

**City of Saint Paul's
STORMWATER MANAGEMENT PROGRAM**



Minnesota Pollution Control Agency

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
Permit No. MN 0061263



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This document was reformatted based on Minneapolis' Stormwater Management Program and resubmitted to the MPCA in October of 2012. The September 2013 submittal includes revisions based on comments received during the public comment period.

In August of 2015, in conjunction with the City's application for reissuance submittal, revisions were made to section 1.4 Authorized Discharges on page 5. The added language describes the MPCA's nondegradation review in 2009 and the City's demonstration of no new or expanded discharges since the review.

PART 1 – GENERAL INFORMATION

1.1 BACKGROUND

The NPDES program was created in 1990 by the United States Environmental Protection Agency (EPA) to safeguard public waters through the regulation of the discharge of pollutants to surface waters including lakes, streams, wetlands, and rivers. The Minnesota Pollution Control Agency (MPCA) is the local authority responsible for administering this program. Under this program, specific permits are issued to regulate different types of municipal, construction, and industrial activities.

The MPCA issued the first Municipal Separate Storm Sewer System (MS4) NPDES Permit to the City of Saint Paul on December 1, 2000. The City's MS4 Permit was reissued by the MPCA on January 21, 2011. This permit requires submittal of a revised Stormwater management (SWMP). In 2012 and subsequent years, the report submittal date has been changed to June 30th.

The goal of the SWMP is to set a framework defining how the City will manage, operate, and maintain its Municipal Separate Storm Sewer System and areas within the City's jurisdiction drained by the System in a manner to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP). The stormwater management activities of the City cover a broad range of responsibilities involving the governing body and almost every department of the City. The City Council and Mayor approve budgets, ordinances, and policies to provide direction for the stormwater program.

1.2 CONTACT INFORMATION

Permit coordination and annual reporting functions are handled by:

Contact Information

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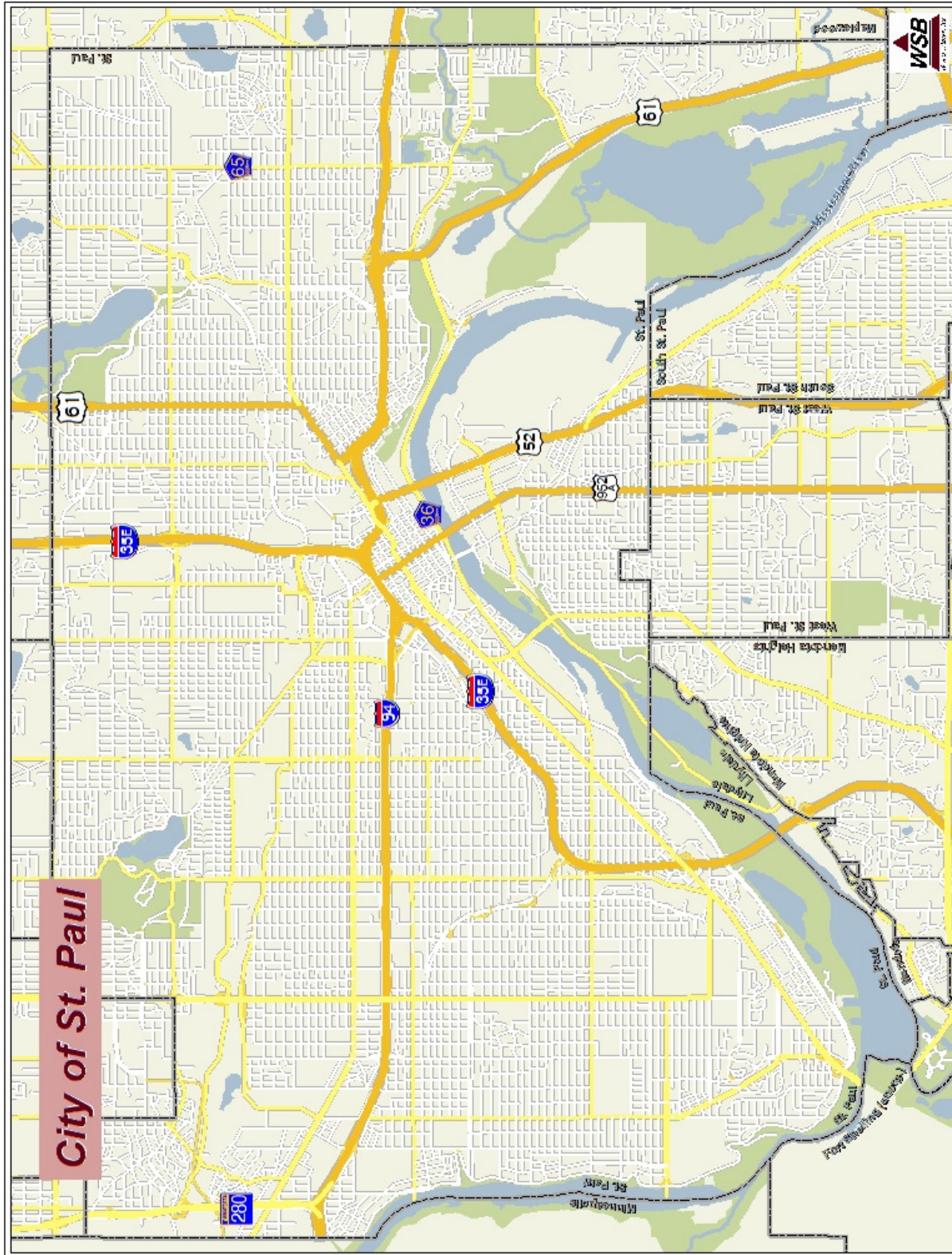
This SWMP is prepared in conformance with requirements of NPDES Permit MN 0061263 issued to the City of Saint Paul on January 21, 2011. This permit, currently in effect, expires January 21, 2016.

To meet the goal of the City's SWMP, employees will need to responsibly and effectively implement relevant tasks related to the management, planning, engineering, and maintenance activities described within, or developed through implementation of, the SWMP. The goal of the SWMP is best accomplished by utilizing a citywide approach. However, certain departments will have a primary role in managing stormwater with respect to the City's MS4. Other departments may have a lesser or more passive role. The three departments serving a primary role in meeting the goal of this Program include Public Works, Parks and Recreation, and Safety and Inspections.

The organizational chart, located on page 9, shows the structure of the city and the relationship of stormwater compliance between departments.

1.3 PERMIT COVERAGE AREA

This permit applies to the Municipal Separate Storm Sewer System (MS4) which consists of storm sewer system and treatment works for the collection, conveyance, treatment, storage, and discharge of stormwater owned or operated by the City of Saint Paul.



1.4 AUTHORIZED DISCHARGES

The permittee identified in Section 1.1 is authorized to discharge storm water runoff from its MS4 (as defined in 40 CFR and described by the SWMP herein) in accordance with the requirements of the issued permit. The permit does not exempt or otherwise preclude the permittee from complying with the requirements of Watershed Districts, Watershed Management Organizations, the County, or any other local, state, or federal rules and regulations.

Limitations

The permit does not authorize discharges other than stormwater. Non-stormwater discharges may include: combined sewer overflow, non-contact cooling water, sewage, wash water, scrubber water, spills, oil, hazardous substances, fill, commercial equipment and/or vehicle cleaning and maintenance wastewaters. A separate NPDES permit may be required for these discharges.

The permit does not authorize the discharge of stormwater when a separate NPDES permit is required for these activities. For example, while stormwater from construction activity may be discharged from a municipal separate storm sewer system with authorized stormwater discharges, this permit does not replace or satisfy any other permits required for those discharges.

The permit authorizes only discharges by the Permittee from the portions of the storm sewer system that are under its operational control.

The permit does not allow new or expanded discharges unless the Permittee is in compliance with the requirements of Minn.R. Ch. 7050.0185. The conclusion from the MPCA's December 2009 review of nondegradation for the City of Saint Paul, as set forth in Minnesota Rule 7050.0185, stated that there has been no expanded discharge of stormwaters from the jurisdiction of Saint Paul since 1988. Since this determination by the MPCA, the City has continued to implement the programs mentioned in the review as well as new programs, including but not limited to, the City's SWMP, adherence to watershed district rules and the state construction permit. The implementation of these programs continues to demonstrate that the City of Saint Paul has no new or expanded discharges since the MPCA's 2009 determination.

The permit does not allow the following discharges unless the more stringent requirements for discharges are met with specific criteria:

- Discharges to Wetlands
- Discharges Requiring Environmental Review
- Discharges Affecting Threatened or Endangered Species or their habitat
- Discharges Affecting Historic or Archeological sites.
- Discharges Affecting Source Water Protection Areas.

The permit does not authorize stormwater discharges from any municipal facility where stormwater discharge is authorized under another individual NPDES/SDS permit or other industry-specific general NPDES/SDS permit.

1.5 DEFINITIONS

Best Management Practices or BMP – means a schedule of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the state. BMP also includes treatment requirements and operating procedures and practices to control plant site runoff; spillage or leaks; sludge or waste disposal; or drainage from raw material storage.

CFR – Code of Federal Regulations

Commissioner - means the commissioner of the Minnesota Pollution control Agency or the Commissioner's designee.

Maximum Extent Practicable or MEP – Is the statutory standard that establishes the level of pollutant reductions that an Owner or Operator of regulated MS4 must achieve.

MCM – Minimum Control Measure

MPCA – Minnesota Pollution Control Agency

Municipal Separate Storm Sewer System or MS4 – means a publicly owned and operated conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains)

NPDES – National Pollutant Discharge Elimination System

Operator – means the person with primary operational control and legal responsibility for the municipal separate storm sewer system.

Outfall – means the point where a MS4 discharges from a pipe, ditch, or other discrete conveyance to waters of the state, or other municipal separate storm sewer system. It does not include diffuse runoff or conveyances which connect segments of the same stream or other water systems.

Owner – means the person that owns the municipal separate storm sewer system.

Person – means the state or any agency or institution thereof, any municipality, government subdivision, public or private corporation, individual, partnership, or other entity including, but not limited to, association, commission, or any interstate body, and includes, any officer or governing or managing body of any municipality, governmental subdivision, public or private corporation, or other entity.

Reduce – means reduce to the "MEP" unless otherwise defined in the context in which it is used.

SOP – Standard Operating Procedure

Stormwater – means stormwater runoff, snowmelt runoff, surface runoff, and drainage.

Structural Pollution Control Device – means any stationary, permanent facility or apparatus that is intended to manage and/or treat stormwater runoff.

SWMP – Stormwater Management Program

SWPPP – Stormwater Pollution Prevention Plan

Total Maximum Daily Load (TMDL) – is the process established by the USEPA for the allocation of pollutant loads, including stormwater, to a particular water body or reach of a water body.

Wetlands – are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Constructed wetlands designed for wastewater treatment are not waters of the state.

WLA – Waste Load Allocations

PART 2 STORMWATER MANAGEMENT PROGRAM

2.1 DETAILS

The following summary of budget items for each minimum control measure is estimate over a 5-year permit cycle. These estimates may change according to specific items of concern that the City of Saint Paul identifies throughout the life of this permit coverage. Any updates or changes to these budget estimates will be a part of the annual report the City of Saint Paul submits to the Minnesota Pollution Control Agency.

2.2 ANNUAL BUDGET

MCM 1	Public Education & Outreach	\$101,000
MCM 2	Public Participation & Involvement	\$25,000
MCM 3	Illicit Discharge Detection & Elimination	\$97,000
MCM 4	Construction Site Erosion & Sediment Control	\$79,000
MCM 5	Post Construction Stormwater Management	\$70,000
MCM 6	Pollution Prevention & Good Housekeeping	\$60,000
MCM 7	Monitoring & Analysis	\$118,000
MCM 8	Discharges to Impaired Waters with a TMDL	\$30,000

2.3 CITY ORGANIZATIONAL CHART



2.4 MINIMUM CONTROL MEASURE GENERAL REQUIREMENTS

The City of Saint Paul shall manage, operate, and maintain its storm sewer system and areas that the City controls that discharge to its MS4 in a manner to reduce the discharge of pollutants to the MEP. The BMPs selected by the City for the Minimum Control Measures (MCM) shall meet the minimum requirements of the MS4 permit.

Each MCM will include the following:

1. Identification of potential sources and pollutants targeted for reduction.
2. A description of and the scope of the BMPs for each MCM.
3. Identification of staff and financial resources, including estimated annual budgets, for the permit term dedicated to implementation of the MCM.
4. Measurable, MCM specific goals that will be used to determine the success or benefits of the MCM.
5. Schedules and protocol for monitoring, recordkeeping, and reporting.
6. An implementation schedule for new or revised BMPs.
7. A detailed description or copy of any agreement between the City of Saint Paul and partner(s) to implement the MCM describing the rights, roles, and responsibilities of each party to the agreement.

2.5 MINIMUM CONTROL MEASURES

Description

The City of Saint Paul shall manage, operate, and maintain its storm sewer system and areas drained by the storm sewer system within the permittee's jurisdiction in a manner to reduce the discharge of pollutants to the MEP.

- MCM 1 Public Education & Outreach
- MCM 2 Public Participation & Involvement
- MCM 3 Illicit Discharge Detection & Elimination
- MCM 4 Construction Site Erosion & Sediment Control
- MCM 5 Post-Construction Stormwater Management
- MCM 6 Pollution Prevention & Good Housekeeping
- MCM 7 Monitoring & Analysis
- MCM 8 Discharges to Impaired Waters with a TMDL

2.6 MEASURABLE GOALS

A successful Stormwater Management Program must include both MCM specific goals, as well as long term goals. Demonstrating the City's accomplishment of MCM specific goals verifies compliance with permit requirements and documents that tangible efforts have been made to reduce the impacts of urban stormwater during the permit cycle. The long term goal of reducing the discharge of pollutants to the maximum extent practicable (MEP) will be determined through monitoring, assessment and demonstration of progress towards meeting the City's waste load allocations. The Annual Report will discuss progress toward achieving the goals of the SWMP and shall modify as necessary the priorities, strategies, and monitoring of the SWMP to achieve pollutant reductions to the MEP.

MCM 1: *Public Education & Outreach*

Overview of MCM 1

Description

The objective is to implement a public education program to increase awareness of stormwater impacts to receiving waters and actions that can be taken to reduce those impacts. Everyone's actions can affect the quality of our lakes, wetlands, creeks and the Mississippi River. The City implements public education and outreach programs to reduce the pollutant load to receiving waters, and to promote and facilitate the proper management of stormwater discharges to the storm sewer system. The desired program result is behavior change that will improve water quality.

MCM 1 Specific Measurable Goals

Completion of assessment of ongoing education activities and development of implementation plan including identified target audiences, educational goals for each audience, and activities to reach goals. (see BMP Sheet 1.1)

Participating Departments

Public Works
Safety & Inspections
Parks & Recreation

MCM 1 BMP Sheets:

- 1.1 STORMWATER PUBLIC EDUCATION ACTIVITIES
- 1.2 STORM DRAIN STENCILING & WATER QUALITY EDUCATION PROGRAM

Targeted Pollutants and Potential Sources

Pollutants

Nutrients
Pesticides
Sediment
Chlorides
Bacteria
Oil and grease

Sources

Grass clippings and leaves
Fertilizers
Soil erosion
Deicing materials
Pet waste
Pesticides
Automotive fluids

MCM 1: *Public Education & Outreach*

BMP 1.1: STORMWATER PUBLIC EDUCATION ACTIVITIES

Description

The City implements public education and outreach programs to increase the awareness of stormwater pollution impacts on waters of the state to encourage changes in public behavior to reduce impacts to receiving waters.

Workplan

- Assess ongoing public education activities and identify additional opportunities for coordination. Develop plan for implementation including identification of target audiences, educational goals for each audience and activities to reach goals. This plan will address non-stormwater discharges, proper application of pesticides and fertilizers and proper management of pet waste, leaves and grass clippings. (2014)
- Provide monetary support and a staff person to participate as a member of the committee for the Metro WaterShed Partners Clean Water Minnesota Campaign. (ongoing)
- Participate in and support the Metro Watershed Partners. (ongoing)
- Sponsor Ramsey-Washington Metro Watershed District's Waterfest held at Lake Phalen. (ongoing)
- Plan and organize the Spring Parks Clean-up. (ongoing)

MS4 Permit Reference

V.C1, V.F

Assessment Process for Annual Reporting

- Narrative of public education and outreach events and activities.
- Narrative of multilingual components of documents, events and activities.
- Listing of public education materials developed.

Participating Departments and Contacts

Public Works: Permit Coordinator

Safety & Inspections: Water Resource Coordinator

Parks & Recreation: Volunteer Coordinator

MCM 1: *Public Education & Outreach*

BMP 1.2: STORM DRAIN STENCILING & WATER QUALITY EDUCATION PROGRAM

Description

The objective of this program is to educate the participants and the public by stenciling storm drains with the message “Please Don’t Pollute Drains to Mississippi River,” and distribute multi-lingual educational door-hangers to residents and businesses in the stenciled neighborhoods in the City of Saint Paul.

Workplan

- Stencil storm drains and distribute door hangers in partnership with volunteers from school groups, community groups, and residents of the City of Saint Paul. (ongoing)
- Provide educational orientation to each volunteer group. (ongoing)
- Provide educational presentations on urban runoff pollution to volunteers, classrooms and other community members. (ongoing)
- Coordinate litter clean-ups with school and community groups. (ongoing)
- Present community workshop on urban runoff pollution and ways to prevent it around the yard and home. (ongoing)

MS4 Permit Reference

V.C1, V.F, V.C3c2

Assessment Process for Annual Reporting

- Report on number of volunteers, storm drains stenciled and door hangers distributed.

Participating Departments and Contacts

Public Works: Permit Coordinator

MCM 2: *Public Participation & Involvement*

Overview of MCM 2

Description

The City of Saint Paul will implement a public participation and public involvement effort in order to effectively communicate with their constituents regarding stormwater management.

MCM 2 Specific Measurable Goals

Annual meeting and council resolution adopting report. (see BMP Sheet 2.1)

Annual update of stormwater web page. (see BMP Sheet 2.1)

Participating Departments

Public Works

Safety & Inspections

Category 2 BMP Sheets:

2.1 ENCOURAGE & SOLICIT INPUT FROM THE PUBLIC

Targeted Pollutants and Potential Sources

Pollutants

Nutrients

Pesticides

Sediment

Chlorides

Bacteria

Oil and grease

Sources

Grass clippings and leaves

Fertilizers

Soil erosion

Deicing materials

Pet waste

Pesticides

Automotive fluids

MCM 2: *Public Participation & Involvement*

BMP 2.1: Encourage & Solicit Input from the Public

Description

Saint Paul citizens are actively engaged in many aspects of the City's governance, being involved through commissions, district councils, volunteer organizations and electronic communications. Other public involvement techniques include workshops, web page accessibility and outreach by elected officials. The objective of this program is to make the SWMP and related documents available to the public and to provide a process for public input in the development and implementation of the SWMP.

Workplan

- Hold annual public meeting to address the SWMP and Annual Report. Publish a notice of the meeting at least 30 days prior to the meeting. Make a copy of the notice available to the MPCA Commissioner and to governmental entities that have jurisdiction over activities that relate to stormwater management in the drainage area. Publicize notice of annual meeting via the City's website or other social media methods as appropriate.
- Include a summary of oral public input and responses with the Annual Report. Consider the public input and make appropriate adjustments to the SWMP. (ongoing)
- Include a formal council resolution adopting the Annual Report and SWMP. (ongoing)
- Carry out programs that engage volunteers and encourage citizen involvement as described in MCM 1 and provide information on City's website. (ongoing)
- Update websites with most current MS4 documents, including MS4 permit, SWMP, Annual Report, monitoring reports, and other special reports as required by the MS4 permit. (ongoing)

MS4 Permit Reference

V.C1f, V.C2

Assessment Process for Annual Reporting

- Summary of public input and the City's response.
- Annual meeting attendance.
- Adopted council resolution.
- Summary of web site updates.

Participating Departments and Contacts

Public Works: Permit Coordinator

Safety & Inspections: Water Resource Coordinator

MCM 3: Illicit Discharge Detection & Elimination

Overview

Description

The objective of this program is to detect and prevent illicit connections and improper disposal of wastes into the MS4 by determining the types and sources of illicit discharges entering the system and, by establishing the legal, technical, and educational means needed to prevent these discharges into the MS4 within the scope of this SWMP.

MCM 3 Specific Measurable Goals

Development of non-stormwater discharge ordinance. (See BMP Sheet 3.1)

Completion of storm sewer system map and inventory. (See BMP Sheet 3.3)

Conduct dry weather field screening on 5-year schedule, where 20% of the outfalls are inspected each year. (See BMP Sheet 3.3 & 6.1.3)

Number and type of training/educational sessions and number of participants. (See BMP Sheets 1.2, 3.1 & 3.2)

Participating Departments

Public Works	Parks & Recreation
Safety & Inspections	Emergency Management
Fire & Safety	Police Department

Category 3 BMP Sheets:

- 3.1 PROHIBITED DISCHARGE MANAGEMENT PROGRAM
- 3.2 FIELD SCREENING PROGRAM
- 3.3 STORM SEWER SYSTEM MAP & INVENTORY
- 3.4 INDUSTRIAL ACTIVITIES MANAGEMENT PROGRAM

Targeted Pollutants and Potential Sources

Pollutants

Nutrients	Pesticides
Sediment	Chlorides
Bacteria	Oil and grease

Sources

Grass clippings and leaves	Fertilizers
Soil erosion	Deicing materials
Pet waste	Pesticides
Automotive fluids	

MCM 3: Illicit Discharge Detection & Elimination

BMP 3.1 PROHIBITED DISCHARGE MANAGEMENT PROGRAM

Description

The objective of this program is to effectively prohibit through ordinance or other regulatory mechanism and appropriate enforcement procedures, the introduction of non-stormwater discharges into the MS4.

Workplan

- Development of non-stormwater discharge ordinance. (2013)
- Where non-stormwater discharges from categories listed in Permit Part V.C3g have been identified by the Permittee as a significant contributor of pollutants, develop, implement and enforce a program to reduce pollutants from the category. (ongoing)
- Develop and administer program to detect, investigate and eliminate prohibited discharges. (2014 - ongoing)
- Respond to reports of prohibited discharges and illicit connections. Investigate, make efforts to determine sources, require corrective action and document. (ongoing)
- If suspicious flows or unusual odors, stains or deposits are observed during routine inspection and operation of storm drain structures, storm tunnels, outfalls, grit chambers and other stormwater conveyance infrastructure, report to Public Works Sewers Utility Division for investigation and documentation. (ongoing)
- Develop and implement a process including a central contact point to receive, track and investigate complaints of prohibited discharges including significant sediment sources through mechanisms such as the website, phone and email. (2013 - ongoing)
- Maintain web site information about how the public can identify and report spills and about prohibited discharges and how to report violations. (2014 - ongoing)
- Develop procedures to address prohibited discharges including temporary or permanent structural pollution control devices. (2015-ongoing)
- Carry out staff training on standard procedures, including notification of the state and federal Duty Officers on spill reporting. (ongoing)

MS4 Permit Reference

V.C3, V.C6d

Assessment Process for Annual Reporting

- Number of reported or discovered prohibited discharges, number investigated and number eliminated.
- Development of procedures to address prohibited discharges.
- Training events and staff trained.

Participating Department and Contacts

Safety and Inspections: Code Enforcement Manager
Senior Building Inspector

Fire & Safety: Fire & Safety Supervisor

Public Works: Sewer Utility Engineer

MCM 3: Illicit Discharge Detection & Elimination

BMP 3.2 STORM SEWER SYSTEM MAP & INVENTORY

Description

The objective of this program is to minimize pollutants in stormwater through the effective use of electronic tools for data storage, retrieval, display and analysis. An electronic inventory and map and electronic inventory is under development to support numerous stormwater management system responsibilities and activities, including operation and maintenance, design, hydrologic and hydraulic modeling, Gopher State One Call locates, capacity, condition and water quality studies, illicit discharge detection and management of spills.

Workplan

- Incorporate the following into the City's MS4 electronic inventory and map: (by January 2014)
 - Ponds, streams, lakes and wetlands that are part of the MS4 system
 - Storm sewers and tunnels
 - Outfalls to receiving waterbodies and other MS4s
 - outfall identification number
 - size of outfall pipe
 - size of tributary drainage area
 - land use types and distributions
 - percent of area made up of impervious surfaces
 - Structural pollution control devices that are part of the MS4 system
 - size of tributary drainage area
 - land use types and distributions
 - design capacity of device where available, estimated capacity if design capacity is not available
 - Ditches, swales and inflows from other MS4s.
- Identify the process to update the electronic inventory and map based on new construction.

MS4 Permit Reference

V.C3a

Assessment Process for Annual Reporting

- Report on status of electronic inventory and mapping completion.

Participating Department and Contact

Public Works: Sewer Utility Engineer

Parks & Recreation: Design Manager

MCM 3: Illicit Discharge Detection & Elimination

BMP 3.3 DRY WEATHER FIELD SCREENING PROGRAM

Description

The objective of this program is to develop, and as necessary continue to develop, and implement a dry weather field screening program to detect and eliminate non-stormwater discharges, including illegal dumping, to the system. The City shall inspect each outfall at least once over the five-year term of the current permit for evidence of illicit discharges.

Workplan

- Develop and implement a program to inspect and screen 20% of outfalls for evidence of illicit discharges in dry weather flow. Screening to include visual observations, field testing and laboratory testing. (2014 - annually)
- Implement a program to prioritize the investigation of those areas showing evidence of illicit discharges, during the annual outfall inspection program. (ongoing)
- Detect, investigate, and eliminate discharges of sanitary sewage from the municipal sanitary sewer system, into the MS4. (ongoing)

MS4 Permit Reference

V.C3c5, V.C3d

Assessment Process for Annual Reporting

- Number of outfalls inspected.
- Number of reported or discovered prohibited discharges, number investigated and number eliminated.
- Narrative summarizing dry weather flow inspections, activities, results and responses.
- Training events and staff trained

Participating Department and Contact

Public Works: Permit Coordinator

BMP 3.4 INDUSTRIAL ACTIVITIES MANAGEMENT PROGRAM

Description

The objective of this program is to minimize the discharge of pollutants from industrial activities by administering and enforcing ordinances, exercising municipal authority over activities with high potential for stormwater pollution, and providing information to assist the MPCA in carrying out its industrial permitting program.

Workplan

- Develop and maintain an inventory of industrial, commercial, or other institutional facilities that discharge non-stormwater flows to the MS4. The inventory will include industrial facilities covered under the MPCA's Industrial Stormwater Permit Program. (2015-2017)
- Report to the MPCA discharge incidents from discharges subject to the MPCA's NPDES General Industrial Stormwater Permit program or from another permit program. Encourage the discharger to obtain a permit from the MPCA, if one is not already held. (ongoing)
- Develop and implement procedures addressing facilities that City determines to be contributing a substantial pollutant load to the MS4. Procedures to include inspection, monitoring and implementation of control measures. (2016 - ongoing)
- Develop and maintain inventory of stormwater hotspots through use of available information. The MS4 Permit defines "stormwater hotspot" as any land use or activity that may generate a higher concentration of hydrocarbons, trace metals, or toxic pollutants than are found in typical stormwater runoff. (2013 – ongoing)

MS4 Permit Reference

V.C3f

Assessment Process for Annual Reporting

- Number of water and land pollution complaints.
- Number of discharge incidents reported to MPCA Industrial Permit Program.
- Industrial facilities inventoried.
- Stormwater hotspots inventoried.
- Number of discharges eliminated from industrial facilities.

Participating Department and Contact

Safety & Inspections: Water Resource Coordinator

MCM 4: Construction Site Erosion & Sediment Control

Overview

Description

The stormwater management objective of this program is to prevent or minimize discharge of pollutants from construction activities that result in a land disturbance of one acre or greater to the MS4 system.

MCM 4 Specific Measurable Goals

Develop and maintain standardized written procedures. (See BMP Sheet 4.1)

Consistent and uniform utilization of standardized forms. (See BMP Sheet 4.1)

Maintain proficiency of field inspectors in construction site erosion and sediment control. (See BMP Sheet 4.1, 4.2)

Maintain records including SWPPP, inspection reports and maintenance reports for City projects. (See BMP Sheet 4.2)

Participating Departments

Public Works

Safety & Inspections

Parks & Recreation

Category 4 BMP Sheets:

4.1 DEVELOPMENT & REDEVELOPMENT CONTROL PROGRAM

4.2 MUNICIPAL CONTROL PROGRAM

Targeted Pollutants and Potential Sources

Targeted Pollutants

Sediment	Solid and sanitary wastes
Phosphorus	Nitrogen
Pesticides	Oil and grease
Concrete truck washout	Construction chemicals
Construction debris	

Potential Sources

Construction activity
Soil erosion
Fertilizers

BMP 4.1: DEVELOPMENT & REDEVELOPMENT CONTROL PROGRAM

Description

The objective of this program is to minimize the discharge of pollutants from construction sites disturbing one acre or more by requiring erosion prevention and sediment control measures. Chapter 52 of the Saint Paul Code of Ordinances requires projects disturbing one acre or more to provide for erosion and sediment control during construction. Sites one or more acres in size are also required to obtain NPDES General Construction Permits from the Minnesota Pollution Control Agency, the Capitol Region Watershed District and the Ramsey-Washington Metro Watershed District.

This program encompasses a variety of individuals responsible for water quality concerns from construction activities. These individuals include designers of erosion control plans; staff responsible for plan review; and, field inspectors with municipal authority over contractors.

Workplan

- Provide site plan review to evaluate erosion and sediment control plans for projects subject to Chapter 52, including demolition, construction and other land disturbances. (ongoing)
- Require site plan approval before commencement of any grading, filling, excavating, storing, stockpiling or disposing of earth materials or performing other land disturbing or land filling activity. (ongoing)
- Develop and maintain standardized written procedures for site plan review to evaluate the adequacy of erosion and sediment control for projects disturbing one acre or more. (2013)
- Continue to implement written procedures for inspecting and enforcing erosion & sediment control on sites. Identify criteria for prioritizing inspection of construction sites. (ongoing)
- Develop and implement a process to receive, track and investigate complaints of construction related erosion and sedimentation issues through mechanisms such as the website, phone and email. (2013 - ongoing)
- Maintain University of Minnesota certification for responsible field and plan review staff. (ongoing)
- Provide information about regulatory requirements to Departments/Divisions carrying out permitting and inspection responsibilities. (ongoing)
- Provide information on external training opportunities to relevant parties as available and aware. (ongoing)

- Provide in-house training for field inspectors and plan reviewers/approvers. Topics to include erosion and sediment control inspections and enforcement, documentation and BMP selection. Trainer will be City staff or outside trainer as appropriate. (ongoing)
- Review, establish and enforce ordinance requirements regarding erosion and sediment control BMPs and to ensure control of construction wastes, stabilization of stockpiles, and proper treatment of dewatering discharges. (2013 - ongoing)

MS4 Permit Reference

V.C4

Assessment Process for Annual Reporting

- Report on number of site plans reviewed and approved.
- Report on number of site erosion and sediment control inspections recorded.
- Report on development and implementation of written procedures for site plan review and erosion and sediment control inspections.
- Report on number of non-compliance incidents that were identified and addressed by municipal inspectors.
- Report on development of citizen complaint process and number of citizen complaints received and addressed.
- Report on number of staff trained related to construction site erosion and sediment control.

Participating Departments and Contacts

Safety and Inspections: Water Resource Coordinator
 Senior Building Inspector
 Zoning Specialist

BMP 4.2 MUNICIPAL CONTROL PROGRAM

Description

The objective of this program is to minimize the discharge of pollutants from construction sites disturbing 1 acre or more carried out by the City by requiring erosion and sediment control measures. Sites one or more acres in size are required to get NPDES General Construction Permits from the Minnesota Pollution Control Agency, the Capitol Region Watershed District and the Ramsey-Washington Metro Watershed District.

This program encompasses a variety of individuals responsible for water quality concerns from construction activities. These individuals include designers of erosion control plans, staff responsible for plan review and field inspectors.

Workplan

- Maintain University of Minnesota certification for responsible field and design staff. (ongoing)
- Provided in-house training for field inspectors. (ongoing)
- Identify a person who will oversee the installation, inspection and maintenance of practices before and during construction. (ongoing)
- For projects where City is Owner, maintain records including SWPPP, inspection reports and maintenance reports.
- Provide information about regulatory requirements to Departments/Divisions carrying out projects. (ongoing)
- Provide information on external training opportunities to relevant parties as available and aware. (ongoing)
- Develop and maintain checklists and communication tools for public projects. (2013)
- Develop and implement a process to receive, track and investigate complaints of construction related erosion and sedimentation issues through mechanisms such as the website, phone and email. (2013 - ongoing)

MS4 Permit Reference

V.C4

Assessment Process for Annual Reporting

- Report on number of non-compliance incidents that were identified and addressed on City projects.
- Report on staff attending erosion and sediment control training.
- Report on development of citizen compliant process and number of citizen complaints received and addressed.

Participating Department and Contact

Safety and Inspections: Water Resource Coordinator
Senior Building Inspector

Public Works: Project Managers
Project Inspectors

Parks and Recreation: Project Managers

Planning & Economic Development: Project Managers

MCM 5: Post-Construction Stormwater Management

Overview

Description

The stormwater management objective of this program is to reduce the discharge of pollutants and stormwater runoff from public and private development and redevelopment projects, as compared to conditions prior to project construction. Redevelopment of existing sites presents the opportunity to lessen the impacts of urbanization on the lakes, creeks and Mississippi River in Saint Paul, since most present land uses were created prior to regulation under the Clean Water Act.

MCM 5 Specific Measurable Goals

Document work practices (See BMP Sheets 5.1, 5.2, 5.3)

Complete and implement the Runoff Volume Reduction Plan (See BMP Sheet 5.4)

Participating Departments

Public Works

Safety & Inspections

Parks & Recreation

Planning & Economic Development

Category 5 BMP Sheets:

- 5.1 DEVELOPMENT & REDEVELOPMENT MITIGATION PROGRAM
- 5.2 COMPLIANCE PROGRAM FOR PRIVATE SITE CONTROLS
- 5.3 MUNICIPAL MITIGATION PROGRAM
- 5.4 STORMWATER RUNOFF VOLUME REDUCTION PLAN

Targeted Pollutants and Potential Sources

Targeted Pollutants

Nutrients

Sediment

Bacteria

Potential Sources

Soil erosion

Fertilizers

BMP maintenance

MCM 5: Post-Construction Stormwater Management

BMP 5.1: DEVELOPMENT & REDEVELOPMENT MITIGATION PROGRAM

Description

The objective of this program is to minimize the post-construction discharge of pollutants and stormwater runoff volume from construction projects disturbing one acre or more. Chapter 52 of the Saint Paul Code of Ordinances requires projects disturbing one acre or more to provide post-construction stormwater management. Sites one or more acres in size are also required to obtain NPDES General Construction Permits from the Minnesota Pollution Control Agency, the Capitol Region Watershed District and the Ramsey-Washington Metro Watershed District.

Projects are reviewed through the City's site plan review process, which is facilitated by the Department of Safety and Inspections. The Site Plan Review Committee is made up of staff from various departments including the PW Sewer Utility, Saint Paul Regional Water Services, PW Traffic Division, Zoning and Fire & Safety. Building permits are not issued until site plan review approval is formally attained.

Workplan

- As part of Site Plan Review, provide stormwater-related requirements to applicants. (ongoing)
- Review and administer ordinances that regulate construction projects disturbing one acre or more. (ongoing)
- Review and approve land-disturbing projects for compliance with post-construction stormwater management requirements including ongoing maintenance responsibilities, storm sewer capacity and connection issues. (ongoing)
- Ensure that the hydraulic and pollutant loading capacity of downstream structural stormwater management devices are not negatively affected by increased pollutant or runoff loadings. (ongoing)
- Require that, after construction, applicant certifies that the stormwater management facilities have been built according to approved plans and as-built plans have been submitted. (ongoing)
- Implement recommendations from Runoff Volume Reduction Plan. (2015)

MS4 Permit Reference

V.C5

Assessment Process for Annual Reporting

- Narrative on number of projects reviewed, number of projects approved, number and type of structural BMPs constructed or installed.

Participating Departments and Contacts

Safety and Inspections: Zoning Specialist

MCM 5: Post-Construction Stormwater Management

BMP 5.2 COMPLIANCE PROGRAM for PRIVATE SITE CONTROLS

Description

The objective of this program is to implement a program for maintenance, inspection, record keeping and reporting of private stormwater devices constructed in accordance with the City's requirements.

Workplan

- Require certification by Professional Engineer that stormwater devices have been built according to approved plans. (ongoing)
- Develop a procedure to ensure maintenance, inspection, record keeping and reporting of privately owned controls. (2013)
- Develop procedure to determine if devices are not functioning and how to issue and administer non-compliance orders. (2014)
- Develop and maintain a list of privately owned BMPs for which the City established agreements for long term operation. (2014 - ongoing)
- Communicate on City's website about training opportunities provided by other entities, such as UM extension and watershed districts, for BMP maintenance procedures. (ongoing)

MS4 Permit Reference

V.C5

Assessment Process for Annual Reporting

- Narrative on development of procedures.
- Number of new listings entered for privately owned BMPs.
- Once procedures are implemented, identify percent compliance with submittal of compliance reporting documents.

Participating Department and Contact

Safety and Inspections: Water Resource Coordinator

Public Works: Permit Coordinator

MCM 5: Post-Construction Stormwater Management

BMP 5.3 MUNICIPAL MITIGATION PROGRAM

Description

The stormwater management objective of this practice is to reduce the discharge of pollutants through the proper planning, design, and construction management of projects carried out by the City.

Workplan

- Review plans and specifications for impact on surface waters and on the stormwater system. (ongoing)
- Inspect stormwater management facilities during construction and periodically to determine that the stormwater management devices are functioning properly. (ongoing)
- Submit record drawings of additions, modifications and removals to stormwater management facilities to the PW Sewer Utility for update of the GIS database. (ongoing)
- Evaluate potential of street reconstruction/construction projects for reduction of runoff volume, reduction of water quality impacts on receiving waters and retrofitting existing BMPs to provide additional pollutant removal from stormwater discharges. (ongoing)
- Ensure that the hydraulic and pollutant loading capacity of downstream structural stormwater management devices are not negatively impacted by increased pollutant or runoff loadings. (ongoing)
- Establish pollutant and volume reduction BMP design requirements for storm sewer addition or modification projects, consistent with reliable and efficient conveyance of stormwater. (2013)
- Develop and maintain checklists and other communication tools for public projects regarding stormwater requirements and BMP design. (2013 – ongoing)

MS4 Permit Reference

V.C5

Assessment Process for Annual Reporting

- Inventory of new Stormwater Management Practices installed with City capital improvement projects.

Participating Department and Contact

Public Works Sewer Utility Division: Sewer Utility Engineer

Public Works Street Construction: Street Engineering & Construction Engineer

Parks & Recreation: Design Manager

Planning & Economic Development: Strategic Services

MCM 5: Post-Construction Stormwater Management

BMP 5.4 STORMWATER RUNOFF VOLUME REDUCTION PLAN

Description

The objective of this program is to conduct a study of how stormwater volume reduction practices will best fit into Saint Paul's overall goals of stormwater management for projects that disturb one acre or more. Volume reduction practices include infiltration, bio-infiltration, stormwater reuse, evapotranspiration, minimizing and disconnecting impervious surfaces.

Workplan

By January 2014, develop and submit to MPCA a plan for stormwater runoff volume reduction goals associated with post-construction stormwater management. The plan will be developed to meet permit requirements and to assist the City in meeting the rules of local watershed districts. Coordination with local watershed districts will be part of the planning process. The plan will be implemented upon approval from the MPCA. The plan shall include a framework for determination of the feasibility of on-site stormwater volume reduction based on site characteristics and BMP design features including:

- Efforts to minimize and disconnect impervious cover
- Managing stormwater quantity and quality as close to the source as possible
- Site soils
- Depth of groundwater table
- Sources of pollution
- Available space for BMPs
- Depth of bedrock
- Karst features
- Site soil contamination
- Installation, operation and maintenance costs

Workplan will address alternative compliance measures for projects that can not meet the volume reduction requirements on site including consideration of a stormwater volume reduction crediting system. Plan will also address tools for assessment process for annual reporting including: number and types of volume reduction practices implemented, number and types of alternative compliance projects and volume of runoff capture/reduced annually.

MS4 Permit Reference

V.C5a

Assessment Process for Annual Reporting

Narrative of progress towards plan development and implementation.

Participating Department and Contact

Public Works Sewer Utility: Permit Coordinator

Safety & Inspections: Water Resource Coordinator

Overview of MCM 6

Description

The objective of this program is to minimize the discharge of pollutants through the proper operation and maintenance of the storm sewer system, public streets, municipal parking lots and municipal equipment yards.

MCM 6 Specific Measurable Goals

Document work practices. (See BMP Sheets 6.1, 6.7, and 6.8)

Inspect and evaluate targeted segments of the storm sewer and tunnel system based on condition. (See BMP Sheet 6.1)

Inspect, evaluate and maintain outfalls on a 5-year schedule where 20% of the outfalls are inspected each year. (See BMP Sheet 6.3)

Annually inspect and clean as necessary stormwater ponds and structural pollution control devices (See BMP Sheet 6.4)

Train staff in good housekeeping and pollution prevention.

Participating Departments

Public Works

Safety and Inspections

Parks & Recreation

Planning & Economic Development

Category 6 BMP Sheets:

- 6.1 STORM SEWER SYSTEM OPERATION & MAINTENANCE
- 6.2 CATCH BASIN/MANHOLE OPERATION & MAINTENANCE
- 6.3 OUTFALL OPERATION & MAINTENANCE
- 6.4 STORMWATER POND/STRUCTURAL POLLUTION CONTROL DEVICE OPERATION & MAINTENANCE
- 6.5 HANDLING & DISPOSAL of REMOVED MATERIALS
- 6.6 STREET SWEEPING PROGRAM
- 6.7 ROADWAY DEICING MATERIALS MANAGEMENT
- 6.8 CITY PARKING LOT & EQUIPMENT YARD MANAGEMENT
- 6.9 FIELD OPERATIONS MANAGEMENT

Targeted Pollutants and Potential Sources

Pollutants

Nutrients
Pesticides
Sediment
Chlorides
Bacteria
Oil and grease

Sources

Grass clippings and leaves
Fertilizers
Soil erosion
Deicing materials
Pet waste
Pesticides
Automotive fluids

BMP 6.1: STORM SEWER SYSTEM OPERATION & MAINTENANCE

Description

The objective of this program is to minimize the discharge of pollutants through proper and cost effective operation and maintenance of the City's storm sewer system. General operations and maintenance efforts include inspections, cleaning, repairs, rehabilitation and reconstruction.

Workplan

- Inspect, maintain and enhance condition and effectiveness of existing infrastructure. (See BMP Sheets 6.2 thru 6.4 for specific infrastructure components.) (ongoing)
- Continue assessment program to prioritize repairs and rehabilitation needs. Repair and rehabilitate storm sewers and tunnels based on prioritization. (ongoing)
- Schedule and perform major repairs, rehabilitation or reconstruction considering budget, staff availability and other work. For major rehabilitation or reconstruction projects, look for opportunities to include structural BMPs to improve water quality. (ongoing)
- Develop preventative maintenance plans that establishes cost effective protocols for maintenance of the MS4 system and structural pollution control devices. (ongoing)
- Submit as-built drawings of additions, modifications and removals of stormwater management facilities to Public Works Sewer Utility for use in update of sewer database. (ongoing)
- Utilize the Public Works 24-hour assistance line for reporting maintenance concerns that need to be inspected and addressed by PW Operations staff. Track and follow up on complaints/notices regarding storm sewers. (ongoing)
- Prevent erosion and sedimentation from maintenance, repair and rehabilitation projects through implementation of erosion and sediment control measures. (ongoing)
- During MS4 system cleaning operations, apply sediment control measures to prevent removed material from re-entering the storm sewer system and properly dispose of removed materials. (ongoing)
- Maintain and develop as necessary standard operating procedures for sewer maintenance staff to prevent pollution in their daily activities. (2013 - ongoing)
- Respond to emergencies. (ongoing)
- Limit infiltration of seepage, such as from sanitary sewer system, pipe bedding or groundwater. (ongoing)
- Train staff on best current practices, including construction site erosion control. (ongoing)

MS4 Permit Reference

V.C3c5, V.C5d, V.C6a, V.c6b

Assessment Process for Annual Reporting

- Report on storm sewer and tunnel repair and rehabilitation projects.
- Report on miles of storm sewers and tunnels assessed, miles of storm sewers and tunnels cleaned and amount of material removed.
- Report on development of standard operating procedures.
- Narrative of training activities including number of staff trained and types of training conducted.

Participating Department and Contact

Public Works Sewer Utility Division: Sewer Utility Engineer

BMP 6.2: CATCH BASIN/MANHOLE OPERATION & MAINTENANCE

Description

The objective of this program is to minimize the discharge of pollutants through the proper operation and maintenance of the MS4 system's catch basins and manholes. Catch basins are structures located along the city's street system that provide entrance of stormwater runoff into the storm sewer system.

Workplan

- Complete Catch Basin Sump Management Plan (submitted see Appendix).
- Manage catch basins and manholes with sumps in accordance with Catch Basin Sump Management Plan (ongoing).
- Track and follow up on complaints and notices of plugged or damaged catch basins and manholes (ongoing).
- Inspect catch basin structures, as part of the sewer assessment program, to ensure they are operational, so as not to restrict flow and cause localized flood damage. (ongoing)
- Prioritize observed or reported plugged or damaged catch basins for repair and/or cleaning. (ongoing)
- Inspect manhole structures, as part of the sewer assessment program, to ensure they are operational and safe for access. Manhole inspection includes checking pipe inverts, benches, steps, walls, castings and rings. (ongoing)
- When cleaning, capture and properly dispose of removed materials. (ongoing).

MS4 Permit Reference

V.C6f

Assessment Process for Annual Reporting

- Report on number of catch basins and manholes cleaned and/or repaired and quantity of material removed.
- Report on implementation of the catch basin sump management program.

Participating Department and Contact

Public Works Sewer Utility Division: Sewer Utility Engineer

BMP 6.3: OUTFALL OPERATION & MAINTENANCE

Description

The objective of this program is to minimize the discharge of pollutants through the proper operation and maintenance of outfalls from the MS4 system to receiving water bodies.

Workplan

- Track and follow up on complaints of damaged outfall structures and/or erosion surrounding outfall structures (ongoing).
- Operate outfalls in a condition that stabilizes shorelines, streambanks and steep slopes from damaging erosion. (ongoing)
- Inspect outfalls on a 5-year schedule where 20% of the outfalls are inspected each year. Evaluate the general condition of structures, determine if any significant erosion has occurred, make minor repairs and inspect for sediment deltas. (ongoing)
- If major structural repair or maintenance work is identified, prioritize and schedule based on impact of condition to receiving waterbody, available personnel, budget funding, and coordination with other essential operations. (ongoing)
- If suspicious flows or unusual odors, stains or deposits are observed report to Sewer Dispatch for further investigation and resolution (see BMP Sheet 3.3). (ongoing)

MS4 Permit Reference

V.3d, V.C6b,

Assessment Process for Annual Reporting

- Report on outfalls inspected, dates, comments on repairs needed and dates of repairs.

Participating Department and Contact

Public Works Sewer Utility Division: Sewer Utility Engineer

BMP 6.4: STORMWATER POND/STRUCTURAL POLLUTION CONTROL DEVICE OPERATION & MAINTENANCE

Description

The objective of this program is to minimize the discharge of pollutants through the proper operation and maintenance of stormwater ponds and water quality devices. Stormwater ponds, filtration/infiltration areas, and structural controls are water quality devices that manage stormwater runoff. General operations and maintenance efforts include assessment and maintenance of the functionality of stormwater ponds and water quality devices.

Workplan

- Track and follow up on complaints/notices regarding stormwater ponds and water quality devices. (ongoing)
- Inspect and maintain as necessary to preserve the integrity and intended function of the facility as per maintenance agreements with the watershed districts in accordance with the following document where appropriate: Gulliver, J.S., A. J. Erickson, and P. T. Weiss (editors). 2010. "Stormwater Treatment: Assessment and Maintenance." University of Minnesota, St. Anthony Falls Laboratory. Minneapolis, MN. <http://stormwaterbook.safl.umn.edu/> (2013 – ongoing)
- Manage City's stockpile, storage and material handling areas to prevent pollutant discharges or the potential for pollutant discharges. Inspect weekly when material is actively handled and monthly when not actively handled. (ongoing)
- When cleaning, capture and properly dispose of removed materials. Manage contaminated sediments in accordance with "Managing of Dredged Materials In the State of Minnesota", MPCA, June 2009. (ongoing).
- Maintain and develop as necessary standard operating procedures.
- Complete Stage 1 pond inventory. (submitted February 2012 and found in Appendix)
- Inspect stormwater ponds on a 5-year schedule where 20% of the ponds are inspected each year.
- Inspect and maintain outlets for debris, litter and heavy vegetation, and protect against erosion. (ongoing)
- Inspect and maintain trash guards to prevent clogging of the downstream storm piping. (ongoing)
- Inspect inlets for erosion and sediment deposits, install energy dissipation if needed. (ongoing)
- Mow those areas designed for mowing. For ponds, a vegetated buffer adjacent to the normal water level is typically maintained where feasible, to provide filtration of runoff and wildlife habitat. (ongoing)

MS4 Permit Reference

V.C6b, V.C6e

Assessment Process for Annual Reporting

- Report on number of stormwater ponds and structural pollution control devices inspected, assessed and cleaned, by category. Include date of inspection, date and results of assessment, antecedent weather conditions and nature of repairs.

Participating Department and Contact

Public Work Sewer Utility Division: Sewer Utility Engineer

BMP 6.5: HANDLING & DISPOSAL of REMOVED MATERIALS

Description

The objective of this stormwater management program is to minimize the discharge of pollutants through proper handling of stored and stockpiled materials such as those removed from the storm sewer system.

Workplan

- During MS4 system cleaning, storage and disposal operations, apply sediment control measures to prevent removed material from re-entering the storm sewer system. (ongoing)
- Manage City's stockpile, storage and material handling areas to prevent pollutant discharges or the potential for pollutant discharges. Inspect weekly when material is actively handled and monthly when not actively handled. (ongoing)

MS4 Permit Reference

V.C6b, V.C6f

Assessment Process for Annual Reporting

- By categories shown in BMP Sheet 6.1.4, report estimated annual total mass (pounds) removed, characterization and destination(s) of material removed.

Participating Department and Contact

Public Works Sewer Utility Division: Sewer Utility Engineer

BMP 6.6 STREET SWEEPING PROGRAM

Description

The objective of this program is to minimize the discharge of pollutants to the storm sewer system and receiving waterbodies by removing leaf litter, sediment and debris from streets and gutters before the materials and the pollutants attached to them can be washed into storm drain inlets. The other objectives of the street sweeping program are to protect public health and safety, and to improve cleanliness and livability. The program is divided into several categories, that vary in frequency and work practices, to systematically address the approximately 744 miles of residential streets, 127 miles of arterial streets and the city's approximately 330 miles of alleys. They can be described by two general programs: Spring and Fall Citywide comprehensive sweeping programs, and general sweeping activities outside of those two major activities.

Workplan

- Operate and maintain public rights of way to minimize discharge of pollutants. (ongoing)
- Maintain roadways in a manner that works to prevent wash-off of pollutants during rainfall and snowmelt. (ongoing)
- Develop and maintain written operating procedures for practices specific to pollutant control and reduction. (2013 – ongoing)
- Carry out sweeping programs. (ongoing)
 - Class I-A & B Downtown or Loop streets
 - Class II - Outlying Commercial and Arterial Streets
 - Class III - Residential Streets
 - Class IV - Oiled and Paved Alleys
 - Class V and VI - Unimproved Streets and Alleys
- Use sampling and literature values to estimate the amount of total sediment (TSS) and total phosphorus (TP) per mass of debris being removed. (ongoing)
- Properly dispose of removed materials. (ongoing).
- Manage City's stockpile, storage and material handling areas to prevent pollutant discharges or the potential for pollutant discharges. Inspect weekly when material is actively handled and monthly when not actively handled. (ongoing)

MS4 Permit Reference

V.C6a & V.c6c

Assessment Process for Annual Reporting

- Number of miles swept in program categories
- Approximate amount of material removed in each program category

Participating Departments and Contacts

Public Works Street Maintenance Division: Street Maintenance Engineer

BMP 6.7: ROADWAY DEICING MATERIALS MANAGEMENT

Description

The objective of this program is to minimize the runoff of deicing materials applied to roadways under its jurisdiction, consistent with public safety and to properly store deicing materials.

Workplan

- Operate and maintain public rights of way to minimize discharge of pollutants, while addressing public safety and balancing environmental impacts and cost. (ongoing)
- Use weather forecasting information including pavement temperatures to make appropriate deicing material application decisions. (ongoing)
- Use appropriate deicing materials and application rates for weather conditions, vehicle and pedestrian usage. (ongoing)
- Use smart spreading concepts and procedures as available and appropriate for conditions. (ongoing)
- Keep salt and sand stockpiles covered and maintain good housekeeping at loading sites. (ongoing)
- Conduct training for operators, foremen and supervisors. (ongoing)
- Continue to seek practices and programmatic changes that will reduce salt loads to surface waters without compromising safety. (ongoing)
- Calibrate spreaders. (ongoing)
- Study cost and benefit of retrofitting trucks with temperature sensing or other equipment. (ongoing)
- Develop manual of practices for various conditions, applications, and handling of deicing materials. (2013 – ongoing)

MS4 Permit Reference

V.C6c

Assessment Process for Annual Reporting

- Report on quantity of deicing materials, chemicals, and sand applied.
- Report location and description of deicing materials storage facilities.
- Report number of staff attending training on use of salt.

Participating Departments and Contacts

Public Works Street Maintenance Division: Street Maintenance Engineer

BMP 6.8: CITY PARKING LOT & EQUIPMENT YARD MANAGEMENT

Description

The objective of these activities is to minimize the discharge of pollutants by utilizing proper fleet and building maintenance practices, and proper operation and maintenance of parking lots and equipment and storage yards. Program categories include the following:

- a) Saint Paul Parks and Recreation – parks, recreation centers, maintenance facilities
- b) Planning & Economic Development –city owned parking lots
- c) Public Works
 - Dale Street Facility includes Street Maintenance, Traffic Operations and Municipal Equipment
 - Sewer Maintenance
 - Asphalt Plant

Workplan

- Develop and maintain written operating procedures for maintenance and maintenance of City parking lots and equipment yards. (2014 and ongoing)
- Operate and maintain municipal property to minimize discharge of pollutants. (ongoing)
- Train staff on proper operation and maintenance activities to minimize discharge of pollutants and non-stormwater discharges from City maintenance facilities. (ongoing)
- For equipment washing areas, incorporate controls such as inlet protection and perimeter controls, or runoff collection systems, to prevent material from entering the MS4 system. Inspect controls weekly when wash areas are actively used. (ongoing)
- Manage City's stockpile, storage and material handling areas to prevent pollutant discharges or the potential for pollutant discharges. Inspect weekly when material is actively handled and monthly when not actively handled. (ongoing)

MS4 Permit Reference

V.C3c, V.C6c

Assessment Process for Annual Reporting

- Narrative of training activities
- Report on development of standard operating procedure

Participating Departments and Contacts

Public Works Street Maintenance Division: Street Maintenance Engineer

Public Works Municipal Equipment Division: Manager

Public Works Sewer Utility: Sewer Utility Engineer

Parks & Recreation: Operations Manager

Planning and Economic Development: Municipal Parking Lot Manager

BMP 6.9: FIELD OPERATIONS MANAGEMENT

Description

The objective of this program is to minimize the discharge of pollutants from the operation and maintenance of City right-of-way and park property.

Workplan

- Train staff on good housekeeping for field operations. (ongoing)
- Annually review Water Resource Protection Policy with Public Works and Parks field operation staff. (ongoing)
- Develop and maintain standard operating procedures for practices including vegetation management, proper lawn maintenance and fertilizer and pesticide use, equipment cleaning and vehicle maintenance. (2013-ongoing)
- Manage City's stockpile, storage and material handling areas to prevent pollutant discharges or the potential for pollutant discharges. Inspect weekly when material is actively handled and monthly when not actively handled. (ongoing)

MS4 Permit Reference

V.C3c2 & V.C6a

Assessment Process for Annual Reporting

- Narrative of training activities
- Report on development of standard operating procedures

Participating Departments and Contacts

Public Works Street Maintenance Division: Street Maintenance Engineer

Parks and Recreations: Operations Manager

Overview

Description

The objective of this program is to quantify stormwater volumes and loads from the MS4 and assist in the assessment of effectiveness of the SWMP. Sampling is performed throughout the year at various types of sites. Specifically the purposes of the analysis are to: characterize pollutant event mean concentrations, estimate total annual pollutant load and volume to water bodies, estimate effectiveness of devices and practices and calibrate and verify stormwater models.

MCM 7 Specific Measurable Goals

Completion of each annual monitoring and analysis program.

Participating Departments

Public Works

Category 7 BMP Sheets:

7.1 Cooperative Monitoring Program

Targeted Pollutants and Potential Sources

Parameters outlined in permit.

BMP 7.1 COOPERATIVE MONITORING PROGRAM

Description

The objective of this program is to develop and implement a cooperative monitoring, analysis, and reporting effort with partnerships that could include: adjacent municipalities, Capitol Region Watershed District, Mississippi Watershed Management Organization, Ramsey-Washington Metro Watershed District, Metropolitan Council Environmental Services, Ramsey County Environmental Health and Metropolitan Mosquito Control District.

In 2005, the City began a partnership with the Capitol Region Watershed District, to conduct the stormwater permit monitoring program for Saint Paul, as part of CRWD's overall monitoring program. CRWD established a monitoring program in 2004 to collect stormwater data from the major subwatersheds and stormwater best management practices (BMPs).

In 2012, the City began its Stormwater Quantity and Quality Monitoring Program. Monitoring was completed at ten stormwater volume reduction BMPs in the City of Saint Paul. Electronic water monitoring equipment was used to collect water quantity and quality data on a continuous basis from each BMP, which included:

- Water level in all of the BMPs
- Rate and volume of runoff flowing into and bypassing 4 of the BMPs
- Composite water quality sampling at 2 of the BMPs.

Workplan

- Continue partnership with Capitol Region Watershed District, including development of agreement. The Capitol Region Watershed District Monitoring Program is available on the district website at www.capitolregionwd.org. (ongoing)
- Establish additional partnerships as appropriate. (Ongoing)
- Implement City's BMP Monitoring Program to collect water quantity and quality data from selected BMPs. The City's BMP monitoring program can be found on the Public Works Stormwater page at www.stpaul.gov/index.aspx?NID=2686. (2012 – ongoing)

MS4 Permit Reference

V.C.7

Assessment Process for Annual Reporting

- Number and type of monitoring sites.
- Annual monitoring and analysis results.

Participating Department and Contact

Public Works Sewer Utility: Permit Coordinator

MCM 8: Discharges to Impaired Waters with a TMDL

Overview

Description

Under the requirements of the federal Clean Water Act, waters that do not meet water quality standards are considered impaired. The Clean Water Act requires states to develop a clean-up plan for impaired waters. The clean-up plan and the process used to create it is a Total Maximum Daily Load (TMDL). A TMDL must identify all sources of the pollutant causing a water body to violate standards. The TMDL also determines the amount by which each source must reduce its contribution to ensure a water body meets applicable water quality standards. Each of the MS4s within a TMDL study area is given a Waste Load Allocation (WLA). The MS4 WLA is a numerical maximum pollutant discharge goal for pollutants in stormwater runoff from each MS4.

MCM 8 Specific Measurable Goals

Develop format for annual reporting.

Participating Departments

Public Works

Safety and Inspections

Category 8 BMP Sheets:

8.1 TMDL Program

Targeted Pollutants and Potential Sources

Pollutants identified in approved TMDL.

BMP 8.1: TMDL Program

Description

Stormwater runoff from Saint Paul is discharged to several surface waterbodies including the Mississippi River. Several of these have been listed on Minnesota's Impaired Waters List for having the presence of concentrations of certain pollutants identified at levels higher than Minnesota standards. A TMDL study has been completed and approved for Lake Como.

Workplan

TMDL Study process:

- Provide early and significant involvement in the TMDL process. Provide information, data and expertise unique to Saint Paul. Participate in pollutant source identification, modeling assumptions and TMDL equation development. Work to ensure that the study is considering all cost-effective options for achieving water quality, and that the study is emphasizing the importance of locally led decisions on where and how to spend local money to address water quality issues. Work to ensure that MS4 WLAs are equitable and adequately address reasonable assurance provisions. Work to ensure that implementation plans are done concurrently with TMDL studies, are feasible, constructible, and cost-effective. Work to ensure that TMDL based projects can be implemented in a manner that is consistent with the City's goals and objectives. (ongoing)

EPA approved TMDL:

- Develop a general timeline and strategy for general activities to be conducted within each permit cycle, such as mapping the existing conveyance system, developing the means to calculate pollutant loads, identifying existing structural and non-structural BMPs, developing the means to evaluate their effectiveness, calculating effectiveness and comparing to the WLA, assessing and comparing the cost and benefit of new or modified BMPs, addressing level of funding in light of identified needs, developing modifications to the SWMP if needed, and implementing new or modified BMPs if needed.
- For an individual WLA, track City practices and calculate their effectiveness for progress in reducing loads to meet WLAs assigned to the Saint Paul MS4. Review the adequacy of the SWMP. If the SWMP will need to be modified to make reasonable progress in meeting the approved individual WLA, use knowledge gained through adaptive management over time to develop additional or modified practices or programs.

- For a categorical WLA, participate with other stakeholder MS4s (typically as members of a watershed organization) to track practices of the stakeholder MS4s and calculate their effectiveness for progress in reducing loads to meet categorical WLAs. As a group, review the adequacy of existing practices and programs. If the Saint Paul SWMP will need to be modified to make reasonable progress in meeting the approved categorical WLA, use knowledge gained through adaptive management over time to develop additional or modified practices or programs.
- Work with the Capitol Region Watershed District, Ramsey County, MnDOT, Roseville and Falcon Heights to implement the approved Como Lake TMDL.

In annual report, for WLAs approved by the EPA prior to June 30 of the previous calendar year:

- Identify outfalls and their stormwater drainage areas that discharge to the impaired waterbody.
- Annually report on progress made.
 - Identify the general strategy for meeting the WLA.
 - Identify existing BMPs, report on effectiveness calculations.
 - Provide comparison of calculated BMP pollutant load reductions to the assigned WLA.
 - Provide description of calculation method(s) used.
 - If not meeting and not making reasonable progress toward meeting the WLA, identify any SWMP modifications being submitted for MPCA approval that are specific to approved WLAs. Identify estimated timeframe, and identify actions scheduled for future permit cycles if all BMPs or control measures cannot feasibly be implemented in the current permit cycle.

MS4 Permit Reference

V.C8

Assessment Process for Annual Reporting

- For each impaired waterbody with an EPA-approved TMDL, report on progress toward addressing Waste Load Allocations.

Participating Departments and Contacts

Public Works: Permit Coordinator

Safety & Inspections: Water Resource Coordinator

PART 3 – ASSESSMENT REPORTING AND SUBMITTALS

3.1 STORMWATER MANAGEMENT PROGRAM ASSESSMENT

The City will complete an annual assessment of its Stormwater Management Program based on results of information collected and analyzed during the reporting period. The purpose of the Stormwater Management Program assessment is to provide information for improving performance and optimizing maintenance of the municipal separate storm sewer system.

3.2 RECORD KEEPING

The City will keep records required by this permit for at least three years beyond the term of this permit.

3.3 PUBLIC AVAILABILITY

The City will make its Stormwater Management Program available to the public.

3.4 ANNUAL REPORTING

The City will submit an annual report in accordance with all reporting requirements of the permit. In addition to this annual report, the City will also hold a public meeting to discuss the program and the annual reporting details.

3.5 SCHEDULE OF SUBMITTALS

Stormwater Management Program	
Original submittal	September 2011
Revised based on MPCA comments	October 2012
Revised based on public comments	September 2013
Stormwater Monitoring Plan	September 2011
Catch Basin Sump Maintenance Plan	February 2012
Stage 1 Pond Inventory	February 2012
Volume Reduction Plan	January 21, 2014
Annual Reports	June 30 th

PART 4 - APPENDIX

4.1 CATCH BASIN SUMP MANAGEMENT PLAN

4.2 STORMWATER POND INVENTORY

**City of Saint Paul
MS4 Catch Basin Sump Management Plan
October 2013**

Description

A catch basin is an inlet to the storm sewer system that typically includes a grate or curb inlet where stormwater enters the catch basin. Catch basins may include a sump to capture coarse sediment and debris. The performance of sump catch basins at removing coarse sediment and debris depends on the design of the catch basin and routine maintenance to retain the storage available in the sump to capture sediment. Cleaning catch basin grates, while ensuring proper runoff conveyance from City streets, also removes accumulated sediments, trash and debris.

Maintenance Protocol including Targeted Priority Areas.

The City currently has 26,200 catch basins with sumps. The City has set a goal of cleaning 2,000 catch basin sumps annually. Maintenance resources are directed towards sumps based on several factors. Maintenance protocol factors include communication from citizen observations, prior to repair or reconstruction of a catch basin, or, as required upstream of water quality BMPs. Plugged catch basins are elevated in the maintenance protocol for cleaning. Damaged catch basins are cleaned prior to repair. Sediment control structures upstream of water quality best management practices are cleaned annually as required by watershed district rules.

Twenty percent of the 2,000 sumps (400 sumps) will be cleaned in targeted priority areas. Examples of targeted priority areas include drainage areas to water bodies with approved TMDLS, water bodies identified for protection and other areas as determined by City.

Integration with Street Sweeping Program

The City implements many distinct municipal operations which together address pollution prevention and good housekeeping. In addition to a catch basin cleaning program, the City carries out street sweeping program, performed by the Street Maintenance Division. The street sweeping program targets the pick-up of street sediment, debris and leaves prior to their reaching catch basins.

The City's stormwater permit requires that the City consider integrating the catch basin cleaning program with the street sweeping program. While the road network is a common denominator, these are independent programs carried out by separate divisions in the Public Works Department; each program has distinctly different goals and operational constraints. Careful consideration has revealed several important practical limitations which render integration infeasible.

- Street sweeping is performed during day and night, while catch basin cleaning must be performed during the day.
- Street sweeping is performed citywide each year. Due to the quantity of sump catch basins, only a portion of the City is done each year.

- Street sweeping is generally seasonal and intended to address conditions associated with snowmelt or leaf fall. In contrast, catch basin sumps address sediment and debris which accumulates in the interim months between seasons. At times it can be difficult to predict precisely when conditions are suitable to begin sweeping operations. Catch basin cleaning can occur throughout a season.

In reviewing these BMPs, the City does not feel that integration is a feasible option.

Catch Basin Sump Replacement

New knowledge regarding practices for urban sediment disposal, as well as long-term experience with catch basin sump performance including resuspension of sediment particles, has led the City to conclude that sumps are not a cost-effective sustainable BMP. The quantity of sump catch basins and their effectiveness are highly disproportionate to the level of resources that can be reasonably directed to meet permit requirements. The City is also concerned with the mosquito and other vector breeding that takes place in these sumps.

Starting with the 2014 construction season, the City plans to stop building sumps on its catch basins as a standard practice. In addition, the City plans to remove the catch basin sumps as the opportunities arrive with street reconstruction and other projects. Water quality BMPs will be installed with these projects. Structures with sumps will continue to be installed as pre-treatment for water quality BMPs and will continue to be part of the BMP menu for design consideration on a project basis.

**City of Saint Paul
MS4 Stage 1 Pond Inventory
February 2012**

			Waterbody Location		
			Coordinate System	X Coord	Y Coord
	Type	Unique ID			
1	Stormwater Pond	Arlington/Arkwright	Ramsey County	577254.07	170382.36
2	Stormwater Pond	Atwater/Western	Ramsey County	568966.62	163905.93
3	Stormwater Pond	Birmingham/Minnehaha	Ramsey County	588647.76	162743.51
4	Stormwater Pond	Birmingham/York	Ramsey County	588478.02	164695.76
5	Stormwater Pond	Bush/Desoto	Ramsey County	578032.97	163385.60
6	Stormwater Pond	Crosby Business Park	Ramsey County	562095.18	144719.54
7	Stormwater Pond	Crosby Outlet	Ramsey County	561910.34	142942.79
8	Stormwater Pond	Etna/Third	Ramsey County	588774.99	161190.05
9	Stormwater Pond	Flandrau/Case	Ramsey County	591313.54	166310.30
10	Stormwater Pond	Hazel/Nokomis	Ramsey County	594128.41	163797.70
11	Stormwater Pond	Hazel/Ross	Ramsey County	593731.61	163950.98
12	Stormwater Pond	High Bridge East	Ramsey County	571357.01	153101.35
13	Stormwater Pond	High Bridge West	Ramsey County	570796.71	152671.24
14	Stormwater Pond	Hillcrest Knoll	Ramsey County	591668.35	172051.53
15	Stormwater Pond	Phalen Blvd/Burr East	Ramsey County	578689.27	163749.04
16	Stormwater Pond	Phalen Blvd/Burr West	Ramsey County	578389.28	163730.42
17	Stormwater Pond	Phalen Blvd/Earl	Ramsey County	584928.10	164496.81
18	Stormwater Pond	Phalen Blvd/Johnson Pkwy	Ramsey County	587622.54	166745.26
19	Stormwater Pond	Phalen Blvd/Karl Neid	Ramsey County	581411.36	164002.84
20	Stormwater Pond	Pleasant View	Ramsey County	565100.52	151542.51
21	Stormwater Pond	Flandrau/Hoyt	Ramsey County	590875.41	169272.73
22	Stormwater Pond	Sims/Agate	Ramsey County	575640.33	164789.28
23	Stormwater Pond	Sylvan/Acker	Ramsey County	572693.26	163004.90
24	Stormwater Pond	Terrace Ct./Whitall	Ramsey County	576968.69	163994.98
25	Stormwater Pond	Westminister/Mississippi	Ramsey County	576685.67	168557.28
26	Stormwater Pond	Wheelock Parkway - Lower	Ramsey County	577630.69	172868.05
27	Stormwater Pond	Wheelock Parkway - Upper	Ramsey County	578084.86	173115.78
28	Stormwater Pond	Wildview/Lenox	Ramsey County	596335.23	145705.21
29	Stormwater Pond	Burg/Stinchfield	Ramsey County	597600.24	138720.31
30	Stormwater Wetland	Arlington/Jackson	Ramsey County	573607.19	171157.24
31	Stormwater Wetland	Mallard Marsh	Ramsey County	546191.03	167681.03
32	Stormwater Wetland	Suburban Pond	Ramsey County	593319.34	157544.72
33	Stormwater Wetland	Willow Reserve	Ramsey County	569146.05	168916.27
34	Wetland	Airport Marsh	Ramsey County	583541.06	149452.80
35	Wetland	Fairview/North	Ramsey County	551965.38	165466.44
36	Wetland	Phalen Wetland	Ramsey County	587127.06	168361.07
37	Wetland	Unnamed (South of Pig's Eye Lk)	Ramsey County	595033.84	140796.85
38	Wetland	Unnamed (Warner/Fish Hatchery)	Ramsey County	587121.21	156723.81
39	Lake	Beaver Lake	Ramsey County	598018.93	166624.51
40	Lake	Como Lake	Ramsey County	562862.35	168738.56
41	Lake	Crosby Lake	Ramsey County	560462.30	141435.66
42	Lake	Loeb Lake	Ramsey County	567353.87	167376.70
43	Lake	Phalen Lake	Ramsey County	585264.12	171752.49
44	Lake	Pickereel Lake	Ramsey County	568095.27	146042.47
45	Lake	Pig's Eye Lake	Ramsey County	592246.34	145247.70
46	Lake	Upper Lake	Ramsey County	558000.27	139867.05