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Stormwater Management Program

July 2019

Minneapolis Stormwater Management Program
Municipal Separate Storm Sewer System (MS4)
Phase I Permit
NPDES/SDS Permit No. MN0061018

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List of Acronyms

BCWMC	Bassett Creek Watershed Management Commission
BMP	Best Management Practice
BWSR	Board of Water and Soil Resources
CaCo3	Calcium Carbonate
CEAC	Citizen Environmental Advisory Committee
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
City	City of Minneapolis
CPED	Community Planning and Economic Development
CPTF	Capital Project Task Force
COD	Chemical Oxygen Demand
CSO	Combined Sewer Overflow
Cu	Copper
CWA	Clean Water Act
DWSMA	Drinking Water Supply Management Area
EPA	Environmental Protection Agency
ERP	Enforcement Response Procedure
EMC	Event Mean Concentration
FEMA	Federal Emergency Management Agency
H&H	Hydrologic and Hydraulic
GIS	Geographic Information Systems
IAP	Incident Accident Plan
ID	Identification
IDDE	Illicit Discharge and Detection Elimination
I/I	Inflow and Infiltration
ISS	Inorganic Suspended Solids
MDH	Minnesota Department of Health
MEP	Maximum Extent Possible
mg/L	Milligram per Liter
MIDS	Minimal Impact Design Standards
MNDNR	Minnesota Department of Natural Resources
MnDOT	Minnesota Department of Transportation
MPCA	Minnesota Pollution Control Agency
MPRB	Minneapolis Park and Recreation Board
MS4	Municipal Separate Storm Sewer System
MCES	Metropolitan Council Environmental Services
MCWD	Minnehaha Creek Watershed District
MWMO	Mississippi Watershed Management Organization
N	Nitrogen
N/A	Not Applicable
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
NPDES/SDS	National Pollutant Discharge Elimination System/State Disposal System
O&M	Operations and Maintenance
PACP	Pipeline Assessment Certification Program
P	Phosphorus
Pb	Lead
PCAB	Pollution Control Annual Billing
PDR	Preliminary Development Review
PW-SWS	Public Works – Surface Water and Sewers

QA	Quality Assurance
SARA	Superfund Amendments and Reauthorization Act
SCWMC	Shingle Creek Watershed Management Commission
SMP	Stormwater Management Practice
SOP	Standard Operating Procedure
SWMP	Stormwater Management Program
SWPPP	Storm Water Pollution Prevention Plan
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
TP	Total Phosphorus
TSS	Total Suspended Solids
U of M	University of Minnesota
USACE	United States Army Corps of Engineers
VSS	Volatile Suspended Solids
WLA	Waste Load Allocation
WQS	Water Quality Standards
WRMP	Water Resource Management Plan
Zn	Zinc

Executive Summary

The Minneapolis Stormwater Management Program (SWMP) is prepared in accordance with the requirements of the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit No. MN0061018, issued by the Minnesota Pollution Control Agency (MPCA) under the federal Clean Water Act (CWA) to the City of Minneapolis (City) and the Minneapolis Park and Recreation Board (MPRB) on February 16, 2018. This permit is also known as the Municipal Separate Storm Sewer System (MS4) Phase I Permit.

The objective of the SWMP is to provide clear, comprehensive, and effective structure and guidance for operation of the MS4 conveyance and treatment system in accordance with the MS4 Permit to minimize discharge of pollutants.

As of fiscal year 2019, the City, along with the MPRB, budgeted \$46 million to be used to manage 36 individual stormwater management practices (SMPs), organized into 11 categories:

1. Public Education and Outreach on Stormwater Impacts
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management
6. Pollution Prevention and Good Housekeeping for Municipal Operations
7. Stormwater Discharge Monitoring and Analysis
8. Progress Toward Waste Load Allocation for Approved Total Maximum Daily Loads
9. Coordination and Cooperation with Other Entities
10. Stormwater Management Program Assessment, Modification, and Annual Reporting
11. Sanitary Sewer Reporting Requirements

This SWMP is a revision of the Minneapolis Stormwater Management Program that was adopted by the Minneapolis City Council in September 2011, approved by the MPCA in May 2013, and revised by the City on July 22, 2015. This 2019 revision of the SWMP is written to be in accordance with the requirements of the February 16, 2019 MS4 Permit.

Major changes to the 2018 MS4 Permit and incorporated into this SWMP include:

- Incorporation of Combined Sewer Overflow (CSO) documentation and reporting requirements. These requirements were previously contained in a separate NPDES CSO permit which was last issued in 2000 and was terminated in 2018.
- Requirement that the City establish Enforcement Response Procedures (ERPs) to enforce compliance with contracts, ordinances, permits, and standards, that are issued and enforced by the City.
- Requirement that the City develop and implement runoff volume reduction requirements for new construction that creates one acre or greater of new impervious surface. This requirement allows for stormwater treatment as a substitute for runoff volume reduction in areas where stormwater infiltration is prohibited. Prohibited areas include, but are not limited to, runoff from industrial sources, soils with high levels of contaminants, clay soils, karst areas, and sites within a Drinking Water Supply Management Area (DWSMA) as defined by the Minnesota Department of Health (MDH).

This report is organized into three sections, as follows:

- Section 1 contains general information about the City’s approach to stormwater management, MS4 Permit requirements, the relationship between the SWMP and other water resource programs, funding for stormwater programs, and pollutants in stormwater runoff.
- Section 2 contains specific information on the individual SMPs managed by the City and the MPRB. Each specific SMP summary sheet includes a general description of the program, ongoing tasks conducted by the City and the MRPB, proposed new tasks with a schedule for implementation, measurable goals, and the City and MPRB departments responsible for implementing the SMP.
- Appendix A contains tables of detailed information, including public education activities managed by other government agencies and non-profit organizations, departments responsible for each SMP, and a cross-reference between the MS4 Permit requirements and the City’s stormwater management program.

Section 1 – Introduction

Organization of the Stormwater Management Program

This Stormwater Management Program (SWMP) is organized into two main sections with an Appendix of supplementary tables. Section 1 provides background and general information about the City of Minneapolis’s (City) stormwater management program. Section 2 provides detailed descriptions of stormwater management practices (SMPs), organized according to the following stormwater management control categories:

1. Public Education and Outreach on Stormwater Impacts
2. Public Participation and Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management
6. Pollution Prevention and Good Housekeeping for Municipal Operations
7. Stormwater Discharge Monitoring and Analysis
8. Progress Toward Waste Load Allocation for Approved Total Maximum Daily Loads
9. Coordination and Cooperation with Other Entities
10. Stormwater Management Program Assessment, Modification, and Annual Reporting
11. Sanitary Sewer Reporting Requirements

The objective of this SWMP is to provide clear, comprehensive, and effective structure and guidance for operation of the MS4 conveyance and treatment system in accordance with the MS4 Permit requirements to minimize discharge of pollutants.

Regulatory Requirements

History

The [Clean Water Act](#) (CWA), the primary federal law governing water pollution, was enacted in 1972. It established the goals of elimination of pollutant discharges and restoration of surface water quality as necessary for beneficial uses such as aquatic habitat, water supply, and recreation. The United States Environmental Protection Agency (EPA) manages the CWA and subsequent regulations in partnership with state environmental agencies. Major amendments were enacted in the CWA of 1977 and the Water Quality Act of 1987. The CWA requires a National Pollutant Discharge Elimination System (NPDES) permit to discharge pollutants to waters of the United States.

NPDES Stormwater Permits in Minnesota

The EPA has authorized the Minnesota Pollution Control Agency (MPCA) to issue all NPDES permits in the State of Minnesota. The MPCA issues different types of NPDES permits, including wastewater discharge, industrial discharge, and stormwater construction activities. The NPDES permit addressed by this SWMP is a Municipal Separate Storm Sewer System Permit, commonly referred to as an MS4 Permit. Additionally, within the MS4 type of NPDES permit, there are two categories: Phase I and Phase II. Phase I covers systems serving a population of 100,000 or more. Phase II covers systems not already covered by Phase I. The City holds a Phase I permit. The City of Saint Paul also holds a Phase I permit.

The MPCA issued the first MS4 Permit to the City and the MPRB as co-permittees on December 1, 2000. The permit was re-issued on January 21, 2011 and on February 16, 2018. MS4 permits require regulated municipalities to use Best Management Practices (BMPs)¹ to reduce pollutants in stormwater runoff to the Maximum Extent Possible (MEP). This SWMP is a document that describes, in detail, activities related to the City's program for management of stormwater within its jurisdiction, in accordance with the MS4 Permit requirements. This SWMP is a revision of the Minneapolis Stormwater Management Program that was adopted by the Minneapolis City Council in September 2011, approved by the MPCA in May 2013, and revised by the City on July 22, 2015. This 2019 revision of the SWMP is written to be in accordance with the requirements of the February 16, 2018 NPDES/SDS Permit.

Comparison of Stormwater Management Program and Water Resource Management Plan

This SWMP document is a federal requirement of the MS4 Permit, which is issued under authority of the Federal CWA. The Water Resource Management Plan (WRMP) is a parallel document that is a State requirement, prepared in response to Minnesota Statute 103B and Rule 8410, governing watershed management in Minnesota. The 2018 WRMP is the water resource and sanitary sewer chapter of the Minneapolis Comprehensive Plan, which is issued every 10 years. It describes a broad view of surface water management in the City, which includes water resource management activities, management of the sanitary sewer collection system, and management of the stormwater drainage system. This SWMP is a detailed document that focuses specifically on the management of the stormwater drainage system. This SWMP has additional details not included in the WRMP, including detailed descriptions of City activities, responsible departments, annual report requirements, and schedules for revision or creation of new stormwater program activities. The City's SWMP is revised on a 5-year cycle after issuance of updated NPDES permits.

Description of Permitted Areas, Systems, and Surface Waters

Minneapolis is a fully developed city located in Hennepin County, Minnesota. The City owns and operates an estimated 500 miles of mainline storm drain and 16 miles of storm tunnels.² The storm drainage system of catch basins, manholes, pipes, and deep tunnels conveys runoff from all areas of the City, which totals approximately 50 square miles in area. The land use is approximately 41 percent residential, 26 percent streets/highways, 17 percent commercial/industrial/institutional, 13 percent parks/open space, 2 percent rail/airport, and less than 1 percent open water. The system also includes structural stormwater practices installed to improve the quality of stormwater runoff. These include stormwater ponds and basins, bio-(in)filtration areas, grit chambers, and other controls and treatment facilities. A more detailed description of the City can be found in Section 4 of the [WRMP](#).

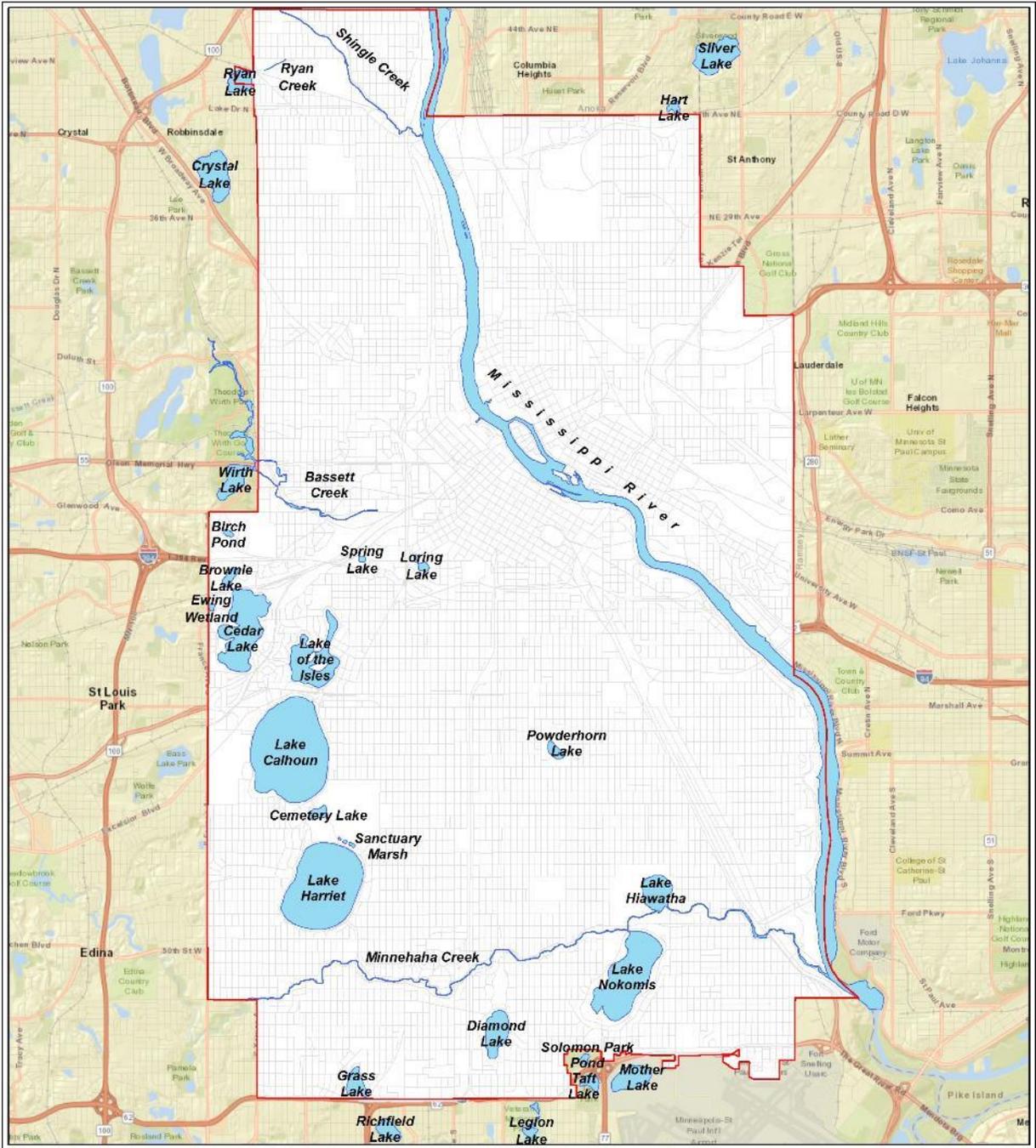
The oldest City sewers were built in 1870 and were designed to carry both sewage and stormwater directly to the Mississippi River. In 1922, construction started for a separate storm drain system around the City lakes, as well as newly developing areas. Older areas continued to be served by combined sewers. In 1960, the City banned stormwater drainage to the sanitary sewer system and since 1960 has been actively working to separate the stormwater from the sanitary sewers by constructing separate storm drains that discharge to lakes, streams, or the Mississippi River. This effort has been successful as evidenced by the last rainfall triggered discharge of combined stormwater and sewage in 2006.

¹ Within this document, the term Stormwater Management Practice (SMP) is used in place of Best Management Practice (BMP).

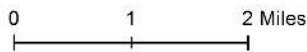
² Additional stormwater drains, public ditches, and deep tunnels are owned and operated by the Minnesota Department of Transportation, Hennepin County, the University of Minnesota, and the Minnehaha Creek Watershed District.

Approximately 25 miles of the Mississippi River, Shingle Creek, Bassett Creek, and Minnehaha Creek wind through the City. These streams and their tributary lakes and wetlands are the primary surface waters receiving stormwater runoff from the City and MPRB stormwater drainage systems. Those lakes that exist partially or wholly within the City and those that receive Minneapolis generated stormwater runoff but are outside the municipal boundaries are shown in **Figure 1.1**. The lakes within the municipal boundaries are integrated into MPRB parks, which are the focus of the City's park system, providing residents and visitors with numerous opportunities for land and water-based recreation. **Table 1.1** provides details of the streams and lakes within the City that are listed by the Minnesota Department of Natural Resources (MNDNR) as public waters. As property owner of record for much of the shoreline in the City, the MPRB is responsible for maintaining the shoreline and has created an effective program for lake management, further detailed in the [Annual Water Resource Reports](#).

Figure 1.1 – City of Minneapolis Waterbodies



City of Minneapolis
Minneapolis Water Bodies



- Minneapolis Boundary
- Water Bodies

Table 1.1 – City of Minneapolis Waterbodies

Surface Water	DNR ID	Minneapolis Stormwater Runoff Pipeshed (acres)
Surface Waters Within Minneapolis		
Bassett Creek	07010206-538	1,493
Bde Maka Ska	27003100	1,188
Birch Pond	27065300	16
Brownie Lake	27003800	66
Cedar Lake	27003900	216
Diamond Lake	27002200	635
Grass Lake	27068100	318
Lake Harriet	27001600	1,097
Lake Hiawatha	27001800	1,217
Lake Nokomis	27001900	652
Lake of the Isles	27004000	689
Loring Lake	27006500	7
Minnehaha Creek	07010206-539	3,061
Mississippi River	07010206-805 07010206-814	19,736
Powderhorn Lake	27001400	278
Ryan Lake	27005800	56
Shingle Creek	07010206-506	1,378
Spring Lake	27065400	39
Surface Waters Outside Minneapolis		
Bassett's Pond ^a	27003600	--
Crystal Lake	27003400	421
Hart Lake	02008100	3
Legion Lake	27002400	2
Mother Lake	27002300	3
Richfield Lake	27002100	58
Silver Lake	62008300	25
Taft Lake	27068300	139
Wirth Lake	27003700	37

^a Pipeshed area for Bassett Pond included in pipeshed area for Bassett Creek

Water Quality Standards and Total Maximum Daily Loads

Water quality standards (WQS) are risk-based requirements (also called hazard-based requirements) which set allowable general and site-specific parameters for individual waterbodies, such as rivers, lakes, streams, and wetlands. States set WQS by designating uses for a waterbody (e.g., recreation, water supply, aquatic life, agriculture) and applying allowable water quality concentrations and requirements designed to protect the designated uses. Minnesota Rule 7050 classifies all surface waters in Minnesota according to specific uses. Each use has a defined numerical water quality standard that protects the physical, biological, and chemical integrities of each classification of surface water. The only surface water in the City that has a special Class 1 designation

under [Minnesota Rule 7050.0470](#) is the segment of the Mississippi River that is above St. Anthony Falls, which is protected for domestic consumption. All other surface waters in the City are Class 2 waters, protected for aquatic life and recreation, or are wetlands without numerical standards. Within the City, there are no Outstanding Resource Value waters designated for special protection under the non-degradation classifications, as defined in [Rule 7050.0335](#).

The EPA requires that the MPCA maintain a list of surface waters that do not meet the numerical standards set by the State of Minnesota for its designated use classifications, called the Impaired Waters, or 303(d), list. A TMDL study of each Impaired Water may be conducted to determine the sources of pollutant(s) that are causing the impairment. An implementation plan may then be developed that identifies activities and capital projects to reduce the pollutant loading to meet water quality standards. The MPCA provides additional information on impaired waters and TMDL studies at the following web page: [Minnesota's Impaired Waters and TMDL Status](#).

The TMDL study produces list of factors that, when combined, totals the maximum amount of pollutant the impaired waterbody can assimilate. Often, these TMDL studies target stormwater runoff as a pollutant that needs to be reduced for the surface water to meet its water quality standards. In this case, one of the factors in the TMDL equation is a Waste Load Allocation (WLA) from permitted sources, including entities holding wastewater permits, MS4 permits, industrial stormwater permits, and construction stormwater permits. For a given TMDL, an MS4 can be assigned an individual WLA, or can be one of a group of MS4s with a shared categorical WLA. The Minneapolis NPDES MS4 Permit requires that the City document progress towards meeting the WLA through structural or non-structural stormwater BMPs. Those surface waters in the City that have been listed as impaired and the status of current TMDL studies are listed in the Appendix in **Table A.1**.

The status of compliance with the requirements contained in approved TMDL studies are listed in the Appendix in **Table A.2**.

As of 2018, the City is fully compliant with the requirements of the recommendations of two TMDL studies:

- South Metro Mississippi River TMDL (Metro) – There is a zero percent (0%) reduction required from the City for this TMDL. However, most BMPs that the City implements for water quality improvement will positively impact this impairment.
- Wirth Lake – In 2012, the BCWMC (in cooperation with the MPRB and the City of Golden Valley and with a grant from the Clean Water Legacy Fund) completed a project which modified the Wirth Lake outlet to prevent backflow from Bassett Creek into Wirth Lake during periods of high water in the creek. This project, along with other improvements in the watershed, reduced total phosphorus levels in the lake considerably. The lake was slated to be removed from the Impaired Waters List when the 2014 statewide list was approved by the EPA.

The MPCA maintains a [TMDL Glossary of Terms](#) that defines the technical terminology that is used in Table A.1 and other TMDL reports referenced in this SWMP.

Program Management and Coordination

Legal Authority

The City of Minneapolis (City), a municipal corporation in the State of Minnesota, has broad general powers to enact legislation for the health and welfare of the community. The City Charter and Code of Ordinances include provisions that protect the water resources of the City.

The Minneapolis Park and Recreation Board (MPRB) is an independent agency governed by an elected board. As an independent agency, it maintains a separate [Code of Ordinances](#) that apply to lands owned and operated by the MPRB.

The primary ordinances governing stormwater management can be found in the [Minneapolis Code of Ordinances](#) Title 3 (Air Pollution and Environmental Protection), and Title 19 (Waters, Sewers, and Sanitary Sewage) and in MPRB Code of Ordinances Chapter 3 (Bathing and Beaching), Chapter 4 (Boating), Chapter 10 (Trees and Vegetation), and Chapter 12 (Environmental Protection, Shoreland, and Floodplain Preservation). A comprehensive list of City and MPRB ordinances related to stormwater and surface water management can be found in Table 5.1 and Table 5.2 of the 2018 [WRMP](#).

Relationship Between Comprehensive Plan, the SWMP, and Other Public Entities

In addition to meeting the requirements of the MS4 permit, the City's stormwater management activities must also conform to various other policies, including the City Council goals, WRMP goals, and the policies and goals of the comprehensive plan.

Stormwater management programs required by the MS4 permit have been established in a manner that follows these adopted policies and goals of the City. Detailed information on the relationship between all goals and practices is contained in Section 2 of the 2018 WRMP.

Co-Permittee Coordination

This SWMP is developed and administered by the City and MPRB departments that are responsible for permit activities. Generally, the City is responsible for managing the storm drain system and the MPRB is responsible for shoreline and lake management. They are jointly responsible for the completion of the required Permit submittals. The Minneapolis Public Works Division of Surface Water and Sewers provides program management and completes the SWMP and the annual reports.

Minneapolis Comprehensive Plan

The current comprehensive plan for the City, Minneapolis 2040, was approved by the Minneapolis City Council in December 2018. The purpose of Minneapolis 2040 is to establish housing, transportation, wastewater collection, and water resource management strategies to guide the growth of the City in a manner that is both consistent with Metropolitan Council strategies, as well as consistent with goals and policies established by the City. The Minneapolis WRMP also approved in December 2018, an appendix to the Minneapolis 2040 Plan, focuses specifically on water resource and stormwater management systems and planning.

The current WRMP was prepared in accordance with the watershed planning requirements in [Minnesota Statute 103B.235](#) and [Minnesota Rule 8410](#). This plan is developed to comply with the policies of each watershed organization in the City, as well as the planning requirements set in the City's comprehensive plan. The WRMP is a broad document that guides water resource management activities by the City, including stormwater management, flood control, sanitary sewer collection system management, and surface water management.

The City has worked to integrate stormwater, sanitary sewer, and surface water decision-making and activities into the 2018 WRMP. This practice was approved and is preferred by the City because it eliminates overlap and sometimes conflicting requirements of the laws, regulations, statutes, rules, and other regulatory requirements that are set up to guide stormwater, sanitary collection, and surface water management systems. The City intends that the programs and activities of this SWMP compliment the WRMP.

Minneapolis Park and Recreation Board Comprehensive Plan

The MPRB adopted a [separate comprehensive plan](#) that is effective through 2020. The MPRB plan contains policies that guide the planning, development, and operations of their parks, including environmental operations.

Coordination with Other Jurisdictions

The City and the MPRB coordinate with several other public jurisdictions for water resource management, including:

- Bassett Creek Watershed Management Commission
- Minnehaha Creek Watershed District
- Mississippi Watershed Management Organization
- Shingle Creek Watershed Management Commission
- Metropolitan Council
- Minnesota Pollution Control Agency
- Minnesota Department of Natural Resources
- Minnesota Board of Water and Soil Resources
- United States Environmental Protection Agency
- United States Army Corps of Engineers
- Federal Emergency Management Agency
- United States National Park Service

Other public entities own storm drainage systems that are interconnected with the Minneapolis stormwater drainage system and are subject to Phase II MS4 NPDES permit requirements. These systems are not governed by the Minneapolis/MPRB MS4 permit:

- University of Minnesota
- Minnesota Department of Transportation
- Hennepin County Department of Transportation
- Hennepin County – County Ditch 13 (Shingle Creek)
- Minnehaha Creek Watershed District – Ditch 14, Ditch 17, and Ditch 29

Although the City does not operate these storm drainage systems, it does in some cases have the responsibility and authority to manage the land use tributary to these systems. An exception is land within a right-of-way operated by another road authority (MnDOT, Hennepin County, or the University of Minnesota). Another exception is University of Minnesota (U of M) land tributary to the U of M storm drainage system and U of M outfalls. Where U of M land is tributary to City storm drains and/or City outfalls, City utility connection permits or extension permits are necessary.

More details regarding these publicly-owned systems are included in Section 4 of the [WRMP](#). A detailed description of each of these jurisdictions, responsibilities, and agreements is included in Section 2 of the WRMP.

Education Activities by Other Entities

Appendix **Table A-3** summarizes water quality outreach and education activities that are carried out by other entities and are targeted, in whole or in part, to City residents and businesses. These highly effective activities are not regulated by the City/MPRB permit; however, they are complementary to it. To the extent possible, an update of this table will be included in future Annual Reports.

It is the intention of the City and the MPRB to not duplicate programs carried out by others but rather, in most cases, to implement initiatives that are unique to the City or MPRB, to identify needs that are not being met by others, and to tailor outreach and education efforts accordingly. Section 2 of this SWMP contains detailed descriptions of education activities carried out by the City and the MPRB.

Stormwater Management Program

The City of Minneapolis (City) has developed a stormwater management program that is based on the recognition that many City and Minneapolis Park and Recreation Board (MPRB) departments are involved in programs or activities that impact success of effective water quality improvement programs. This document details how stormwater management practices are embedded into the responsibilities of many departments. The result is a combination of ordinances, inspections, education, monitoring, maintenance, and capital projects managed by various departments of the City and the MPRB.

Budgets and Funding

The 2019 adopted budget of the Stormwater Fund is approximately \$50.4 million. The budget includes debt payment on storm sewer bonds, storm sewer maintenance, rehabilitation, engineering, street cleaning, capital improvement projects, and regulatory activities. The City budget is current only for the year that it is adopted. Projected budgets are presented for planning purposes, and there is no certainty that future funding will follow the projected budgets.

Table 1.3 provides the current budget and funding for the stormwater program. The City works to keep its activities, such as repair/rehabilitation projects, capital improvement projects, or regulatory activity, within the limits of available funding, and prioritization is critical.

Table 1.3 – Stormwater Management Program Budget and Funding

	Budget (in millions)				
	Adopted	Proposed	Proposed	Proposed	Proposed
	2019	2020	2021	2022	2023
PUBLIC WORKS – SURFACE WATER & SEWERS					
Primary revenue source is Stormwater Utility Fee. Other sources include bond sales, General Fund, grant proceeds, maintenance agreement payments. ¹					
Stormwater Operating Budget	\$22.2	\$22.8	\$23.3	\$23.8	\$23.8
Stormwater Capital Improvement Budget	\$14.8	\$25.8	\$25.8	\$28.8	\$15.8
Health Department – Environmental Services					
Primary revenue source is permit fees. ^{2, 3}					
Detection and enforcement activities	\$1.9	\$1.9	\$2.0	\$2.0	\$2.0
MINNEAPOLIS PARK & RECREATION BOARD					
Primary revenue source is MPRB General Fund with some reimbursement from City Stormwater Utility Fee. ⁴					
Stormwater monitoring, public education/outreach on stormwater impacts	\$3.3	\$3.5	\$3.6	\$3.7	\$3.9

¹ Based on adopted 2019 City Budget

² Based on 5-year projected activities

³ Budget amount includes all environmental inspection, detection, and enforcement activities, including air quality, illicit discharge, and erosion and sediment control

⁴ Environmental management including environmental education, natural and water resources management, and volunteer coordination

Funding Mechanisms

Stormwater Utility Funds

In 2005, the City began implementing a stormwater utility fee. Implementation of this fee did not create new revenue, but instead changed how each property was billed for stormwater services. The stormwater utility fee is similar to other fees the City charges its residents for services provided, such as the sanitary sewer fee, and trash and recycling fee. The stormwater utility rate is set each year, and the monthly fees are based on numeric units calculated from actual or assumed imperviousness of a specific property. The revenues collected are dedicated to stormwater management activities.

Bonds

In certain years, the City may decide to issue bonds to raise money to pay for capital project infrastructure upgrading and replacement. The debt service on bonds sold for stormwater improvements is paid for by the stormwater utility.

General Fund

Property taxes spread capital, operations, and maintenance costs of the surface water system over the entire City. General fund revenues are not a major source of funding for water resource projects or programs in the City; however, these funds may pay for a storm drainage improvement that is part of a larger capital improvement project, such as a highway reconstruction project. General funds are also used to fund some activities of the MPRB.

Grants

Though subject to budgetary constraints, a number of state and other grant programs are available for surface water management programs. Grants are used to supplement locally available resources.

Targeted Pollutants and Target Sources

The Minneapolis Stormwater Management Program (SWMP) targets pollutants typically present in urban stormwater runoff and, as possible, also targets sources of these pollutants. **Table A.4** is used by the City as an aid in cross-referencing pollutants typically present in urban stormwater runoff to likely sources of pollutants.

Annual Report

The City and the MPRB prepare annual reports that are made available for public review and comment. The annual reports provide an overall description and evaluation of the activities, accomplishments, progress towards goals, special studies, financial information, and other assessments for each stormwater management practice. Current and previous year reports are available on the websites for each organization, at [Minneapolis MS4 Permit Annual Report](#), and Minneapolis Park & Recreation Board [Water Resources Reports](#). These websites will also contain future year reports as they are developed.

Any proposed modifications to this SWMP will be presented in the Minneapolis MS4 Stormwater Annual Report when it has been determined that a stormwater management practice requires replacement or modification.

Section 2 – Stormwater Management Practices

Stormwater Management Practice (SMP) Sheets

Section 2 of this Stormwater Management Program (SWMP) details the activities for each of 11 overview sheets summarizing the SMPs for each category, plus 36 detailed SMP sheets. These practices are organized within the control measure category that most closely matches the specific activity, and the control measure categories address Part V.C. of the permit. The following summarizes the information contained on each SMP sheet.

An overview sheet precedes each group of practice sheets. Each of the 11 overview sheets (one for each control measure category) includes a program overview, program goals, pollutants and sources table, and participating departments. Each of the 36 detailed SMP sheets includes a general description of the program, ongoing tasks conducted by the City of Minneapolis (City) and the Minneapolis Park and Recreation Board (MPRB), proposed new tasks with a schedule for implementation, measurable goals, and City/MPRB departments responsible for implementing the SMP.

Table 2.1 lists the SMP sheets summary, arranged by stormwater management category.

The specific information contained in each category sheet includes the following.

Program Overview

This section generally describes the activities of the SMP.

Program Goals

This section details existing and planned activities.

Pollutants and Sources

The overview sheets for each category describe targeted pollutants and, as possible, describe likely sources of pollutants typically present in urban stormwater runoff. These lists of pollutants and sources are not intended to be an exhaustive list but are intended to target the most dominant pollutants and sources present in urban stormwater runoff.

MS4 Permit References

The MS4 Permit references are included for users that are interested in the detailed requirements set in the permit. A cross-reference table is also provided in the Appendix as Table A-5.

Specific information contained on each individual SMP sheet includes the following.

Tasks

This section describes ongoing tasks performed by the City and the MPRB for each individual SMP.

New Tasks to be Implemented

This section describes any new tasks proposed for the permit term and a schedule for implementation of those tasks.

Measurable Goals

This section describes the measurable goals for each individual SMP.

Annual Reporting

The MS4 Permit requires assessment procedures that will be documented in the Annual Report. There are both general assessment requirements and some SMP-specific assessment requirements included on the individual SMP sheets.

Participating Departments

The specific City or MPRB department participating in each individual SMP is listed in this section. A table that compiles all department responsibilities for all SMPs is contained in the Appendix in Table A-6.

Table 2.1 – Stormwater Management Categories and Practices

Category 1 – Public Education and Outreach on Stormwater Impacts	
1.1	Stormwater Public Education
1.2	Stormwater Education for Staff
1.3	Stormwater Education by Others
Category 2 – Public Participation and Involvement	
2.1	Stormwater Public Participation Activities
Category 3 - Illicit Discharge Detection and Elimination	
3.1	Phosphorus-Free Fertilizer Program
3.2	Pesticides Program
3.3	Illicit Discharge Investigation Program
3.4	Spill Response Program
3.5	Facilities Inspection Program
3.6	Stormwater Management for Regulated Activities Program
3.7	Electronic Inventory and Mapping
3.8	Enforcement Response Procedures
Category 4 – Construction Site Stormwater Runoff Control	
4.1	Erosion and Sediment Control for Development and Redevelopment Projects
4.2	Erosion and Sediment Control for City and MPRB Construction Projects
4.3	Enforcement Response Protection Procedures for Development and Redevelopment Projects
Category 5 – Post-Construction Stormwater Management	
5.1	Review and Approval for Private Development and Redevelopment Projects
5.2	Ongoing Compliance Program for Private Development/Redevelopment Projects
5.3	Review and Approval for Projects Proposing to Modify the Municipal Separate Storm Sewer System
5.4	Project Management for Stormwater in City of Minneapolis and Minneapolis Park and Recreation Board Capital Projects
5.5	Stormwater Management Planning
5.6	Stormwater Modeling
5.7	Water Resources Capital Improvement Program Development
5.8	Enforcement Response Procedures
Category 6 – Pollution Prevention and Good Housekeeping for Municipal Operations	
6.1	Operations and Maintenance
6.2	Street Sweeping and Cleaning Program
6.3	Facilities Management
6.4	Snow and Ice Control for Streets
6.5	Vegetation Management
6.6	Localized Flood Mitigation Capital Projects
Category 7 – Stormwater Discharge Monitoring and Analysis	
7.1	Monitoring and Analysis to Assist in Assessing Stormwater Management Program Effectiveness
Category 8 – Progress Toward Waste Load Allocations for Approved Total Maximum Daily Loads	
8.1	Total Maximum Daily Load (TMDL) Program
Category 9 – Coordination and Cooperation with Other Entities	
9.1	City of Minneapolis and Minneapolis Park and Recreation Board Responsibilities
9.2	City of Minneapolis and Metropolitan Council Responsibilities
9.3	Coordination and Cooperation with Other Entities
Category 10 – Stormwater Management Program Assessment, Modification, and Annual Reporting	
10.1	Stormwater Management Program Assessment, Modification, and Annual Reporting
Category 11 – Sanitary Sewer Reporting Requirements	
11.1	Integrated Infrastructure Management Program

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Overview of Category 1

Program Overview

A successful stormwater management program involves participation and good management from everyone in the City, including municipal staff, residents, business owners, park visitors, facility managers, contractors, developers, and all others who live and work in Minneapolis. A long-term component of the City's stormwater program is public education that serves to provide new or updated information on the importance of water quality, the impacts of stormwater runoff, the sources of pollutants in stormwater runoff, and the activities that the public should adopt to fulfill their collective responsibilities towards improved water quality. The SMPs contained in this category work to maintain and improve the ongoing stormwater education efforts of the City.

Program Goals

The goals of these stormwater education activities are to increase the awareness of water quality, sources of pollutants, and important practices that must be adopted to improve overall water quality through the hosting of education events, distribution of education materials, regular updates of web-based information, staff training, and other activities.

Pollutants and Sources

Pollutants

- Bacteria
- Chlorides
- Metals
- Nutrients
- Oil & Grease
- Pesticides
- Sediment

Sources

- Pet Waste
- De-icers
- Fertilizers
- Automotive Fluids
- Pesticides
- Grass clippings, leaves, and other organic materials
- Soil Erosion

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works Department
- Regulatory Services Department

Category 1 SMP Sheets

SMP 1.1 – Stormwater Public Education

SMP 1.2 – Stormwater Education for Staff

SMP 1.3 – Stormwater Education by Others

*Category 1 Public Education and Outreach on Stormwater Impacts
Overview*

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SMP 1.1 – Stormwater Public Education

(MS4 Permit References: I.D.3.d, III.C.1.a, III.C.3.e, III.C.4.c, III.C.8.b, III.C.8.d, III.C.8.e, III.c.8.f, IV.D.1)

The City of Minneapolis (City) and Minneapolis Park and Recreation Board (MPRB) implement public education and outreach programs to reduce the pollutant load to receiving waters, and to promote, publicize, and facilitate the proper management of stormwater discharges to the storm sewer system. The stormwater management objective of this program is to promote public responsibility, accountability, creativity, and innovation towards reduction of stormwater pollutants through public education. This program aims to continue to use a multi-faceted approach of stormwater education programs that engage volunteers, nurtures citizen involvement, encourages accountability, and involves youth in environmental stewardship. The desired program result is behavior change in ways that will improve water quality.

Tasks

- Continue to implement the following education and outreach activities at least once throughout the permit term:
 - Proper application of pesticides, herbicides, and fertilizers and the benefits of retaining grass clipping and leaf litter on lawn surfaces.
 - Proper pet waste disposal.
 - Proper management and application of de-icing and anti-icing compounds for winter maintenance.
 - Educate developers and contractors on construction site and post-construction stormwater management BMP design, construction, and maintenance methods.
 - Impaired waters within the City and the TMDLs developed to address the impairments.
- Continue to use innovative and affordable means of delivering water quality messages to residents, businesses, and visitors through a variety of avenues.
 - Issue press releases to community newspapers, and work with community newspaper columnists on water quality topics.
 - Participate in community, classroom and sustainability forums, festivals, and other events. Distribute informational brochures, carry out presentations and conversations regarding clean water with focus on what residents can do.
 - Educate staff about how to engage a diverse public through multi-lingual communications.
 - Maintain a program of interpretive signage, website information, and self-guided tour for water quality projects.
 - Distribute and publicize materials developed by other public agencies. Refer to SMP 1.3.
- Maintain a stormwater public education webpage.
 - Regularly update information on the City and MPRB stormwater management activities and how the programs relate to water quality.
 - Highlight information on how actions by the public contribute to the discharge of pollutants, and behavior changes they can make to reduce or eliminate pollutants.
 - Utilize web page to encourage public to call 311 to report illicit discharges, illegal dumping, and erosion from construction sites. Refer to SMP 2.1.
 - Periodically check websites for information gaps and opportunities.
- Provide easy to understand information links to education materials in water resource reports posted on the City's web site as well as those reports generally available for review by the public:

Category 1 Public Education and Outreach on Stormwater Impacts
SMP 1.1 – Stormwater Public Education

- MPRB Annual Water Resources Report monitoring and analysis results will include an explanation of the results, trends, and significance for City waterbodies.
 - MS4 Phase I Annual Report will include links to materials and web sites that provide information and education which is related to the specific section of the report.
 - Unique studies for a specific waterbody or other stormwater research study will include links to materials and web sites that provide information and education which is related to the topic of that report.
- Refer to SMP 1.2 for staff training and SMP 1.3 for public education by other agencies.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
<p>Create and implement an education and outreach workplan that includes:</p> <ul style="list-style-type: none"> ▪ An inventory of ongoing public education activities to educate and engage those who live, work, and play in the City about actions they can take to improve quality of surface waters. ▪ Specific activities and timelines for each topic identified in the permit. ▪ Identification of target audiences and measurable educational goals for each activity and target audience. ▪ A description of coordination with other education and outreach programs being implemented by other organizations. ▪ An annual evaluation that assesses results against established measurable goals. ▪ Identification of City staff responsible for each public education activity. 	X	X	X	X	X
<p>Implement a multi-lingual program for residents and businesses to increase the level of awareness about stormwater runoff impacts to receiving water utilizing a variety of communication tools and methods.</p>			X	X	X
<p>Develop education materials that target source controls at commercial, industrial, and public facilities.</p> <ul style="list-style-type: none"> ▪ Identify target pollutants and target audiences for additional source control outreach programs. Examples may include contractors that do saw cutting and concrete work, power washing activities, demolition/construction activities, runoff from greenhouses, and yard maintenance. Include identification of significant sources of sediment and identify appropriate education and enforcement programs for control. ▪ Conduct outreach to property owners regarding voluntary improvement of properties. Examples include increasing tree canopy on commercial/industrial sites, reducing tracking onto streets from equipment/materials handling yards, and the beneficial onsite reuse of leaves and grass clippings. ▪ Use handouts and enforcement activities as opportunity to educate as follow-up on inspection and enforcement. 			X	X	X

*Category 1 Public Education and Outreach on Stormwater Impacts
SMP 1.1 – Stormwater Public Education*

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop illicit discharges and improper waste disposal education program, including: <ul style="list-style-type: none"> ▪ Written procedures to promote, publicize, and facilitate public reporting of illicit discharges ▪ Communications to public, businesses, and industry about: <ul style="list-style-type: none"> ▪ Identification of illicit discharges ▪ Hazards and water quality impacts associated with illicit discharges ▪ How to report illicit discharges to the City ▪ How to prevent illicit discharges 			X	X	X
Develop system to document education and outreach workplan activities, to include: <ul style="list-style-type: none"> ▪ All required information ▪ Modifications made to program as a result of annual evaluation ▪ Activities held to meet measurable goals ▪ Quantities and descriptions of education materials distributed and dates of distribution 		X	X		

Measurable Goals

- New Tasks are implemented per implementation schedule.
- Increase in attendance at event each year.
- Increase in materials distributed each year.
- Increase in web visits each year.
- Development of measurable goals for each audience the City is trying to reach.

Annual Reporting

- Quantities and descriptions of education materials distributed.
- Summary of education activities and events held, including dates of events.
- Progress made towards meeting measurable goals established for each audience in the City.
- Modifications to education program resulting from annual evaluation.
- Description of education and outreach activities to inform the public and industries about reporting, response, and elimination of illicit discharges and illegal dumping.

Participating Departments

- Communications Divisions with City of Minneapolis and Minneapolis Park and Recreation Board
- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division

*Category 1 Public Education and Outreach on Stormwater Impacts
SMP 1.1 – Stormwater Public Education*

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SMP 1.2 – Stormwater Education for Staff

(MS4 Permit References: III.C.4.g, III.C.6.j, III.C.8.b, III.C.8.d, III.C.8.e, III.C.8.f, IV.D.1, IV.D.3, IV.D.4)

The stormwater management objective of this program is to deliver training related to the Stormwater Management Program into all relevant parts of the business of city government in a coordinated, cost-effective way, and to fulfill federal and state requirements under the MS4 Permit. The training is being customized at multiple levels, for various departments and personnel groups. The SWMP obligations are embedded in different City departments, and coordinating training – compared to separate, disconnected efforts – will improve efficiency and effectiveness, result in more people trained, and increase staff awareness of how their activities relate to federal and state regulatory requirements. A coordinated program will also target a higher level of awareness for staff and officials of how the municipal stormwater conveyance and treatment system is related to our lakes, creeks and the Mississippi River, the importance of minimizing the discharge of pollutants into the system and recognizing and reporting illicit discharges and improper disposal of waste.

Tasks

- Training programs, current and in development, to include, at a minimum:
 - Illicit discharge training
 - Identification, hazards, reporting requirements, prevention, containment, and response.
 - Internal procedures for municipal staff responsibility on response and containment of spills.
 - Written procedures to notify a City central contact for complaints and spill reporting.
 - Responsibilities and procedures to notify state and federal Duty Officers, Public Works Surface Water & Sewers Division Operations staff, other City/MPRB departments and watershed organizations (including for watershed staff who may be monitoring in the affected pipe) on spill reporting.
 - River deployment of booms and maintain experience in placement of both contaminant and absorbent types of booms, as well as extensive knowledge of the Mississippi River, lakes, landings, and outfalls.
 - Erosion and sediment control training for inspectors and site plan reviewers:
 - Requirements of the MPCA General Permit to Discharge Stormwater Associated with Construction Activity.
 - Information on compliant vs. non-compliant erosion, sediment, and waste control at construction sites.
 - Information on the selection, installation, and maintenance of construction site SMPs and waste control.
 - Information on enforcement response procedures, including documentation, checklists, and required supporting documentation.
 - Proper management and application of deicing and anti-icing compounds for municipal applicators.
 - Stormwater management training for permanent and seasonal City and MPRB maintenance personnel:
 - Importance of protection of waterbodies.
 - MS4 Permit requirements.
 - Contacts for reporting illicit discharges upon discovery.
 - Changes in procedures, practices, techniques, and reporting requirements.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Define training objectives, frequency of training, level of training required for City and MPRB personnel who are involved in activities that relate to the discharge of pollutants, including, but not limited to: <ul style="list-style-type: none"> ▪ Park and open space maintenance. ▪ Street maintenance and deicing. ▪ Fleet and building maintenance. ▪ New construction and land disturbances. ▪ Stormwater system maintenance. ▪ Site inspectors. ▪ Illicit discharge inspections ▪ Emergency response inspections ▪ Call Center (311) operators. 			X	X	X
Develop technical training plan for erosion and sediment control and stormwater management training: <ul style="list-style-type: none"> ▪ Specify audiences, training activities, and outcomes. ▪ Create a catalog of existing training and materials available from the EPA, MPCA, University of Minnesota, state and regional agencies, and other organizations that fulfill SWMP commitments that can be accessed by City staff identified as in need of training. ▪ Identify gaps in existing training and materials and work to develop or enhance training or materials to meet the City’s needs. ▪ Create a system to track and document relevant training, lists of topics covered, dates of training event, and staff attendance. 		X	X	X	
Develop stormwater management orientation for new staff and refresher orientation for existing staff.			X	X	

Measurable Goals

- New Tasks are implemented per implementation schedule.
- All City and MPRB staff identified as having inspection, maintenance, or other stormwater management responsibility attends a minimum of 1 training session each year.

Annual Reporting

- Title, attendance numbers, participating agencies, and description of education activities that trained City and MPRB staff on illicit discharges and spill response.
- Title(s) and attendance numbers for construction stormwater management training sessions attended by City and MPRB staff.
- Titles(s), topics, date(s), and names of staff attending stormwater management training events.
- Modifications to education program resulting from annual evaluation.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division

SMP 1.3 – Stormwater Education by Others

(MS4 Permit References: III.C.1.a, III.C.8.b, III.C.8.d, III.C.8.e, III.C.8.f, IV.D.1)

The stormwater management objective of this program is to coordinate and communicate with public agencies and non-profit organizations that provide water quality and stormwater management education materials and activities. The primary public agencies and non-profit organizations that provide public education activities, training, and materials include, but are not limited to the Minnesota Pollution Control Agency, the Minnesota Board of Soil and Water Resources, the Minnesota Department of Natural Resources, the Metropolitan Council, Hennepin County Environmental Services, Bassett Creek Watershed Management Commission, Minnehaha Creek Watershed District, Mississippi Watershed Management Organization, Shingle Creek Watershed Management Commission, Metropolitan Mosquito Control District, Freshwater Foundation, Metro Blooms, University of Minnesota, and many Minneapolis neighborhood associations. The overall purpose is to ensure that the citizens of Minneapolis have access to information and activities by others, that there is minimal overlap of the education materials provided, and that there are no significant informational gaps between the City/MPRB materials and those materials developed by others.

Tasks

- Provide links on City’s web page to education materials provided by others.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Create and regularly update an inventory of water quality and stormwater management education activities conducted by other public agencies and non-profit organizations which target residents, businesses, employees, and visitors of the City.		X	X	X	X

Measurable Goals

- New Tasks are implemented per the implementation schedule.

Annual Reporting

- Description of education materials and activities conducted by others and promoted by the City during the previous calendar year.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division

*Category 1 Public Education and Outreach on Stormwater Impacts
SMP 1.3 – Stormwater Education by Others*

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Overview of Category 2

(MS4 Permit References: III.C.8.a, III.C.8.d)

Program Overview

The City of Minneapolis' (City) Stormwater Management Program (SWMP) taps into numerous public participation and public involvement activities to solicit input on specific stormwater-related activities and decisions that affect the residents and businesses of the City. As with Category 1 – Public Education and Outreach, this Stormwater Management Practice (SMP) embeds participation and involvement activities into the workplan of specific stormwater control practices whenever opportunities are closely linked to other activities contained in that workplan.

Program Goals

The City will give the public an opportunity to play an active role in the development and implementation of the City's SWMP. An active and involved community is crucial to the success of the City's program because it creates broader public support, allows a broader base of expertise, and is a conduit to citizen involvement in other programs.

Pollutants and Sources

Pollutants

- Bacteria
- Chlorides
- Metals
- Nutrients
- Oil & Grease
- Pesticides
- Sediment

Sources

- Pet Waste
- De-icers
- Fertilizers
- Automotive Fluids
- Pesticides
- Grass clippings, leaves, and other organic materials
- Soil Erosion

Participating Departments

- Minneapolis Communications Department
- Minneapolis Park and Recreation Board
- Public Works Department

Category 2 SMP Sheets

SMP 2.1 – Stormwater Public Participation Activities

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SMP 2.1 – Stormwater Public Participation Activities

(MS4 Permit References: III.C.2a-f, III.C.8.b, III.C.8.e, III.C.8.f, IV.A, IV.D, IV.D.2)

The City of Minneapolis (City) citizens are actively engaged in many aspects of the City's governance, being involved through commissions, neighborhood associations, and volunteer organizations. The City's stormwater management program works to solicit input from these existing public participation and public involvement activities on specific activities and decisions that affect the residents and businesses of the City. Public involvement techniques include annual meeting, workshops, webpage accessibility, electronic communication, 311 reporting, and outreach by elected officials.

Tasks

The City conducts the following public participation tasks on an ongoing basis:

- Conducts annual meeting to solicit input into the City's stormwater management program.
 - The meeting notice is published and announced at least 30 days prior to the public meeting.
 - Notice to be published in the local newspaper or other publication of general circulation.
 - Copies of published announcements to be provided to the MPCA Commissioner, other governmental agencies, and other interested parties.
 - Public notice to include:
 - Date, time, and location of public meeting.
 - Reference to SWMP and annual report.
 - Proposed modifications to SWMP.
 - How the public meeting will be conducted.
 - Information about where SWMP and annual report are available for public review.
- Considers and implements changes to the SWMP based on public input at the annual meeting. Refer to SMP 10.1.
- Maintains documentation of:
 - Dates and locations of events held for purposes of compliance.
 - Notices provided to the public of events scheduled to meet SWMP requirements.
 - All relevant input submitted regarding SWMP.
 - All responses to written input, including modifications to SWMP made as a result of input.
 - Notices of any event scheduled to meet MS4 Permit requirements, including electronic correspondence.
- Maintain websites with current MS4 documents, including:
 - MS4 Permit.
 - SWMP.
 - Annual Report.
 - MPRB monitoring reports.
 - Other special reports as required by the MS4 Permit.
- Provides 311 access for citizens to report problems or get information.
 - 311 operators are prepared to record and refer complaints to appropriate City departments for stormwater management issues including illicit discharge, illegal dumping, erosion and sediment control, and other related complaints.

Category 2 Public Participation and Involvement

SMP 2.1 – Stormwater Public Participation Activities

- 311 information is available in English, Spanish, Hmong, Lao, Oromo, Somali, and Vietnamese, and translation services are available in additional languages.
- Engages the public in the process of decision making. Past examples include capital improvement project meetings, *Water Resource Management Plan* solicitation of public comments, and development of the City's comprehensive plan, *Minneapolis 2040*.
- Maintains communications between staff and City/MPRB elected officials and other policymakers.
- Provides information and materials for informing and engaging the public about SWMP decisions and activities.
- Utilizes technology to announce public participation opportunities.
- Leads, or partners in, special citizen-based watershed improvement initiatives. Examples have included the Powderhorn Lake Neighborhood of Rain Gardens and Friends of Diamond Lake, both winners of Minnesota Environmental Initiative awards.
- Requests Citizen Environmental Advisory Committee (CEAC) review and participation on major stormwater policy initiatives.

Measurable Goals

- Provide notice of, conduct, and document SWMP Annual Meeting.
- Revise SWMP per input from SWMP Annual Meeting and public comments received.
- Prepare Annual Report and submit to MPCA by June 30.

Annual Reporting

- Summary of oral and written input received regarding the SWMP and the City's response(s).
- Resolution(s) adopted that formally approve the SWMP and Annual Report. Resolution(s) must be submitted to the MPCA no later than August 30 if not available in the Annual Report. Refer to SMP 10.1.
- Summary of modifications made to the SWMP as a result of the input received during the public meeting.
- The date and location of the public meeting.

Additionally, the Minneapolis Park and Recreation Board (MPRB) annually publishes their *Water Resources Report*; a comprehensive technical reference of water quality information about the lakes managed by the MPRB.

Participating Departments

- Communications Divisions with City of Minneapolis or Minneapolis Park and Recreation Board
- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division

Overview of Category 3

(MS4 Permit References: III.C.8.a, III.C.8.d)

Program Overview

The stormwater management objective of these programs is to regulate the illicit discharge of pollutants to the municipal separate storm sewer system (MS4), in accordance with the MS4 Permit to discharge stormwater to surface waters including lakes, creeks, wetlands, and the Mississippi River.

Program Goals

This program serves to minimize the adverse effects caused by unauthorized (illicit) discharges of materials to receiving waters via the stormwater drainage system. Illicit discharges may be random, frequent, infrequent, accidental, or other, and may occur anywhere along the stormwater drainage pathways including, but not limited to, pavements, gutters, catch basins, manholes, or permitted connections to the storm drain.

Pollutants and Sources

Pollutants

- Bacteria
- Metals
- Nutrients
- Oil & Grease
- Pesticides
- Sediment
- VOCs

Sources

- Fertilizers
- Automotive Fluids
- Pesticides
- Grass clippings, leaves, and other organic materials
- Soil Erosion
- Sanitary Waste
- Illegal dumping
- Accidental releases
- Improper storage, handling, and processing of materials

Participating Departments

- Public Works Department
- Regulatory Services Department
- Health Department
- Fire Department
- Minneapolis 311
- Minneapolis Park and Recreation Board

Category 3 SMP Sheets

SMP 3.1 – Phosphorus-Free Fertilizer Program

SMP 3.2 – Pesticides Program

SMP 3.3 – Illicit Discharge Investigation Program

SMP 3.4 – Spill Response Program

SMP 3.5 – Facilities Inspection Program

SMP 3.6 – Stormwater Management for Regulated Activities Program

SMP 3.7 – Electronic Inventory and Mapping

SMP 3.8 – Enforcement Response Procedures

*Category 3 Illicit Discharge and Detection Elimination
Overview*

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SMP 3.1 – Phosphorus-Free Fertilizer Program

(MS4 Permit References: III.A, III.C.3.b, III.C.3.g, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

The stormwater management objective of this program is to reduce the phosphorus concentrations in the City's stormwater by enforcing the prohibition of the use of fertilizers containing phosphorus on lawns. The City introduced the prohibition in 2001. In 2003, the prohibition was enacted statewide. By City ordinance, Chapter 55: Lawn Fertilizers (relating to Air Pollution and Environmental Protection), the use of fertilizers containing any amount of phosphorus or other compound containing phosphorus, such as phosphates, is prohibited on lawns in Minnesota, except as allowed by Minnesota Statute 18C.60: Phosphorus Turf Fertilizer Use Restrictions.

Tasks

- Maintain website information about Phosphorus-Free Fertilizers. Refer to SMP 1.1.
- Utilize 311 Call Center as a hotline for reporting improper or illegal phosphorus fertilizer application. Refer to SMP 2.1.
- Respond to reports of improper or illegal phosphorus fertilizer application per established procedures. Refer to SMP 3.8.
- Maintain website information about restrictions and how to file a complaint about improper or illegal phosphorus fertilizer application. Refer to SMP 3.8.
- Provide public education. Refer to SMP 1.1.
- Carry out staff training. Refer to SMP 1.2.

Measurable Goals

- Long-term reduction in the number of reports to the 311 Call Center.

Annual Reporting

- Number of complaints, discoveries, incidents, and City response related to use of fertilizers containing phosphorus contained in annual report contained in SMP 3.8.

Participating Departments

- Health Department – Environmental Services
- Public Works Department – Surface Water & Sewers Division

*Category 3 Illicit Discharge Detection and Elimination
SMP 3.1 – Phosphorus-Free Fertilizer Program*

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SMP 3.2 – Pesticides Program

(MS4 Permit References: III.A, III.C.3.b, III.C.3.g, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

The stormwater management objective of this program is to use public outreach to minimize the discharge of pesticides including herbicides, insecticides, and fungicides from misuse or overuse within the statutory authority of the City. Minnesota Statute 18.02 preempts local governments from enacting ordinances to control pesticides or herbicides.

Tasks

- Maintain website information about restrictions and how to file a complaint about spills, excessive applications, and/or illicit dumping of pesticides. Refer to SMP 1.1.
- Utilize 311 Call Center as a hotline for reporting spills or excessive applications. Refer to SMP 2.1.
- Respond to reports of spills or excessive applications per established procedures. Refer to SMP 3.8.
- Provide public education. Refer to SMP 1.1.
- Carry out staff training. Refer to SMP 1.2.

Measurable Goals

- Long-term reduction in the number of reports to the 311 Call Center.

Annual Reporting

- Number of complaints, discoveries, incidents, and City response related to the improper use of pesticides contained in annual report prepared for SMP 3.8.

Participating Departments

- Regulatory Services – Environmental Management and Safety
- Public Works Department – Surface Water & Sewers Division

*Category 3 Illicit Discharge Detection and Elimination
SMP 3.2 – Pesticides Program*

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SMP 3.3 – Illicit Discharge Investigation Program

(MS4 Permit References: I.A.2, III.A, III.C.3.b, III.C.3.c, III.C.3.d, III.C.3.g, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

The stormwater management objective of this program is to minimize the discharge of pollutants to the maximum extent practicable (MEP) by detecting, investigating, and resolving illegal dumping and disposal of unpermitted, non-stormwater flows in receiving waters and in the City's stormwater drainage system, including pipes, gutters, swales, and other conveyance infrastructure. Pollutants prohibited are those defined in Minneapolis Code of Ordinances, Chapter 48, and as otherwise defined by federal and state laws, regulations, and standards.

Tasks

Health Department – Environmental Services

- Continue to refine and administer the program to detect, respond to, and mitigate illicit discharges.
 - Maintain website information about illicit discharges and how to report violations.
 - Utilize the 311 Call Center as a hotline for reporting dumping and other activities that degrade stormwater runoff.
 - Respond to reports of unauthorized discharges and illicit connections, including reports from Public Works – Surface Water & Sewers Division (PW-SWS) Operations personnel, plumbing inspectors, 311 calls, and Environmental Management Complaint Forms. Investigate, make efforts to determine sources, require corrective action, and document. Refer to SMP 3.8.
 - Identify sources of illicit discharges.
 - Enforce violations. Refer to SMP 3.8.
- Report to the Minneapolis Pollution Control Agency (MPCA) discharge incidents from discharges subject to the MPCA's National Pollutant Detection Elimination System (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.
- Train staff on procedures to notify state and federal Duty Officers, PW-SWS Operations staff, and other departments if a spill is discovered during dry weather flow screening.
- Carry out staff training. Refer to SMP 1.2.

Regulatory Services Department – Hazardous Materials Manager and Environmental Manager

- On a regular basis, visually inspect, by boat, Mississippi River outfalls for plumes or other evidence of illicit discharges (when navigable). Coordination with outfall inspections described in SMP 6.1.
- Carry out staff training. Refer to SMP 1.2.

Public Works – Surface Water & Sewers Division

- Report to Regulatory Services suspicious flows or unusual odors, stains, or deposits are observed during routing inspection and operation of storm drain structures, storm tunnels, outfalls, grit chambers, or other stormwater conveyance infrastructure. Refer to SMP 3.8 for investigation and enforcement of identified IDDE violations.
- Carry out staff training. Refer to SMP 1.2.
- Provide up-to-date mapping data of storm sewer and sanitary sewer systems to support illicit discharge investigation and enforcement activities. Refer to SMP 3.7 and SMP 3.8.
- Limit infiltration of seepage from municipal sanitary sewers to MS4 storm drainage system.
- Maintain a dry weather screening program based on the most cost-effective approach, that identifies pollutants and sources in non-stormwater dry weather flow. Program includes:
 - Written procedures:

Category 3 Illicit Discharge Detection and Elimination SMP 3.3 – Illicit Discharge Investigation Program

- Evaluation procedures, including non-sampling evaluation.
- Sampling procedures.
- Record keeping procedures and requirements.
- Notification requirements, including notifications to Regulatory Services and State Duty Officer.
- Areas or locations to be evaluated. Areas are prioritized based on results of field screening, potential sources, history, land use, sanitary sewer system, proximity to sensitive waters, and other appropriate information.
- Pollutants of interest.
- Schedule for field activities.
- Coordination with outfall inspections. Refer to SMP 6.1.
- Provide public education. Refer to SMP 1.1.
- Carry out staff training. Refer to SMP 1.2.

Measurable Goals

- Twenty (20) percent of storm sewer system is inspected during dry weather each year for illicit discharges.
- Long-term reduction in number of deliberate illicit discharges reported and responded to.

Annual Reporting

- Identification of outfall or other areas where illicit discharges have been discovered. Refer to SMP 3.8 for enforcement activities.
- Reports of alleged illicit discharges received. Information to include date of report and description of response, investigation, and enforcement. Refer to SMP 3.8 for enforcement actions.
- Number of illicit discharges that occurred and description of response, containment, and cleanup of the illicit discharges. Refer to SMP 3.4 for information on emergency spill response.
- Number of dry weather flow screenings completed. Refer to SMP 3.8 for enforcement actions.
- Number of illicit discharge inspections completed. Refer to SMP 3.8 for enforcement actions.

Participating Departments

- Health Department – Environmental Services
- Public Works – Surface Water & Sewers Division
- Regulatory Services Department – Hazardous Materials Inspection

SMP 3.4 – Spill Response Program

(MS4 Permit References: I.A.2, III.A, III.C.3.b, III.C.3.c, III.C.3.f, III.C.3.g, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

The objective of this program is to minimize the discharge of pollutants to lakes, creeks, wetlands, and the Mississippi River by appropriately responding to spills. The immediate goals of response are safety, containment of the spill, recovery of hazardous materials, and collection of data for use in assessment of site impacts. Motor vehicle collisions and electrical transformer overloads are examples of accidental releases, and results can include untreated waste and hazardous materials including heavy metals, toxics, and solvents.

For small spills of petroleum products or other vehicle fluids, personnel are dispatched with appropriate equipment to apply sand. Once the sand has absorbed the spill, it is removed and then deposited in a leak-proof container. For large or extremely hazardous spills, a Hazardous Materials Response Team is also mobilized and augmented with staff from additional departments, outside agencies, and/or contractors, if warranted, as the event progresses. For spills that reach the Mississippi River or Minneapolis lakes, boats are available for spill response and personnel are trained in boom deployment.

The lifecycle of an event requires personnel from various departments and agencies to work as a team, utilizing available resources to protect people, the environment, and property. Training and response procedures are coordinated among the Regulatory Services, Public Works, and Fire Departments. The Regulatory Services Hazardous Materials Manager is responsible for coordinating recovery efforts. Events are followed by post-action debriefings to determine the causes of the events, to identify measures to improve the City's response, and to determine the means to limit future occurrences. As the assessment of the event progresses, other departments and/or outside agencies or contractors may become involved. Full procedures are documented in the City of Minneapolis Emergency Action Plan.

Tasks

Regulatory Services – Hazardous Materials Inspections Manager

- Utilize the 311 Call Center as a hotline for reporting spills, dumping, and other activities that degrade stormwater runoff. Refer to SMP 2.1.
- Administer program.
 - Develop and implement stormwater management practices that prevent or reduce discharges of pollutants to the MS4 stormwater drainage system from emergency spill response and cleanup.
 - Coordinate activities and conduct inspection, monitoring, routine recordkeeping, and emergency response readiness and training.
 - Consider and evaluate more effective techniques and timelines.
 - Organize and facilitate spill drill training to train for field scenarios.
 - Maintain documentation of spill response and clean-up.
- Report spills to the MPCA Public Safety Duty Officer, 911 Emergency Communications, and for qualified spills to the National Duty Officer as required by law. (Note that some spills are reported to the City by the MPCA, in which case the Duty Officer has already been notified.)
- For staff training, refer to SMP 1.2.

Fire Department, Regulatory Services Department Hazardous Materials Manager, Health Department Environmental Services

- Serve as responders.
 - Assess the site/incident, assess for life safety, start spill abatement such as putting down sand dike to contain flow, and determine the Incident Action Plan (IAP).

Category 3 Illicit Discharge Detection and Elimination
SMP 3.4 – Spill Response Program

- Secure appropriate resources to implement the IAP (City, State, Federal, private contractors).
- Oversee site incident remediation and recovery activities.
- Maintain website information about how the public can identify and report spills.

Public Works – Street Maintenance

- For small spills of vehicle-related fluids, apply sand, remove and transfer to leak-proof container, convert to a spill debris pile. When an amount has accumulated, sample for laboratory analysis according to MPCA regulations and dispose of in an approved manner.
- If the spill has been encountered by Public Works without notification from Regulatory Services, report to Regulatory Services for notification to MPCA Public Safety Duty Officer.

Public Works – Surface Water & Sewers Division

- Identify and alert PW-SWS crews working on the sewer system and evacuate, if necessary.
- Assist Regulatory Services and Fire Department with identifying discharge pathway of contaminants that have entered the City sewer system, as well as upstream pathway for possible sources of the contaminants.
- Provide mapping data to support illicit discharge investigation and enforcement activities.
- Assist Regulatory Services, Environmental Services, Street Maintenance, Police, Fire, and regulatory entities with the placement of booms and/or other release control media at outlet locations along area waterbodies.

Measurable Goals

- Long-term reduction in number of spills identified and mitigated per year.

Annual Reporting

- Number of spills that occurred and a description of the response, containment, and cleanup. Investigation and enforcement actions contained in SMP 3.8.
- Description of stormwater management practices developed that serve to reduce or eliminate the discharge of pollutants to the MS4 stormwater drainage system from emergency response and cleanup activities.

Participating Departments

- Fire Department – Fire Inspection Services
- Health Department – Environmental Services
- Public Works Department – Surface Water & Sewers Division
- Public Works Department – Transportation Maintenance/Repair Division
- Regulatory Services Department – Hazardous Materials Inspection

SMP 3.5 – Facilities Inspection Program

(MS4 Permit References: I.A.2, III.A, III.C.3.f, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

The stormwater management objective of this program is to minimize the discharge of pollutants by conducting site visits of public and private facilities that store large quantities of regulated and hazardous materials. Site inspections of facilities that store large quantities of regulated and hazardous materials yield information about the drainage patterns to the nearest storm drain inlet or waterbody, identification of the receiving waterbody and outfall location, and handling, storage, and transfer procedures.

Tasks

Regulatory Services Department – Hazardous Materials Manager and Environmental Manager

- Maintain and continue to develop data on the storage of hazardous materials regulated by the Fire Code that may be potential water pollution point sources and/or stormwater hotspots.

Public Works – Surface Water & Sewers Division

- Maintain and continue to develop data on non-stormwater discharges, storage of hazardous materials regulated by the Fire Code, and activities or operations that may be potential water pollution point sources and/or stormwater hotspots.
- Carry out staff training. Refer to SMP 1.2.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Implement a program that identifies industrial facilities with substantial pollutant loading from: <ul style="list-style-type: none"> ▪ Municipal landfills. ▪ Hazardous waste treatment, disposal, and recovery facilities. ▪ Facilities subject to Superfund Amendments and Reauthorization Act of 1986 (SARA). 		X			
Develop and maintain inventory of stormwater hotspots through use of available information. Stormwater hotspot is defined 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; common example is fueling station. Stormwater hotspots to be identified and prioritized using industrial/commercial stormwater risk factors and input from Hennepin County Environmental Services and Minneapolis Inspections Departments.		X	X		
Develop written standard operating procedures with assistance from participating departments for addressing non-NPDES permitted discharges from industrial facilities that have been determined to be contributing substantial pollutant load. Procedures to include: <ul style="list-style-type: none"> ▪ Inspections. ▪ Monitoring for illicit discharges. ▪ Implementation of BMPs to control illicit discharges associated with stormwater hotspots and priority industrial facilities. 			X	X	

Measurable Goals

- Database of TIER II Hazardous Materials Facilities is updated within the same calendar year that the change occurred.
- Long-term reduction in illicit discharges from TIER II Hazardous Materials Facilities.
- Identification of and a reduction in non-NPDES permitted discharges from industrial facilities.

Annual Reporting

- Updated inventory and map of hazardous waste and other industrial facilities within stormwater hotspot areas.
- Description of municipal procedures implemented to reduce illicit discharges from stormwater hotspot areas.

Participating Departments

- Regulatory Services Department – Hazardous Materials Inspection
- Public Works Department – Surface Water & Sewers Division

SMP 3.6 – Stormwater Management for Regulated Activities Program

(MS4 Permit References: I.A.2, III.A, III.C.3.f, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

The stormwater management objective of this program is to minimize the discharge of pollutants 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 programs.

Tasks

Health Department – Environmental Services

- Track MPCA permits issued to industrial, commercial, or institutional facilities that discharge non-stormwater flow to the City’s stormwater drainage system. The MPCA will provide a list of permitted industrial facilities to the City upon request.
 - Develop and maintain an inventory of permitted discharges to municipal separate storm sewer systems using City permit information, and permit information furnished to the City by the MPCA. Inventory to contain:
 - Facility name.
 - Address/location.
 - Discharge location.
 - Receiving water.
 - Discharge description.
 - Permit information.
 - Review notices of permits issued or renewed by the MPCA, work with the MPCA permitting authority to address local concerns and assist MPCA staff in updating or revoking MPCA permits if the MPCA permits are violated or if conditions indicate that the MPCA permit should be revised.
 - Report to the MPCA discharge incidents from discharges subject to MPCA’s industrial permits. Encourage the discharger to obtain a permit from the MPCA if one is not already held.
- Provide access from the City website to MPCA inventory of brownfield sites, Superfund sites, and other contaminated properties.
- Approve and track underground and aboveground chemical storage tank installations, removals, and abandonments.
- Administer Pollution Control Annual Billing (PCAB) program.
- Carry out staff training. Refer to SMP 1.2.

Public Works – Surface Water & Sewers Division

- Provide mapping data to support illicit discharge investigation and enforcement activities. Refer to SMP 3.7 and SMP 3.8.

Measurable Goals

- Long-term reduction in illicit discharges from identified stormwater hotspot areas.

Annual Reporting

- Updated inventory of facilities with NPDES permits.

Participating Departments

- Health Department – Environmental Services
- Public Works – Surface Water & Sewers Division
- Regulatory Services Department – Hazardous Materials Inspection

*Category 3 Illicit Discharge Detection and Elimination
SMP 3.6 – Stormwater Management for Regulated Activities Program*

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SMP 3.7 – Electronic Inventory and Mapping

(MS4 Permit References: III.C.3.a, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

The stormwater management objective of this program is to develop and maintain effective electronic tools for data storage, retrieval, display, and analysis to be used for assessment of stormwater programs. The City's GIS geodatabase is being continually updated 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.

Tasks

- Continue to update the GIS geodatabase to ensure accurate geographic coordinates and physical descriptive information of:
 - Receiving waters for the MS4 system: ponds, streams, lakes, and wetlands.
 - MS4 tunnels, pipes, manholes, catch basins, catch basin leads, and stormwater flow direction.
 - MS4 outfalls to receiving waterbodies.
 - Outfall identification number.
 - Size of outfall pipe.
 - Size of tributary drainage area.
 - Percent of impervious surfaces.
 - Number and type of structural stormwater management practices with tributary drainage area.
 - Structural stormwater management practices (including catch basins with sumps) that are part of the system.
 - Size of tributary drainage area.
 - Design capacity of device where available, estimated capacity if design capacity if not available.
 - Size of the structure.
 - Identification of the outfall to receiving waterbody.
 - Significant, known swales or ditches, including flow direction.
 - City and MPRB owned facilities.
 - Land use types.
 - Drinking Water Supply Management Areas and areas of groundwater vulnerability.
- Identify connections between neighboring municipalities, MnDOT, Hennepin County, the University of Minnesota, and other regulated MS4s.
 - Storm drain connections to other MS4s.
 - Storm drain connections from other MS4s.
- Identify stormwater related sites, including:
 - Significant, known stormwater runoff infiltration sites/discharges to groundwater.
 - Connections from private properties.
 - Flood control detention facilities that are primarily intended for rate and volume control.
- Identify the process to update the electronic inventory based on new construction and field inspections/maintenance.
- Identify conveyance and treatment systems in stormwater drainage areas to impaired waterbodies with EPA-approved MS4 waste load allocations.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Integrate MPRB and City storm sewer mapping in the GIS database maintained by the City.		X	X		
Update the City and MPRB Service Area 2 Memorialization document.		X	X		

Measurable Goals

- MPRB storm sewers are incorporated into City GIS database within 3 years.

Annual Reporting

- Description and date of most recent update to electronic storm sewer inventory.
- Map of areas completed during the reporting year.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division
- Public Works – Transportation, Engineering, and Design Division

SMP 3.8 – Enforcement Response Procedures

(MS4 Permit References: I.A.2, III.A, III.B.1, III.B.2, III.C.3.b, III.C.3.c, III.C.3.g, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.3)

A new provision contained in the February 15, 2018 MS4 Permit requires that the City develop and implement written Enforcement Response Procedures (ERPs) that compel compliance with regulatory requirements established by the City. This SMP focuses on ERPs required for compliance with improper use of phosphorus-based fertilizers (SMP 3.1), improper use of pesticides (SMP 3.2), illicit discharge activities (SMP 3.3), spill response and recovery (SMP 3.4), and non-stormwater discharges that contribute pollutants (SMP 3.5 and SMP 3.6).

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop and implement written ERPs to enforce and compel compliance with contract language(s), ordinance(s), permit(s), standard(s), or any other regulatory process.		X	X		
Document enforcement of IDDE ERP actions, including: <ul style="list-style-type: none"> ▪ Dates and locations of illicit discharge inspections conducted. ▪ Reports of alleged illicit discharges received. ▪ Dates of discovery of illicit discharges. ▪ Sources of illicit discharges (if known). ▪ Identification of outfalls or other areas where illicit discharge has been discovered. ▪ Enforcement actions: <ul style="list-style-type: none"> ▪ Name of person responsible for violating the terms and conditions. ▪ Dates and locations of observed violation. ▪ Description of the violation. ▪ Corrective actions including a completion schedule, date and type of enforcement used to compel compliance, referrals to other regulatory agencies, and date violation was resolved. 		X	X	X	X

Measurable Goals

- Establishment of Enforcement Response Procedures within 2 years.
- Long-term reduction in reports and responses related to illicit discharges.

Annual Reporting

- Description of the response, investigation, and ERPs utilized to enforce illicit discharges.
- Reports of alleged illicit discharges, improper use of fertilizers, improper use of pesticides received, including date of report, response, and enforcement procedures implemented.
- Sources of identified illicit discharges, description, and responsible party (if known), and identified outfall.

Participating Departments

- Public Works – Surface Water & Sewers Division
- Health Department – Environmental Services
- Regulatory Services Department – Hazardous Materials and Environmental Management
- Fire Department

Overview of Category 4

(MS4 Permit References: III.C.8.a, III.C.8.d)

Program Overview

The stormwater management objective of these programs is to prevent or minimize discharge of sediment or pollutants from construction activities, public and private, to the municipal separate storm sewer system (MS4).

Program Goals

The City's erosion and sediment control ordinance, Chapter 52, was initially adopted in 1996 and most recently amended in 2011. Over this 20+ year period, the City has worked to improve erosion and sediment control practices and compliance as new materials become available and industry practices are refined. The goal of this category is to ensure that the City's erosion and sediment control practices and requirements continues to be an effective tool in minimization of the discharge of sediment and pollutants from construction sites and that these practices and requirements continue to evolve and improve.

Pollutants and Sources

Pollutants

- Bacteria
- Metals
- Nutrients
- Oil & Grease
- Sediment
- VOCs

Sources

- Improper handling and disposal of construction materials and chemicals
- Concrete washout, concrete slurry
- Vehicle Track Out
- Fertilizers
- Automotive Fluids
- Grass clippings, leaves, and other organic materials
- Soil Erosion
- Sanitary Waste

Participating Departments

- Health Department
- Public Works Department
- Regulatory Services Department
- Minneapolis Park and Recreation Board
- Community Planning and Economic Development

Category 4 SMP Sheets

SMP 4.1 – Erosion and Sediment Control for Development and Redevelopment Projects

SMP 4.2 – Erosion and Sediment Control for City and MPRB Construction Projects

SMP 4.3 – Enforcement Response Procedures for Development and Redevelopment Projects

*Category 4 Construction Site Stormwater Runoff Control
Overview*

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SMP 4.1 – Erosion and Sediment Control for Development and Redevelopment Projects

(MS4 Permit References: III.C.4.a, III.C.4.b, III.C.4.d, III.C.4.f, III.C.4.h, III.C.8.b, IV.D.4)

The stormwater management objective of this program is to minimize the discharge of pollutants from private construction sites by requiring management of construction site stormwater. The Minneapolis Code of Ordinances Chapter 52 requires Erosion and Sediment Permits that must be obtained before commencement of land-disturbing activities, and for activities that will disturb more than five cubic yards or 500 square feet. For activities that will disturb land greater than 5,000 square feet, Erosion and Sediment Control Plans must be submitted and approved before Minneapolis Erosion and Sediment Control Permits can be issued. Sites that disturb one or more acres are also required to get National Pollution Discharge Elimination System (NPDES) General Construction Permits from the Minnesota Pollution Control Agency (MPCA). Under the ordinance, permits are also required for soil storage that is not associated with construction sites.

Tasks

Public Works – Surface Water & Sewers Division

- Serve as a technical resource for program administration:
 - Provide information about existing and updated regulatory requirements to Departments and/or Divisions carrying out permitting and inspection responsibilities.
 - Review ordinance once each permit cycle to ensure it is in line with current permit requirements, the State NPDES General Construction Permit, and best available technology.
 - Continue to assist in development of written procedures, checklists, and other communication tools.
 - Use checklists and approved plans as primary compliance and documentation reporting tools.
 - Develop criteria for prioritizing inspection of construction sites.
 - Develop frequency of site inspections.
 - Identify position title of individuals responsible for conducting site inspection.
- For land disturbing activities greater than one (1) acre:
 - Review and approve site plans through the City’s PDR process. Site plans must include:
 - BMPs to minimize erosion.
 - BMPs to minimize discharge of sediment and other pollutants.
 - BMPs for dewatering activity.
 - Site inspections.
 - Record of rainfall events.
 - BMP maintenance.
 - Management of solid and hazardous wastes on each project site.
 - Final stabilization upon completion of construction activity.
 - Criteria for use of temporary sediment basins.
- Require management of construction site stormwater control compliance for the life of the project in accordance with requirements of the City’s Sediment and Erosion Control ordinance, Chapter 52.100, which is in compliance with the MPCA NPDES General Permit to Discharge Stormwater Associated with Construction Activity No. MN R100001. Require that stormwater controls be updated as necessary during active construction activity. Refer to SMP 5.1, SMP 5.2, SMP 5.3, and SMP 5.4.

Category 4 Construction Site Stormwater Runoff Control
SMP 4.1 – Erosion and Sediment Control for Development and Redevelopment Projects

- Require that stormwater controls be updated as necessary during active construction activity. Refer to SMP 5.1, SMP 5.2, SMP 5.3, and SMP 5.4.
- Act as a technical resource for reviewers/approvers.
- Maintain documentation of site inspections, including checklists or other written documentation, as necessary for the annual report on NPDES activities.
- Maintain documentation of each site plan review, to include:
 - Project name.
 - Location.
 - Total acreage to be distributed.
 - Owner of construction activity.
 - Stormwater related comments and other information used to determine project approval or denial.

Community Planning and Economic Development – Development Services

- Issue Erosion and Sediment Control Permits for projects subject to Chapter 52, including demolition, construction, and other land disturbances. Require before commencement of any demolition or construction activity.
- Maintain database of erosion and sediment control permits issued and inspections performed.

Health Department – Environmental Services

- Regulate private demolition and construction projects to minimize discharge of pollutants. Track Erosion and Sediment Control Permits for projects subject to Chapter 52, inspect sites, and carry out enforcement.
- Administer program, with technical assistance from Public Works – Surface Water & Sewers Division.
 - Provide information about existing and updated regulatory requirements to Departments and/or Divisions carrying out permitting and inspection responsibilities.
 - Review ordinance requirements to ensure it is in line with current NPDES Stormwater Runoff Permit requirements, the State NPDES General Construction Permit, and best available technology.
- Continue to implement and update standard operating procedures (SOPs) for inspecting and enforcing Erosion and Sediment Control Permit sites.
 - Develop the use of checklists as primary compliance tools.
 - Develop criteria for prioritizing inspection of construction sites.
 - Develop frequency of site inspections.
 - Identify position titles of individuals responsible for conducting site inspections.
- Require management of construction site stormwater control compliance for the life of the construction and/or demolition project in accordance with requirements of MPCA NPDES General Permit to Discharge Stormwater Associated with Construction Activity No. MN R100001.
- Require that stormwater controls be updated as necessary during active construction. Refer to SMP 5.1, SMP 5.2, SMP 5.3, and SMP 5.4.
- Maintain a database to track project name, location, area disturbed, owner, construction progress, inspection checklists, and construction site compliance for sites receiving erosion and sediment control permits.
- Expand program to include inspections and enforcement for selected categories of private utility work and public construction work.
- Continue to identify or develop outreach materials, as handouts or website content, to distribute to site operators at private construction sites. Refer to SMP 1.1.

Category 4 Construction Site Stormwater Runoff Control
SMP 4.1 – Erosion and Sediment Control for Development and Redevelopment Projects

- Distribute information for contractors and developers regarding training opportunities and regarding dangers to water resources from improper control of erosion and sediment. Refer to SMP 1.1.
- Utilize the 311 Call Center as a hotline for reporting construction-related activities and other non-construction sites that exhibit soil erosion. Promptly inspect and enforce, as required. Refer to SMP 2.1.
- Issue Temporary Water Discharge Permits.
- Maintain documentation of site plan review, site inspections, including checklists or other written documentation.
- Provide appropriate training for inspectors. Refer to SMP 1.2.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Establish criteria for the use of temporary sediment basins			X	X	
Document standard operating procedures (SOPs) for inspecting and enforcing Erosion and Sediment Control Permit sites. Document the following: <ul style="list-style-type: none"> ▪ The use of checklists as primary compliance tools. ▪ Criteria for prioritizing inspection of construction sites. ▪ Frequency of site inspections. ▪ Identification of position titles of individual responsible for conducting site inspections. 		X	X		
Expand program to include inspections and enforcement for selected categories of private utility work.				X	
Update Chapter 52 to be in compliance with NPDES MS4 Phase I and General Construction Permits.		X			

Measurable Goals

- Inspect 100 percent of issued Erosion and Sediment Control Permit sites per year.

Annual Reporting

- Number of site inspections completed and summary of inspection findings.
- Number of construction site plans reviewed and approved.

Participating Departments

- Community Planning and Economic Development – Development Services
- Health Department – Environmental Services
- Public Works – Surface Water & Sewers Division

*Category 4 Construction Site Stormwater Runoff Control
SMP 4.1 – Erosion and Sediment Control for Development and Redevelopment Projects*

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SMP 4.2 – Erosion and Sediment Control for City and MPRB Construction Projects

(MS4 Permit References: III.C.4.a, III.C.4.b, III.C.4.d, III.C.4.f, III.C.4.h, III.C.8.b, IV.D.4)

The stormwater management objective of this program is to minimize the discharge of pollutants through the proper construction management of construction projects, including capital, maintenance, and emergency repair projects, carried out by the co-permittees: the City of Minneapolis (City) and the Minneapolis Park and Recreation Board (MPRB). These projects include streets and sidewalks, bridges, trails, buildings (including office buildings, police stations, parking ramps, park buildings), parking lots, open spaces (including parks and plazas), and public utilities (including traffic lights, watermains, sanitary sewers, stormwater management facilities).

Tasks

Departments/Division Carrying Out Construction Projects

- Require City and MPRB Construction Projects associated with land-disturbing activities to implement and maintain practices to prevent sediment and other pollutants from entering curb and gutter systems, storm sewer inlets, and ultimately surface waters.
- Require management of construction site stormwater management compliance for the life of the project in accordance with requirements the City's Sediment and Erosion Control ordinance, Chapter 52.100 which is in compliance with the MPCA NPDES General Permit to Discharge Stormwater Associated with Construction Activity No. MN R100001.
- Require that stormwater controls be updated as necessary during active construction activity. Refer to SMP 5.1, SMP 5.2, SMP 5.3, and SMP 5.4.
- For projects disturbing more than one acre, prepare Storm Water Pollution Prevention Plan (SWPPP) and apply for and comply with Minnesota Pollution Control Agency (MPCA) National Pollutant Discharge Elimination System (NPDES) General Construction Permit.
- Maintain files on SWPPP, inspection reports, and maintenance reports that tracks construction progress and compliance.
- Identify the title of the person who will oversee the installation, inspection, and maintenance of practices before and during construction.

Public Works – Surface Water & Sewers Division

- Serve as technical resource for program administration by individual department.
 - Provide information about current and new regulatory requirements to Departments and/or Divisions carrying out capital projects.
 - Provide information on training opportunities.
 - Continue to develop checklists and other communication tools.
- Review and comment on project plans that are submitted through the City's Capital Project Task Force (CPTF) program. Refer to SMP 5.3.
- Utilize the 311 Call Center as a hotline for reporting construction related and other activities that degrade stormwater runoff. Refer to SMP 2.1.

Measurable Goals

- Inspect 100 percent of City and MPRB construction sites for compliance with erosion and sediment control requirements.
- Long-term reduction in number of reports of erosion and sediment control violations.

Category 4 Construction Site Stormwater Runoff Control
SMP 4.2 – Erosion and Sediment Control for City and MPRB Construction Projects

Annual Reporting

- Number of site inspections completed and summary of inspection findings.
- Number of construction site plans reviewed and approved.
- Number of construction stormwater complaints received for City and MPRB construction projects and responses to complaints. Refer to SMP 4.3 for enforcement actions.

Participating Departments

- Community Planning and Economic Development – Development Services
- Finance & Property Services Department
- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division
- Public Works – Traffic & Parking Services Division
- Public Works – Transportation Maintenance & Repair Division
- Public Works – Transportation Engineering & Design
- Public Works – Transportation Planning and Programming
- Public Works – Water Treatment & Distribution Division

SMP 4.3 – Enforcement Response Procedures for Development and Redevelopment Projects

(MS4 Permit References: III.A, III.B.1, III.B.2, III.C.4.e, III.C.8.b, IV.D.4)

A new provision contained in the February 15, 2018 MS4 Permit requires that the City develop and implement written Enforcement Response Procedures (ERPs) that compel compliance with regulatory requirements established by the City. This SMP focuses on ERPs required for compliance with erosion and sediment control requirements.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop and implement written ERP procedures to enforce and compel compliance with Chapter 52, contract language(s), ordinance(s), permit(s), standard(s), or any other regulatory process.			X	X	
Enforcement and documentation of ERP must include: <ul style="list-style-type: none"> ▪ Name of person responsible for violating the terms and conditions. ▪ Dates and locations of observed violation. ▪ Description of the violation. ▪ Corrective actions including a completion schedule, dates and type of enforcement used to compel compliance, referrals to other agencies, and date violation was resolved. 			X	X	

Measurable Goals

- Establishment of Enforcement Response Procedures within four years.
- Long-term reduction in erosion and sediment control violations.

Annual Reporting

- Number of construction stormwater complaints received and responses to complaints.
- Number of violations of construction site stormwater runoff control and types of enforcement response procedures utilized.

Participating Departments

- Community Planning and Economic Development – Development Services
- Health Department – Environmental Services
- Public Works – Surface Water & Sewers Division

*Category 4 Construction Site Stormwater Runoff Control
SMP 4.3 – Enforcement Response Procedures for Development and
Redevelopment Projects and Database*

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Overview of Category 5

(MS4 Permit References: III.C.8.a, III.C.8.d)

Program Overview

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

Program Goals

The overall goal of these SMPs is to ensure that the City's regulatory structure and procedures are up-to-date, to ensure that development and redevelopment projects incorporate stormwater management, and that violations to the City's regulations are mitigated.

Pollutants and Sources

Pollutants

- Bacteria
- Metals
- Nutrients
- Oil & Grease
- Sediment
- Volume

Sources

- Directly Connected Impervious Area

Participating Departments

- Community Planning and Economic Development
- Minneapolis Park and Recreation Board
- Finance & Property Services Department
- Public Works Department
- Health Department

Category 5 SMP Sheets

SMP 5.1 – Development and Redevelopment Program

SMP 5.2 – Ongoing Compliance Program for Private Development/Redevelopment Projects

SMP 5.3 – Review and Approval for Projects Proposing to Modify the Municipal Separate Storm Sewer System (MS4)

SMP 5.4 – Project Management for Stormwater in City of Minneapolis and Minneapolis Park and Recreation Board Capital Projects

SMP 5.5 – Stormwater Management Planning

SMP 5.6 – Stormwater Modeling

SMP 5.7 – Water Resources Capital Improvement Program Development

SMP 5.8 – Enforcement Response Procedures

*Category 5 Post-Construction Stormwater Management
Overview*

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SMP 5.1 – Review and Approval Program for Private Development and Redevelopment Projects

(MS4 Permit References: III.C.5.a, III.C.5.b, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.5)

Construction activities and development projects are reviewed through the City’s site plan review process. The Development Review section of the Community Planning and Economic Development Department facilitates a process where a Development Coordinator directs a preliminary, multi-disciplinary review of submitted plans. This review provides comments that are integrated into a final plan submittal that is subsequently routed to City departments for review of compliance issues. The Surface Water and Sewers Division reviews and approves for compliance with runoff and pollutant loading reduction requirements, including: 1) ongoing operation and maintenance commitments under Minnesota Code of Ordinances Chapter 54; 2) review of project plans for compliance with Erosion and Sediment Control under Chapter 52 (see SMP 3.1); and, 3) review of project plans for storm system issues related to connections and capacity.

Tasks

Community Planning and Economic Development – Development Review

- Provide stormwater-related regulatory requirements to applicants using printed materials furnished by Public Works – Surface Water & Sewers (PW-SWS) Division as part of the coordinated, multi-disciplinary review process.
- Provide information to PW-SWS for carrying out the stormwater review and approval process. Conform to ordinance requirements in issuing building and other permits.

Public Works Department Project Manager

- Distribute information to PW-SWS for carrying out the stormwater review and approval process. Conform to ordinance requirements in issuing building and other permits.

Public Works Development Project Manager

- Distribute information to PW-SWS for carrying out the stormwater review and approval process. Until approved by PW-SWS, act as liaison to Development Coordinator if information is incomplete or does not meet standards. Once approved by PW-SWS, sign routing sheet for final plans, notify PW-SWS Approver, establish electronic files, and notify PW-SWS Best Management Practice (BMP) Compliance Manager.

Public Works – Surface Water & Sewers Division

- Administer ordinances that regulate public and private development and redevelopment projects to minimize discharge of pollutants.
- Review and approve stormwater management plans of land-disturbing projects for compliance with post-construction stormwater management requirements (including ongoing maintenance responsibilities and easement dedications if required).
 - Maintain written procedures for site plan reviews.
- Maintain documentation of:
 - Supporting information used to determine compliance with site plan review and approval.
 - Supporting information used for approval of infiltration practices in DWSMA areas.
 - Supporting information associated with approved off-site mitigation projects.
 - Payments received and used for off-site mitigation.
- Review and approve for hydraulic storm sewer capacity, connection issues, hydraulic and pollutant loading capacity of downstream structural stormwater management devices, and compliance with specific receiving

*Category 5 Post-Construction Stormwater Management
SMP 5.1 – Development and Redevelopment Program*

waters requirements. Refer to SMP 5.3. During construction and post-construction activities, inspect projects to observe installation of stormwater management facilities for consistency with approved plans.

- Continue to develop checklists and other communication tools.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
<p>Create processes to allow for off-site stormwater management to mitigate stormwater requirements that cannot cost-effectively be managed onsite. Off-site mitigation must ensure:</p> <ul style="list-style-type: none"> ▪ Order of preference for selection of mitigation areas: <ul style="list-style-type: none"> ▪ #1 – Locations that yield benefits to the same receiving water. ▪ #2 – Locations within the same MNDNR catchment area. ▪ #3 Locations in adjacent, upstream MNDNR catchment area. ▪ #4 – Locations within City jurisdiction. ▪ Mitigation to involve: <ul style="list-style-type: none"> ▪ Creation of new structural stormwater management practices. ▪ Retrofit of existing structural stormwater management practices. ▪ Use of properly designed regional structural stormwater management practices. ▪ Documentation by City staff that all mitigation requirements have been met and documentation on responsibility for long-term maintenance. ▪ Payment from permittee to City, made in lieu of onsite stormwater management, must be applied to public stormwater management project. ▪ Routine maintenance of structural stormwater management practice cannot be defined as mitigation. 		X	X		
Update Chapter 54 Ordinance to be in compliance with NPDES permit requirements.		X			

Measurable Goals

- All site plans for development and redevelopment are reviewed and in compliance with permanent stormwater management requirements.

Annual Reporting

- Number of development and redevelopment construction project plans reviewed during calendar year.
- Number of structural stormwater management practices installed in development and redevelopment projects during calendar year. For each newly installed practice, record:
 - Type.
 - Description of pollutant removal capabilities.
- For development and redevelopment projects requiring mitigation to meet stormwater management requirements:
 - Number of projects requiring mitigation.
 - Explanation of why mitigation was required.

*Category 5 Post-Construction Stormwater Management
SMP 5.1 – Development and Redevelopment Program*

- Types of structural stormwater management practices and date of implementation.

Participating Departments

- Community Planning and Economic Development – Development Services
- Public Works – Surface Water & Sewers Division
- Public Works – Transportation Planning & Programming
- Public Works – Transportation Engineering & Design

*Category 5 Post-Construction Stormwater Management
SMP 5.1 – Development and Redevelopment Program*

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SMP 5.2 – Ongoing Compliance Program for Private Development/Redevelopment Projects

The stormwater management objective of this program is to sustain the reduction of pollutants discharged from completed private development and redevelopment projects by requiring that the built stormwater devices continue to function as intended, as required by Minneapolis Code of Ordinances Chapter 54 (except devices subject to the Pollution Prevention and Good Housekeeping for Municipal Operations category which are address on other SMP Sheets). The compliance program addresses inspection to ensure facilities are continuing to function as designed and approved and carrying out maintenance or rehabilitation activities as needed.

Tasks

Public Works – Surface Water & Sewers Division

- After construction, inspect and certify that the stormwater management facilities have been built according to approved plans and that required documentation has been submitted. Notify Health Department – Environmental Services for registration under Pollution Control Annual Billing (PCAB) annual compliance program.
- Conduct periodic compliance inspections.
- Establish and maintain project files and photo documentation.
 - Determine that responsible parties have submitted the required annual documentation and that maintenance of stormwater devices has been carried out according to maintenance of structural stormwater best management plans (BMPs) on file.
 - If not maintained or functioning properly, or if required records are not submitted, detail actions needed, communicate with property owners/managers, and follow up to bring into compliance. If still not in compliance, inform Health Department – Environmental Services to issue and administer non-compliance orders.
- Require maintenance responsibilities for structural stormwater management practices and ability of the City to inspect are legally transferred when ownership of property changes.
- Require that structural stormwater management practices are protected and/or preserved when ownership of property changes.
- Require new or improved structural stormwater management practices if site configurations are changed.
- Maintain database and integrate into electronic inventory and mapping. Refer to SMP 3.7.
- Commensurate with development levels, maintain staffing levels needed for comprehensive inspection and enforcement activities.
- During construction and post-construction activities, inspect projects to observe installation of stormwater management facilities for consistency with approved plans.
- Maintain documentation of legal mechanisms drafted to ensure proper ongoing operation and maintenance of structural stormwater management practices.

Health Department – Environmental Services

- Annually register stormwater management devices in PCAB program.
- If reported by Public Works – Surface Water and Sewers Division, issue and administer non-compliance orders. Refer to SMP 5.9.

Measurable Goals

- All new structural stormwater management practices on private property are inspected by the City before completion of construction and enter into agreement for maintenance.

*Category 5 Post-Construction Stormwater Management
SMP 5.2 – Ongoing Compliance Program for Private Development/Redevelopment Projects*

- Each existing private structural stormwater management practice is inspected by the City at least once every 5 years.
- All registration information for existing structural stormwater management practice is up-to-date.

Annual Reporting

- Number and type of new structural stormwater management practices implemented for development / redevelopment projects.
- Number of long-term maintenance agreements executed during the reporting year.
- Number of site inspections completed. Refer to SMP 5.9 for enforcement actions.
- Number of enforcement actions taken.

Participating Departments

- Health Department – Environmental Services
- Public Works – Surface Water & Sewers Division

SMP 5.3 – Review and Approval for Projects Proposing to Modify the Municipal Separate Storm Sewer System

(MS4 Permit References: III.A, III.C.5.a, III.C.5.b, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.5)

The stormwater management objective of this program pertains to adding, modifying, or removing infrastructure that is part of the MS4 system – public stormwater conveyance and treatment infrastructure such as storm drains, inlets, outfalls, grit chambers, ponds, and infiltration devices. (Projects that merely tie into or drain into the stormwater structure are addressed elsewhere). The stormwater management objectives of this practice are to review and approve projects that will physically alter the MS4 system for the betterment of the system and to avoid adverse capacity, maintenance, and pollutant discharge impacts. The majority of projects that alter the MS4 system are designed by the Public Works – Surface Water and Sewers (PW-SWS) Division Capital Projects group. This SMP, however, addresses projects that are carried out by others if they propose to physically alter the MS4 system in conjunction with their projects. Examples include other road authorities (MnDOT, Hennepin County, University of Minnesota) or parties developing projects (housing, commercial/industrial, sports facilities, light rail transit, utilities, other).

Tasks

- Review projects being carried out by other departments, agencies, or private parties including Community Planning and Economic Development (CPED), Property Services, Hennepin County, MnDOT, Metropolitan Council, University of Minnesota, watershed districts/organizations, or private development initiatives.
- For selected projects, evaluate available capacity remaining within the stormwater conveyance system. Refer to SMP 5.1.
- Review and approve for hydraulic and pollutant loading capacity of downstream structural stormwater management devices and receiving waters.
- Maintain Standard Specifications and Detail Plates related to design requirements for the City's sanitary sewer and stormwater infrastructure.
- Submit record drawings of additions, modifications, and removals to stormwater management facilities to PW-SWS for use in updating of GIS database. Refer to SMP 3.7.
- Maintain a database of waterbody-specific requirements that apply to development and redevelopment projects in the City, including TMDL and watershed organization requirements. Each receiving waterbody may have its own regulatory situation and wet weather stressors that affect water quality.

Measurable Goals

- Downstream hydraulic and stormwater treatment capacity is assessed for all site plans that add impervious surface or increase stormwater flow or volume to ensure sufficient capacity exists prior to City approval.

Annual Reporting

- The number and type of structural stormwater management practices constructed or modified in order to manage additional flows and/or pollutant loads resulting from upstream land use changes, including development and redevelopment projects.

Participating Departments

- Public Works – Surface Water & Sewers Division

*Category 5 Post-Construction Stormwater Management
SMP 5.3 – Review and Approval for Projects Proposing to
Modify the Municipal Separate Storm Sewer System
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SMP 5.4 – Project Management for Stormwater in City of Minneapolis and Minneapolis Park and Recreation Board Capital Projects

(MS4 Permit References: III.C.5.a, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.5)

Redevelopment of existing public sites and infrastructure provides an opportunity to lessen the impacts of urbanization on lakes, creeks, and the Mississippi River. The stormwater management objective of this practice is to reduce the discharge of pollutants through the proper planning, design, and construction management of capital projects carried out by the municipal separate storm sewer system (MS4) co-permittees, the City of Minneapolis (City) and the Minneapolis Park and Recreation Board (MPRB). These projects include streets and sidewalks, bridges, trails, buildings (including police stations, parking ramps, and park buildings), parking lots, open spaces (including parks and plazas), and utilities (including traffic lights, watermains, sanitary sewers, and stormwater management facilities). This comprehensive approach provides potential benefits to the City's infrastructure and ultimately to the water resources in the following ways: 1) reduced pollutant loading to surface waters; 2) reduced velocity of flow in local streams leading to stabilized streambanks and improved wildlife habitat; 3) possible increase in groundwater recharge; 4) reduced frequency, severity, and duration of localized street/intersection flooding; 5) improved capacity of stormwater drainage system; and, 6) updated comprehensive records of the MS4.

Tasks

Departments/Divisions Carrying Out Capital Projects

- Comply with regulatory requirements specific to downstream waterbody, including total maximum daily load (TMDL) and watershed management requirements. Each receiving waterbody may have its own regulatory situation and wet weather stressors that affect water quality. Look for opportunities to address wet weather problems that apply to the project area: pollutant loads, rate/volume control, localized flooding, excessive inflow/infiltration, aging infrastructure.
- Seek out projects that are multi-functional or which solve multiple problems or are cooperative projects with multiple funding partners, to enhance sustainability and infrastructure life. Outside funding sources might include watershed organizations, county, regional, state, and federal programs, or private funding.
- Make land use or engineering decisions to manage stormwater to minimize the amount of pollutants in stormwater runoff. Consider volume reduction methods first when feasible, pollutant load reduction methods next, and finally rate reduction stormwater management practices. Consider lifecycle costs.
- Inspect stormwater management facilities during construction and periodically after construction to determine that the stormwater management devices are functioning properly.
- Submit record drawings of additions, modifications, and removals to stormwater conveyance and management facilities to Public Works – Surface Water and Sewers (PW-SWS) Division for use in update of GIS database. Refer to SMP 3.7.
- Where needed, complete operations and maintenance (O&M) manuals for new SMPs and other structural improvements made to MS4.
- Provide staff training. For staff training, refer to SMP No. 1.2.

Public Works – Surface Water & Sewers Division

- Provide stormwater management advice and expertise to City and MPRB departments.
- Review plans and specifications for impact on surface waters and on the stormwater system, and review for compliance with Minneapolis Code of Ordinances Chapter 54 runoff and pollutant reduction requirements.

*Category 5 Post-Construction Stormwater Management
SMP 5.4 – Project Management for Stormwater in City of Minneapolis
and Minneapolis Park and Recreation Board Capital Projects*

- Provide information about regulatory requirements, receiving waterbody, wet weather problems that apply to the project site, and applicable stormwater hydraulic and water quality design standards. Refer to SMP 5.3.
- Provide information on training opportunities, as available. Refer to SMP 1.2.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop checklists and other communication tools. Refer to SMP 5.1.			X	X	X

Measurable Goals

- All site plans developed for City and MPRB projects are reviewed for compliance with permanent stormwater management requirements.
- All new structural stormwater management practices on public property are inspected before completion of construction.

Annual Reporting

- Number of new SMPs installed with City or MPRB capital improvement projects.

Participating Departments

- Community Planning and Economic Development – Development Services
- Finance & Property Services Department
- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division
- Public Works – Traffic & Parking Services Division
- Public Works – Transportation Maintenance/Repair Division
- Public Works – Transportation Planning and Engineering Division
- Public Works – Water Treatment & Distribution Division

SMP 5.5 – Stormwater Management Planning

(MS4 Permit References: III.C.5.a, III.C.6.c, III.C.6.i, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.5)

The stormwater management objective of this program is to conduct studies of how stormwater management practices that control volume and pollutants will best fit into the City of Minneapolis' (City) overall goals of pollutant removal for water quality improvement. Volume reduction practices include infiltration, bio-infiltration, stormwater reuse, evapotranspiration, other evaporative systems, minimizing the extent of impervious surfaces, and disconnecting impervious surfaces to allow runoff to flow into and soak into planted areas.

Tasks

- Review current stormwater management requirements for developments, redevelopments, and public projects to determine if the regulatory mechanism should be amended to require reduction of stormwater runoff volume. Regulatory controls must include:
 - Prohibition of structural stormwater infiltration practices for certain land uses, including:
 - Vehicle fueling and maintenance facilities.
 - Facilities regulated under NPDES industrial stormwater program, including auto salvage yards, scrap recycling and waste recycling, hazardous waste treatment/storage/disposal, and air transportation facilities.
 - Sites with high levels of soil containments, based on results of MPCA site screening assessment checklist or other assessment.
 - Prohibitions of structural infiltration practices for soils with infiltration rates higher than 8.3 inches per hour, soils that are predominantly HSG D (clay), prohibitive soil conditions, within 1,000 feet of karst conditions in bedrock, areas designated as Drinking Water Supply Management Area, areas designated by the MN Department of Health as Emergency Response Area, and areas with less than 3 feet separation between bottom of infiltration devices and seasonably high groundwater and/or bedrock.
 - Requirements that other methods of stormwater treatment be used for the water quality volume not managed by infiltration.
 - Require volume reduction of 1-inch times the new and/or fully reconstructed impervious surface for new development and redevelopment that creates or fully reconstructs one or more acres of impervious surface.
 - Require volume reduction of 1-inch times the net increase in impervious areas for linear projects that create or fully reconstruct one or more acres of impervious surface. Project planning for linear projects should include a reasonable attempt to obtain additional right-of-way to accomplish the volume reduction requirement.
- Items to consider when reviewing and implementing stormwater management requirements and SMPs:
 - Documented instances of linkage between volume and Section 303(d) impairments. Differentiate and consider the needs and impairments of receiving waterbodies. Consider instances where volume reduction is expected to provide attainment of water quality standards.
 - Permeability of site soils, contamination of site soils, groundwater contamination, depth of groundwater, depth of bedrock, presence of karst features, sources of pollution, presence and proximity of structures, presence, proximity, and condition of underground pipes, available space for SMPs, wellhead protection areas, and lifecycle costs.
 - Pollutant removal effectiveness on an annual basis, capital costs, ongoing operation and maintenance costs, and volume reduction design guidelines (including MIDS).

*Category 5 Post-Construction Stormwater Management
SMP 5.5 – Stormwater Management Planning*

- Site suitability in relation to functionality, mitigating pollutants and impairments, risk of spills, and surface water/groundwater interactions.
- Incorporate stormwater management practices into SWMP that protect the following drinking water sources that discharge from MS4 stormwater system may affect:
 - Wells and source waters for DWSMAs that have been identified as vulnerable under Minnesota rules.
 - Source water protection areas for drinking water intakes identified in source water assessments prepared by or for the Minnesota Department of Health.
- Differentiate and prioritize: 1) volume that as runoff could cause pollution, such as channel erosion or street/intersection flooding that mobilizes additional pollution; 2) volume that as runoff could cause damage to public safety or infrastructure; 3) volume reduction to address a total maximum daily load (TMDL) requirement; 4) volume containing pollutants; and, 5) volume without pollutants.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop a retrofit plan to evaluate the ability to implement structural stormwater BMPs in areas that currently do not have stormwater runoff treatment or where existing structural stormwater BMPs could be enhanced to improve pollutant removal capability.	X	X			
Develop strategies to encourage privately owned parcels to install stormwater retrofits to reduce and/or treat stormwater runoff from privately owned impervious surfaces.	X	X			

Measurable Goals

- Draft the City’s Retrofit Plan within 24 months of permit coverage.

Annual Reporting

- Submit Retrofit Plan to MPCA within 24 months of permit coverage.

Participating Departments

- Public Works – Surface Water & Sewers Division

SMP 5.6 – Stormwater Modeling

(MS4 Permit References: III.C.6.i, III.C.8.b, III.C.8.e, III.C.8.f)

Hydrologic and hydraulic modeling is used to analyze flow rates, volumes, and patterns, and to test various alternative scenarios for stormwater runoff design and management. Currently, the City of Minneapolis utilizes XP-SWMM for hydrologic and hydraulic modeling as a tool to design structural stormwater management practices, to assess the hydraulic capacity of the storm sewers, and to determine the estimated pollutant removal capabilities of a structural stormwater management practice. Water quality modeling is used to understand the impacts of structural and non-structural SMPs on receiving waters in the City. The City uses a GIS-based model that utilizes the MIDS calculator to determine pollutant loading, effectiveness of SMPs, and provides guidance on where best to site SMPs to provide the most benefits.

The stormwater management objective of this SMP is to continuously review the capabilities of the City’s stormwater management network to identify critical improvements, to assess the downstream effects of projects that will alter the quality, rate, and volume of stormwater runoff, and to test the effectiveness of proposed improvements.

Tasks

Hydrologic and Hydraulic (H&H)

- Continue to update mapped delineations of storm drain pipesheds (outfall drainage areas).
- Use hydrologic and hydraulic modeling in the design of capital projects to analyze impacts of various alternatives on the existing system.
- As opportunities arise, collaborate on modeling with the four watershed organizations for mutual benefit.

Water Quality

- Continue to update the City’s existing GIS and MIDS calculator-based water quality model.
- Use results from monitoring and analysis activities to calibrate the water quality model for use as a baseline for modeling in pipesheds without available monitoring data.
- Use the models to study load reductions from various structural and non-structural practice scenarios.
- As opportunities arise, collaborate on modeling with the four watershed organizations for mutual benefits.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Within targeted outfall drainage areas of impaired waterbodies, determine percentage of existing treatment and create plans with goals for improvement.	X	X	X	X	X

Measurable Goals

- Each year, the H&H and water quality models are updated as required to reflect modifications to the stormwater drainage system.

Annual Reporting

- Number and type of SMPs installed in the City to address water quality and/or flooding problems.
- Information from H&H and MIDS calculator to be used to support loading calculation and drainage area summary information. Refer to SMP 7.1.

Participating Departments

- Public Works – Surface Water & Sewers Division

*Category 5 Post-Construction Stormwater Management
SMP 5.6 – Stormwater Modeling*

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SMP 5.7 – Water Resources Capital Improvement Program Development

(MS4 Permit References: III.C.8.b, III.C.8.e, III.C.8.f)

The stormwater management objective of this program is to develop a comprehensive capital improvement program (CIP). This CIP will prioritize capital investments in stormwater infrastructure to address flooding, water quality, green infrastructure, and coordination with transportation projects.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop and implement a comprehensive water resource CIP incorporating both flood modeling and water quality modeling results.		X	X	X	X
Create a 'toolbox' to disseminate best practices and to use as design, construction, and operational models for additional projects.				X	X

Measurable Goals

- Development of a 5-year CIP.

Annual Reporting

- Narrative on project development, construction, and results for future water resource projects.

Participating Departments

- Public Works – Surface Water & Sewers Division

*Category 5 Post-Construction Stormwater Management
SMP 5.7 – Water Resources Capital Improvement Program*

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SMP 5.8 – Enforcement Response Procedures

(MS4 Permit References: III.A, III.B, IV.D.5)

A new provision contained in the February 15, 2018 MS4 Permit requires that the City develop and implement written Enforcement Response Procedures (ERPs) that compel compliance with regulatory requirements established by the City. This SMP focuses on ERPs associated with non-compliance of development and redevelopment requirements and post-construction stormwater management tasks.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
<p>Develop and implement written ERPs to enforce and compel compliance with contract language(s), ordinance(s), permit(s), standard(s), or any other regulatory process associated with non-compliance of development and redevelopment requirements and post-construction stormwater management.</p> <p>Enforcement and documentation of each ERP must include:</p> <ul style="list-style-type: none"> ▪ Name of person responsible for violating the terms and conditions. ▪ Dates and locations of observed violation. ▪ Description of the violation. ▪ Corrective actions including a completion schedule. ▪ Data and type of enforcement used to compel compliance. ▪ Date violation was resolved. 			X	X	

Measurable Goals

- Establish Enforcement Response Procedures associated with non-compliance of requirements related to permanent stormwater management on private property.
- Inspect all new structural stormwater management practices on private property before completion of construction and enter into agreement for maintenance.
- Review all site plans for compliance with permanent stormwater management requirements.

Annual Reporting

- Description of enforcement actions taken utilizing ERPs related to stormwater management on proposed and existing development and redevelopment projects.
- Any changes, modifications, or updates to ERPs that occurred during the previous year.

Participating Departments

- Community Planning and Economic Development – Development Services
- Public Works – Surface Water & Sewers Division
- Public Works – Transportation Planning and Engineering Division

*Category 5 Post-Construction Stormwater Management
SMP 5.8 – Enforcement Response Procedures*

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Overview of Category 6

(MS4 Permit References: III.C.6, III.C.8.a, IV.D.6)

Program Overview

The City of Minneapolis (City) operates its public works systems in a manner that maintains efficient and effective operability, ensures structural integrity, complies with regulatory requirements, and safeguards the ability to prevent impacts to health safety, property, infrastructure, and the environment. The stormwater management objective is to ensure sufficient hydraulic capacity in a manner that prevents flooding and property damage, and that minimizes the discharge of pollutants. This is accomplished through the proper operation and maintenance of structural stormwater management practices, public streets, bridges, and alleys, parks and golf courses, municipal properties, municipal parking lots, and municipal equipment yards.

Program Goals

The overall goal of these SMPs is to follow operation, inspection, and maintenance practices in a manner that prevents or reduces the discharge of pollutants from the City and the Minneapolis Park and Recreation Board (MPRB) MS4 system, streets and alleys, facilities, parks, and golf courses.

Pollutants and Sources

Pollutants

- Bacteria
- Chlorides
- Metals
- Nutrients
- Oil & Grease
- Sediment
- VOCs
- PAHs

Sources

- Grass clippings, leaves, and other organic materials
- De-icers
- Automotive Fluids
- Sanitary Waste
- Coal tar sealants
- Material storage
- Vehicle and equipment maintenance

Participating Departments

- Community Planning and Economic Development
- Finance and Property Services Department
- Minneapolis Park and Recreation Board
- Public Works Department

Category 6 SMP Sheets

- SMP 6.1 – Operations and Maintenance
- SMP 6.2 – Street Sweeping and Cleaning Program
- SMP 6.3 – Facilities Management
- SMP 6.4 – Snow and Ice Control for Streets
- SMP 6.5 – Vegetation Management
- SMP 6.6 – Localized Flood Mitigation Capital Projects

*Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
Overview*

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SMP 6.1 – Operations and Maintenance

(MS4 Permit References: I.D.3.d, III.C.6.e, III.c.6.f, III.C.6.k, III.C.8.b, III.C.8.d, III.c.8.e, III.C.8.f, IV.D.6)

The stormwater management objective of this program is to minimize the discharge of pollutants through proper and cost-effective operational management and maintenance of the MS4 storm drain conveyance and treatment system. General operations and maintenance efforts include operations, inspections, cleaning, repairs, rehabilitation, and reconstruction.

Tasks

Entire Storm Drain System

- Schedule and perform major repairs, rehabilitation, or reconstruction considering budget, staff availability, and other work.
- Continue implementation of asset management system for the purpose of inspection, maintenance, and prioritization of the enhancement to the condition and effectiveness of existing infrastructure.
- For major rehabilitation or reconstruction projects, look for opportunities to include SMPs to improve water quality. Refer to SMP 5.3 and SMP 6.6.
- Utilize 311 Call Center as hotline for reporting maintenance concerns that need to be inspected and addressed by Public Works Operations staff.
- Track and follow-up on 311 Call Center or other complaints/notices regarding storm drains.
- Establish agreements on responsibilities for those SMPs with responsibilities by more than one entity (City, MPRB, watershed organization, Hennepin County, etc.) for surface water systems operation and maintenance where none currently exist. Prioritize and schedule major structural repair or maintenance work based on impact of condition to receiving waterbody, available personnel, budget funding, and coordination with other essential operations.
- Retain records for compliance with MS4 Permit.
 - Dates and description of finding of all inspections.
 - Adjustments to inspection frequency.
 - Description of maintenance conducted.
- Handling and Disposal of Stored and Stockpiles Dredged or Other Removed Materials:
 - During MS4 cleaning, storage, and disposal operations, apply sediment control measures to prevent removed materials from re-entering the storm drain system. Refer to SMP 6.3.

Hydraulic Conveyance System

- Storm Drains
 - Inspect, clean, and repair storm drains in a manner that maintains hydraulic capacity and structural integrity.
 - Perform condition assessment of storm drain system using NASSCO-developed PACP inspection procedures.
 - Based on condition assessment, develop and document storm drain inspection, assessment, and maintenance activities. When cleaning, capture and properly dispose of removed materials.
 - Limit infiltration of seepage, such as from sanitary sewer system, pipe bedding, or groundwater.
- Storm Tunnels
 - Inspect, clean, and repair storm tunnels in a manner that maintains hydraulic capacity and structural integrity.

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SMP 6.1 – Operations and Maintenance

- Continue targeted inspection and assessment program.
- Limit infiltration of seepage, such as from sanitary sewer system, sandstone bedrock, or groundwater.
- Catch Basins
 - Inspect, as needed, to ensure catch basins are operational so as not to restrict flow and cause localized flood damage.
 - Prioritize observed or reported plugging or damages for repair and/or cleaning. Also prioritize repair on impact to the traveling public.
 - When cleaning, capture and properly dispose of removed materials.
 - Develop routes and schedules for conducting inspections of all catch basins for necessary maintenance.
- Manholes
 - Inspect, as needed, to ensure manholes are operational so as not to restrict flow and cause localized flood damage.
 - Check pipe inverts, benches, safety condition of steps and walls, address condition of castings and rings, and address structural defects, as needed. Examples are cracked, deteriorated, and spalled areas.
- Outfalls
 - Operate outfalls in a condition that conserves and stabilizes shorelines, streambanks, and steep slopes from damaging erosion.
 - Inspect outfalls on a 5-year schedule where 20 percent of the outfalls are inspected each year. Evaluate the structural integrity, proper function and maintenance needs. Determine if any significant erosion has occurred, make minor repairs, and inspect for sediment deltas. Coordinate with IDDE inspections described in SMP 3.3.
 - If inspections show an increase in significant erosion or substantial structural damage, then inspection frequency will be increased to at least annually until the problem can be corrected.
 - If suspicious flows or unusual odors, stains, or deposits are observed, work with Regulatory Services Department for further investigation and resolution. Refer to SMP 3.3.
 - 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 operators.
- Pump Stations
 - Inspect, on a regular basis, for routine operational checks and condition assessment.
 - Perform inspection, maintenance, and repairs in conjunction with routine items completed as recommended by manufacturer and/or based on developed asset management procedures.
 - Assess cost and benefit for repairs, upgrades, and installing backup generators for existing pump stations, and identify workplan for identified repairs, upgrades, or backup generators.
- Level Control Weirs and Bulkheads
 - Inspect, repair, and maintain to facilitate proper operational working order, in coordination with MPRB, where applicable.
 - Conduct inspection of non-inventoried weirs and bulkheads if discovered during routine maintenance. Update GIS system if required. Refer to SMP 3.7.

Structural Stormwater Management Practices

- All Structural Stormwater Management Practices

Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.1 – Operations and Maintenance

- Conduct annual inspections of all structural stormwater management practices to determine structural integrity, proper function, and maintenance needs. Annual inspection schedule should be adjusted if either of these conditions apply:
 - Greater frequency of inspection is required if multiple complaints are received.
 - Greater frequency of inspection is required if maintenance patterns indicate a need for additional inspection.
 - Two-year cycle of inspection is allowed if first two-years of inspection conclude that maintenance or sediment removal is not required.
- Use inspection findings to determine whether repair, replacement, or maintenance measures are necessary to ensure the structural integrity, proper function, and treatment effectiveness of structural stormwater management practices.
 - Complete maintenance as soon as possible.
 - Repair, replacement, or maintenance that must be delayed must be prioritized and the following must be implemented:
 - Preventative maintenance.
 - Dewater and dispose of solids, floatables, dredgings, or other pollutants. Comply with all applicable statutes and rules when disposing materials.
- Maintain documentation of all structural stormwater management inspections. Documentation to include:
 - Dates and descriptions of findings.
 - Adjustments to frequency of inspections.
 - Descriptions of maintenance conducted as a result of inspection findings.
- Inspections and maintenance of all structural stormwater management practices should be completed per manufacturer's recommended practices or any operations and maintenance manuals developed by the City.
- Open Ditch/Vegetated Channels
 - As open ditch/vegetated channels are identified and inventoried, periodically inspect and maintain to control and remediate erosion.
- Grit Chambers
 - Perform cleaning to provide capacity for future sedimentation and to prevent re-suspension and washout. When cleaning, capture and properly dispose of removed materials. Record date of inspection and amount of materials removed. Inspect and clean twice per year, unless patterns of maintenance have become apparent such that frequency should be adjusted, as follows: if a frequent need for sediment removal has been established (according to recorded maintenance patterns), increase inspection and cleaning to maximize pollutant removal by preventing carryout, washout, or re-suspension of pollutants from the structures; if an infrequent need for maintenance or sediment removal has been established, the frequency may be reduced. Use pellets provided by the Metropolitan Mosquito Control District for grit chamber mosquito control.
- Stormwater Retention Ponds and Detention Basins, Stormwater Wetlands
 - Inspect stormwater ponds on a 5-year schedule where 20 percent of the ponds are inspected each year. Evaluate the structural integrity, proper function and maintenance needs.

Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.1 – Operations and Maintenance

- If inspections show an increase in significant erosion or substantial structural damage or if the pond or forebay is reaching 50 percent of design capacity, then inspection frequency will be increased to at least annually until the problem can be corrected.
- Maintain documentation of inspection and maintenance as required for all structural stormwater management practices. Additional documentation for ponds to include:
 - Sediment excavation and removal activities, including unique ID for each stormwater pond, volume of sediment removed, location of final disposal of sediment.
- Maintain facilities for volume and functionality. When volume of sediment is approaching 50 percent of the capacity of the pond, or there is less than 3 feet of water at the inlet half of the pond, schedule for sediment removal to ensure design capacity of the system is maintained and to minimize discharge of sediment leaving the basin.
- Stormwater Retention Pond Dredging process will follow all applicable MPCA guidance.
- Infiltration Structural Stormwater Management Practices
 - Maintain infiltration devices for infiltration capacity and functionality. Inspect and maintain any vegetation. Visually inspect for surface ponding or sedimentation deposits that may require replacement of media.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop written procedures and schedule to assess the TSS and TP treatment effectiveness of all City and MPRB owned stormwater ponds. Refer to SMP 7.1.				X	X
Develop and implement stormwater management practices for MS4 discharges that may affect Source Water Protection Areas as defined in the Permit. Refer to SMP 5.5.				X	X

Measurable Goals

- All structural stormwater management practices are inspected a minimum of one time each year.
- All outfalls are inspected at least one time during the 5-year period of the MS4 Permit.
- All stormwater ponds are inspected at least one time during the 5-year period of the MS4 Permit.
- All inspection, maintenance, and repair activities for the MS4 system are documented.

Annual Reporting

- Description of stormwater management practices implemented in Source Water Protection Areas. Refer to SMP 5.5.
- Description of stormwater outfall inspection findings and maintenance or improvements performed. Refer to SMP 3.3 for reporting on illicit flows observed during outfall inspections.
- Results of structural stormwater management practice inspections, assessments, maintenance, and repair activities. Specific information to include:
 - Date.
 - Estimate of sediment storage capacity and percent of capacity remaining.
 - Date of completed maintenance and/or repairs.
 - Dates and quantity of material removed.

Participating Departments

- Public Works – Surface Water & Sewers Division

Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.1 – Operations and Maintenance

- Finance and Property Services Department
- Minneapolis Park and Recreation Board
- Health Department – Environmental Services

*Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.1 – Operations and Maintenance*

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SMP 6.2 – Street Sweeping and Cleaning Program

(MS4 Permit References: I.D.3.d, III.C.6.g, III.C.8.b, III.C.8.d, III.C.8.e, III.C.8.f, IV.D.6)

The stormwater management 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 1,100 miles of streets in the City (including streets under MPRB jurisdiction), and the City’s approximately 400 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. The stormwater management objective of this program is to minimize the discharge of pollutants to the storm drain system and receiving waterbodies by removing leaf litter, sediment, and debris from streets and gutters before the materials and the pollutants can be washed into storm drain inlets.

Tasks

- Operate and maintain streets, roads, and highways under City’s jurisdiction, to minimize discharge of pollutants.
 - Prioritize areas based on land use, trash, and stormwater pollutant level generated.
 - Sweep streets at least two times each year.
 - Conduct additional street sweeping in higher priority areas.
- Develop and implement stormwater management practices for road maintenance, including pothole repair, road shoulder maintenance, pavement marking, sealing, and repaving operations.
- Maintain roadways in a manner that works to prevent wash-off of pollutants during rainfall and snowmelt. Refer to SMP 6.4 for winter operations.
- Carry out sweeping programs and modify methods, routes, and equipment as new data or research becomes available.
- Use sampling and literature values to estimate the amount of total suspended solids and total phosphorus per mass of debris being removed.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop and maintain written operating procedures for practices specific to pollutant control and reduction. Procedures to include pothole repair, road shoulder maintenance, pavement marking, sealing, and repaving operations.		X	X		

Measurable Goals

- All streets are swept a minimum of two times per year.
- All alleys are swept one time per year.

Annual Reporting

- Description of roadway maintenance activities that contribute pollutants to stormwater discharges and stormwater management practices implemented.
- Quantity of material removed by street sweeping, itemized according to program category (spring, fall, other).

Participating Departments

- Public Works – Fleet Services
- Public Works – Surface Water & Sewers Division
- Public Works – Transportation Maintenance & Repair

*Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.2 – Street Sweeping and Cleaning Program*

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SMP 6.3 – Facilities Management

(MS4 Permit References: I.D.3.d, III.C.6.a, III.C.6.b, III.c.6.e, III.C.8.b, III.C.8.d, III.c.8.e, III.C.8.f, IV.D.6)

The stormwater management objective of these activities is to prevent or reduce the discharge of pollutants generated at City and MPRB owned facilities. Facilities include, but are not limited to: composting sites, equipment storage and maintenance, hazardous waste disposal, hazardous waste handling and transfer, landfills, solid waste handling and transfer, parks, pesticide storage, public parking lots, public golf courses, public swimming pools, public works yards, recycling sites, salt storage yards, vehicle storage and maintenance yards, and materials storage yards. Pollutant control is most commonly managed through proper storage of materials, routine maintenance, effective application of winter salt and deicers, and, where necessary, installation of structural stormwater management practices. Operations are performed to address public safety while balancing those needs with environmental and cost considerations. (NOTE: Streets and alleys are address separately on SMP Sheet 6.4.)

Tasks

- Stockpile, storage, and material handling areas.
 - Conduct weekly inspections at active material handling areas.
 - Conduct monthly inspections at areas not actively handled.
- For exposed stockpile, storage material handling, and equipment washing areas, incorporate controls such as perimeter controls, inlet protection and perimeter controls, or runoff collection systems, to prevent material from entering the MS4.
 - Avoid mixing sediment with high levels of contamination with low level contaminated material. If comingled prior to disposal, must be managed at the highest management level measures.
 - Dewater and dispose of solids in a manner that prevents materials from entering MS4 stormwater system.
 - Disposal of materials must comply with applicable statues and rules.
- Operate and maintain municipal and MPRB property to minimize discharge of pollutants while addressing public safety.
- Train staff on proper operation and maintenance activities to minimize discharge of pollutants and non-stormwater discharges from City and MPRB storage facilities. Refer to SMP 1.2.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop and maintain inventory of City and MPRB owned/operated facilities that contribute pollutants to stormwater discharges.	X	X			
Develop and implement stormwater management practices for inventoried facilities and operations that prevent or reduce discharges of pollutants from the following operations at City and MPRB facilities: <ul style="list-style-type: none"> ▪ Waste disposal and storage, including dumpsters ▪ Municipal landfills, hazardous waste treatment, disposal and recovery facilities, and industrial facilities ▪ Vehicle fueling, operation, and repair ▪ Cleaning of maintenance equipment, building exteriors, dumpsters, and the disposal of associated wastes and wastewater ▪ Use, storage and disposal of significant materials 		X	X		

*Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.3 – Facilities Management*

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
<ul style="list-style-type: none"> ▪ Road maintenance, including pothole repair, road shoulder maintenance, pavement marking, sealing and repaving ▪ Cold weather operations, including plowing or other snow removal practices, sand use, and application of anti-icing and deicing compounds 					
Develop and maintain written operating procedures and Facility Stormwater Plans according to facility category that identify practices with potential to discharge pollutants to the MS4, identify best management practices, and identify staff positions responsible for BMP operation and maintenance, inspections, and reporting.			X	X	
Develop a program to improve sweeping City and MPRB parking lots, prioritizing based on land use, trash, and stormwater pollutant levels generated.				X	

Measurable Goals

- All City and MPRB facilities are inventoried within 2 years.
- Stormwater management practices are developed for each facility within 3 years.

Annual Reporting

- Description of City and MPRB facilities that contribute pollutants to stormwater discharge.
- Stormwater management practices implemented at City and MPRB facilities to prevent polluted runoff from discharging to MS4 system from City and MPRB facilities that have been identified as contributing pollutants.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Transportation Maintenance & Repair
- Finance and Property Services Department – Property Services
- Community Planning and Economic Development
- Public Works – Surface Water & Sewers Division
- Public Works – Traffic and Parking Services
- Public Works – Water Treatment & Distribution
- Public Works – Fleet Services
- Convention Center/Target Center
- Public Works – Solid Waste & Recycling

SMP 6.4 – Snow and Ice Control for Streets

(MS4 Permit References: I.D.3.d, III.C.6.g, III.C.8.b, III.C.8.d, III.C.8.e, III.C.8.f, IV.D.6)

The stormwater management objective of these activities is to monitor and report on the application of chemicals for snow and ice control on streets and alleys, where operations are performed to address safety while balancing those needs with environmental and cost considerations. The most commonly used deicing and anti-icing chemical is salt and salt brine. Public Works also performs snow and ice control on some public sidewalks such as on bridges, as well as on various plazas, pedestrian bridges, stairways, and miscellaneous areas. (NOTE: This sheet addresses only streets and alleys. Other municipal facilities, including public parking lots are addressed on SMP Sheet 6.3.)

Tasks

- Operate and maintain public rights-of-way to minimize discharge of pollutants while addressing public safety.
- Perform snow and ice operations to address public safety while balancing environmental impacts and cost.
- Use weather forecasting information including pavement temperatures to make appropriate deicing material application decisions.
- Use appropriate deicing materials and application rates for weather conditions, vehicle and pedestrian usage, and land use (type/configuration of street, sidewalk, trail, etc.).
- Use smart spreading concepts and procedures as available and appropriate for conditions.
- Keep salt and sand stockpiles covered and maintain good housekeeping at loading sites.
- Utilize runoff collection systems or other best practices around deicing material stockpiles and truck washout areas.
- Conduct training for operators, foremen, and supervisors. Refer to SMP No. 1.2.
- Continue to seek practices and programmatic changes that will reduce salt loads to surface waters without compromising safety. Perform pilot projects and partner with research institutions to test results.
- Calibrate spreaders.
- Address leaking water services in winter when they are icing up the street.
- Perform sidewalk enforcement activities to address public safety while balancing environmental impacts.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop and implement stormwater management practices for inventoried operations that prevent or reduce discharges of pollutants from the following operations: <ul style="list-style-type: none"> ▪ Cold-weather operations including plowing or other snow removal practices, sand use, and application of anti-icing and deicing compounds. 		X	X		
Develop a manual of practices for various conditions, applications, and handling of deicing materials.		X			

Measurable Goals

- Overall reduction in use of snow and ice removal materials as measured over a 10-year period, allowing for year-to-year fluctuations that reflect differing weather conditions.

Annual Reporting

- Quantity of deicing materials, chemicals, and sand applied to roadways.
- Description of snow and ice management activities that contribute pollutants to stormwater discharges.

Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.4 – Snow and Ice Control for Streets

- Stormwater management practices implemented to prevent polluted runoff from discharging to MS4 system for snow and ice management activities.
- Location and description of all storage facilities for sand, deicing materials, and anti-icing solution used during winter maintenance activities.

Participating Departments

- Public Works – Transportation Maintenance & Repairs
- Public Works – Water Treatment & Distribution

SMP 6.5 – Vegetation Management

(MS4 Permit References: I.D.3.d, III.C.6.a, III.C.6.e, III.C.6.f, III.C.8.b, III.C.8.d, III.C.8.e, III.C.8.f, IV.D.6)

The stormwater management objective of this SMP is to manage the vegetation at City and MPRB owned facilities, including public right-of-way, in a manner that does not contribute pollutants to the stormwater runoff. This SMP also serves to protect and enhance the health of trees and other vegetation to maximize their availability for interceptor, evapotranspiration, volume, rate, and cleansing of stormwater. Pollutants are minimized through control of the application of fertilizers containing phosphorus and pesticides, proper mowing, and maintaining healthy vegetation.

Tasks

- Comply with State and City regulations about phosphorus-free fertilizers. Refer to SMP 3.1.
- Train staff on lawn care, vegetation management, and non-stormwater discharges. Refer to SMP 1.2.
- Work to increase tree canopy and implement practices that minimize tree disturbance during street, sidewalk, and utility work.
- Train and certify staff on proper herbicide and pesticide application. Refer to SMP 1.2.
- Control application of any pesticides and fertilizers to minimize discharge of pollutants and non-stormwater discharges.
- Document use of any pesticides and fertilizers for properties managed.
- For public participation and involvement and where safety considerations allow, consider vegetation management programs that engage volunteers, nurture citizen involvement, and/or that involve and train youth in environmental stewardship. Examples include planting events and identification and removal of invasive plants. Refer to SMP 1.1

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop and implement stormwater management practices for inventoried operations that prevent or reduce discharges of pollutants from the following operations: <ul style="list-style-type: none"> ▪ Landscaping, park, and lawn maintenance. ▪ Right-of-way maintenance, including mowing. ▪ Application of herbicides, pesticides, and fertilizers. 		X	X		
Develop and maintain written operating procedures for practices specific to pollutant control and reduction.		X	X		

Measurable Goals

- Fertilizer and pesticide application is minimized and only used where necessary to maintain public health and safety and defined recreational uses.

Annual Reporting

- Number of staff with pesticide applicator licenses.
- Narrative description of significant vegetation management activities at City stormwater facilities.
- Description of City and MPRB vegetation management activities that contribute pollutants to stormwater discharges.
- Stormwater management practices implemented to prevent polluted runoff from discharging MS4 system from vegetation management activities that have been identified as contributing pollutants.

Participating Departments

- Community Planning and Economic Development
- Convention Center and Target Center
- Finance and Property Services
- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division
- Public Works – Traffic & Parking Services
- Public Works – Transportation Maintenance & Repairs
- Public Works – Water Treatment & Distribution

SMP 6.6 – Localized Flood Mitigation Capital Projects

(MS4 Permit References: III.C.6.h, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.5)

The stormwater management objectives of this practice is to prevent public health threats, protect primary structures, protect lands and surface waters from detrimental effects created by localized flooding (including soil erosion and sedimentation, inflows that contribute to combined sewer overflows, and damage to aquatic and riparian habitat), and degradation of quality of urban lifestyle framed by surface waters.

Tasks

Departments/Divisions Carrying Out Capital Projects

- Develop and construct projects to mitigate surface flooding caused by insufficient storm sewer hydraulic capacity or other condition that prevents efficient conveyance of stormwater runoff to the surface water body.
- Carry out hydrologic and hydraulic modeling as framework for developing flood mitigation strategies. Maintain records of reports of flooded streets or parcels from residents, field crews, and others, and use these records as a factor in strategies. Refer to SMP 5.6.
- Analyze impacts of flood mitigation alternatives on municipal separate storm sewer system (MS4) and surface waters. Refer to SMP 5.6.
- Evaluate green infrastructure techniques for stormwater runoff volume control as alternatives to, or as partial remedies for, new or larger pipes in flood mitigation projects. Evaluate the reduction of flood potential through land use changes or structural measures, including volume reducing techniques (such as bio-infiltration rain gardens or reducing or connecting impervious surfaces) upstream of the flood-impacted sites. Refer to SMP 5.5.
- Design flood control projects in accordance with total maximum daily load (TMDL) requirements.
- Look for opportunities to partner with other entities towards creation of multi-purpose projects with shared funding responsibilities.

Measurable Goals

- Areas of ongoing flooding are identified, and flooding impacts are assessed.
- The feasibility of Green Infrastructure is assessed during the development of all projects that have the primary purpose of mitigating ongoing flooding.

Annual Reporting

- Number and type of structural stormwater management facilities constructed or modified in order to resolve ongoing surface flooding.
- Description of pollutant removal capabilities for each structural stormwater management practice constructed or modified to resolve ongoing surface flooding.

Participating Departments

- Public Works – Surface Water & Sewers Division

*Category 6 Pollution Prevention and Good Housekeeping for Municipal Operations
SMP 6.6 – Localized Flood Mitigation Capital Projects*

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Overview of Category 7

(MS4 Permit References: III.C.8.a, III.C.8.d)

The purpose of monitoring and analysis under the MS4 permit are to understand and improve stormwater management program and Stormwater Management Practice effectiveness. Sampling is performed throughout the year at various types of sites, described in detail on SMP Sheet 7.1.

Program Overview

Monitoring results are used to track long-term improvements in stormwater quality, and to assess the effectiveness of structural stormwater management practices, and to influence future stormwater management practice design and operations and maintenance decisions.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works Department

Category 7 SMP Sheets

SMP 7.1 – Monitoring and Analysis to Assist in Assessing Stormwater Management Program Effectiveness

*Category 7 Stormwater Discharge Monitoring and Analysis
Overview*

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SMP 7.1 – Monitoring and Analysis to Assist in Assessing Stormwater Management Program Effectiveness

(MS4 Permit References: I.D.3.d, III.C.6.d, III.C.7.a-c, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.7)

The stormwater management objective of these activities is to understand and improve stormwater management program effectiveness, as described in the Overview of Category 7. The three types of sites for sampling, with priority levels established in the MS4 Permit are: Type 1 – To determine and improve system/BMP effectiveness through adaptive management (highest priority); Type 2 – Representative land use management sites selected by the Permittee (second priority); and, Type 3 – To determine contributions from upstream jurisdictions (third priority).

Tasks

- Collect stormwater samples and data at a minimum of six (6) sites as detailed in the monitoring program outline. Analyzes samples to determine pollutant concentrations. Monitoring sites and analysis to include:
 - Determination of SMP effectiveness through adaptive management.
 - Representative land use management sites.
 - Determination of contribution from upstream jurisdictions.
- Conduct sampling, monitoring, and analysis in accordance with quality assurance project plan for lab and field methods and procedures:
 - *EPA Guidance for Quality Assurance Project Plans*, EPA QA/G-5 (EPA/240/R-02/009) or approved variation.
 - *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R-5 (EPA/240/B-01/003) or approved variation.
 - MDH-certified laboratory(s).

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop written procedures and schedule to assess the TSS and TP treatment effectiveness of all City and MPRB owned stormwater ponds.				X	X

Measurable Goals

- Annual monitoring and analysis is completed and reported in the Annual Report each year.

Annual Reporting

- Proposed modifications to substitute sources of monitoring and analysis data. Include discussion of how data will be used to demonstrate compliance and to characterize nature of stormwater discharge.
- Description of significant operation differences in monitoring and monitoring protocols.
- Monitoring results:
 - Estimated pollutant Event Mean Concentration (EMC).
 - Estimated total annual pollutant load to receiving waters.
 - Estimated total annual volume to receiving waters.
 - Estimated effectiveness of structural stormwater management practices (removal efficiency, load reduction, etc.).
 - Calibration and verification of stormwater models.

Category 7 Stormwater Discharge Monitoring and Analysis
SMP 7.1 – Monitoring and Analysis to Assist in Assessing
Stormwater Management Program Effectiveness

- Narrative of monitoring results for each monitoring site, including:
 - Tabulations, statistics, summary tables, and summary graphics.
 - Continuous flow data.
 - Sample analytical data identified as composite or grab with corresponding flows and storm event periods.
 - Estimate of rainfall for storm event that generated sampled discharge.
 - Approximate duration between storm event sampled and previous storm event greater than 0.10-inch rainfall.
 - Loading calculations of estimated annual and seasonal loads from continuous monitoring station for Total Phosphorus, Chloride, Total Suspended Solids, Volatile Suspended Solids, Inorganic Suspended Solids (TSS-VSS=ISS), and Total Nitrogen.
 - Summary information for each site:
 - Drainage area.
 - Estimated annual total discharge volume.
 - Storm event discharge volume.
 - Storm event discharge values used to calculate event-scale pollutant loads.
 - Runoff yield (inches per year).
 - Analyte flow weighted mean concentrations.
 - Analyte annual mean concentrations.
 - Map showing receiving waters and representative land use management sites.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers

**Category 7 Stormwater Discharge Monitoring and Analysis
SMP 7.1 – Monitoring and Analysis to Assist in Assessing
Stormwater Management Program Effectiveness**

Analytical Data for Samples			Sites 1-6 Monitored by the Permittee (Types 1, 2, 3)					
Parameter	Sample Type	Frequency (Note 3)	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6
Chloride, Total	Flow-paced composite samples over non-ice time period (approx. March through November) Grab samples at least two times during typical winter thaw (approx. December to March)	10 samples/year, select from events 0.10 inch or greater over range of seasons and events	X	X	X	X	X	X
Copper, total (as Cu)			X	X	X	X	X	X
Lead, Total (as Pb)			X	X	X	X	X	X
Zinc, Total (as Zn)			X	X	X	X	X	X
Hardness, Carbonate (as CaCo3)			X	X	X	X	X	X
Nitrate + Nitrite, Total (as N)			X	X	X	X	X	X
Nitrogen, Total			X	X	X	X	X	X
Phosphorus, Total (as P)			X	X	X	X	X	X
Solids, Total Suspended (TSS)			X	X	X	X	X	X
Solids, Volatile Suspended (VSS)			X	X	X	X	X	X
Solids, Inorganic Suspended by difference (TSS-VSS=ISS)			X	X	X	X	X	X
Carbon, Organic Dissolved			X	X	X	X	X	X
Chemical Oxygen Demand (COD)			X	X	X	X	X	X
Phosphorus, Total Dissolved or Ortho			X	X	X	X	X	X
Solids, Total Dissolved (TDS)			X	X	X	X	X	X
Flow	Measurement	Continuous during period when flow-paced composite samples are collected as required for other parameters in this table Point-estimated when grab samples are collected as required for other parameters in this table	X	X	X	X	X	X
Precipitation	Measurement, at 3800 Bryant Avenue South location	Daily	N/A	N/A	N/A	N/A	N/A	N/A
Oil and grease (Note 1)	Grab	Quarterly (spring, summer, fall, winter)	X	X	X	X	X	X
Escherichia coli (E. coli)			X	X	X	X	X	X
pH (Note 2)	Grab, measured by multi-parameter probe		X	X	X	X	X	X

Note 1: Pilot. If oil and grease is less than 15 mg/L in all quarterly samples for the first 2 years of the permit term, the **Permittee** may end oil and grease sampling at that/those site(s). If oil and grease is at least 15 mg/L in any quarterly sample for the first 2 years of the permit term, then oil and grease sampling must continue through the entire permit term at that/those site(s).

Note 2: Field analysis.

Note 3: Taking into consideration weather and safety.

X: Monitoring of parameter is applicable.

N/A: Not applicable.

Type 1. A determination of BMP effectiveness through adaptive management (highest priority).

Type 2. Representative land use management sites selected by the **Permittee** (second priority).

Type 3. A determination of contributions from upstream jurisdictions (third priority).

*Category 7 Stormwater Discharge Monitoring and Analysis
SMP 7.1 – Monitoring and Analysis to Assist in Assessing
Stormwater Management Program Effectiveness
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Overview of Category 8

(MS4 Permit References: III.C.8.a, III.C.8.d)

Program Overview

Total maximum daily loads (TMDL) are one of the many tools Congress authorized in the Clean Water Act (CWA) to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.” A TMDL study determines the level of pollution the impaired waterbody could assimilate if it were meeting State water quality standards, models the mass of pollutants associated with various pollutant sources including stormwater runoff, and develops an equation with allocations for regulated sources (waste load allocations or WLAs), unregulated sources, future growth if applicable, and a margin of safety to account for uncertainty. The MS4 WLA is a numerical maximum pollutant discharge goal for pollutants in stormwater runoff from each MS4 (individual WLA) or all the MS4s in the study (categorical WLA). A successful TMDL study includes significant stakeholder involvement, characterizes the watershed to identify the waterbody, watershed and impairment conditions, requires sound data, emphasizes the importance of locally led decisions on where and how to spend local money to address water quality issues, and provides [equitable] allocations for known sources.

Program Goals

The goal of the TMDL program is to work closely with the MPCA and other water resource agencies during the study and implementation phases of each TMDL study which is being conducted for a waterbody that receives stormwater runoff from the Minneapolis MS4 system. Additionally, this program aims to develop and maintain a tracking system to assess and report on the progress towards compliance with TMDL established maximum pollutant discharges.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division

Category 8 SMP Sheets

SMP 8.1 – Total Maximum Daily Load (TMDL) Program

*Category 8
Progress Toward Waste Load Allocations for Approved Total Maximum Daily Load*

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SMP 8.1 – Total Maximum Daily Load (TMDL) Program

(MS4 Permit References: I.D.3.d, III.C.8.d, III.C.8.e, III.C.8.f, III.D.1, IV.D.8)

Stormwater runoff from the City and MPRB lands is discharged to 30 surface waterbodies, located either within or immediately outside the City. Nineteen of these have been listed on the MPCA Section 303(d) Impaired Waters List for having the presence of concentrations of certain pollutants identified in the water column or fish tissue at levels higher than Minnesota standards, as defined in Minnesota Rule 7050. TMDL studies have either been completed or are in process for 18 of the surface waters that are listed as impaired. These TMDL studies compute the mass of pollutants associated with stormwater runoff. The purpose of this SMP is to develop and maintain a system that tracks and reports on compliance with TMDL goals set for the City.

Tasks

During TMDL Study Process

Provide early and significant involvement in the TMDL study and process. Provide information, data, and expertise unique to Minneapolis. 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 City and MPRB goals and objectives.

After EPA TMDL Approval of WLA

- 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 SMPs, 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 SMPs, addressing level of funding in light of identified needs, developing modifications to the SWMP if needed, and implementing new or modified SMPs if needed.
- For an individual WLA, track City and MPRB practices and calculate their effectiveness for progress in reducing loads to meet WLAs assigned to the Minneapolis 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 Minneapolis 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.
- Provide documentation for applicable WLA(s) that the City is reasonably confident has been met by date of permit coverage.
 - Implementation of SMPs used to meet each applicable WLA.
 - Narrative describing strategy for long-term continuation of meeting each applicable WLA.

*Category 8 Progress Toward Waste Load Allocation for Approved Total Maximum Daily Loads
SMP 8.1 – Total Maximum Daily Load (TMDL) Program*

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Within 9 months of receiving permit coverage, submit the following information to the MPCA on the form provided by the MPCA: <ul style="list-style-type: none"> ▪ TMDL project name. ▪ Numeric WLA including units. ▪ Type of WLA (categorical or individual). ▪ Pollutants of concern. ▪ Applicable flow data. ▪ Compliance schedule: <ul style="list-style-type: none"> ▪ Interim milestones expressed as SMPs or progress toward implementation of SMPs. ▪ Dates for implementation of interim milestones. ▪ Strategies for continued SMP implementation beyond the term of the MS4 Permit. ▪ Target dates for achievement of applicable WLA(s). 	X				
Create methodology for computing the annual pollutant loading for each finalized TMDL and for reporting to the MPCA within 1 year.	X				

Measurable Goals

- Long-term improvement in the water quality of impaired waters.

Annual Reporting

- An assessment of the progress towards meeting TMDL goals, reported on a form provided by the MPCA.
 - List of SMPs being applied towards meeting goals. Structural stormwater management practices must be described with a unique ID and geographic coordinate and must have the same ID as inventoried during 2011 Phase I MS4 permit reports.
 - List of all SMPs contained in compliance schedule and stage of implementation of each SMP.
 - Updated estimate of cumulative reduction in pollutant loading achieved for each pollutant of concern for each applicable WLA.
 - Updated narrative of adaptive management strategies used to make progress towards each applicable WLA.
 - Comparison of estimated pollutant loading of each impaired water in the City’s jurisdiction and the applicable WLA for that impaired water.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division

Overview of Category 9

(MS4 Permit References: I.D.3.d, III, III.C.8.g)

Program Overview

The City and MPRB interact with numerous agencies involved in surface water systems or stormwater management. Included at the Federal level are the Environmental Protection Agency (EPA), the United States Army Corps of Engineers (USACE), and Federal Emergency Management Agency (FEMA); at the State level are Minnesota Pollution Control Agency (MPCA), Board of Water and Soil Resources (BWSR), Minnesota Department of Transportation (MnDOT), Minnesota Department of Natural Resources (MNDNR), and Minnesota Department of Health (MDH); at the regional level the Metropolitan Council; and, at the local level Hennepin County, neighboring cities, the University of Minnesota (U of M), and the following four watershed organizations: Mississippi Watershed Management Organization (MWMO), Minnehaha Creek Watershed District (MCWD), Basset Creek Watershed Management Commission (BCWMC), and Shingle Creek Watershed Management Commission (SCWMC). The SMPs contained in this category serve to facilitate communications and develop cooperative agreements such that water quality efforts and MS4 permit responsibilities are defined and documented.

Program Goals

The goal of these SMPs is to work cooperatively with all water resource agencies towards improvements in water resource management. Specifically, this category of SMPs aims to establish new, or to re-establish previous cooperative agreements with the City's primary partners, including the Minneapolis Park and Recreation Board and the Metropolitan Council, to ensure that all required activities are properly defined and managed.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works Department
- Health Department
- Regulatory Services Department
- Community Planning and Economic Development

Category 9 SMP Sheets

SMP 9.1 – City of Minneapolis and Minneapolis Park and Recreation Board Responsibilities

SMP 9.2 – City of Minneapolis and Metropolitan Council Responsibilities

SMP 9.3 – Coordination and Cooperation with Other Entities

*Category 9 Coordination and Cooperation with Other Entities
Overview*

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SMP 9.1 – City of Minneapolis and Minneapolis Park and Recreation Board Responsibilities

(MS4 Permit References: I.D.3.d, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.10)

The MS4 permit has been issued jointly to the City of Minneapolis (City) and the Minneapolis Park and Recreation Board (MPRB). The cooperative agreement developed through this SMP serves to define the specific responsibilities that the City and the MPRB will undertake to meet the conditions of the MS4 permit. This agreement will guide communications and activities such that there are no overlaps or gaps in MS4 permit compliance.

Tasks

- Negotiate and execute annual cooperative agreement.
- Re-examine roles and responsibilities each year after completion of the annual report. Amend the cooperative agreement, as required.

New Tasks to be Incorporated

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Update the City and MPRB Service Area 2 Memorialization document.		X	X		

Measurable Goals

- Execute cooperative agreement with MPRB within 1 year.

Annual Reporting

- Summary of compliance with cooperative agreement.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works – Surface Water & Sewers Division

Category 9 Coordination and Cooperation with Other Entities
SMP 9.1 – City of Minneapolis and Minneapolis Park and Recreation Board Responsibilities

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SMP 9.2 – City of Minneapolis and Metropolitan Council Responsibilities

(MS4 Permit References: I.D.3.d, III.C.8.b, III.C.8.e, III.C.8.f, IV.D.10, IV.D.12)

The current MS4 permit has incorporated combined sewer overflow (CSO) requirements that in the past were contained in a NPDES permit jointly issued to the City of Minneapolis (City) and the Metropolitan Council. The overall aim of these requirements is to improve and manage the stormwater and sanitary sewer systems such that excessive flows in the sanitary sewers are not discharged to the Mississippi River at existing overflow structures, termed regulators. Generally, the City is responsible for working to reduce the non-sanitary flows through efforts to eliminate inflow and infiltration (I/I) into the City-owned sanitary sewers. The Metropolitan Council, as owner of the sanitary interceptor sewers and the regulators, is also required to maintain and operate their system in a manner that does not contribute to sanitary sewage overflows. In the past, the City and the Metropolitan Council would execute a cooperative agreement that detailed the responsibilities of each organization under the previous CSO NPDES permits. The cooperative agreement developed through this SMP serves to define the specific responsibilities that the City and the Metropolitan Council will undertake to meet the conditions of the Integrated Infrastructure Management Program responsibilities contained in the current MS4 permit (Category 11). This agreement will guide communications and activities such that there are no overlaps or gaps in MS4 permit compliance.

Tasks

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Negotiate and execute cooperative agreement.	X	X			
Re-examine roles and responsibilities each year after completion of the annual report. Amend the cooperative agreement, as required.		X	X	X	X

Measurable Goals

- Execute cooperative agreement with Metropolitan Council within 1 year.

Annual Reporting

- Summary of status of compliance with cooperative agreement.

Participating Departments

- Public Works – Surface Water & Sewers Division

*Category 9 Coordination and Cooperation with Other Entities
SMP 9.2 – City of Minneapolis and Metropolitan Council Responsibilities*

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SMP 9.3 – Coordination and Cooperation with Other Entities

(MS4 Permit References: I.D.3.d, III.C.8.b, III.C.8.d, III.C.8.e, III.C.8.f, III.C.8.g, IV.D.1.d, IV.D.10.a)

The stormwater management objective of this SMP is to execute cooperative agreements and to document the coordination as it pertains to improved stormwater management and improved water quality. The majority of coordinated efforts focuses on development of total maximum daily load (TMDL) studies, water quality monitoring, and water quality education. However, there are numerous efforts that involve a specific task or effort to improve water quality.

Tasks

- Foster collaborative efforts, capitalizing on expertise and resource strengths while minimizing duplication of efforts. The City and MPRB will continue to coordinate and cooperate with other governmental entities. Past or present examples include:
 - Partnering with other entities to provide education and outreach. (See Table A-3 in the Appendix).
 - Partnering with the MWMO, Metro Blooms, and others to reach out to members of the City’s diverse communities, and to increase environmental knowledge and water stewardship using multi-lingual approaches.
 - Coordinating with the other MS4s operating in the City: Hennepin County, University of Minnesota, and MnDOT.
 - Cooperating and coordinating with neighboring MS4 cities when managing common drainage areas, monitoring water quality for common receiving waters, and working together to fund and complete water quality projects.
 - Collaborating on Upper Mississippi River Source Water Protection Project with St. Cloud, St. Paul, MDH, and the Metropolitan Council.
 - Participating with watershed organizations in studies, water quality projects, education, investigation/enforcement activities, participation on total maximum daily load (TMDL) studies and development of implementation plans.
 - Participating with the watershed management organizations in evaluating, constructing, and funding water quality controls and shoreline and streambank stabilization projects.
 - Collaborating with MWMO and MCWD on stormwater monitoring.
- Public Education Coordination
 - Create a database of water quality education efforts being conducted in the City and post on the City’s water quality webpage.
 - Communicate with each agency at least annually for updates in water quality education.
 - Update the database, as necessary.
 - Maintain a list of formal agreements or partnerships related to Public Education. Refer to SMP 1.3.
- Coordination on Stormwater and Water Quality Monitoring Activities
 - Communicate with other agencies (Metropolitan Council, Minnehaha Creek Watershed District, Mississippi Watershed Management Organization, Hennepin County Environmental Services, Bassett Creek Watershed Management Commission, Shingle Creek Watershed Management Commission, Metropolitan Mosquito Control District) performing water quality monitoring in the City.
 - Compile and maintain a table identifying agency, monitoring location, parameters, and frequencies. Provide the database online or link to the database that is management by another agency. (Note: only

Category 9 Coordination and Cooperation with Other Entities
SMP 9.3 – Coordination and Cooperation with Other Entities

the MPRB and MWMO monitor stormwater. The other sampling activities in the City are performed in wetlands, lakes, creeks, and the Mississippi River.)

Measurable Goals

- Water quality monitoring and public education databases are updated at least annually such that the most current information is available on the City's water quality webpage.

Annual Reporting

- Summary of public education activities conducted by other organizations.
- List of cooperative agreements executed in previous year that assist with implementation of SWMP and copies of agreement(s).
- Summary of status of compliance with each cooperative agreement.

Participating Departments

- Community Planning and Economic Development
- Minneapolis Park and Recreation Board
- Health Department
- Public Works – Surface Water & Sewers Division
- Regulatory Services Department

Overview of Category 10

(MS4 Permit References: III.C.8.a, III.C.8.d)

Program Overview

The primary goal of the MS4 permit is “to restore and maintain the chemical, physical, and biological integrity of waters of the state through management and treatment of urban stormwater runoff”³ to be accomplished through a Stormwater Management Program. The City and the Minneapolis Park and Recreation Board (MPRB), as co-permittees, have annual and ongoing responsibilities for Stormwater Management Program (SWMP) assessment, SWMP modifications, recordkeeping, and annual reporting to the Minnesota Pollution Control Agency (MPCA).

Program Goals

- Submission of Annual Report.

Participating Departments

- Minneapolis Park and Recreation Board
- Public Works Department

Category 10 SMP Sheets

SMP 10.1 – Stormwater Management Program Assessment, Modification, and Annual Reporting

³ Minneapolis MS4 Permit Part I

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SMP 10.1 – Stormwater Management Program Assessment, Modifications, and Annual Reporting

(MS4 Permit References: I.D.3.d, III.C.2.e, III.C.8.d, III.C.8.e, III.F, IV.A, IV.B, IV.C, IV.D.10, IV.D.11)

The stormwater management objective of this program is to provide coordination and oversight of Stormwater Management Program (SWMP) assessment, modification, and reporting requirements.

Tasks

- Update SWMP to be in compliance with current MS4 Permit within 12 months of permit coverage.
- Modify SWMP and compliance schedules as required by the MPCA, in writing, based on the following factors:
 - MS4 discharges are impacting the quality of receiving waters.
 - More stringent requirements are necessary.
 - Additional conditions as necessary to comply with requirements of the Clean Water Act.
- Track assessment of progress being made for stormwater management practices (SMPs), prepare or coordinate revisions to SMPs or other portions of the SWMP:
 - Assessment must be based on results of information collected and analyzed, including
 - Inspection findings.
 - Stormwater runoff monitoring.
 - Public input received during reporting period.
 - Analyze performance and effectiveness of stormwater management practices. Refer to SMP 7.1.
 - Analyze effectiveness of SWMP in achieving permit compliance.
 - Analyze budget utilized for SWMP implementation. Include analysis of capital, operation, maintenance, and staff resources.
- Prepare an Annual Report for submission to the Minnesota Pollution Control Agency (MPCA) by June 30 that includes the following:
 - Previous year's activities and accomplishments. Include inspection and enforcement activities, and operation and maintenance activities, performance, and effectiveness.
 - Assessment of progress being made according to SMP descriptions contained in the SWMP.
 - Status of compliance with the Permit, including:
 - SMP assessments
 - Progress towards goals
 - Stormwater monitoring
 - Partnerships
 - Change in SMPs or measurable goals
 - New or modified measurable goals.
 - Proposed or new or modified SMPs. New SMPs to be added to the SWMP after written approval received from MPCA.
 - Summary of public education activities, with copies of materials or links.
 - Summary of oral and written public input.
 - City Council resolution that formally adopts SWMP and Annual Report.
- Involve all departments and agencies in programming and annual reporting that impact success.

Category 10 Stormwater Management Program Assessment, Modifications, and Annual Reporting

SMP 10.1 – Stormwater Management Program Assessment, Modifications, and Annual Reporting

- Document protocols for monitoring, recordkeeping, and reporting.
- Coordinate recordkeeping of required records for at least three years beyond the term of the permit.

Measurable Goals

- Revise each Annual Report by June 1 of each year.

Annual Reporting

- Discussion of modifications to SWMP by City and/or MPRB which did not require MPCA approval, if :
 - New SMP is added and none are subtracted from SWMP.
 - Less effective SMP is replaced with more effective SMP.
 - Modifications are included in notification published for annual meeting.
- Discussion of proposed modifications to SWMP which require MPCA written approval.
- Results of SWMP annual assessment for SMP Categories 1 through 8.
- Change in SMPs or measurable goals for SMP Categories 1 through 8.
- Status of compliance with permit terms and conditions.
- All reporting requirements contained on individual SMP sheets.

Participating Departments

- Public Works – Surface Water & Sewers Division
- Minneapolis Park and Recreation Board

Overview of Category 11

(MS4 Permit References: III.C.6.I)

Program Overview

There are seven (7) control structures on the Metropolitan Council interceptor system that serve the purpose of releasing sanitary sewage to either the Mississippi River or the stormwater drainage system during an extreme rain event. Improvements made to the Minneapolis sanitary sewer system, through the removal of inflow and infiltration sources, has dramatically reduced the number and volume of releases as compared to historic records. In fact, there have been no releases of raw sewage caused by a rain event since 2006. However, these structures must remain in place as a safeguard to prevent the future release of raw sewage into basements or onto streets should an extreme event occur.

The Minnesota Pollution Control Agency (MPCA) has written specific conditions into the Minneapolis / Minneapolis Park and Recreation Board (MPRB) NPDES Municipal Stormwater Permit that the City must follow to allow for these control structures to remain in operation. This Category and SMP sets up a reporting and monitoring program to meet the requirements of the permit.

Program Goals

Manage the historically interconnected sanitary sewer system and storm sewer system in a manner that:

- Maximizes public investment.
- Minimizes risk to human health.
- Minimizes risk to the environment.
- Prevents the loss of life and personal injury.
- Prevents property damage.
- Prevents the unintentional release of untreated sewage from the Minneapolis sanitary sewer system.

Participating Departments

- Minneapolis Public Works – Surface Water & Sewers Division
- Minneapolis Regulatory Services – Fire Inspections
- Minneapolis Health Department – Environmental Services
- Metropolitan Council Environmental Services (MCES)

Category 11 SMP Sheets

SMP 11.1 – Integrated Infrastructure Management Program

*Category 11 Sanitary Sewer Reporting Requirements
Overview*

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SMP 11.1 – Integrated Infrastructure Management Program

(MS4 Permit References: Part III.C.6.I, IV.D.12)

The objective of this program is to prevent the unintentional discharge of untreated sewage from the Minneapolis sanitary sewer system at the control structures located on Metropolitan Council Interceptors at the following locations:

- Minnehaha Parkway and 39th Avenue South.
- East 38th Street and 26th Avenue South.
- Southwest Meters at West River Parkway between East 28th Street and Dorman Avenue.
- Northwest Meters at West River Parkway between East 28th Street and Dorman Avenue.
- Eastside Meters at East River Terrace and Emerald Street Southeast.
- East 26th Street and Seabury Avenue.
- Portland Avenue and Washington Avenue South.

Requirements of the Program

- Comply with conditions of this permit and any federal, state, or local law or regulation.
- Prohibit toxic discharges.
- Prohibit nuisance conditions including floating solids, scum and visible oil film, acutely toxic conditions to aquatic life, or other adverse impact on the receiving water.
- Control users of its wastewater treatment facility to prevent the introduction of pollutants.

Monitoring Requirements

- A laboratory certified by the Minnesota Department of Health or registered by the MPCA must be used.
- Maintain monitoring records for at least three years:
 - Exact place, date, and time of the sample or measurement.
 - The date of analysis.
 - Name of the person who performed the sample collection, measurement, analysis, or calculation.
 - Analytical techniques, procedures, and methods used.
 - Results or the analysis.
- Twice per year, check and calibrate all equipment used for compliance with requirements (flow meters, pumps, flumes, monitoring equipment).

In the Event of a Release

- Comply with following notifications, control, and clean-up requirements upon the discovery of a release of untreated sewage:
 - Take all reasonable steps to end release.
 - Immediately notify State Duty Officer.
 - Rapidly and thoroughly recover all substances and materials released.
 - Immediately take other reasonable actions to minimize or abate pollution to waters of the state or potential impacts to human health.
- Comply with the following sampling requirements upon the discovery of a release of untreated sewage:
 - Collect representative samples immediately upon discovery of release.
 - Continue to collect samples two (2) times per week for as long as the release continues.

*Category 11 Sanitary Sewer Reporting Requirements
SMP 11.1 – Integrated Infrastructure Management Program*

- Collect sample in accordance with [MPCA Release Sampling Form](#).
- Sample must be tested by laboratory certified by Minnesota Department of Health.
- Sample must be preserved, and procedures must conform to 40 CFR pt. 136 and Minn. R. 7041.3200.

New Tasks to be Implemented

TASK	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Develop Standard Operating Procedures (SOPs) for addressing CSO discharge.		X			
Review and update Standard Operating Procedures (SOPs) related to CSO releases.					X

Measurable Goals

- Standard Operating Procedures (SOPs) are developed and implemented within two years of permit coverage.

Annual Reporting

- Description of release, including:
 - Outfall location.
 - Duration and volume.
 - Summary of sampling activities.
- Summary of studies, investigations, and monitoring activities initiated to identify sources of inflow and infiltration.
- Updated inventory of identified areas of inflow to the sanitary sewer system, including:
 - Location and sewershed of individually identified combined sewer areas.
 - Catch basins, roof leaders, and other stormwater inlets connected to the combined sewer.
 - Sewer service area in acres for each individual areas of inflow to the sanitary sewer.
 - MCES Regulator identification number and geographic coordinates.
 - MCES and Minneapolis stormwater outfall location and geographic coordinates.
 - Total area of Minneapolis sewershed tributary to outfall the percent of combined sewer area in that sewershed.
- Map and summary of projects completed in the past year that minimized inflow and infiltration, including, but not limited to:
 - Sewer separation projects
 - Lined sewer pipes
 - Manhole lining and repairs
 - Rainleader disconnections.
- Description of collaborative arrangements with external partners to minimize releases and improve water quality.
- Description of annual expenditures for reporting year.

Event Reporting and Recordkeeping

The following actions are required in the event of a release of untreated sewage from one or more of the seven (7) control structures:

- Submit all sampling results to MPCA on Release Sampling Form (release sampling and any additional sampling)

Category 11 Sanitary Sewer Reporting Requirements
SMP 11.1 – Integrated Infrastructure Management Program

- Maintain all records for a minimum of three (3) years
- Record following information:
 - Exact place, date, and time of sample or measurement
 - Date of analysis
 - Name of person who performed sample collection, measurement, analysis, or calculation
 - Analytical techniques, procedures, and methods used
 - Analysis results

Participating Departments

- Public Works – Surface Water & Sewers Division
- Regulatory Services – Fire Inspections
- Metropolitan Council

*Category 11 Sanitary Sewer Reporting Requirements
SMP 11.1 – Integrated Infrastructure Management Program*

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Appendix A – Tables of Detailed Information

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Table A.1 City of Minneapolis TMDL Status

The federal Clean Water Act requires states to adopt water quality standards to protect waters from pollution. The goal is to protect high-quality waters and improve the quality of impaired waters, so that beneficial uses (such as fishing, swimming, and protection of aquatic life) are maintained and restored, where these uses are attainable. *Adapted from MPCA 12/2011 Guidance Manual for Assessing the Quality of Minnesota Surface Waters.*

The process includes the following steps: 1) Assess waters; 2) Determine whether impaired; 3) Place water on the impaired list; 4) Monitor and study the waterbody; 5) Complete a pollutant load allocation formula (called a “Total Maximum Daily Load” or TMDL); 6) Develop a restoration strategy; 7) Implement the strategy; 8) Monitor changes in water quality; and, 9) De-list if standards are being achieved, or 10) Determine next steps. The list of impaired waterbodies, or 303(d) list, is updated every two years.

Name of Surface Water (includes lakes, creeks, wetlands, and Mississippi River). Alphabetical order. *indicates waterbody is not in the City of Minneapolis	Receives City of Minneapolis Municipal Stormwater Runoff?	State ID	Next-in-line Receiving Water	Status of Impairment and TMDL Study	Designated Use that is Affected by the Impairment
BASSETT CREEK	yes (and from upstream municipalities)	07010206-538	Mississippi River	FISHES BIOASSESSMENTS (listed in 2004) – TMDL study not started yet, may be reassessed.	Aquatic Life
				BACTERIA (listed 2008) – TMDL approved Nov. 2014 (metro-wide).	Aquatic Recreation
				CHLORIDE (listed 2010) – TMDL approved June 2016 (metro-wide).	Aquatic Life
BASSETT’S POND* (Part of Bassett Creek. Located in the City of Golden Valley, in Wirth Park, owned and managed by MPRB)	yes	27-0036	Bassett Creek	No impairments.	
BDE MAKA SKA	yes (and from upstream municipalities)	27-0031	Lake Harriet	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL completed 2008, not stormwater-related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
				PFOS IN FISH TISSUE (listed 2008) – Regulatory action by MPCA in lieu of TMDL is underway (pollutant source in Saint Louis Park), target completion 2022.	Aquatic Consumption
BIRCH POND	yes (portion of southbound Wirth Parkway)	27-0653	Landlocked (historic pumping to Chain of Lakes)	No impairments.	
BROWNIE LAKE	yes (and from the City of Saint Louis Park)	27-0038	Cedar Lake	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
				EXCESS NUTRIENTS (listed 2004) – DE-LISTED 2010 (could be listed again if TP rises).	

Table A.1 City of Minneapolis TMDL Status

Name of Surface Water (includes lakes, creeks, wetlands, and Mississippi River). Alphabetical order. *indicates waterbody is not in the City of Minneapolis	Receives City of Minneapolis Municipal Stormwater Runoff?	State ID	Next-in-line Receiving Water	Status of Impairment and TMDL Study	Designated Use that is Affected by the Impairment
				CHLORIDE (listed 2014) – TMDL approved June 2016 (metro-wide).	Aquatic Life
CEDAR LAKE	yes (and from the City of Saint Louis Park)	27-0039	Lake of the Isles	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
CEMETERY LAKE	no	27-0017	Bde Maka Ska	No impairments.	
CRYSTAL LAKE* (located in the City of Robbinsdale)	yes (and from the City of Robbinsdale)	27-0034	Shingle Creek	EXCESS NUTRIENTS (listed 2002) – TMDL approved 2009, in implementation stage.	Aquatic Recreation
DIAMOND LAKE	yes	27-0022	Minnehaha Creek	Was formerly listed for EXCESS NUTRIENTS but removed from list in 2008 because it was determined to be a wetland (or game lake) that had been mischaracterized by MNDNR as a lake. There are no nutrient standards for wetlands at this time.	
				CHLORIDE (listed 2014) – TMDL approved June 2016 (metro-wide).	Aquatic Life
GRASS LAKE (officially a wetland. Was previously part of Richfield Lake, which was divided by construction of Highway 62)	yes	27-0681	Landlocked/ Lower Minnesota River	EXCESS NUTRIENTS (listed in 2006) – DE-LISTED in 2016.	Aquatic Recreation
HART LAKE	yes (and from Columbia Heights)	02-0081	Silver Lake	No excess nutrients impairment for Hart Lake, but Hart Lake is involved in the TMDL for Silver Lake.	
LAKE HARRIET	yes	27-0016	Minnehaha Creek	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL completed 2008, not stormwater-related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
				2) PFOS IN FISH TISSUE (listed 2008) – Regulatory action by MPCA in lieu of TMDL is underway (pollutant source in Saint Louis Park), target completion 2022.	Aquatic Consumption
LAKE HIAWATHA (Part of Minnehaha Creek)	yes (and from upstream municipalities)	27-0018	Minnehaha Creek	EXCESS NUTRIENTS (listed 2002) – Part of <i>Minnehaha Creek E. Coli Bacteria/Lake Hiawatha Nutrients TMDL</i> Study. TMDL approved 2014.	
LAKE NOKOMIS	yes (and from the City of Richfield and a portion of MSP Airport)	27-0019	Minnehaha Creek	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater-related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
				PCB IN FISH TISSUE (listed 1998) – TMDL status unknown, target completion 2025.	Aquatic Consumption

Table A.1 City of Minneapolis TMDL Status

Name of Surface Water (includes lakes, creeks, wetlands, and Mississippi River). Alphabetical order. *indicates waterbody is not in the City of Minneapolis	Receives City of Minneapolis Municipal Stormwater Runoff?	State ID	Next-in-line Receiving Water	Status of Impairment and TMDL Study	Designated Use that is Affected by the Impairment
				EXCESS NUTRIENTS (listed 2002) – TMDL approved 2011, in implementation stage. (TMDL name: Minnehaha Creek Watershed Lakes)	Aquatic Recreation
LAKE OF THE ISLES	yes	27-0040	Bde Maka Ska	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater-related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
				PFOS IN FISH TISSUE (listed 2008) Regulatory action underway by MPCA in lieu of TMDL (pollutant source in Saint Louis Park), target completion 2022.	Aquatic Consumption
LEGION LAKE* (located in the City of Richfield; the former Legion Lake wetland area in the City of Minneapolis is now Ferdinand Pond)	yes, Minneapolis discharges to one Legion Lake outfall south of Highway 62. Minneapolis also discharges to two MnDOT Ferdinand Pond outfalls north of Highway 62, which discharges to Legion Lake.	27-0024	Taft Lake	No impairment for Legion Lake, but Legion Lake is involved in the TMDL for Lake Nokomis. Minneapolis formerly had outfalls to Legion Lake, but lake was split by Highway 62 project, and Minneapolis outfalls now discharge to Ferdinand Pond, which is not a public water. It is a stormwater pond under the jurisdiction of MnDOT.	
LORING LAKE (commonly called Loring Pond)	yes (little direct runoff BUT takes runoff on occasion from 35W Tunnel)	27-0655	Mississippi River	CHLORIDE (listed 2014) – TMDL approved June 2016 (metro-wide).	Aquatic Life
MINNEHAHA CREEK	yes (and from upstream municipalities)	07010206-539	Mississippi River	FISHES BIOASSESSMENTS (listed 2004) – TMDL study not started, may reassess (baseflow not constant), appears to be on hold until 2020.	Aquatic Life
				CHLORIDE (listed 2008) – TMDL approved June 2016 (metro-wide).	Aquatic Life
				BACTERIA (listed 2008) – Part of <i>Minnehaha Creek E. Coli Bacteria/Lake Hiawatha Nutrients TMDL Study</i> . TMDL approved 2014.	Aquatic Recreation
				DISSOLVED OXYGEN (listed 2010) – TMDL not started, may reassess (baseflow not constant), appears to be on hold until 2020.	Aquatic Life

Table A.1 City of Minneapolis TMDL Status

Name of Surface Water (includes lakes, creeks, wetlands, and Mississippi River). Alphabetical order. *indicates waterbody is not in the City of Minneapolis	Receives City of Minneapolis Municipal Stormwater Runoff?	State ID	Next-in-line Receiving Water	Status of Impairment and TMDL Study	Designated Use that is Affected by the Impairment
				AQUATIC MACROINVERTEBRATE BIOASSESSMENTS (listed 2014) – TMDL not started.	Aquatic Life
MISSISSIPPI RIVER (the specific reach upstream of Upper Saint Anthony Falls to Crow River [was previously Coon Creek])	yes (and from upstream municipalities)	07010206-805	N/A	PCB IN FISH TISSUE (listed 1998) – Targeted TMDL completion date 2025.	Aquatic Consumption
				BACTERIA (listed 2002) – TMDL approved Nov. 2014 (metro-wide), bacteria not an issue in this river segment this round, MPCA plans to look again in 2020.	Aquatic Consumption
				EXCESS NUTRIENTS (listed 2016) – TMDL study underway with Lake Pepin.	Aquatic Life
MISSISSIPPI RIVER (the specific reach between Upper and Lower Saint Anthony Falls)	yes (and from upstream municipalities)	07010206-814	N/A	MERCURY IN FISH TISSUE (listed 1998) - Statewide TMDL approved 2008, not stormwater-related	Aquatic Consumption
				PCB IN FISH TISSUE (listed 1998) – Targeted TMDL completion date 2025.	Aquatic Consumption
				BACTERIA (not listed, but part of TMDL study) – TMDL approved Nov. 2014 (metro-wide). Bacteria not an issue in this River segment this round. MPCA plans to look again in 2020.	Aquatic Recreation
MISSISSIPPI RIVER (the specific reach downstream of Lower Saint Anthony Falls to Lock and Dam #1)	yes (and from upstream municipalities)	07010206-814	N/A	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater-related, no MS4 responsibilities	Aquatic Consumption
				BACTERIA (listed 2002) – TMDL approved Nov. 2014 (metro-wide). Bacteria not an issue in this River segment this round. MPCA plans to look again in 2020.	Aquatic Recreation
MISSISSIPPI RIVER* (impaired downstream of confluence with Minnesota River to Lake Pepin)	this impairment is downstream of the City of Minneapolis segments	07010206-814	N/A	TOTAL SUSPENDED SOLIDS (TSS) (listed 1998) (replaced turbidity with site-specific TSS standard) – South Metro Mississippi River TSS TMDL near completion. Zero reduction required for Minneapolis MS4.	Aquatic Life
LAKE PEPIN* (widening of Mississippi River) (as tributary to Lake Pepin nutrient/eutrophication biological indicators TMDL)	this impairment is downstream of the City of Minneapolis segments	25-0001	N/A	EXCESS NUTRIENTS (listed 2002) – Lake Pepin TMDL in progress.	Aquatic Recreation
MOTHER LAKE* (formerly in the City of Minneapolis, now Airport)	yes	27-0023	Lake Nokomis	No excess nutrients impairment for Mother Lake, but Mother Lake is involved in the TMDL for Lake Nokomis.	

Table A.1 City of Minneapolis TMDL Status

Name of Surface Water (includes lakes, creeks, wetlands, and Mississippi River). Alphabetical order. *indicates waterbody is not in the City of Minneapolis	Receives City of Minneapolis Municipal Stormwater Runoff?	State ID	Next-in-line Receiving Water	Status of Impairment and TMDL Study	Designated Use that is Affected by the Impairment
POWDERHORN LAKE	yes	27-0014	Landlocked (has been pumped to Mississippi River in the past)	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater-related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
				EXCESS NUTRIENTS (listed 2002) – DE-LISTED in 2012, due to improved water quality. RE-LISTED in 2018. TMDL not started.	Aquatic Recreation
				CHLORIDE (listed 2014) – TMDL approved June 2016 (metro-wide).	Aquatic Life
RICHFIELD LAKE	yes (and City of Richfield and MnDOT)	27-0021	Minnesota River	No impairments.	
RYAN CREEK (primarily conveyed by storm drain pipe, about two blocks exposed, on industrial property)	yes (and Ryan Lake)	Unknown	Shingle Creek	No impairments.	
RYAN LAKE part* (located in the City of Minneapolis and in the Cities of Robbinsdale and Brooklyn Center)	yes (and from upstream municipalities)	27-0058	Ryan Creek	EXCESS NUTRIENTS (listed 2002) – TMDL approved 2007, DE-LISTED 2014 because of restoration activities under TMDL Implementation Plan.	
SANTUARY MARSH	no	27-0065	Lake Harriet	No impairments.	
SHINGLE CREEK	yes (and from upstream municipalities)	0701206-506	Mississippi River	CHLORIDE (listed 1998). TMDL approved 2007, now in implantation stage.	Aquatic Life
				DISSOLVED OXYGEN (listed 2004) – TMDL approved 2011, now in implementation stage.	Aquatic Life
				AQUATIC MACROINVERTEBRATE BIOASSESSMENTS (listed 2006) – TMDL approved 2011, now in implementation stage.	Aquatic Life
				BACTERIA (listed 2014) – TMDL approved Nov. 2014 (metro-wide).	Aquatic Recreation
SILVER LAKE* (located in the Cities of New Brighton and Columbia Heights)	yes, from a very small corner of the City of Minneapolis (and from the Cities of New Brighton,	62-0083	Ramsey County Ditch #3, then Rice Creek	EXCESS NUTREINTS (listed 2002) – TMDL approved 2010, now in implementation stage.	Aquatic Recreation
				MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater-related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption

Table A.1 City of Minneapolis TMDL Status

Name of Surface Water (includes lakes, creeks, wetlands, and Mississippi River). Alphabetical order. *indicates waterbody is not in the City of Minneapolis	Receives City of Minneapolis Municipal Stormwater Runoff?	State ID	Next-in-line Receiving Water	Status of Impairment and TMDL Study	Designated Use that is Affected by the Impairment
	Columbia Heights, and Saint Anthony Village)			CHLORIDE (listed 2014) – TMDL approved June 2016 (metro-wide).	Aquatic Life
SPRING LAKE	yes (and from I-394)	27-0654	Connection verified to 48-inch to new BC Tunnel to Mississippi River	CHLORIDE (listed 2014) – TMDL approved June 2016 (metro-wide).	Aquatic Life
TAFT LAKE* (formerly in the City of Minneapolis, now Airport)	yes (formerly part of the City of Minneapolis, now Airport)	27-0683	Lake Nokomis	No excess nutrients impairments for Taft Lake, but Taft Lake is involved in the TMDL for Lake Nokomis.	
WEBBER POND (MPRB is requesting removal from public waters listing due to reconstruction)	no (reconstructed 2013-2015 with no stormwater outfalls to it)	27-1118	Shingle Creek	No impairments.	
WIRTH LAKE* (located in the City of Golden Valley, in Wirth Park, owned and managed by MPRB)	no apparent City of Minneapolis municipal runoff (MPRB only; parkway runoff appears to be only in the City of Golden Valley)	27-0037	Bassett Creek	MERCURY IN FISH TISSUE (listed 1998) – Statewide TMDL approved 2008, not stormwater-related, no MS4 responsibilities, target completion 2025.	Aquatic Consumption
				CHLORIDE (listed 2016) – TMDL approved June 2016 (metro-wide).	Aquatic Life
				EXCESS NUTRIENTS (listed 2002) – TMDL approved 2010 (Wirth Lake Excess Nutrients TMDL Report). DE-LISTED 2014 because of activities carried out under TMDL Implementation Plan.	

Table A.1 City of Minneapolis TMDL Status

Color Key:	Notes:
Chloride	MERCURY – Presence of mercury is primarily airborne, not stormwater runoff. Statewide Mercury TMDL is being carried out by MPCA. No MS4.
Bacteria	PFOS – Presence of perfluorooctane sulfonate (PFOS) is primarily related to industrial discharge. Regulatory action in lieu of TMDL is underway.
Excess Nutrients	PCB – Polychlorinated biphenyls.
Related to Lake Nokomis Excess Nutrients TMDL	* indicates waterbody is not in the City of Minneapolis
Total Suspended Solids	
Dissolved Oxygen, or Bioassessments for fish or aquatic macroinvertebrates	<i>Message from Minnesota’s Clean Water Council: We recognize that people are hungry for immediate results; however, managing water resources is an ongoing task, and some clean water outcomes may take several decades to achieve. Once a best management practice has been implemented, it often takes many years, or decades, before a positive environmental outcome is achieved in a highly degraded river, lake, or groundwater source.</i>
PFOS or PCB	
Mercury – no MS4 responsibilities	

[Minnesota's Impaired Waters List](#)

Table A.2 Status of Compliance with the Requirements Contained in Approved TMDL Studies

MS4 Permit TMDL Attachment Spreadsheet

Municipal Separate Storm Sewer Systems (MS4) Program

Total Maximum Daily Load (TMDL)

Doc Type: Permit Application

Instructions

This form is to be completed and submitted to the Agency for approval within nine (9) months of receiving permit coverage.

Once approved by the Agency, the submittal will become an enforceable part of the SWMP. Navigate through this form using the tabs at the bottom of the page. An example of a mock completed form is provided to you as a reference (see "Example" tabs). As required by Part III.D.1., the submittal must include the following:

- a. TMDL project name(s).
- b. Numeric WLA(s), including units.
- c. Type of WLA (i.e., categorical or individual).
- d. Pollutant(s) of concern.
- e. Applicable flow data specific to each applicable WLA.
- f. For each applicable WLA not met by the date of permit coverage, a compliance schedule is required. Compliance schedules can be developed to include multiple WLAs associated with a TMDL project and must include:
 - (a) Interim milestones, expressed as BMPs or progress toward implementation of BMPs, to be achieved during the term of this permit.
 - (b) Dates for implementation of interim milestones.
 - (c) Strategies for continued BMP implementation beyond the term of this permit.
 - (d) Target dates the applicable WLA(s) will be achieved.
- g. For each applicable WLA the Permittee is reasonably confident is being met by the date of permit coverage, the Permittee must provide the following documentation:
 - (a) Implemented BMPs used to meet each applicable WLA.
 - (b) A narrative describing the Permittee's strategy for long-term continuation of meeting each applicable WLA.

TMDL Wasteload Allocation Excel Spreadsheet PART III.D.1.a.-e.

The submittal must include: TMDL project name(s), numeric WLA(s), including units, type of WLA (i.e., categorical or individual), pollutant(s) of concern, and applicable flow data specific to each applicable WLA.

EXAMPLE

Permittee name	Preferred ID	TMDL project name*	Waterbody ID	Type of WLA*	Numeric WLA*	Unit*	Percent reduction	Flow condition*	Waterbody name	Pollutant of concern	Date approved
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	296	lbs/day	74%	High	Red Creek; Highway 129 West Crossing to Red River	TSS	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	139	lbs/day	74%	Moist	Red Creek; Highway 129 West Crossing to Red River	TSS	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	100	lbs/day	74%	Mid-Range	Red Creek; Highway 129 West Crossing to Red River	TSS	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	80	lbs/day	74%	Dry	Red Creek; Highway 129 West Crossing to Red River	TSS	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	65	lbs/day	74%	Low	Red Creek; Highway 129 West Crossing to Red River	TSS	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	289	million KJ/day	6%	High	Red Creek; Highway 129 West Crossing to Red River	Thermal Loading	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	55	million KJ/day	6%	Moist	Red Creek; Highway 129 West Crossing to Red River	Thermal Loading	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	23.6	million KJ/day	6%	Mid-Range	Red Creek; Highway 129 West Crossing to Red River	Thermal Loading	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	11.4	million KJ/day	6%	Dry	Red Creek; Highway 129 West Crossing to Red River	Thermal Loading	12/16/2009
Cleanwater Township	MS400653	Red Creek: Lack of a Coldwater Assemblage and Impaired Biota TMDL	02030005-470	Individual	6.2	million KJ/day	6%	Low	Red Creek; Highway 129 West Crossing to Red River	Thermal Loading	12/16/2009
Cleanwater Township	MS400653	Yellow Lake Phosphorus TMDL	82-0099-00	Individual	0.0082	lbs/day	50%	N/A	Yellow Lake	Phosphorus	9/3/2012
Cleanwater Township	MS400653	Blue Lake Nutrient TMDL	82-0049-00	Categorical	24.1	lbs/day	34%	N/A	Blue Lake	Phosphorus	5/8/2012
Cleanwater Township	MS400653	Big River Basin Basin Fecal Coliform Bacteria TMDL	07040004-544	Categorical	5.17	10 ¹² organisms/month		High	Big River; Little Creek to Cleanwater Dam	Fecal Coliform	6/5/2007
Cleanwater Township	MS400653	Big River Basin Basin Fecal Coliform Bacteria TMDL	07040004-544	Categorical	1.97	10 ¹² organisms/month		Moist	Big River; Little Creek to Cleanwater Dam	Fecal Coliform	6/5/2007
Cleanwater Township	MS400653	Big River Basin Basin Fecal Coliform Bacteria TMDL	07040004-544	Categorical	1.26	10 ¹² organisms/month		Mid-Range	Big River; Little Creek to Cleanwater Dam	Fecal Coliform	6/5/2007
Cleanwater Township	MS400653	Big River Basin Basin Fecal Coliform Bacteria TMDL	07040004-544	Categorical	0.54	10 ¹² organisms/month		Dry	Big River; Little Creek to Cleanwater Dam	Fecal Coliform	6/5/2007
Cleanwater Township	MS400653	Big River Basin Basin Fecal Coliform Bacteria TMDL	07040004-544	Categorical	0.18	10 ¹² organisms/month		Low	Big River; Little Creek to Cleanwater Dam	Fecal Coliform	6/5/2007
Cleanwater Township	MS400653	Small Lake Excess Nutrient TMDL	65-0086-00	Categorical	0.55	lbs/day	17%	N/A	Small Lake	Phosphorus	3/19/2010
Cleanwater Township	MS400653	Eagle Creek Bacteria TMDL	07010205-319	Categorical	539.43	10 ⁹ organisms/day	0%	High	Eagle Creek: Eagle Lake to Big Creek	E. Coli	2/14/2012
Cleanwater Township	MS400653	Eagle Creek Bacteria TMDL	07010205-319	Categorical	203.99	10 ⁹ organisms/day	0%	Moist	Eagle Creek: Eagle Lake to Big Creek	E. Coli	2/14/2012
Cleanwater Township	MS400653	Eagle Creek Bacteria TMDL	07010205-319	Categorical	101.84	10 ⁹ organisms/day	0%	Mid-Range	Eagle Creek: Eagle Lake to Big Creek	E. Coli	2/14/2012
Cleanwater Township	MS400653	Eagle Creek Bacteria TMDL	07010205-319	Categorical	61.01	10 ⁹ organisms/day	0%	Dry	Eagle Creek: Eagle Lake to Big Creek	E. Coli	2/14/2012
Cleanwater Township	MS400653	Eagle Creek Bacteria TMDL	07010205-319	Categorical	26.95	10 ⁹ organisms/day	0%	Low	Eagle Creek: Eagle Lake to Big Creek	E. Coli	2/14/2012

Compliance Schedule PART III.D.1.f.-g.

EXAMPLE

Is your MS4 currently meeting its WLA for any approved TMDLs?

- NO (Complete Table 1, Strategies for continued BMP implementation beyond the term of this permit, and Table 2 below)
- YES (Provide the following information below)

Go to:
[Table 1](#)

Go to:
[Strategies...](#)

Go to:
[Table 2](#)

If YES, indicate the WLAs (may be grouped by TMDL Project) you believe are reasonably being met. For each WLA, list the implemented BMPs and provide a narrative strategy for the long-term continuation of meeting each WLA. PART II.D.6.g.(1)-(2)

- Small Lake Excess Nutrient TMDL: 0.55 lbs/day Phosphorus
A large regional treatment pond (POND-1017) underwent renovation to include iron enhanced sand filtration in the bench surrounding the pond. A series of rain gardens were installed in the neighborhood directly adjacent to the lake (RGDN-0011). These new BMPs, in addition to those already on the ground, provide more than enough treatment to achieve the necessary loading rate from our MS4 to satisfy the WLA. We will continue to maintain the existing BMPs to ensure they remain sufficient to address any loading generated from our system.

- Eagle Creek Bacteria TMDL: 539.43, 203.99, 101.84, 61.01, and 29.92 10⁴ E. coli
No reduction (0% reduction) in loading from MS4s was called for in this TMDL. Therefore, we will continue to maintain the existing BMPs to ensure they remain sufficient to address any loading generated from our system.

EXAMPLE

Table 1
Fill in the following table with your Interim Milestones, BMP IDs, and Implementation Dates. Replace "TMDL Project Name & Pollutant" Columns with each TMDL Project Name and the corresponding pollutant. Then put an "X" in the boxes for the TMDL that corresponds with each BMP. PART II.D.6.f.(1)-(2)

NOTE:
It is recommended to assign each Interim Milestone (BMP) a BMP ID. You will be required to report on the status of each Interim Milestone and include a BMP ID for all structural BMPs as part of the MS4 Annual Report (see Part III.E.), so including those ID numbers at the time of application may be useful in tracking implementation efforts. If a pond that will be included in the pond inventory (Part III.C.2.) is to be applied toward a WLA, use the same ID for both the pond inventory and TMDL tracking. Non-structural BMPs are not required to have an ID, but it may be useful to assign it an ID for internal MS4 recordkeeping.

MPCA recommends the Implementation Dates align with the submittal of MS4 Annual Reports. Dates selected may not reflect the actual date a BMP is implemented, but shall indicate a BMP will be implemented on that date or before for that reporting year.

For this example, June 20th was selected as the implementation date for all interim milestones to correspond with Annual Reports, which are due June 30th.

Interim Milestone (Best Management Practice)	BMP ID	Implementation Date	Red Creek: Lack of Coldwater Assemblage and Impaired Biota TMDL TSS	Red Creek: Lack of Coldwater Assemblage and Impaired Biota TMDL - Thermal Loading	Blue Lake Nutrient TMDL - Phosphorus	Yellow Lake Phosphorus TMDL - Phosphorus	Big River Basin Fecal Coliform Bacteria TMDL - Fecal Coliform
Install 300 linear feet of vegetated buffer along creek on golf course	BUFF-0102	6/20/2014	X	X			X
Review Illicit Discharge Detection and Elimination Ordinance and update enforcement procedures; train field staff to recognize and report illicit discharges	NSTR-0009	6/20/2014	X		X	X	X
Retrofit Grey's pond to include pretreatment bay	POND-1003	6/20/2015	X	X			
Enhance street sweeping program in high traffic corridor	NSTR-0012	6/20/2015	X		X	X	X
Recruit landowners to participate in neighborhood rain garden program in Blue Lake watershed	RGDN-0012	6/20/2015			X		
Public education campaign on illegal dumping, pet waste disposal, and reporting of illicit discharges	NSTR-0010	6/20/2015	X	X	X	X	X
Main Street reconstruction from 3rd Avenue to 4th Avenue; includes sidewalk and boulevard tree boxes and center median infiltration basin; designed to capture/treat 1.25" runoff from impervious area	STRT-2161	6/20/2015	X	X			X
Retrofit four existing catch basins to include sediment traps	CBRF-0007	6/20/2016			X		
Wetland restoration	WTLD-1211	6/20/2016				X	
Install at least six, and up to ten residential rain gardens in Blue Lake watershed neighborhood	RGDN-0012	6/20/2016			X		
Install additional pet waste disposal centers in four locations along lake trail	NSTR-0013	6/20/2016	X				X
Partner project with watershed district - Stormwater reuse for irrigation of ball fields in Central Park	WDXX-0001	6/20/2017	X	X			X
Revise zoning ordinance and code with consideration of increasing minimum set-back distances from shorelines for new development and redevelopment	CODE-1023	6/20/2017	X	X	X	X	X
Retrofit four existing catch basins to include sediment traps	CBRF-0008	6/20/2017				X	
Main Street reconstruction from 4th Avenue to 6th Avenue; includes sidewalk and boulevard tree boxes and large rain garden at intersection of 5th and Main; designed to capture/treat a minimum of 1.25" runoff from impervious area	STRT-2167	6/20/2018	X	X			X
Reroute roof drains from public works facility to create disconnected impervious from rooftop to parking lot	PWKS-0011	6/20/2018	X	X		X	
Maintenance workshop for homeowners with rain gardens in Blue Lake watershed	RGDN-0012	6/20/2018			X		

EXAMPLE

Strategies for continued BMP implementation beyond the term of this permit. PART II.D.6.f.(3)

The City intends to explore opportunities to retrofit existing BMPs in the watersheds of each TMDL to maximize their pollutant removal capacity. We will also implement a 1.1 inch volume control standard from all newly created impervious surfaces with any new development or redevelopment projects. All city construction projects will consider Green Infrastructure practices

when feasible. Upon reevaluation of the TMDL waters on a ten-year monitoring cycle conducted by the state, the City will consider any necessary modifications to this approach.

EXAMPLE

Table 2

Target dates the applicable WLA(s) will be achieved. PART II.D.6.f.(4)

TMDL Project Name	Target Date to Achieve WLA
Red Creek: Lack of Coldwater Assemblage and Impaired Bioata	2031
Blue Lake Nutrient TMDL	2020
Yellow Lake Phosphorus TMDL	2023
Big River Basin Fecal Coliform Bacteria TMDL	2031

TMDL Wasteload Allocation Excel Spreadsheet PART III.D.1.a.-e.

The submittal must include: TMDL project name(s), numeric WLA(s), including units, type of WLA (i.e., categorical or individual), pollutant(s) of concern, and applicable flow data specific to each applicable WLA.

Permittee name	Preferred ID	TMDL project name*	Waterbody ID
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek and Bass Creek Biota and Dissolved Oxygen TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek and Bass Creek Biota and Dissolved Oxygen TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Minnehaha Creek Watershed District Lakes TMDL	27-0019
Minneapolis Municipal Storm Water	MN0061018	Wirth Lake: Excess Nutrients TMDL	27-0037
Minneapolis Municipal Storm Water	MN0061018	Silver Lake TMDL	62-0083-00
Minneapolis Municipal Storm Water	MN0061018	Crystal Lake Nutrient TMDL	27-0034
Minneapolis Municipal Storm Water	MN0061018	Twin and Ryan Lakes Nutrient TMDL	27-0058-00
Minneapolis Municipal Storm Water	MN0061018	Twin and Ryan Lakes Nutrient TMDL	27-0058-00
Minneapolis Municipal Storm Water	MN0061018	Twin and Ryan Lakes Nutrient TMDL	27-0058-00
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek Chloride TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek Chloride TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek Chloride TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek Chloride TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek Chloride TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Shingle Creek Chloride TMDL	07010206-506
Minneapolis Municipal Storm Water	MN0061018	Minnehaha Creek Lake Hiawatha TMDL	27-0018-00
Minneapolis Municipal Storm Water	MN0061018	Minnehaha Creek Lake Hiawatha TMDL	07010206-539
Minneapolis Municipal Storm Water	MN0061018	Minnehaha Creek Lake Hiawatha TMDL	07010206-539
Minneapolis Municipal Storm Water	MN0061018	Minnehaha Creek Lake Hiawatha TMDL	07010206-539
Minneapolis Municipal Storm Water	MN0061018	Minnehaha Creek Lake Hiawatha TMDL	07010206-539

Permittee name	Preferred ID	TMDL project name*	Waterbody ID
Minneapolis Municipal Storm Water	MN0061018	Minnehaha Creek Lake Hiawatha TMDL	07010206-539
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	27-0014-00
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	62-0083-00
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	07010206-539
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	27-0654-00
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	27-0022-00
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	07010206-538
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	27-0037-00
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	27-0038-00
Minneapolis Municipal Storm Water	MN0061018	TCMA Chloride TMDL Study	27-0655-02
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	07010206-538
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	07010206-538
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	07010206-538
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	07010206-538
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	07010206-538
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-584
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-584
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-584
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-584
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-584
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-584

Permittee name	Preferred ID	TMDL project name*	Waterbody ID
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-506
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-506
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-506
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-506
Minneapolis Municipal Storm Water	MN0061018	Upper Mississippi River: Bacteria	070102 06-506
Minneapolis Municipal Storm Water	MN0061018	South Metro Mississippi River TMDL (Metro)	N/A

Type of WLA*	Numeric WLA*	Unit*	Percent reduction	Flow condition*	Waterbody name	Pollutant of concern*	Date approved
Categorical	11.8	kg/day		N/A	Shingle Creek; Lower Shingle Creek Watershed	Nitrogenous biochemical oxygen demand	11/4/2011
Categorical	35.8	kg/day		N/A	Shingle Creek; Upper Shingle Creek Watershed	Nitrogenous biochemical oxygen demand	11/4/2011
Individual	0.851	lbs/day	38%	N/A	Lake Nokomis	Phosphorus	4/25/2011
Categorical	0.104	lbs/day		N/A	Wirth Lake	Phosphorus	10/25/2010
Categorical	0.55	lbs/day	17%	N/A	Silver Lake	Phosphorus	7/29/2010
Categorical	0.22	kg/day		N/A	Crystal Lake	Phosphorus	3/25/2009
Categorical	0.5	kg/day Average Precipitation Year		N/A	Ryan Lake	Phosphorus	11/9/2007
Categorical	0.8	kg/day Wet Precipitation Year		N/A	Ryan Lake	Phosphorus	11/9/2007
Categorical	0.4	kg/day Dry Precipitation Year		N/A	Ryan Lake	Phosphorus	11/9/2007
Categorical			60%	Winter Low Flow (60% to 100%)	Shingle Creek	Chloride	2/14/2007
Categorical			67%	Winter Runoff (60% to 0%)	Shingle Creek	Chloride	2/14/2007
Categorical	23.2	tons/day		High	Shingle Creek	Chloride	2/14/2007
Categorical	7.2	tons/day		Moist	Shingle Creek	Chloride	2/14/2007
Categorical	2.9	tons/day		Mid-Range	Shingle Creek	Chloride	2/14/2007
Categorical	1.8	tons/day		Dry	Shingle Creek	Chloride	2/14/2007
Categorical	0.3	tons/day		Low	Shingle Creek	Chloride	2/14/2007
Individual	7.252	lbs/day	31%	N/A	Lake Hiawatha	Phosphorus	2/24/2014
Categorical	7.94	billions of organisms/day	N/A	Low	Minnehaha Creek; Lake Minnetonka to Mississippi River	Escherichia coli	2/24/2014
Categorical	27.74	billions of organisms/day	N/A	Dry	Minnehaha Creek; Lake Minnetonka to Mississippi River	Escherichia coli	2/24/2014
Categorical	103.9	billions of organisms/day	N/A	Mid-Range	Minnehaha Creek; Lake Minnetonka to Mississippi River	Escherichia coli	2/24/2014
Categorical	285.1	billions of organisms/day	N/A	High	Minnehaha Creek; Lake Minnetonka to Mississippi River	Escherichia coli	2/24/2014

Type of WLA*	Numeric WLA*	Unit*	Percent reduction	Flow condition*	Waterbody name	Pollutant of concern*	Date approved
Categorical	588.2	billions of organisms/day	N/A	Very High	Minnehaha Creek; Lake Minnetonka to Mississippi River	Escherichia coli	2/24/2014
Categorical	491	lbs/day	N/A	N/A	Powderhorn	Chloride	6/9/2016
Categorical	831	lbs/day	N/A	N/A	Silver	Chloride	6/9/2016
Categorical	189928	lbs/day	N/A	N/A	Minnehaha Creek	Chloride	6/9/2016
Categorical	35	lbs/day	N/A	N/A	Spring	Chloride	6/9/2016
Categorical	1092	lbs/day	N/A	N/A	Diamond	Chloride	6/9/2016
Categorical	43993	lbs/day	N/A	N/A	Bassett Creek	Chloride	6/9/2016
Categorical	2460	lbs/day	N/A	N/A	Wirth	Chloride	6/9/2016
Categorical	767	lbs/day	N/A	N/A	Brownie	Chloride	6/9/2016
Categorical	22	lbs/day	N/A	N/A	Loring (South Bay)	Chloride	6/9/2016
Categorical	138	billions of organisms/day	79%	High	Bassett Creek Medicine Lake to Mississippi River	E. coli	11/20/2014
Categorical	54.1	billions of organisms/day	0%	Moist	Bassett Creek Medicine Lake to Mississippi River	E. coli	11/20/2014
Categorical	19.9	billions of organisms/day	0%	Mid-Range	Bassett Creek Medicine Lake to Mississippi River	E. coli	11/20/2014
Categorical	10.6	billions of organisms/day	30%	Dry	Bassett Creek Medicine Lake to Mississippi River	E. coli	11/20/2014
Categorical	3.56	billions of organisms/day	37%	Low	Bassett Creek Medicine Lake to Mississippi River	E. coli	11/20/2014
Categorical	396	billions of organisms/day	0%	High	Rice Creek - Long Lake to Locke Lake	E. coli	11/20/2014
Categorical	96.8	billions of organisms/day	4.8%	Moist	Rice Creek - Long Lake to Locke Lake	E. coli	11/20/2014
Categorical	23.6	billions of organisms/day	44%	Mid-Range	Rice Creek - Long Lake to Locke Lake	E. coli	11/20/2014
Categorical	4.93	billions of organisms/day	Insufficient Data	Dry	Rice Creek - Long Lake to Locke Lake	E. coli	11/20/2014
Categorical	1.75	billions of organisms/day	Insufficient Data	Low	Rice Creek - Long Lake to Locke Lake	E. coli	11/20/2014

Type of WLA*	Numeric WLA*	Unit*	Percent reduction	Flow condition*	Waterbody name	Pollutant of concern*	Date approved
Categorical	202	billions of organisms/day	61%	High	Shingle Creek Eagle Creek/Bass Creek to Mississippi River	E. coli	11/20/2014
Categorical	68.4	billions of organisms/day	43%	Moist	Shingle Creek Eagle Creek/Bass Creek to Mississippi River	E. coli	11/20/2014
Categorical	22.9	billions of organisms/day	69%	Mid-Range	Shingle Creek Eagle Creek/Bass Creek to Mississippi River	E. coli	11/20/2014
Categorical	8.19	billions of organisms/day	13%	Dry	Shingle Creek Eagle Creek/Bass Creek to Mississippi River	E. coli	11/20/2014
Categorical	1.33	billions of organisms/day	68%	Low	Shingle Creek Eagle Creek/Bass Creek to Mississippi River	E. coli	11/20/2014
Categorical	154	lbs/acre	0%	N/A	Mississippi River	TSS	4/26/2016

Compliance Schedule PART III.D.1.f.-g.

Is your MS4 currently meeting its WLA for any approved TMDLs?

- NO (Complete Table 1, Strategies for continued BMP implementation beyond the term of this permit, and Table 2 below)
 YES (Provide the following information below)

Go to:
[Table 1](#)

Go to:
[Strategies..](#)

Go to:
[Table 2](#)

If YES, indicate the WLAs (may be grouped by TMDL Project) you believe are reasonably being met. For each WLA, list the implemented BMPs and provide a narrative strategy for the long-term continuation of meeting each WLA. PART II.D.6.g.(1)-(2)

South Metro Mississippi River TMDL (Metro) - There is a zero percent (0%) reduction required from the City for this TMDL. However most BMPs that the City implements for water quality improvement will positively impact this impairment.

Wirth Lake - In 2012, the BCWMC (in cooperation with the MPRB and the City of Golden Valley and with a grant from the Clean Water Legacy Fund) completed a project which modified the Wirth Lake outlet to prevent backflow from Bassett Creek into Wirth Lake during periods of high water in the creek. This project, along with other improvements in the watershed reduced total phosphorus levels in the lake considerably. The lake was slated to be removed from the Impaired Waters List when the 2014 state-wide list was approved by the EPA.

Table 1

Fill in the following table with your Interim Milestones, BMP IDs, and Implementation Dates. Replace "TMDL Project Name & Pollutant" Columns with each TMDL Project Name and the corresponding pollutant. Then put an "X" in the boxes for the TMDL that corresponds with each BMP. PART II.D.6.f.(1)-(2)

NOTE:
 It is recommended to assign each Interim Milestone (BMP) a BMP ID. You will be required to report on the status of each Interim Milestone and include a BMP ID for all structural BMPs as part of the MS4 Annual Report (see Part III.E.), so including those ID numbers at the time of application may be useful in tracking implementation efforts. If a pond that will be included in the pond inventory (Part III.C.2.) is to be applied toward a WLA, use the same ID for both the pond inventory and TMDL tracking. Non-structural BMPs are not required to have an ID, but it may be useful to assign it an ID for internal MS4 recordkeeping.

MPCA recommends the Implementation Dates align with the submittal of MS4 Annual Reports. Dates selected may not reflect the actual date a BMP is implemented, but shall indicate a BMP will be implemented on that date or before for that reporting year.

Interim Milestone (Best Management Practice)	BMP ID	Implementation Date	Shingle Creek and Bass Creek Biota and Dissolved Oxygen TMDL	Minnehaha Creek Watershed District Lakes TMDL	Silver Lake TMDL	Crystal Lake Nutrient TMDL	Twin and Ryan Lakes Nutrient TMDL	Shingle Creek Chloride TMDL	Minnehaha Creek Lake Hiawatha TMDL	TCMA Chloride TMDL Study	Upper Mississippi River: Bacteria
Subwatershed Assessment completed in priority subwatersheds to identify and prioritize opportunities for small-scale BMP installation completed in partnership with the SCWMC.	SCWMC-ASSM-001	6/15/2019	x			x	x				
Implement recommendations from Subwatershed Assessment in partnership with the MPRB and SCWMC.	SCWMC-ASSM-002	6/15/2020	x			x	x				
Targeted education campaign through WMWA: Target policy makers and staff, including city councils, planning and environmental commissions, and city management and expand Watershed PREP program targeting 4th grade classrooms with WQ education	SCWMC-ED-001	6/15/2019	x	x	x	x	x	x	x	x	
Evaluate options for refining street sweeping practices to maximize pollutant removal by subsidizing and partnering in research efforts, including providing test sites, measurements of sweeping practices (distance, time, material collected).	ASSM-003	6/15/2019		x	x	x	x		x		
Implement BMP retrofits as opportunities with street reconstruction projects arise; the city's 5 year CIP is listed below for possible project locations. BMPs will be installed annually but will be targeted towards meeting multiple goals such as flood reduction, maximum pollutant removal to impaired water bodies, ideal soil conditions, and equity.				x	x	x	x		x		
28th Ave S Bridge over Minnehaha Creek	BR -28th	6/15/2020							x		
Bloomington Ave S Bridge Over Minnehaha	BR - Bloomington Ave	6/15/2022							x		
BR-510 Stevens & E Minnehaha Parkway Bridge Repair and Rehabilitation	BR - 510	6/15/2020							x		
Nicollet Ave Over Minnehaha Creek - Bridge Project	BR - Nicollet	6/15/2021							x		
34th Ave S, 54th St E to Minnehaha Pkwy Road Reconstruction - Nokomis	ROAD - NKMS-001	6/15/2020		x							
East Warrington & Wenonah Areas Neighborhood Road Reconstruction - Hiawatha	ROAD-HWTH - 004	6/15/2024							x		
Grand Ave S from Lake St W to 48th St W - Hiawatha - Road Reconstruction	ROAD-HWTH - 002	6/15/2022							x		
Bryant Ave S from Lake St E to 50th St W - Road Reconstruction	ROAD-NKMS-003	6/15/2024		x							
Kings Highway, 42nd to 46th St W - Hiawatha - Road Reconstruction	ROAD-HWTH-003	6/15/2018							x		

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Municipal Activities				
Green Initiatives Website	City of Minneapolis	The Green Initiatives page details best practices that citizens can easily participate in to positively impact water resources, such as installing green roofs, planting rain gardens and trees, setting up rain barrels, and installing pervious pavements.	Minneapolis Residents and Website Visitors	No
Minneapolis Environmental Management	City of Minneapolis	The Minneapolis Environmental Management Department provides education and water quality information to the public.	Residents	No
Storm Drain Stenciling	City of Minneapolis	Volunteer program which encourages residents to stencil educational messages on City storm drain inlets, distribute educational materials, and pick up trash near storm drains.	Residents	No
Adopt-a-Drain	City of Minneapolis	Program run by the City in which residents sign up to clean and maintain storm drain inlets.	Residents	No
Flood Information	City of Minneapolis	Webpage which contains flood risk maps, flood protection contacts, and flood information for residents.	Website Users	No
Metro Blooms	City of Minneapolis	The City sponsors Metro Blooms rain garden workshops to inform, coach, and offer consultation to City residents to keep rainwater onsite and prevent polluted water runoff by installing properly designed rain gardens and implementing stormwater friendly lawn care practices.	Residents	No
Aquatic Invasive Species (AIS) Inspection Program	Minneapolis Parks and Recreation Board (MPRB)	The MPRB staffs public boat launches at Lakes Bde Maka Ska, Harriet, and Nokomis from May 1 to December 1. AIS inspectors physically inspect boats and boat trailers for evidence of invasive species, survey boat owners, and educate boat owners about aquatic invasive species.	Boat Owners at Public Accesses	No
Park Building Graphics	Minneapolis Parks and Recreation Board (MPRB)	The MPRB has created stickers, posters, and other graphics to remind staff and visitors of the importance of limiting chloride use.	MPRB Maintenance Staff and Visitors	No
Canines for Clean Water Program	Minneapolis Parks and Recreation Board (MPRB)	MPRB informational campaign aimed at preventing dog waste from entering waterbodies by encouraging dog owners to pick up after their pets.	Minneapolis Dog Owners	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Teen Teamworks	Minneapolis Parks and Recreation Board (MPRB)	MPRB program which hires and trains 250 to 300 youths each summer to assist in park maintenance. The program includes the education of the youths in stormwater runoff, water quality, and best practices to keep waterbodies clean and healthy. Participants in the program are also involved in local education outreach activities.	Minneapolis Youths	No
MPRB Website	Minneapolis Parks and Recreation Board (MPRB)	The MPRB website provides information on aquatic invasive species and the health of the area's lakes, rivers and creeks, wetlands, and stormwater.	Website Users	No
Minneapolis Earth Day Clean Up	Minneapolis Parks and Recreation Board (MPRB)	MPRB partners with the City of Minneapolis to organize an Earth Day Cleanup, which encourages residents to become active in environmental volunteer activities.	Residents	No
State Agency Activities				
Fertilizer Webpage	Minnesota Department of Agriculture (MDA)	Webpage which provides information on the application, storage, and registration of fertilizers to help farmers both maximize yields and protect water resources.	Farmers and Fertilizer Users	No
Pesticide Best Management Practices Webpage	Minnesota Department of Agriculture (MDA)	Webpage containing best management practices for pesticide handling, disposal, and mixing, to help farmers use pesticides effectively and in a way that is not damaging to water resources.	Farmers and Pesticide Users	No
Contaminants of Emerging Concern (CEC) Initiative	Minnesota Department of Health (MDH)	Through CEC, the Minnesota Department of Health collaborates with private parties and the public to identify contaminants of concern, research them, and educate the public about pollution prevention and exposure reduction techniques.	Minnesota Residents	No
Waterline Newsletter	Minnesota Department of Health (MDH)	Waterline is a newsletter for City officials, water operators, and the public. It has information about training sessions and features stories about water resources.	City officials, Water Operators, and the Public	No
Clean In Clean Out Program	Minnesota Department of Natural Resources (MNDNR)	The MNDNR provides videos, signs at boat landings, billboards, and boat inspectors which educate the public about aquatic invasive species.	Residents	No
Eco Experience Exhibit at the Minnesota State Fair	Minnesota Pollution Control Agency (MPCA)	Eco Experience is a hands-on exhibit with activities, demonstrations, and resources that teach the audience about topics such as water quality, resilient yards, climate change, and storm drains.	State Fair Attendees	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Resource Center Website	Minnesota Pollution Control Agency (MPCA)	The MPCA Resource Center contains fact sheets and materials available to the public.	Website Users	No
Regional Activities				
Environmental Literature	Hennepin County	Environmental literature focused on water quality/stormwater distributed at community events and provided to organizations free-of-charge.	Residents	No
Environmental Education Toolkit and Programs	Hennepin County	Environmental education toolkits, funding, project supplies, and training provided to organizations in specific networks such as Early Childhood Family Education and community groups.	ECFE Groups, Neighborhood, and Community Groups	No
Hennepin County Website	Hennepin County	Water quality information on website.	General Public	No
Wetland Health Evaluation Program	Hennepin County	Partner with MPRB to use citizen volunteers to monitor wetlands throughout Minneapolis for invertebrate and vegetation communities and to evaluate each wetland's health. Each year an annual report is distributed county-wide providing site descriptions and assessments.	Citizens	No
River Watch	Hennepin County	Local high school students sample a local stream such as Minnehaha Creek or Shingle Creek to gather information on macroinvertebrates and habitat. The data they collect is shared with the county and watersheds.	Students of Minneapolis High Schools	No
Metro Blooms	Hennepin County	Hennepin County Environmental Services provided grant funds to Metro Blooms for cost-share funds for residents who are implementing rain gardens on their property.	Neighborhood Groups	No
River Watch Program - Bassett Creek	Hennepin County	Uses volunteers to conduct biological monitoring as a means of monitoring water quality.	Citizens	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Water Conservation Toolbox	Metropolitan Council	A collection of resources to assist in water conservation in homes, businesses, and distribution systems. Available resources include both educational material and calculation tools.	Residents, Business Owners, Communities, Water Suppliers, and Learners	No
Water Conservation Webpage	Metropolitan Council	Webpage containing educational graphics about water issues, community water sources, water conservation ideas, water distribution systems, water use, and more.	Website Users	No
Publications and Materials	Minnehaha Creek Watershed District (MCWD)	The MCWD develops and distributes educational materials related to BMP maintenance, Blue Thumb programming, aquatic invasive species, low maintenance lawn care, pollution prevention, road salt management, Lake Minnetonka historical maps, and Minnehaha Creek canoe maps. Additional materials include the Putt-Putt for Clean Water, Water Quality Interactive Kiosk, Enviroscope, and the MCWD 40th Anniversary Traveling Display. Curriculum and educational CD's include the Digital Watershed Atlas and Waters to the Sea. Publications and materials are frequently distributed at local events within Minneapolis, including MPRB Earth Day watershed cleanup, the MCDW's creek cleanup, neighborhood group/lake association events, and are on display at public buildings.	Private Landowners, Members of Lake Associations and Community Groups, Local Businesses, Municipal Officials, Technical Staff, Consultants, Other Stakeholders, and Students	No
MCWD Workshops	Minnehaha Creek Watershed District (MCWD)	Numerous workshops are held throughout the District on topics including rainwater gardens, resilient yards, shoreline restoration, community cleanups, zebra mussels/aquatic invasive species, salt impact, and lake management planning. Workshops are occasionally held within Minneapolis.	Private Homeowners, Local Businesses, Developers, and Contractors	No
MCWD Events	Minnehaha Creek Watershed District (MCWD)	The MCWD hosts a yearly Minnehaha Creek cleanup event to encourage citizen engagement in cleaning up the Minnehaha Creek corridor. The district also co-hosts the Clean Water Summit, an annual conference designed to provide the latest research and development in Green Infrastructure. The events are attended by 600+ and 300+ attendees, respectively. The Minnehaha Creek cleanup is held near Lake Hiawatha.	General Public	No
NEMO/Stormwater U Training	Minnehaha Creek Watershed District (MCWD)	NEMO (Nonpoint Education for Municipal Officials) is an educational program for local land use decision-makers focusing on the relationship between land use and natural resource quality. The program emphasizes land use planning that allows economic growth while conserving a community's highest quality natural resources. NEMO programming is implemented within district communities, as	Local Land Use Decision Makers, Municipal Staff, Local Contractors and Businesses	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
		well as at events that target regional audiences. Additional Stormwater U training workshops are provided for municipal staff as well as local contractors and businesses pertaining to BMP design, selection, maintenance and inspection, and salt management. Minneapolis public officials and staff are invited to attend NEMO and Stormwater U training workshops and events.		
Citizen Advisory Committee	Minnehaha Creek Watershed District (MCWD)	MCWD provides citizens the opportunity to be directly involved in protecting and preserving Minnehaha Creek, Lake Minnetonka, the Minneapolis Chain of Lakes, and other valued resources within the MCWD.	Citizens	No
Cynthia Krieg Watershed Stewardship Fund	Minnehaha Creek Watershed District (MCWD)	This fund encourages and supports community service initiatives to protect water quality and promote public awareness of nonpoint source pollution abatement. The MCWD partners with local community groups, schools, and government agencies to engage citizens in protecting and providing clean water resources. Previously funded projects in Minneapolis include community cleanups, habitat restoration, stormwater runoff treatment, and non-point source pollution education.	Community Residents	No
Splash e-Newsletter	Minnehaha Creek Watershed District (MCWD)	MCWD's e-newsletter. Periodic messages (2-6 per month) with news and events from the District.	General Public	No
Watershed Association Initiative	Minnehaha Creek Watershed District (MCWD)	The MCWD provides monetary support and technical expertise to citizen-led management groups with the goal of protecting and preserving our local water resources. Minneapolis neighborhoods have received direct assistance with funding and technical guidance through the Watershed Association Initiative.	Representatives from Citizen-Led Management Groups and Local Neighborhoods	No
MCWD Website	Minnehaha Creek Watershed District (MCWD)	The MCWD website provides up-to-date educational information pertaining to stormwater management, pollution prevention, best management practices, funding opportunities, lake/stream water quality data, and local and regional events.	Website Users	No
K-12 Education	Minnehaha Creek Watershed District (MCWD)	The MCWD provides support and assistance for the Children's Water Festival and gives presentations and demonstrations to local classes on water quality, non-point source pollution, and natural resource protection.	K-12 Students	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Passive Events	Minnehaha Creek Watershed District (MCWD)	The MCWD staff attends numerous local community events, ranging from eco fairs, Earth Day events, native landscaping fairs, community cleanups, Blue Thumb and Watershed Partners State Fair booths, and other environmental education events.	Community Residents	No
Concrete Washout and Dewatering Video	Minnesota Erosion Control Association (MECA)	Video providing tips and instructions for the proper handling and wasting of excess concrete.	Residents, Contractors, Engineers	No
Perimeter/ Sediment Control Video	Minnesota Erosion Control Association (MECA)	Video providing tips and instructions for keeping sediment from leaving a construction site.	Residents, Contractors, Engineers	No
Workshops	Minnesota Erosion Control Association (MECA)	MECA hosts educational workshops on topics such as MS4 compliance and erosion control.	Residents	No
Nature of Water / Dej Tus Kab Ke DVD	Mississippi Watershed Management Organization (MWMO)	The Nature of Water DVD, developed in conjunction with Minneapolis Public Works, was created to increase environmental knowledge and water stewardship in Southeast Asian communities in Minneapolis. The video includes a 12-minute main feature about water and pollution prevention and several bonus features about rain gardens, household hazardous waste, watersheds, and more. This has also been played on Minneapolis and St. Paul cable TV.	Southeast Asian Communities in Minneapolis as well as the English-Speaking General Public	Hmong, Vietnamese, Lao, Khmer, English
Newsletter	Mississippi Watershed Management Organization (MWMO)	The MWMO Newsletter provides water stewardship and pollution prevention information to a wide audience. Names are collected at tabling events and added to the e-distribution list. The newsletter is also available online.	General Public	No
Mississippi River Green Team	Mississippi Watershed Management Organization (MWMO)	Carried out in partnership with the MPRB, this is a group of youth age 14-17 from diverse ethnic backgrounds in north and northeast Minneapolis that work on environmental stewardship projects. By reaching these youth, environmental awareness is spreading through the various ethnic communities.	Ethnic Communities	Various

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Greening Teen Teamworks	Mississippi Watershed Management Organization (MWMO)	Work with MPRB's Teen Teamworks Program to increase environmental awareness of the teen residents.	200 Teen Residents Participate Each Year	No
Metro Area Children's Water Festival	Mississippi Watershed Management Organization (MWMO)	All day field day held at the state fairgrounds. Each class visits 5 learning stations and a presentation about water by the Science Museum of Minnesota.	5 th Grade Students (Classes Selected by Lottery)	No
Training Video – THERE ARE 2 VIDEOS	Mississippi Watershed Management Organization (MWMO)	Winter Maintenance for Small Spaces (created by MWMO, University of MN, and MPCA).	Landowners, Property Managers; Municipal, County, State Operations Staff, Private Landscapers, Business Owners, Members of Congregations, Residents	No
Project WET	Mississippi Watershed Management Organization (MWMO)	Environmental workshops held several times per year to inform teachers, leaders, and instructors of youth (K-12).	Educators and Youth Leaders	Hmong
Citizens Advisory Committee	Mississippi Watershed Management Organization (MWMO)	Citizen advisors review the MWMO's annual budget, Stewardship Fund Planning and Action grant proposals, and major planning processes of the MWMO. New members receive education about their role and the MWMO's resource, programs, and governance, and are invited to participate in MWMO events.	Community Members	No
Stormwater Park and Learning Center	Mississippi Watershed Management Organization (MWMO)	The interpretive center features interactive and informative exhibits, including rotating art exhibits by local artists whose work reflects a connection with and stewardship of the Mississippi River and other waterways. Programming offered at the interpretive center includes: Stormwater 101, Introduction to Urban Stormwater Management, Tours, Share the River Community Event, Art Events, Professional Development for Landcare Professionals, Paddleshare Station.	Public	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Tabling at Community Events	Mississippi Watershed Management Organization (MWMO)	Provide table displays of information related to water environmental stewardship at various community events such as the Children's Water Festival and the Hmong Resource Fair.	Residents, Families, Members of Congregations and Service Groups, Students	No
Neighborhood Cleanups	Mississippi Watershed Management Organization (MWMO)	Program to coordinate with neighborhoods to facilitate volunteer cleanups to prevent trash and other pollutants out of the Mississippi River and other waterways.	Public	No
Macro-Invertebrate Sampling Workshops	Mississippi Watershed Management Organization (MWMO)	Collect and identify macroinvertebrates to determine the health of a local waterbody.	Youth	No
Training Workshops	Mississippi Watershed Management Organization (MWMO)	Summer Turfgrass & Winter Maintenance with Reduced Environmental Impacts.	Landowners, Property Managers; Municipal, County, State Operations Staff, Private Landscapers, Master Gardeners	No
Water Quality Newsletter Articles	West Metro Water Alliance (WMWA)	Water quality-related articles developed by WMWA are provided for use by their partners in community newsletters, newspapers, and websites. The articles include: Adopt a Storm Drain: Tips on protecting nearby bodies of water by keeping storm drains clear. Earth Friendly Lawn-care Tips: Tips on maintaining a healthy lawn while minimizing your impact on the environment. Five Easy Things: Five easy steps you can take to improve the water quality of lakes, rivers and streams. Rain Gardens: Information about how rain gardens reduce runoff and resources that offer more information about installing rain gardens.	Citizens	No
Resilient Yard Workshop	West Metro Water Alliance (WMWA)	Workshops aimed at educating residents about the importance of resilience and how it can be incorporated into residential yards. Includes representatives from local environmental businesses to assist in the planning of attendee's own resilient yards	Citizens	No
Turf Alternative Workshop	West Metro Water Alliance (WMWA)	Workshops aimed at educating residents about water and pollinator-friendly ground covers.	Citizens	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Workshop Series	West Metro Water Alliance (WMWA)	Workshops aimed at educating City Councils, Planning Commissions, Parks, and other Commissions, and City staff about water quality issues. Workshops are focused on runoff volume management, water quality, TMDLs, and management planning.	Citizens	No
Citizens Assisted Lake Monitoring Program (CAMP) - Bassett Creek	West Metro Water Alliance (WMWA)	Volunteer citizens participate in monitoring of metro area lakes, in participation with Metropolitan Council Environmental Services (MCES).	Citizens	No
River Watch Program - Bassett Creek	Hennepin County	Uses volunteers to conduct biological monitoring as a means of monitoring water quality.	Citizens	No
Classroom Programs - Bassett Creek	West Metro Water Alliance (WMWA)	Water quality improvement communication and education programs presented to raise awareness of everyone's role/responsibility in improving and maintaining water quality in the watershed.	Educators and Students	No
Distribution of Education Materials	West Metro Water Alliance (WMWA)	Brochures or other publications for residents, small businesses, and associations targeting topics such as the proper use of salt for snow and ice control. Water Quality Brochure - Ten steps you can take in caring for your house and lawn that will help protect water quality.	Residents, Business Owners, Associations	No
Commission Electronic Newsletter - Shingle Creek	West Metro Water Alliance (WMWA)	Electronic newsletter containing environmental educational information is sent out at least twice per year.	Residents	No
The Great Shingle Creek Watershed Cleanup - Shingle Creek	West Metro Water Alliance (WMWA)	Annual volunteer event targeting Creek cleanup.	Residents	No
Maintain your Property the Watershed Friendly Way Handbook	West Metro Water Alliance (WMWA)	Increase developer and construction contractor awareness of the Commission's BMPs and the Minnesota Stormwater Manual.	Developers and Contractors	No
Public Event Presentations and Educational Displays - Shingle Creek	West Metro Water Alliance (WMWA)	Presentations and educational displays at events targeted for residential and commercial property owners, lakeshore property owners, students, developers, and contractors.	Property Owners, Students, Developers, and Contractors	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Volunteer Stream Monitoring Program - Shingle Creek	West Metro Water Alliance (WMWA)	Assist Hennepin County Environmental Services with identifying volunteers for at least four stream monitoring locations per year.	Citizens	No
Watershed PREP (Protection, Restoration, Education, and Prevention)	West Metro Water Alliance (WMWA)	Education program focused with the water cycle, stormwater runoff, and downstream water quality.	Elementary School Students, Citizens, Lake Associations, Youth Groups, Civic Organizations	No
Pledge to Plant Campaign	West Metro Water Alliance (WMWA)	Public outreach campaign which encouraged residents to plant native species.	Residents	No
Continuing Education Presentations	West Metro Water Alliance (WMWA)	Presentations with educational displays meant to increase awareness of water resource issues and trends, and to educate about strategies to effectively and efficiently manage water resources in a watershed.	Commissioners, Technical Advisory Committee (TAC)	No
Non-Profit Activities				
Online Resources	Clean Water Minnesota	The Clean Water Minnesota Media Campaign maintains the www.cleanwatermn.org website with "Classroom Curriculum" resources for stormwater educators, and "Info You Can Use" seasonal clean water tips for residents.	Website Users	No
Document Upload Tool	Clean Water Minnesota	The document upload tool allows MS4 educators and other stormwater pollution prevention experts to upload documents, brochures, posters, images, and other resources for others to use. This allows all of Minnesota's stormwater pollution prevention education community to share successful education materials with their peers.	MS4 Educators and Stormwater Pollution Prevention Experts	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Clean Water MN Quarterly e-Newsletter	Clean Water Minnesota	Delivered electronically to all campaign members. Each newsletter features a suite of ready-to-run materials, season-specific stormwater education materials including: press releases, brochures, photos, print ads, and other education products. All materials are free for member use in publications, web sites, and other public education efforts.	Campaign Members	No
Freshwater Society Blog	Freshwater Society of Minnesota	A regular source of information about water and the environment. Each week, the blog publishes a digest of regional, national, and international articles and research on water and the environment. Scan the digest, then follow the links to read articles in the original sources in their entirety -- publications such as the New York Times, Scientific American, journals of all kinds, and news releases from state and federal agencies.	General Public	No
Community Cleanups for Water Quality	Freshwater Society of Minnesota	A robust Take Action program in partnership with MWMO and MCWD to promote community cleanup efforts. Such efforts include citizen cleanup of parking lots and other areas in their communities that aren't covered by city cleaning efforts.	General Public	No
Water is Life: Protecting A Critical Resource For Future Generations	Freshwater Society of Minnesota	A Freshwater Society report on Minnesota's ground and surface waters. The October 2008 report focuses on the sustainability of groundwater and the pollution that contaminates many lakes and streams. The report was prepared by the Guardianship Council advisory group. A shorter Executive Summary of the report also is available.	General Public	No
Online Fact Sheets	Freshwater Society of Minnesota	Freshwater Society fact sheets available online: Sustainability of Ground Water, Success Stories, What You Can Do, Value of Water, Groundwater Quality, Groundwater Quality Success Stories, Groundwater Quality: What You Can Do, and Groundwater Quality: Resource Materials, What You Can Do to Save Water and Have a Green Lawn.	General Public	No
Facets of Freshwater	Freshwater Society of Minnesota	A regular newsletter produced for members and interested citizens. An electronic archive of newsletters since 2004 is available.	General Public	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
Minnesota Weatherguide Environment Calendar	Freshwater Society of Minnesota	A calendar available in wall and desk formats that the Society has published for three decades. It offers weather records, phases of the moon, times for sunrise and sunset, plus phenology data on the response of living organisms to seasonal and climatic changes. Free curriculum guides are available for elementary school teachers who use the calendars in their science classes.	General Public	No
Guide To Lake Protection and Management	Freshwater Society of Minnesota	A 27-page brochure published in cooperation with the MPCA. The guide includes information on watersheds, the chemistry of lakes, exotic species, development of a lake management plan, and best management practices for preserving water quality.	General Public	No
Original Sources	Freshwater Society of Minnesota	A digest of electronic links to reports on water quality and the environment from researchers and regional, national, and international agencies.	General Public	No
Sharing Environmental Education Knowledge (SEEK) Website	MN Association for Environmental Education	A resource containing programs, curricula, videos, and organizations for those interested in environmental education.	Teachers	No
Go Blue! Blue Community Makeover	Friends of Diamond Lake	A program through which property owners in the Diamond Lake watershed implement stormwater mitigation projects that have a direct and positive impact on the water quality of Diamond Lake. The program provides educational opportunities through community workshops for property owners to learn more about the many things they can do themselves to improve water quality—like organic lawn care, native plantings, trees, rain barrels, and storm drain “adoption.”	Property Owners in the Diamond Lake Watershed	No
Workshops	Friends of Lake Nokomis	Partner with other agencies to organize workshops which promote water quality best practices such as rain garden planting.	Residents	No
Documentary Films	Friends of Mississippi River	Partner with various other agencies to provide documentary films such as Troubled Waters and Big River to educate residents on stormwater management.	Residents	N/A
Earth Day Cleanup	Friends of Mississippi River	Partner with other agencies to organize Earth Day cleanup activities along the Mississippi River in Minneapolis.	Residents	No
Blooming Boulevards	Metro Blooms	Program which replaced turf with native grass to promote pollinators and reduce runoff. Encourages residents to adopt similar practices.	Community Residents	No

Table A.3 Education Activities by Other Entities

Public Education Activity	Activity Coordinator	Description	Audience	Alternate Languages
State Fair Exhibit "What is a Watershed?"	Metro Watershed Partners	The Watershed interactive exhibit in the Minnesota Department of Natural Resources Education Building at the Minnesota State Fair provides attendees the opportunity to learn about metropolitan watersheds and about human connections to rivers and water through everyday actions.	State Fair Attendees	N/A
Watershed Interactive Tabletop Exhibits	Metro Watershed Partners	Two museum-quality tabletop exhibits are brought by Watershed Partners to community events and locations throughout the metro area to provide learning opportunities about metropolitan watersheds and about human connections to rivers and water through everyday actions.	Community Event Attendees	No
"Water Down the Drain" Interactive Multimedia Program	Metro Watershed Partners	An interactive multimedia program available on kiosks and iMacs. Six modules introduce the user to a watershed perspective of the landscape and provide information about the impacts of impervious surfaces and pollution on our waterways	Citizens	No
Metro Watershed Partners list serve	Metro Watershed Partners	A forum for information sharing to promote educational programs, share information about professional programs, and exchange information with other watershed educators, legislators, and businesses.	Educators, Legislators, and Industry Professionals throughout Minnesota	N/A
"Let's Keep it Clean!" Media Campaign	Metro Watershed Partners	A media campaign that places messages about runoff pollution and clean water tips in the mass media to be available to the public.	Educators, Teachers, Students, and Residents	No
Minnesota Water Series	MPR News	MPR featured a series of special programs devoted to Minnesotans' relationship with water, including Minnesota Water Vignettes, Minnesotans and Water, Research Lab White Paper, and Aquatic Invasive Species Special.	MPR News Listeners and Readers	No
Stories in Minnesota Website Articles	The Nature Conservancy	A resource containing articles to educate about conservation efforts in Minnesota and how residents can volunteer in efforts to prevent the spread of aquatic invasive species, keep water resources clean, and restore native grasslands and wetlands.	Website Users	No
Erosion and Stormwater Management Certification Program	University of Minnesota	The University of Minnesota provides a comprehensive training designed for those who install or design erosion and sediment control devices. Training covers NPDES permit requirements, design procedures, installation procedures, and regulatory requirements.	Designers, Inspectors, Contractors, and Other Staff involved with NPDES Regulations	No

Table A.4 Targeted Pollutants and Target Sources

	Coal Plants / Incinerators	Gasoline / Diesel Fuel Combustion	Metal Corrosion / Metal Protection	Road Salts	Deterioration of Brake Pads / Tires	Asphalt	Fertilizers / Pesticides / Soil Treatments	Wood Preservatives	Paints / Stains	Plastics	Soil Erosion	Sanitary Waste	Manufacturing	Animal Waste	Atmospheric Deposition	Grass Clippings, Leaves, and Other Plant Materials	Coal Tar Based Sealants for Parking Lots, Driveways
Chloride, Total ^a	X	X		X						X		X		X			
Copper, Total (as Cu) ^{a,b}	X		X		X		X	X	X	X		X	X	X			
Lead, Total (as Pb) ^a		X	X	X	X		X		X	X			X		X		
Zinc ^a			X	X	X		X		X	X			X	X			
Hardness, Carbonate (as CaCO ₃) ^a	X		X	X							X	X		X			
Nitrate / Nitrite ^a		X					X				X	X	X	X	X	X	
Nitrogen, Total ^a							X				X	X		X	X	X	
Phosphorus, Total ^a	X	X			X	X	X				X	X	X	X	X	X	
Total Suspended Solids (TSS) ^a	X		X	X	X	X	X			X	X	X	X	X	X	X	
Volatile Suspended Solids (VSS) ^a											X	X		X		X	
Inorganic Suspended Solids by Difference (TSS-VSS=ISS) ^a	X		X		X	X			X	X	X	X	X	X	X	X	
Organic Dissolved Carbon ^a	X	X	X				X	X	X		X	X	X	X		X	
Chemical Oxygen Demand (COD) ^a	X	X	X			X	X	X	X	X	X	X	X	X	X	X	
Phosphorus, Total Dissolved ^a	X	X					X				X	X		X	X	X	
Total Dissolved Solids (TDS) ^a	X			X		X	X					X		X	X	X	
Oil and Grease ^a		X			X	X							X				

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	Coal Plants / Incinerators	Gasoline / Diesel Fuel Combustion	Metal Corrosion / Metal Protection	Road Salts	Deterioration of Brake Pads / Tires	Asphalt	Fertilizers / Pesticides / Soil Treatments	Wood Preservatives	Paints / Stains	Plastics	Soil Erosion	Sanitary Waste	Manufacturing	Animal Waste	Atmospheric Deposition	Grass Clippings, Leaves, and Other Plant Materials	Coal Tar Based Sealants for Parking Lots, Driveways
Bacteria: E. Coli ^a											X	X		X			
pH ^a	X		X	X													
Arsenic ^b	X						X	X			X		X	X	X		
Polycyclic Aromatic Hydrocarbons (PAH) ^b	X	X				X	X					X	X				X

^a MS4 Monitored Parameter

^b Stormwater Pond Dredging Parameter

Sources:

- Massachusetts Department of Environmental Protection, Source Water Assessment Program, DRAFT Land Use/Associated Contaminants Matrix, 1999
- Minnesota Pollution Control Agency, Managing Stormwater Sediment Best Management Practices Guidance, 2017
- Minnesota Pollution Control Agency, Minnesota Stormwater Manual, Total Suspended Solids (TSS) in Stormwater, 2017
- Texas Commission on Environmental Quality (TCEQ) Source Water Assessment and Protection (SWAP) Program’s List of Potential Source of Contamination Types and Subtypes Detailed Listing, Descriptions, and Applied Contaminants, 2009
- United States Environmental Protection Agency, National Primary Drinking Water Regulation Table, 2009
- United States Environmental Protection Agency/United States Army Corps of Engineers, Inland Testing Manual, Table -41, 1998

Appendix A
Table A.5 MS4 Permit References

Table A.6 Department Responsibilities for All SMPs

		Community Planning and Economic Development	Finance & Property Services Department	Health Department – Environmental Services	Minneapolis Park and Recreation Board	Public Works – Surface Water & Sewers Division	Public Works – Traffic & Parking Services Division	Public Works – Transportation Maintenance / Repair Division	Public Works – Transportation Planning & Programming	Public Works – Transportation, Engineering, & Design Division	Public Works – Water Treatment & Distribution Division	Regulatory Services Department	Other
Category 1 – Public Education and Outreach on Stormwater Impacts													
1.1	Stormwater Public Education				X	X							X
1.2	Stormwater Education for Staff				X	X							
1.3	Stormwater Education by Others				X	X							
Category 2 – Public Participation and Involvement													
2.1	Stormwater Public Education				X	X							X
Category 3 – Illicit Discharge Detection and Elimination													
3.1	Phosphorus-Free Fertilizer Program			X		X							
3.2	Pesticides Program					X						X	
3.3	Illicit Discharge Investigation Program			X		X						X	
3.4	Spill Response Program			X		X		X				X	X
3.5	Facilities Inspection Program					X						X	
3.6	Stormwater Management for Regulated Activities Program			X		X						X	
3.7	Electronic Inventory and Mapping				X	X			X				
3.8	Enforcement Response Procedures			X		X						X	X
Category 4 – Construction Site Stormwater Runoff Control													
4.1	Erosion and Sediment Control for Development and Redevelopment Projects	X		X		X							
4.2	Erosion and Sediment Control for City and MPRB Construction Projects	X	X		X	X	X	X	X	X	X	X	X

Table A.6 Department Responsibilities

		Community Planning and Economic Development	Finance & Property Services Department	Health Department – Environmental Services	Minneapolis Park and Recreation Board	Public Works – Surface Water & Sewers Division	Public Works – Traffic & Parking Services Division	Public Works – Transportation Maintenance / Repair Division	Public Works – Transportation Planning & Programming	Public Works – Transportation, Engineering, & Design Division	Public Works – Water Treatment & Distribution Division	Regulatory Services Department	Other
4.3	Enforcement Response Procedures for Development and Redevelopment Projects	X		X		X							
Category 5 – Post-Construction Stormwater Management													
5.1	Review and Approval for Private Development and Redevelopment Projects	X				X			X	X			
5.2	Ongoing Compliance Program for Private Development/Redevelopment Projects			X		X							
5.3	Review and Approval for Projects Proposing to Modify the Municipal Separate Storm Sewer System					X							
5.4	Project Management for Stormwater in City of Minneapolis and Minneapolis Park and Recreation Board Capital Projects	X	X		X	X	X	X	X		X		
5.5	Stormwater Management Planning					X							
5.6	Stormwater Modeling					X							
5.7	Water Resources Capital Improvement Program Development					X							
5.8	Enforcement Response Procedures	X				X			X				
Category 6 – Pollution Prevention and Good Housekeeping for Municipal Operations													
6.1	Operations and Maintenance		X	X	X	X							
6.2	Street Sweeping and Cleaning Program					X		X					X
6.3	Facilities Management	X	X		X	X	X	X			X		X
6.4	Snow and Ice Control for Streets							X			X		

Table A.4 Targeted Pollutants and Target Sources

		Community Planning and Economic Development	Finance & Property Services Department	Health Department – Environmental Services	Minneapolis Park and Recreation Board	Public Works – Surface Water & Sewers Division	Public Works – Traffic & Parking Services Division	Public Works – Transportation Maintenance / Repair Division	Public Works – Transportation Planning & Programming	Public Works – Transportation, Engineering, & Design Division	Public Works – Water Treatment & Distribution Division	Regulatory Services Department	Other
6.5	Vegetation Management	X	X		X	X	X	X			X		X
6.6	Localized Flood Mitigation Capital Projects					X							
Category 7 – Stormwater Discharge Monitoring and Analysis													
7.1	Monitoring and Analysis to Assist in Assessing Stormwater Management Program Effectiveness				X	X							
Category 8 – Progress Toward Waste Load Allocations for Approved Total Maximum Daily Loads													
8.1	Total Maximum Daily Load (TMDL) Program				X	X							
Category 9 – Coordination and Cooperation with Other Entities													
9.1	City of Minneapolis and Minneapolis Park and Recreation Board Responsibilities				X	X							
9.2	City of Minneapolis and Metropolitan Council Responsibilities					X							
9.3	Coordination and Cooperation with Other Entities	X		X	X	X						X	
Category 10 – Stormwater Management Program Assessment, Modification, and Annual Reporting													
10.1	Stormwater Management Program Assessment, Modification, and Annual Reporting				X	X							
Category 11 – Sanitary Sewer Reporting Requirements													
11.1	Integrated Infrastructure Management Program					X						X	X