



# A Review of 2017 MS4 Stormwater Permit Activities

Presented to City Council by:

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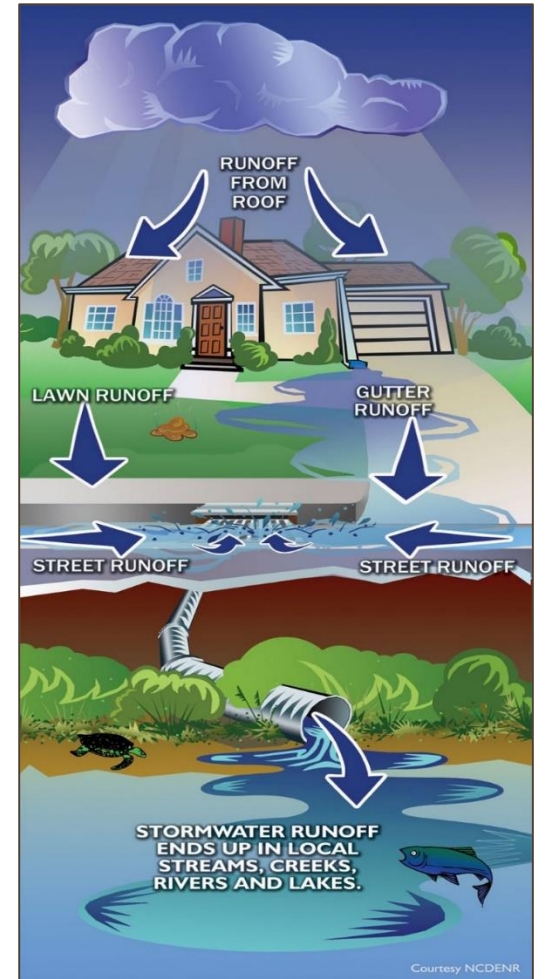


# Stormwater Runoff

Stormwater runoff is generated from rain and snowmelt events that flow over land or impervious surfaces, such as streets, parking lots, and building rooftops, and does not soak into the ground.

Stormwater flows across the land and into area waterways, usually without treatment, picking up pollutants along the way.

Pollutants of concern are: phosphorus, sediment, nitrogen, chlorides, PAHs, metals, pesticides, oils, and litter.



Stormwater runoff flows into one of approximately 18,900 catch basins and inlets...

then travels through approximately 450 miles of City storm sewers...

and discharges into our waterways via over 650 outfalls

# Municipal Separate Storm Sewer System (MS<sub>4</sub>) Permit

The City of Rochester – Stormwater Management is regulated by EPA's  
Municipal Separate Storm Sewer System (MS<sub>4</sub>) Phase II Permit

Environmental Protection Agency – Federal Level

Minnesota Pollution Control Agency – State Level

City of Rochester Stormwater Management – Local Level

An important component of the MS<sub>4</sub> Permit is the  
**Storm Water Pollution Prevention Plan (SWPPP)**  
which consists of six Minimum Control Measures (MCMs)

# Storm Water Pollution Prevention Plan (SWPPP)

The SWPPP must be designed and managed to reduce the discharge of pollutants from storm sewer systems to the maximum extent practicable (MEP).

As part of the SWPPP, an MS<sub>4</sub> must define best management practices (BMPs) appropriate for its community that address the following:

Minimum Control Measures (MCMs):

MCM 1 – Public Education and Outreach

MCM 2 – Public Participation/Involvement

MCM 3 – Illicit Discharge Detection and Elimination

MCM 4 – Construction Site Stormwater Runoff Control

MCM 5 – Post-construction Stormwater Runoff Control

MCM 6 – Pollution Prevention/ Good Housekeeping form Municipal Operations

# MCM 1 - Public Education and Outreach

Continue to implement an Education Program that includes:

- Distribution of educational materials that informs the public of the impact of stormwater discharges on water bodies
- Actions citizens, businesses, and other local organizations can take to reduce the discharge of pollutants

Education Type	Examples	Amount
Education materials	Brochures, newspaper, radio, television, website	9.95 million distributed
Education programs	Speaker series, school programs, A Litter Bit Better, etc.	11,375 participants



Rain Garden Tours



Street Sweeper Displays



Contractor Trainings



Stormwater Speakers Series at Cascade Meadow

# MCM 2 - Public Participation/Involvement

Continue to implement a Public Participation / Involvement Program to:

- Solicit public input on the City's Storm Water Pollution Prevention Plan
- Coordinate opportunities that engage residents in stormwater pollution prevention activities

## A Litter Bit Better

## Amount

Volunteers in 2017

3,250 people

Trash removed

18,400 lbs



A Litter Bit Better!



Storm Drain Marking



Rain Garden Installation



319 EPA Grant  
Stormwater Demonstration Site  
Community Engagement

# MCM 3 – Illicit Discharge Detection and Elimination

Continue to implement Illicit Discharge Detection and Elimination Program that:

- Effectively prohibits non-stormwater discharges
- Incorporates illicit discharge detection into all inspection and maintenance activities
- Provides timely response to known, suspected, and reported illicit discharges

Incidents	Examples	Amount
Illicit Discharge Reports	Oil spills, construction discharge, paint spills, sanitary sewer overflow	14
Hazardous material spills with Fire Dept. response	Automobile accidents	200+



Oil sheen on water



Sediment discharge into Zumbro River



Concrete washout to catch basin



Process water from Seneca facility

# MCM 4 – Construction Site Stormwater Runoff Control

Continue to implement a Construction Site Stormwater Runoff Control Program that:

- Requires erosion and sediment control plan review
- Reduces pollutants in stormwater runoff resulting from construction activity
- Establishes regulations, standards and requirements related to erosion and sediment control to ensure proper construction site management
- Prioritizes site inspections and encourages public input

ESC Inspections	Commercial Sites & subdivisions	Individual Lots
Inspections overall	1,024 (641 ≥ 1 acre)	1,883
Inspections (passed/failed)	750/274	702/1,181
Enforcement Actions	2	170



Inlet Protection Compliance



Inlet Protection Violation



Construction Site Entrance - Compliance



Construction Site Entrance - Violation

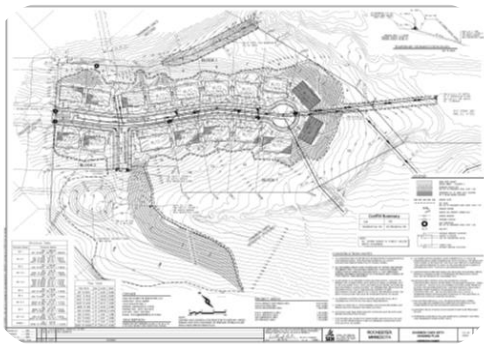


# MCM 5 – Post-construction Stormwater Runoff Control

Continue to implement a Post-Construction Stormwater Management Program that:

- Requires site grading and stormwater management plan review prior to construction
- Mandates non-degradation with respect to stormwater volume, TSS and TP
- Promotes the use of Green Infrastructure techniques and practices

Grading Plans	Commercial Sites & Subdivisions	Individual Residential Lots
Submitted Plans (Review Events)	96+ (290+)	55
Approved	77	53



Grading Plan Review



Bio-Filtration Basin



SAFL Baffle  
HydroDynamic Separator



Stormwater Pond

# MCM 6 – Pollution Prevention/ Good Housekeeping for Municipal Operations

Continue to implement an Operations and Maintenance Program that prevents or reduces the discharge of pollutants from City-owned facilities by:

- Maintaining inventory of City-owned facilities
- Developing and implementing BMPs for inventoried facilities
- Conducting assessments, inspections and maintenance of all City-owned BMPs
- Training City employees on illicit discharge detection & elimination, erosion sediment controls, and BMPs

Highlights:

- Inspection and maintenance of over 150 stormwater ponds, filtration/infiltration basins, and conveyance channels
- Operation & maintenance of subdrain system
- Street sweeping of 17,600+ miles
- Inspection of all City facilities and storage/stockpiles
- Turf maintenance at 40 boulevard locations, and prescribed burns at numerous sites



Prescribed Burns



Storm Sewer Replacement



Sediment Removal  
from Zumbro River



Infrastructure Inspections

# Total Maximum Daily Loads

MS<sub>4</sub> Permit requires that City estimates progress toward meeting applicable waste load allocation (WLA) for USEPA-approved TMDL.

- Analysis performed for Fecal Coliform (FC) and Total Suspended Solids (TSS)
- Year over year reductions have been achieved – continued progress required
- Reductions are attributed only to newly implemented or retrofitted water quality BMPs permitted or constructed by the City



# 2017 Program Additions & Highlights

- Completed MPCA Audit of City's MS4 Phase II Permit
- Hired Environmental Education Specialist – Stephanie Hatzenbihler
- Continued integration and utilization of GIS to comprehensively track water quality impacts associated with development using:
  - MS4 Front
  - Elements XS
- Multiple projects were designed and/or constructed to address erosion and/or water quality, such as:
  - Rocky Creek – Phase III Channel Restoration Project
  - Several Storm Sewer and Outfall Repair Projects
  - Cascade Lake BMP Implementation (Design)
  - Manorwoods Channel Restoration (Design)
- Updated ordinances and checklists required for post-construction stormwater management that address water quality
- Completed all outstanding maintenance work orders



MPCA Audit



Environmental Education Specialist at recent event



Rocky Creek Channel Restoration Project



Manorwoods Channel Restoration

# Looking Ahead

- MS4 Phase II Permit reissuance and SWPPP development in late 2018
- Construction of the following projects:
  - USEPA 319 Grant Ultra-Urban Stormwater Pollution Reduction Project – Demonstration Site
  - 37<sup>th</sup> Street Infiltration Basin
  - Various Storm Sewer Replacement and Outfall Restoration Projects
- Continued development and update of ordinances and checklists related to site stormwater management
- Involvement with Minnesota Board of Water and Soil Resources' One Watershed One Plan initiative for the Zumbro River
- Education materials refresh & addition of new programs and events



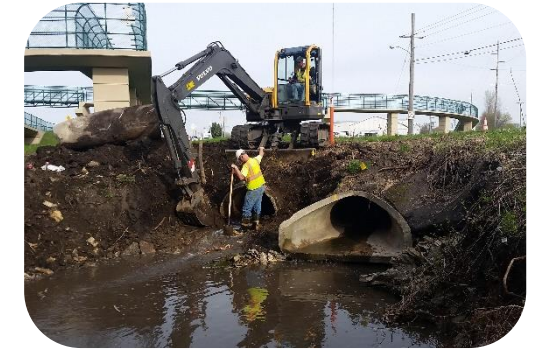
Community Engagement  
for 319 Grant



Outfall Pipe Cleanings



Education Materials  
Refresh



Outfall Pipe Resetting

# Provide Input

This presentation and the Annual MS<sub>4</sub> Permit Report, along with additional stormwater management information, is available online.

[www.rochesterstormwater.com](http://www.rochesterstormwater.com)

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