



STORMWATER POLLUTION PREVENTION PLAN ANNUAL REPORT 2018

City of Red Wing

Email: swppp@ci.red-wing.mn.us

Tel: 651-385-5143

Website: www.red-wing.org



TABLE OF CONTENTS

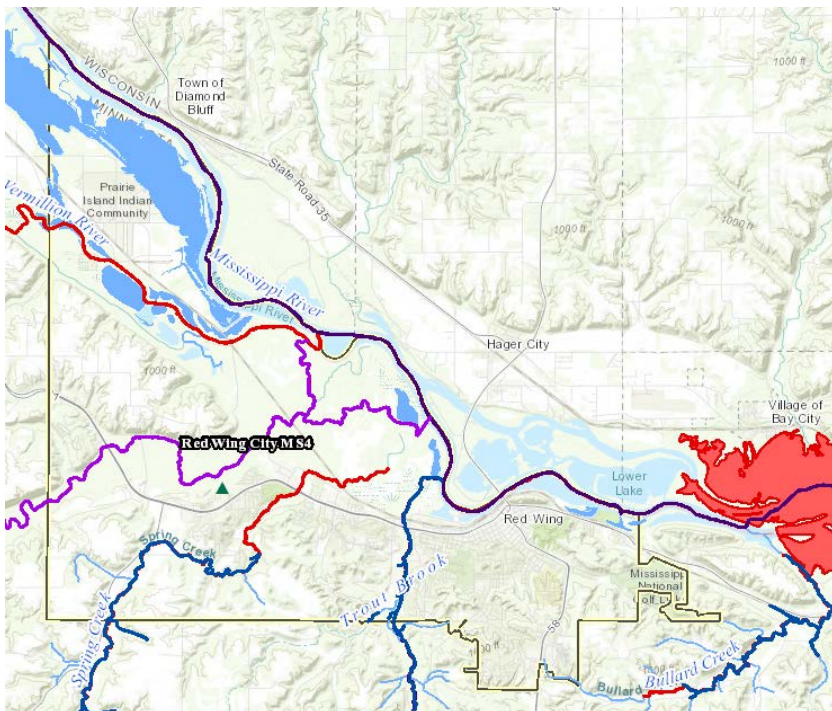
| | |
|--|----|
| Introduction | 3 |
| Stormwater Pollution Prevention Plan | 4 |
| Public Education and Outreach | 5 |
| Distribute Education Materials | 5 |
| Public Education Program | 6 |
| Public Involvement and Participation | 5 |
| Annual Public Meeting | 9 |
| Input and Opinion on the Adequacy of the SWPPP | 9 |
| Consider Public Input | 9 |
| Illicit Discharge Detection and Elimination | 10 |
| Storm Sewer System Map | 10 |
| Regulatory Control Program | 10 |
| IDDE Plan and Enforcement | 11 |
| Non-Stormwater Discharges and Flows | 11 |
| Construction Site Runoff Control | 12 |
| Construction Site Ordinance | 12 |
| Site Plan Reviews and Grading Permits | 12 |
| Construction Site Inspections and Enforcement | 13 |
| Post Construction Runoff Control | 15 |
| Post Construction Runoff Ordinance | 15 |
| Operation and Maintenance of BMPs | 15 |
| Pollution Prevention & Good Housekeeping | 16 |
| Municipal Operations and Maintenance Program | 16 |
| Street Sweeping | 16 |
| Inspection of Structural Pollution Control Devices and Material Storage Yard | 16 |
| Record Retention and Reporting | 17 |
| Impaired Waters | 19 |
| SWPPP Modifications | 21 |
| 2018 Stormwater Activities | 22 |

INTRODUCTION

The City of Red Wing, situated on the Mississippi River and surrounded by limestone bluffs has some of the most precious and beautiful water resources around. The City of Red Wing is committed to protecting these resources by aggressive stormwater management.

Stormwater threatens these water resources when rain or melting snow cannot infiltrate into the ground and flows across impervious surfaces like roads, parking lots, and rooftop. In 2018, Red Wing received 39 inches precipitation, making it yet again, one of the wettest years on record for the 5th straight year. This equates to millions of gallons of water falling on human-altered surfaces that change the natural flow of the precipitation. Stormwater picks up pollutants like trash, chemicals, bacteria, sediment, nutrients, and leaf litter that flow directly into our surrounding water bodies. These pollutants degrade our water bodies and cause fish consumption advisories, poor water quality, excess algae, and uninhabitable ecosystems for sensitive species.

“The surest way to improve water quality in Minnesota is to better manage stormwater.” – Minnesota Pollution Control Agency



Impaired Waters in the City of Red Wing

| | |
|-------------------|---|
| Cannon River | Outstanding resource value water Concern for aquatic life, PCB in fish & nutrients |
| Hay Creek | Cold-water trout stream Concern for E. coli |
| Mississippi River | Concern for turbidity, mercury in fish & PCB in fish |
| Spring Creek | Cold-water trout stream Concern for turbidity & aquatic life |
| Trout Brook | Cold-water trout stream |
| Vermillion River | Concern for mercury in fish, PCB in fish & turbidity |

Major Surface Water Bodies

STORMWATER POLLUTION PREVENTION PLAN

The National Pollutant Discharge Elimination System (NPDES) is the regulatory mechanism to control discharges into surface water bodies. This program issues permits to protect and reduce the amount of pollutants entering water bodies from municipal, industrial and construction activities. The City of Red Wing began its Stormwater Pollution Prevention Plan (SWPPP) in 2007 when the Minnesota Pollution Control Agency (MPCA) designated it as a regulated Municipal Separate Storm Sewer System (MS4). To comply with our NPDES permit, the City of Red Wing created a detailed plan to reduce stormwater pollution. The SWPPP addresses six minimum control measures(MCMs):

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Runoff Control
5. Post Construction Runoff Control
6. Pollution Prevention and Good Housekeeping

Within each minimum control measure are specific activities and measurable goals. The progress and activities for each MCM is outlined below.



PUBLIC EDUCATION AND OUTREACH & PUBLIC INVOLVMENT AND PARTICIPATION (MCM 1 & 2)

Each year, the City of Red Wing identifies specific topics or activities as high priority issues to concentrate on for education and outreach efforts. Construction activities and yard waste were the high priority issue to be emphasized in 2018.

Distribute Education Materials

The City of Red Wing informs its citizens about stormwater pollution prevention by publishing articles on its website and in the newspaper Republican Eagle, and broadcasting informational videos on the cable access Channel 6. The City also distributes “Erosion Control Requirements” packets as part of the building permit process.

| Type | Topic | Location | Estimated Number Distributed |
|---------|--|-------------------------------|------------------------------|
| Article | “Spring is in the Air”: yard waste | Newspaper, Website | 5,500 |
| Article | “Ask the Chief – Trash Pick Up”: trash | Website, Facebook | 9,950 |
| Article | “Ask the Chief – Pet Waste”: pet waste | Website, Facebook | 9,950 |
| Article | MPCA Environmentally Friendly Turf Management class: grass/chemicals | City Beat, Facebook | 5,500 |
| Website | Complete Update of website | Website | 20 |
| Event | Pottery Pond Macroinvertebrates with Park Naturalists | Pottery Pond | 24 |
| Article | “Musings of a Stormwater Officer”: general stormwater | Website, Newspaper | 4,700 |
| Video | “Protecting our Water During Construction”: Construction BMPs | Channel 6, Youtube, City Beat | 44 hours |
| Event | Water In Red Wing Exhibit | Red Wing Public Library | 12,044 library visits |
| Article | “Smart Salting”: salt/sand | City Beat | 468 |
| Packets | “Erosion Control Requirements”: construction | Planning | 24 |
| Video | “Puddles” – PSA | Channel 6 | 44 hours |

| | | | |
|---------------------------|---|--|----------|
| Video | Watershed Demo | Channel 6 | 43 hours |
| Article | Water Advisories | Facebook | 611 |
| Article | Sand for Icy Sidewalks | Facebook, Twitter | 7,490 |
| Article Video Event | Water Treatment Open House: pollution prevention | Facebook, Twitter, City Beat, YouTube | 2,050 |
| Doorhanger | Environmental Reminders | Door hanging near affected areas | 20 |

Public Education Program

The City of Red Wing's Stormwater public education program informs citizens and students about the impact of stormwater discharges on waterways and how the public can take steps to reduce pollution in stormwater runoff.

Storm Drain Murals

Through a partnership with ArtReach, storm drains at Bay Point Park were stenciled during River City Days with artwork highlighting the importance of keeping stormwater clean. This event draws approximately 50,000 people to the Bay Point Park area.



Pottery Pond Macroinvertebrate Investigation

In partnership with the Red Wing Park Naturalists, a macroinvertebrate investigation was held at Potter pond. Participants learned what macroinvertebrates are, how to catch them and how to identify them. They also learned about how macroinvertebrates are indicators of water quality and how keeping our stormwater clean makes clean ponds for them to live in.

Water in Red Wing Exhibit

A month long exhibit at the Red Wing Public Library displayed information about surface water, stormwater, drinking water and wastewater in Red Wing. Residents of Red Wing and visitors of the Red Wing Public Library explored water in Red Wing all month long in October. The exhibit highlighted the topics: water conservation, wellhead protection, stormwater, surface water, drinking water, and wastewater. All City plans and documents were available for residents as well as tons of resources and handouts about water. A City water professional was there to answer questions and talk to people about their water. Water Pros: 10/09/18 11 AM – 12 PM.



Water Treatment Plant Open House

An open house was held on November 10th at the Twin Bluff Water Treatment Plant where residents learned about water resources in Red Wing and were able to tour the treatment plant. The open house highlighted the topics: water conservation, wellhead protection, stormwater, surface water, drinking water, and how they are all interconnected. All City plans and documents were available for residents as well as tons of resources and handouts about water. Attendees learned how stormwater pollution can effect drinking water resources and what can be done to prevent it.

Pet Waste Stations

The City of Red Wing maintains 8 pet waste cleanup stations at 5 locations across the City to encourage pet owners to clean up after their pets. Pet waste is the number one source of E coli in stormwater in urban areas. Pet waste stations are kept fully stocked with MuttMitt bags at the Goodhue County Historical Museum, Bay Point Park, Colvill Park, Memorial Park, and AP Anderson Park. In 2018, more than 24,000 pet wastes bags were provided.

Yard Waste Composting

The City of Red Wing operates a yard composting facility at the Solid Waste Campus. Here residents can bring leaves and yard waste to dispose of for free. The yard waste is composted by city staff and residents can take the resulting compost for free also! This encourages residents to keep leaves and grass clippings out of city streets. In 2018, 3,373 tons of yard waste were brought to the Solid Waste Campus to be composted. Yard waste, such as leaves and grass clippings left in the street wash down the storm sewer and right into the river, contributing a large amount of nutrients to water bodies.

Pottery Pond Rain Garden

Pottery Pond Rain Garden was installed in 2009. The Red Wing Master Gardeners spend many hours maintaining the rain garden each year. The Master Gardeners have also installed educational signage in and around the rain garden to educate people about the importance of rain gardens and native plants for clean water.

Annual Public Meeting

The annual public meeting on Red Wing's SWPPP was held on June 11, 2018 to discuss the adequacy of the SWPPP and allow interested people to comment. Public meeting notice was published 30 days prior to the meeting on May 9, 2018. The public meeting was held as part of the city council meeting and was attended by 120 people.



Red Wing's SWPPP and annual report was also presented to the Sustainability Commission on May 22, 2018. Members asked questions about road salting, the Jordan Creek and stormwater fees.

Input and Opinion on the Adequacy of the SWPPP

No input was received in 2018 about the SWPPP. Citizens and interested people are encouraged to attend the public meeting and give feedback on the SWPPP. The SWPPP can also be viewed on the City's website at <https://www.red-wing.org/stormwaterurl.html> and input can be sent to swppp@ci.red-wing.mn.us.

Consider Public Input

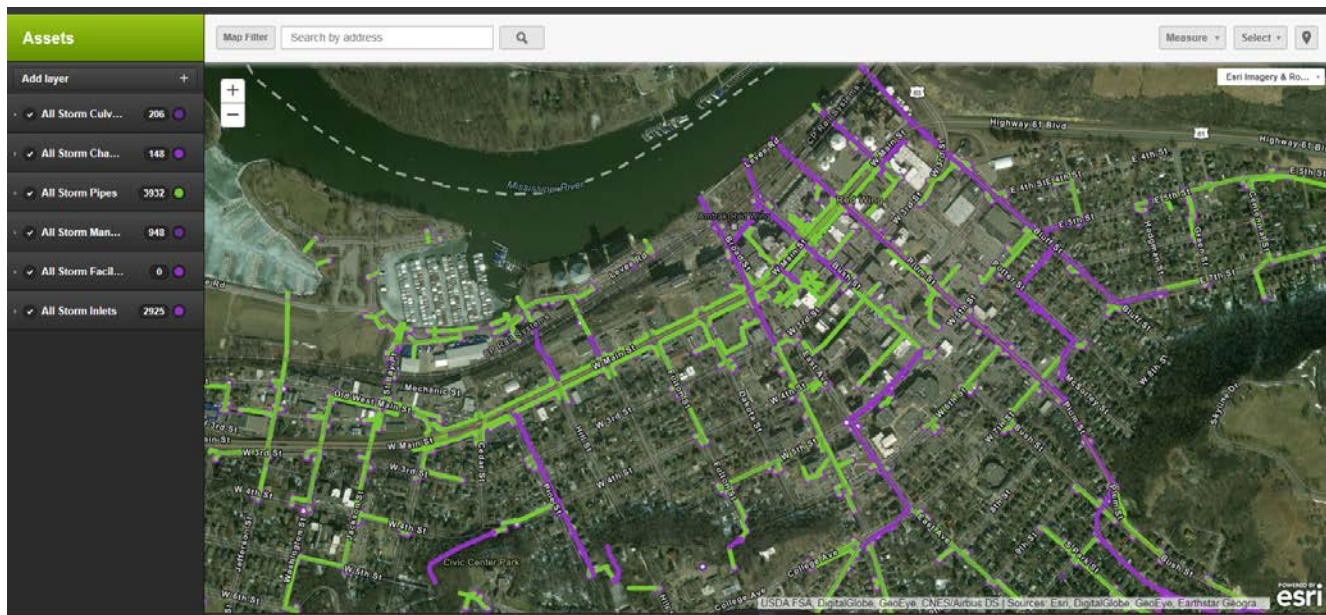
Input by concerned persons and groups will be reviewed by appropriate city staff in order to determine if the suggestions are relevant to the goals of the SWPPP and, if so, how they could be implemented.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Storm Sewer System Map

The City of Red Wing maintains a storm sewer system map that includes ponds, streams, lakes, wetlands and structural pollution control devices. These devices include outfalls greater than 12 inches, catch basins and all pipes and conveyances. This GIS map is updated as development and re-development projects are completed, repairs or maintenance are required, or unknown connections are discovered.

| Red Wing's Storm Sewer System | |
|-------------------------------|--|
| 926 Manholes | |
| 2,890 Inlets | |
| 209 Outlets | |
| 72 Ponds | |
| 7 miles of storm tunnel | |
| 50 miles of storm water pipes | |



Regulatory Control Program

The City of Red Wing has ordinances to prohibit non-stormwater discharges into the sewer system. These ordinances specifically address illicit discharges, septic systems, illegal dumping, obstruction of

the sewers, and the discharge of pollutants into the storm sewer. These ordinances are reviewed annually to ensure their effectiveness.

IDDE Plan and Enforcement

The City of Red Wing maintains an Illicit Discharge Detection and Elimination (IDDE) plan to detect and address non-stormwater discharges throughout the City. The City instructs the public and employees on how to identify illicit discharges and report them to the SWPPP staff. The staff investigates these reports and takes immediate action to remediate the discharge. All Public Works field staff are annually trained specifically in illicit discharge detection and reporting. In 2018 there were 10 illicit discharges or spills detected. One of these discharges was reported by the public and the other three were discovered by City staff. These illicit discharges initiated verbal warnings. All the illicit discharges were sufficiently addressed through the written Enforcement Response Procedures.

Spill Kits

Many City vehicles are stocked with spill kits that include absorbant pads and booms in case of a spill or illicit discharge. In addition to the mobile spill kits, there are larger spill kits available at most of the larger City-owned facilities. All the spill kits are restocked annually or after a use and City staff is trained on how to use the materials.

Non-Stormwater Discharges and Flows

The City of Red Wing annually reviews its operations and activities to determine if they are significantly contributing to stormwater. These may include: waterline flushing, discharge from pools, irrigation, groundwater, fire-fighting activities, and air conditioning condensation. No discharges were identified as significantly contributing to stormwater in 2018.

One non-stormwater discharge was more carefully investigated in 2018. An area of sidewalk on East 5th Street, underneath the CP railroad bridge was seen to be continually wet and stained. Investigation showed that this area has a river delta from the Little Mississippi River on the opposite side of the bank and high river levels allow the river water to seep through the bank, run over the sidewalk and into the storm drain. This was found not to be a significant amount of water.

CONSTRUCTION SITE RUNOFF CONTROL

Construction Site Ordinance

Division 57 “Stormwater Management Regulations” of the City Zoning Code outlines the responsibilities of every contractor or developer actively engaged in disturbing a land area of one acre or more inside the city limits. This regulatory mechanism aligns with the MPCA’s general permit to Discharge Stormwater Associated with Construction Activity. This ordinance is evaluated annually to ensure it complies with the MS4 permit requirements.

| Construction Stormwater Management Controls in Division 57 |
|--|
| Site Dewatering |
| Waste and Material Disposal |
| Tracking |
| Drain Inlet Protection |
| Site Erosion |

In 2018, the Construction Stormwater General permit expired and was reissued with a new version. Minor changes were made to times frames, amendments and documentation, and clarification of some sections. Red Wing’s current SWPPP is adequate to comply with the permit changes.

Site Plan Reviews and Grading Permits

Red Wing’s Engineering and Community Development Departments review site plans on sites with one acre or more of soil disturbance for construction and more than 50 cubic yards for grading to ensure the site adheres to appropriate stormwater best management practices. In 2018, two site plans were reviewed and there were four active construction sites with one acre or more of disturbance. Two sites had plan reviews in prior years. On sites less than one acre, the City Engineer and the Zoning Administrator shall determine if a stormwater management plan is required. In 2018, three sites less than once acre were reviewed or required to submit a SWPPP.

Construction Site Inspections and Enforcement

During construction, SWPPP staff inspects the construction sites to ensure the plans are being fulfilled. In 2018, 32 site inspections occurred by City staff, and specific enforcement action was taken to compel compliance with the construction stormwater management regulations. City staff also received weekly inspection reports from the Mississippi River Bridge Project. In 2018, City staff focused on working closely with contractors to achieve the stormwater goals by creating relationships and educating about expected objectives.

| Enforcement Action | Number Issued |
|---------------------|---------------|
| Verbal Warning | 27 |
| Notice of Violation | 0 |
| Fine | 0 |





POST CONSTRUCTION RUNOFF CONTROL

Post Construction Runoff Ordinance

Division 57 in the City Zoning Code requires significant attention to post-construction stormwater pollution mitigation practices. This ordinance gives preference to green infrastructure techniques, requires no net increase of stormwater discharge volume and requires infiltration or retaining the first one inch of precipitation over the impervious surface of a site one acre or greater. This ordinance is evaluated annually to ensure it complies with the most recent regulations.

Operation and Maintenance of BMPs

The City of Red Wing inspects and maintains post construction stormwater BMPs on a regular basis to ensure proper function. Any structural stormwater BMPs that the City determines to be privately owned must be inspected annually by the owner and all inspection and maintenance agreements must be recorded. All required routine inspections and maintenance were completed in 2019.

POLLUTION PREVENTION & GOOD HOUSEKEEPING

Municipal Operations and Maintenance Program

The City of Red Wing holds an annual information meeting for Public Works employees to educate on activities that might impact stormwater in their day-to-day activities. Training topics include: equipment washing, equipment maintenance, good housekeeping, spill reporting and response, street maintenance, material storage, landscaping, and IDDE. In 2018, the employee training was held on March 27, and included a video and a presentation by a MN Duty Officer on proper spill notification. All seasonal workers in the City of Red Wing attended a similar presentation on June 7. An additional training was held on May 30th for city sewer collection and water distribution operators on what to do in the event of a sewer overflow or spill. A meeting for street maintenance workers was held on October 31, 2018 to outline proper use of sand and salt in the winter months.

Street Sweeping

The City of Red Wing has an aggressive street sweeping program to keep refuse out of storm sewers. The streets are swept at least three times each year with an emphasis on seasonal sand and leaf removal. Additional sweeping activities occur for spill clean-up or debris removal as needed. In 2018, approximately 1,100 hours were spent sweeping and approximately 1,400 cubic yards of debris were removed from the streets.

Inspection of Structural Pollution Control Devices and Material Storage Yard

Every year, the City inspects all structural pollution control devices like sump catch basins and manholes, and 20% of stormwater outfalls and ponds. Results of these inspections may trigger maintenance operations if it is required. The City also inspects all stockpiles, storage, and material handling areas quarterly to ensure they are managed appropriately. In 2018, all required inspections and maintenance were completed. City staff spent 659 hours maintaining storm structures and surrounding vegetation in 2018.

In 2018, City staff changed the method used for pond surveys to better understand sedimentation in the stormwater ponds. The method now used is similar to a bathymetric approach, where multiple depth measurements are taken across a pond and the bottom of the pond is mapped with the help of computer aided drawing. This allows staff to better calculate volumes of sediment and pond capacity.



| Stormwater Inspections and Maintenance | | | |
|--|-------|-----------|-------------|
| Asset | Total | Inspected | % Inspected |
| Structural Stormwater BMPs | 16 | 16 | 100 |
| Outfalls | 267 | 78 | 29 |
| Ponds | 72 | 17 | 24 |
| Material Storage Yard | 1 | 1 | 100 |

Record Retention and Reporting

The City of Red Wing summarizes all the results of SWPPP related inspections and activities in this annual report and the SWPPP Annual Report to the MPCA. The City also maintains records of inspection dates, findings, and responses. These records are in various electronic and hard copy states located on the City website, asset management software and in the offices of Environmental Services. All records will be made available upon request.

Industrial Stormwater Permits

In addition to the MS4 permit, the City of Red Wing also holds Industrial Stormwater Permits for areas of industrial activity owned by the City of Red Wing. These areas include: the Solid Waste Campus, the Little River Bulkhead, Colvill Marina, Ole Miss Marina, the Wastewater Treatment Plant, the Industrial Wastewater Pretreatment Plant, and the Goodhue Co/Red Wing Ash Landfill. These areas get special attention to prevent stormwater pollution that includes specific best management practices, inspections, and stormwater sampling. All industrial stormwater permit activities were completed in accordance with permit requirements in 2018.

IMPAIRED WATERS

The City of Red Wing reviews all discharges from our MS4 system to impaired waters, as defined by the current USEPA approved 303(d) list. The SWPPP incorporates measures to assess the adequacy of the stormwater program to meet Total Maximum Daily Load (TMDL) Waste Load Allocations (WLAs).

| Water Body | US EPA Approved Impairment |
|-------------------|----------------------------|
| Bullard Creek | E. coli |
| Cannon River | E. coli, PCBs, Turbidity |
| Hay Creek | E. coli, Turbidity |
| Lake Pepin | Nutrient/Eutrophication |
| Mississippi River | Mercury, PCBs, Turbidity |
| Spring Creek | E. coli, Turbidity |

The City of Red Wing's current SWPPP is adequate to meet the requirements of the completed TMDLs and WLAs. The SWPPP will be updated to meet new requirements as they are apportioned. It is expected that new actions may be required as we learn more about the status of Lake Pepin as an impaired water.

What water body impairments are associated with stormwater?

| | |
|----------------------------|---|
| Lakes | nutrients (primarily phosphorus) and pathogens impair the lake for recreational use |
| Rivers/ streams | nutrients, sediment, chloride, pathogens, and temperature impair the river/stream for aquatic vegetation, recreation, and habitat |
| Wetlands | nutrients and sediment impair wetlands for habitat |

Stormwater module 1: Overview of stormwater effects on water quality

7

The Mississippi River – Lake Pepin Tributaries Total Maximum Daily Load addressed the *E. coli* impairment for Bullard and Hay Creek within the Red Wing MS4 boundary. The following table shows the Wasteload allocation for the City of Red Wing. At this time, no load reductions are required by the City of Red Wing to meet the WLA stated in this TMDL.

Table 4.2. *E. coli* TMDL summaries.

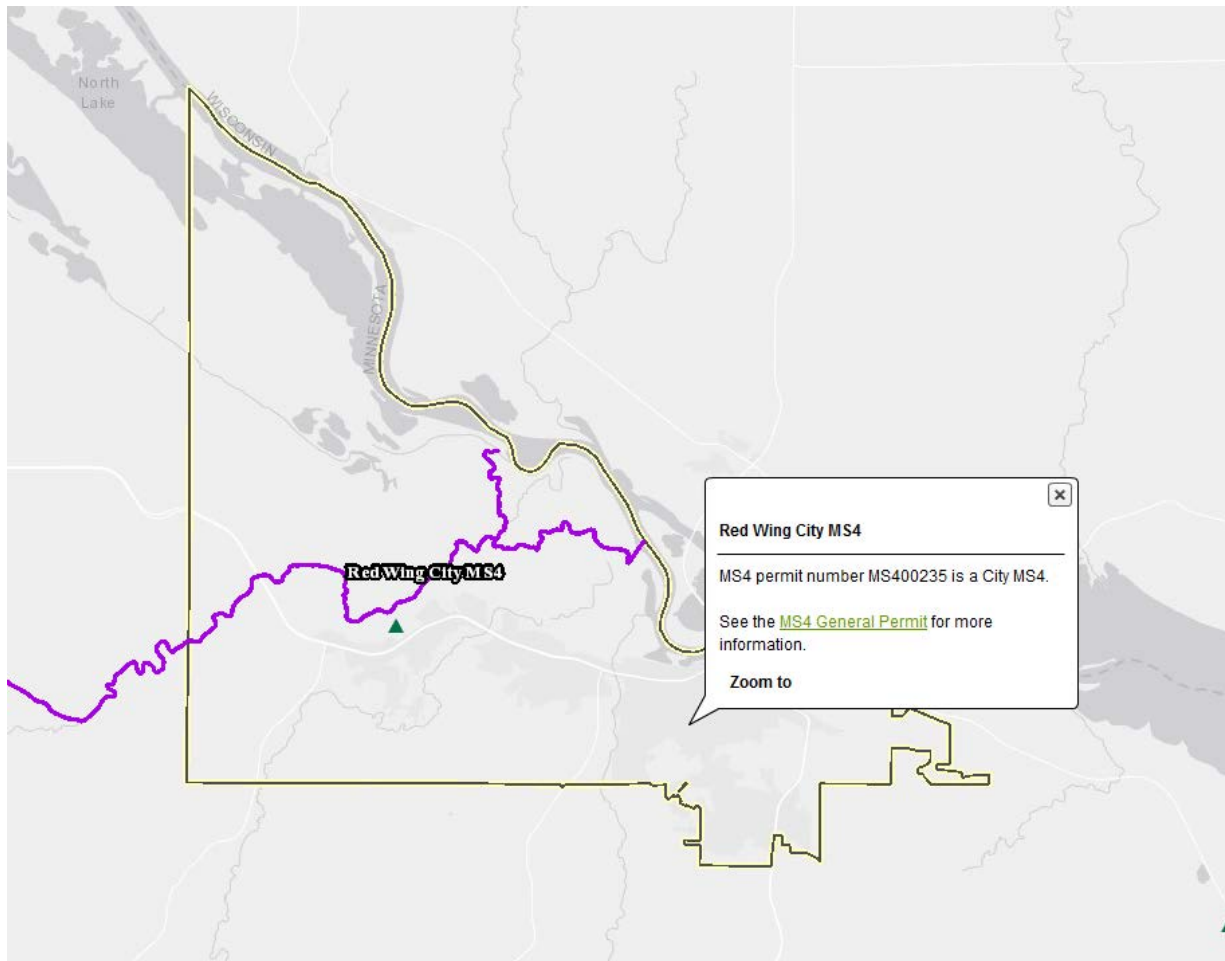
| | | Flow Regime | | | | |
|--|-------------------------------|---------------------------|------|------|------|------|
| | | VHigh | High | Mod | Low | VLow |
| Hay Creek TMDL Summary | | Billions of Organisms/day | | | | |
| Loading Capacity (TMDL) | | 102 | 80 | 73 | 65 | 53 |
| Wasteload Allocation | Total WLA | 9.3 | 7.3 | 6.7 | 5.9 | 4.8 |
| | Red Wing MS4 (MS400235) 10.2% | 9.3 | 7.3 | 6.7 | 5.9 | 4.8 |
| Load Allocation | | 82.5 | 64.7 | 59.0 | 52.6 | 42.9 |
| Margin of Safety | | 10.2 | 8.0 | 7.3 | 6.5 | 5.3 |
| 90 th Percentile Value from WQ Data | | 3406 | 1238 | 1416 | 222 | 190 |
| Bullard Creek TMDL Summary | | Billions of Organisms/day | | | | |
| Loading Capacity (TMDL) | | 34 | 26 | 24 | 21 | 17 |
| Wasteload Allocation | Total WLA | 0.7 | 0.5 | 0.4 | 0.4 | 0.3 |
| | Red Wing MS4 (MS400235) 2.3% | 0.7 | 0.5 | 0.4 | 0.4 | 0.3 |
| Load Allocation | | 29.9 | 22.9 | 21.2 | 18.5 | 15 |
| Margin of Safety | | 3.4 | 2.6 | 2.4 | 2.1 | 1.7 |
| 90 th Percentile Value from WQ Data | | NA | 194 | 285 | 115 | 40 |

The City of Red Wing satisfies its WLA by using the following best management practices:

- Increasing the population with properly functioning sewage treatment systems (septic systems) within the City boundaries. City staff tracks the number of permits issued for septic systems each year and directs residents with failing systems to connect to the municipal sewer system.
- Ensuring proper management of biosolids application and remediation of sewer overflows or spills.
- Reducing the amount of stormwater runoff by mandating new construction over 1 acre capture and treat the first one inch of rainfall on new impervious surface. Infiltration practices are preferred over other methods.
- Monitoring construction sites with construction stormwater permits to ensure compliance.
- Ordinances that limit activities along the river front to protect the natural land buffer along rivers and streams.

SWPPP MODIFICATIONS

The City did not receive any public comment on the SWPPP in 2018. No modifications were made to the SWPPP.



2019 STORMWATER ACTIVITIES

The City of Red Wing's MS4 Stormwater Annual Report for 2018 will be submitted to the MPCA by June 30, 2019. The MPCA annual report and this summary will be made available on the stormwater page on the City's website.

The current general permit authorization to discharge stormwater from MS4s expired July 31, 2018. This is a five-year permit cycle. Part 1 of the application for permit reissuance was submitted in February 2018. This document contained requested contact and program management information for the stormwater participants at the City. Part 2 of the application will be the SWPPP document for the City of Red Wing. At this time, the MPCA has not issued a draft or provided a timeline for reissuance. When these documents become available, the SWPPP will be updated to meet the most current requirements.

| Stormwater Goals in 2019 |
|--|
| Utilize Cartegraph for all inspections and record keeping |
| Continue to increase efficiency and accuracy of stormwater pond measurements |
| Explore areas for community participation |
| Enlist service groups for projects |
| Sample municipal stormwater and compare to TMDLs WLAs |
| Modify and update the SWPPP as permits are reissued |
| Continue connections with partners such as, Cannon River Watershed Partnership, GCSWCD, Master Gardeners, Park Naturalists, Red Wing Conservation Club |
| Utilize social media tools |
| Increase public feedback about actions they would like to see in Red Wing's stormwater management |
| Integrate Red Wing 2040 Plan with the SWPPP |