afternoon children activities, of which we would like to expand on for next year. A wrap up meeting as been scheduled for October 15th to evaluate the cleanup.

For more than a decade, the Mayors' Annual Grand River Cleanup has been successful because of the strategic relationship between the City of Grand Rapids and WMEAC. Together, we have collaborated to enlist numerous community partners in the planning process, media advertising, donor contributions, and individual and group volunteer participation. As a result, the Cleanup has become an annual event that attracts many individuals, groups, organizations, and business throughout the community. In 2010, the event was expanded to include three new city partners. The last few years we have continued to increase volunteer turnout. We also host a large volunteer appreciation party with music, food, and drink, which is a huge success

D. Project Sustainability

This will be the 12th Annual Mayors' Cleanup event. The City of Grand Rapids and WMEAC have already hosted eleven successful Grand River cleanup events, and we are committed to continuing this event into the future. We have enlisted a greater number of community sponsors each year to help us accommodate the event's expanded scale. This year, we will assemble a comprehensive planning committee to share the workload and improve the event. We anticipate a diverse committee will have positive outcomes for the sustainability of the event in its second decade. In addition, with only a small increase in the level of funding, we can sustainably expand this Cleanup and exceed our past efforts in cleaning our regional waterways. We recognize the importance of the Grand River to our community and are committed to maintaining the after quality and the aesthetic appeal it offers to our residents and visitors. In addition to the Cleanup, the City of Grand Rapids has instituted an Adopt-A-Stream program that is also administered by WMEAC. Several times a year, different groups adopt a stretch of urban stream, either along the Grand River or one of its tributaries to clear the debris from the stream.

The City of Grand Rapids and its partners, Wyoming, Walker, Grandville, and Plainfield Township remain committed to this annual event. We continue to have the support of several local businesses, including Founders Brewing, Autodie, General Motors, Steelcase, ADAC, American River, Coca-Cola, GRPD, Dean Transportation, West Michigan Air and Waste Management Associates, DeWys Manufacturing and Schrems Trout Unlimited.

E. Evaluation

To measure the success of the Cleanup, we track the number of volunteers and partners, the miles of stream sections cleaned, and the amount of materials/debris removed from the river. Increases in these variables suggest increasing community "buy-in" and a greater desire to improve our shared environment. Furthermore, we have determined that our efforts are paying off, as some river sections that have been historically part of the Cleanup no longer need significant attention each year. We make a great effort to be strategic with our site selection and planning efforts so that we can concentrate where cleanup is most needed.

Michigan's Volunteer River, Stream and Creek Cleanup Program

In 2015, we will also record the volume of debris removed from the river and its banks and report this in cubic yards, as well as track tons, so that we can compare our current efforts to prior year events. We will also report any unusual items removed from the river and the miles of riverbank cleaned, number of volunteers and sponsors participating, and any feedback we receive from the public or new media.

See attached narrative.

2. Work Plan

Task 1: Planning Committee (10%)

Lead: WMEAC will form a planning committee that will ensure the success of the cleanup. Members will be solicited from past Cleanup participants, city employees, and WMEAC staff and members.

Seven community members served on the successful planning committee.

Task 2: Promotional Material Development (15%)

Lead: WMEAC will develop and distribute flyers and other promotional material throughout Grand Rapids and its surrounding communities.

WMEAC developed flyers that were distributed locally throughout Grand Rapids, as well as throughout

Allendale and Kalamazoo.

Task 3a: Distribution of Promotional Tools (10%)

Lead: WMEAC will distribute flyers, brochures, and electronic materials throughout Grand Rapids and surrounding municipalities. Additional publicity will be conducted using local radio and television media access.

Support: The City of Grand Rapids and other municipal partners will post information on their webpages and will display promotional items (flyers, brochures, etc.) in municipal buildings.

The Mayors' Cleanup was promoted heavily through social media, traditional media, and with two digital billboards.

Task 3b: Recruit Volunteers (20%)

Lead: WMEAC will conduct a recruitment campaign for sponsors and volunteers utilizing contacts from its database of previous Cleanup events, its membership database, and through social media and earned media sources.

Support: The City of Grand Rapids and other municipal partners will send out information to all city employees encouraging participation. In addition, Kent County Parks Department will engage its network of volunteers. Other community partners will be contacted for support, including schools, employers, faith-based institutions, and service clubs.

The City and WMEAC will continue to diversify the Mayors' Cleanup, but volunteer recruitment is essentially self-sustaining. The combination of event promotions and a decade of Mayors' Cleanups draw volunteers and organizations to the event in huge numbers.

Task 4: Site Reconnaissance (15%)

Lead: WMEAC will evaluate potential Cleanup sites, particularly those that will require "extreme team" measures.

Support: The City of Grand Rapids and other municipal partners will assist with site identification and evaluation.

WMEAC began site reconnaissance five weeks before the event and continued periodically in the weeks leading up to the event. Additional preparation and thoroughness in this process paid dividends in terms of allocating the correct number of volunteers to each site and selecting sites that needed attention. Several sites were utilized again this year and none were removed from last year.

Task 5: Purchase Cleanup Supplies (5%)

Lead: WMEAC will purchase supplies and collect donated materials for the Cleanup.

Michigan's Volunteer River, Stream and Creek Cleanup Program

Gloves were donated by ADAC Automotive. Bags were donated by American Rivers and the City of Grand Rapids. First aid kits were purchased by WMEAC.

Task 6: The Cleanup Event (10%)

Lead: WMEAC's planning committee will coordinate the Cleanup that will take place on September 19th. Their involvement including volunteer registration, refreshments, t-shirts and other volunteer appreciation items, signage, and transportation arrangements to selected sites.

Support: The City of Grand Rapids will help with on-site volunteer registration, setup, and cleanup.

The City of Grand Rapids will pick up collected debris from the various Cleanup sites for disposal. Other municipalities and partners will provide support as needed. Kent County will provide recycling services for the second year.

The City of Grand Rapids and WMEAC coordinated set up of the headquarters site with the City providing fencing, parking meter hoods, recycling bins, trash pick up and a PA system. WMEAC staff and volunteers executed set up, registration, and tear down. Recycle Box Bin provided compost bins, while New Soil provided a compost dumpster. Kent County provided recycling services, as well as a dumpster for Plainfield Township sites. WMEAC staff and volunteers also developed signage and distributed t-shirts.

Task 7: Evaluation/Final Report (10%)

Lead: WMEAC will evaluate the Cleanup and prepare a final report within 30 day after the event. Photographs will be included, as well as significant event dates and activities. Copies of brochures, flyer's, and press releases will be provided, as well as examples of t-shirts and other volunteer appreciation items.

Support: The City of Grand Rapids will help compile statistics and other data for the final report.

Photos and promotional materials are included in this report packet. A satisfaction survey was distributed to participants and a short staff debrief is scheduled.

Task 8: Prepare Release of Claims Statement, Present Final Report to City Administration (5%)

Lead: The City of Grand Rapids.

Included.

Proposed Cleanup Sites

Grand River – Locations: Kent County

Proposed Sites: We propose to cleanup approximately 30 miles of the Grand River and several of its urban tributaries consisting of 16 separate stretches (dependent on funds and number of volunteers).

Proposed Sites within Plaster Creek:

1. Kimball Stadium- City of Wyoming
 2. Godfrey Lee and Roosevelt Park
 3. Eastern Ave and 28th St
 4. Ken-o-Sha Park
 5. Plaster Creek Family Park
 6. Division Ave
 7. Madison Ave
- Proposed Grand River Sites:
8. Grandville Clean Water Plant- City of Grandville
 9. Indian Mounds Dr- City of Grandville
 10. Butterworth St- City of Walker
 11. Veterans Memorial Dr- City of Walker
 12. Market Avenue- City of Grand Rapids
 13. Wealthy St- City of Grand Rapids
 14. Fulton St- City of Grand Rapids
 15. Sixth Park (the kickoff location)- City of Grand Rapids
 16. Stretch from Leonard St to Ann St- City of Grand Rapids
 17. Grand Rapids Rowing Association- Plainfield Township

Michigan's Volunteer River, Stream and Creek Cleanup Program

18. Area near Fifth Third Ballpark- Plainfield Township
19. BNT Tents- Plainfield Township
20. Area near Jupiter Av and bridge- Plainfield Township
21. Indian Mill Creek- City of Grand Rapids

2015 Mayors' Cleanup Sites:

Plaster Creek Sites (all in the City of Grand Rapids, except Kimball Stadium):

1. Kimbal Stadium - City of Wyoming
2. Godfrey Lee and Roosevelt Park
3. Eastern Ave and 28th Street
4. Ken-o-sha Park
5. Plaster Creek Family Park
6. Division Ave
7. Madison Ave

Grand River Sites:

8. Grandville Clean Water Plant - City of Grandville
9. Indian Mounds Dr - City of Grandville
10. Butterworth St. - City of Walker
11. Veterans Memorial Dr - City of Walker
12. Market Aveneu - City of Grand Rapids
13. Wealthy St - City of Grand Rapids
14. Fulton St - City of Grand Rapids
15. Walking group from Sixth Street Park (the kickoff locations) - City of Grand Rapids
16. Leonard St to Ann St - City of Grand Rapids
17. Grand Rapids Rowing Association - Plainfield Township
18. Near Fifth Thired Ballpark - Plainfield Township
19. BNT Tents - Plainfield Township
20. Jupiter Ave and bridge - Plainfield Township

Other:

21. Indian Mill Creek - City of Grand Rapids
22. Brandywine Creek - City of Grand Rapids

