City of Saint Paul's

Stormwater Permit Annual Report

Minnesota Pollution Control Agency

National Pollutant Discharge Elimination System

Permit No. MN 0061263

June 2015

Table of Contents

GENERAL INFORMATION

Background 2

Contact Information 2

STORMWATER MANAGEMENT PROGRAM

Minimal Control Measures

MCM 1: Public Education & Outreach 3

MCM 2: Public Participation & Involvement 6

MCM 3: Illicit Discharge Detection & Elimination 7

MCM 4: Construction Site erosion & Sediment Control 14

MCM 5: Post-Construction Stormwater Management 20

MCM 6: Pollution Prevention & Good Housekeeping 26

MCM 7: Monitoring & Analysis 41

MCM 8: Discharges to Impaired Waters with a TMDL 44

APPENDIX

Budget 1

Erosion and Sediment Control Materials 2

Parks Spill Report and Water Protection Policy 6

Public Works Water Protection Policy 10

Non-Stormwater Discharge Fact Sheet and Ordinance 11

Clean Water MN Media Campaign 16

Water Quality Education Program 30

Map of Saint Paul's Watershed Organizations 38

Monitoring Activities Map and Modeling Map 39

Pollutant Load Calculations 41

Storm Sewer Outfall Inventory 50

Watershed Inventory 56

Stormwater Ponding Area Inventory 58

NPDES Permitted Facilities 62

Industrial Land Use and Pollutant Source Maps 65

TMDL Annual Report Form 67

Background

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

The MPCA issued the first Municipal Separate Storm Sewer System (MS4) NPDES Permit to the City of Saint Paul on December 1, 2000. The City's MS4 Permit was reissued on January 21, 2011. The reissued permit required submittal of a revised Stormwater Management Program (SWMP), which was approved by the MPCA in October of 2013.

The Saint Paul SWMP was developed and is administered by the City departments that are responsible for permit activities. Included are the Public Works Department, Saint Paul Parks and Recreation Department and the Department of Safety and Inspection. These stakeholders are jointly responsible for the completion of the required permit submittals. The Department of Public Works provides program coordination. The Permit also requires public input on the development of the priorities and programs, and adoption by Council Resolution of the Annual Report. This Report provides documentation of the activities conducted in 2014.

MS4 Permit Coordinator

Anne Weber
Department of Public Works
651-266-6245
anne.weber@ci.stpaul.mn.us

MCM 1: Public Education & Outreach

BMP 1.1: STORMWATER PUBLIC EDUCATION ACTIVITIES

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

Metro WaterShed Partners

Saint Paul has been an active Metro WaterShed Partners since 1997. Metro WaterShed Partners is an innovative, dynamic coalition of over 40 public, private and non-profit organizations in the Saint Paul/St. Paul metropolitan area that, through collaborative educational outreach, teaches residents how to care for area waters. This partnership has leveraged grant dollars and staff time to develop educational literature and a nationally recognized interactive display. The WaterShed exhibit was at schools and events in and around Saint Paul in 2014. The WaterShed exhibit is also at the Minnesota State Fair in the Department of Natural Resources Building each year. In addition, the WaterShed Partners partnered with Hamline University to develop and host the StormDrain Goalie in the Eco Experience building. This exhibit raised awareness about the importance of protecting water in Minnesota and asks people to commit to take action at home to prevent run-off pollution.

Metro Clean Water Campaign

To assist cities with educational efforts, Metro WaterShed Partners is conducting the Metro Clean Water Campaign. This type of collaboration allows for the development of a consistent message, which is distributed cost effectively. A City of Saint Paul staff person is a member of the planning committee. The campaign was funded in 2014 with money raised from local units of government, including the City of Saint Paul contributed to this campaign in 2014. The 2014 report for the Metro Clean Water Campaign is found in the appendix.

Guard Your Storm Drain Program

In 2014, the City of Saint Paul partnered with the Center for Global Environmental Education at Hamline University and the Capitol Region Watershed District to develop the Guard Your Storm Drain app. This app allows residents to adopt a storm drain in their neighborhood and pledge to

keep it free of pollutants. The app consists of an online map of storm drains in Saint Paul and a simple interface that allows people to sign up to “adopt” a storm drain. Adopted storm drains are flagged with the name of the resident who has adopted it on an online map. The program was piloted in a Como Lake neighborhood in coordination with Saint Paul’s storm drain stenciling program.

The program includes the following components:

- Create and produce outreach materials including: yard signs, recruitment materials, automatic confirmation email for registrants and four seasonal reminder messages to be sent to program participants.
- Conduct focus groups of people within the target neighborhood to evaluate the draft outreach materials and to guide the framing of the program.
- Send materials out in coordination with the City’s storm drain stenciling program. Track participation in the program in response to the door hangers.
- Evaluate program by conducting a follow-up survey within the pilot neighborhood.

Annual Spring Parks Clean-Up and Neighborhood Litter Campaign

The Saint Paul Parks and Recreation Department hosts an Annual Spring Parks Clean-Up every year during the month of April. The City provides clean-up supplies, trash removal, recycling services and a “thank you” celebration. During this event volunteers remove litter from Saint Paul's Parks and Recreation Centers. Without the help of volunteers during the cleanup, trash accumulates in these natural areas harming wildlife, polluting lakes and rivers and detracting from the beauty of our community. This event is a fun and effective way to improve the environment in our community.

Waterfest

The City of Saint Paul is a sponsor of Waterfest, which is a family festival put on each May at Lake Phalen by the Ramsey-Washington Metro Watershed District. The Watershed District estimates that 1000 people attend this free family festival. The Parks Department assists in coordinating this event. The Public Works Department provides a street sweeper to be on display for this event.

Staff Training

- City staff person assisted in planning and attended the Eric Eckl workshop – More than a message hosted by the Metro WaterShed Partners.

MCM 1: Public Education & Outreach

BMP 1.2: STORM DRAIN STENCILING & WATER QUALITY EDUCATION PROGRAM

Description

The objective of this program is to educate the participants and the public by stenciling storm drains with the message "Storm Drains – Keep 'em Clean," and distribute multi-lingual educational door-hangers to residents and businesses in the stenciled neighborhoods in the City of Saint Paul.

Assessment Process for Annual Reporting

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

2014 Activities

Storm Drain Stenciling Education Program

The City of Saint Paul has been conducting a successful storm drain stenciling education program since 1993. The Friends of the Mississippi River (FMR) coordinates this program for the City. FMR is the leading citizens' organization working to protect the Mississippi River and its watershed in the Twin Cities area. In 2014, FMR coordinated the stenciling of 2,699 storm drains and distribution of 6,049 door hangers in partnership with 1,173 volunteers. The 2014 Stenciling Program Report and a copy of the door hanger are found in the Appendix.

The storm drain stenciling project is designed to meet the following three objectives:

- To involve Saint Paul residents in hands-on learning experiences about urban runoff pollution and ways to prevent it.
- To facilitate school service learning initiatives that include storm drain stenciling, litter cleanups and/or habitat restoration as a key components.
- To stencil storm drains with the message "Keep 'em Clean-Drains to River and distribute educational door hangers to residents and businesses in the stenciled neighborhoods in the City of Saint Paul.

The 2014 program objectives were implemented through the following activities:

- Coordinated the stenciling of storm drains and distribution of door hangers in partnership with volunteers from school groups, community groups, and residents of the City of Saint Paul.
- Provided a 20 to 45 minute educational orientation to each volunteer group.
- Provided educational presentations and workshops on urban runoff pollution to volunteers, classrooms and other community members.
- Coordinated the purchase, maintenance and storage of all stenciling and workshop supplies.

MCM 2: Public Participation & Involvement

BMP 2.1: Encourage & Solicit Input from the Public

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

The Annual Report is a coordinated effort by various City departments. Information in the Annual Report provides documentation of the activities conducted in the previous year.

The City holds a public meeting to provide an opportunity for public input regarding the Annual Report. A notice of the availability of the Report for review and public comment is sent to all Saint Paul neighborhood organizations, to the governmental entities that have jurisdiction over activities relating to stormwater management, and to other interested parties.

Once finalized, the Annual Report is also made available on the web site. All testimony presented at the public meeting, and all written comments received, are recorded and given due consideration. The public comments, response to comments and a copy of the council resolution adopting the Stormwater Permit Annual Report are submitted each year to the Minnesota Pollution Control Agency.

MCM 3: Illicit Discharge Detection & Elimination

BMP 3.1 PROHIBITED DISCHARGE MANAGEMENT PROGRAM

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

Spill Response

The Sewer Maintenance section of the Sewer Utility and the Saint Paul Fire Department personnel typically serve as the first responders to a spill event. The immediate goals of this response are safety, containment of the spill, recovery of hazardous materials and collection of data for use in assessment of site impacts. Recovery efforts can take several forms, but typically fall into two broad categories: recovery for disposal and the use of absorbents or other media to collect hazardous waste for disposal.

The life cycle of an event requires City personnel to work as a team, utilizing all available resources to protect residents, the environment and property. Each event is followed by a post-action debriefing to determine the cause of the event, to identify measures to improve the City's response, and to determine the means to limit future occurrences. Outside agencies and private emergency response contractors are incorporated as needed. Spills that fall within the minimum reporting requirements are reported to the Minnesota Pollution Control Agency (MPCA) Public Safety Duty Officer. For these spills, an Oil and Hazardous Materials Spill Data form must be completed within 24 hours, or by the next business day. The completed forms are used to document the type of spill, as well as the response to the spill. The Sewer Utility follows the spill reporting policy, which is signed off on by employees as part of the annual policy review.

Prohibited Discharges

Pollution prevention and control is achieved through educational efforts, inspections and coordinated community outreach. These activities may include enforcement, pursuant to applicable City codes, and coordination with other regulatory agencies at the county, state and federal levels. Enforcement yields identification of the responsible party, documentation of clean-up activities, and efforts to reduce the flow of pollutants from illegal dumping and disposal. Complaints are received from the public, City staff and other government agencies. Department of Safety and Inspections and Public Works staff respond to reports of unauthorized discharges and illicit connections. The City has developed an ordinance (see Appendix for ordinance and fact sheet) defining allowable discharges to the storm sewer system. The ordinance was adopted in February and became effective in March of 2013.

The City's Right of Way inspectors responded to complaints resulting from utility contractors dewatering or saw cutting and construction site dewatering and tracking. Each year at the Utility Coordination Meeting requirements and BMPs are reviewed with contractors. A handout is provided, which is found in the Appendix. At the meeting in February of 2014, the new ordinance, Chapter 51. Allowable Discharges to the Storm Sewer System was introduced and explained. The ROW inspectors enforce these requirements in the field, respond to complaints and coordinate with DSI to address issues originating on private property.

In 2014, DSI sent out 75 leaf letters to properties throughout the City. This letter states that a complaint was received by the City of leaves being raked into the street. It explains these leaves negatively impact downstream water bodies and gives info about compost sites in Ramsey County. The first letter is a warning and subsequent complaints will result in a fine to the property owner.

Staff Training

- Utility Coordination Meeting, February 2014. This training involved municipal employees and utility businesses. The purpose was to educate regarding identification of illicit discharges, associated hazards, prevention, and containment.
- Illicit Discharge Training and Program Development, November 2014. This training session involved 8 city staff. The purpose was to educate municipal employees regarding illicit discharges and discuss enforcement including current procedures to receive, track and enforce violations as well as areas where process development is needed.

MCM 3: Illicit Discharge Detection & Elimination

BMP 3.2 STORM SEWER SYSTEM MAP & INVENTORY

Description

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

Assessment Process for Annual Reporting

- Report on status of electronic inventory and mapping completion.

2014 Activities

Storm Drain System Infrastructure

Approximately 150 years ago, Saint Paul first constructed portions of a sewer system that today comprises approximately 450 miles of storm sewers and over 26,000 catch basins. The system was designed to satisfy the City's obligation to provide reasonable drainage of stormwater and to prevent street flooding, which satisfied the City's responsibility to protect neighboring properties, allow for normal traffic flows, and prevent damage to streets, sidewalks and boulevards.

The Department of Public Works is developing a computer based asset and infrastructure management system. This system will include both the storm and sanitary sewer networks. When the asset and infrastructure management system is complete, the City will have the data and systems necessary to accurately determine the sub-watershed for each of the outfalls. The Sewer Utility is in the process of converting its hand drawn sewer maps to an electronic format. All of the converted sewer data was checked for accuracy and is now going through a QA/QC process.

Watershed and Storm Sewer Outfall Inventory

An inventory of Saint Paul's storm sewer outfalls is found in the Appendix. This inventory includes the outfall identification number, outfall name, watershed name, size of pipe and drainage area. The following information is provided in the Outfall Inventory found in the Appendix for each of the 23 watersheds in St. Paul: drainage area, land use types and distribution, population, percent impervious surface area, and the runoff coefficient. The following table shows the total number of discharge points to each water body in Saint Paul.

Discharge points to receiving waters

Receiving Water	Total Discharge Points
Bridal Veil Creek	1
Mississippi River	59
Upper Lake	1
Crosby Lake	3
Fairview North Pond	2
Lake Como	11
Loeb Lake	1
Lake Phalen	5
Beaver Lake	4
Suburban Pond	2
Little Pig's Eye Lake	1
Pig's Eye Lake	5
Battle Creek	11

Stormwater Ponds

A map showing the stormwater ponding areas in the City of Saint Paul is found in the Appendix. The Appendix also contains the tributary area and design capacity for each City ponding area and a list of ponding areas by watershed.

NPDES Permitted Facilities

Facilities in Saint Paul that area issued NPDES permits by the MPCA are found in Appendix.

Industrial Land Use

Industrial land uses may generate higher concentrations of hydrocarbons, trace metals, or toxicants than are found in typical stormwater runoff. Maps showing the areas of industrial land use in Saint Paul and pollutant source locations are included in the Appendix.

MCM 3: Illicit Discharge Detection & Elimination

BMP 3.3 DRY WEATHER FIELD SCREENING PROGRAM

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

Detection and Removal Screening Program

The field screening program to detect and investigate contaminated flows in the storm drain system is part of the City's daily operations. Sewer Maintenance crews routinely inspect and clean storm drain structures throughout the City. In addition, inspections of flows that generate unusual odors, stains, and deposits are included in the annual outfall inspection program. In 2013, City staff inspected the East Kittsondale Tunnel system prior to a stormwater modeling and tunnel rehabilitation project. During the walk through, no visual or odor evidence of prohibited discharges was observed.

Any suspect flows are then reported to appropriate City staff for further investigation. These combined efforts result in an annual screening of more than 20% of City drainage areas.

The City works with the Capitol Region Watershed District to conduct a stormwater monitoring program in Saint Paul as well as conducting its own BMP monitoring program. The best avenue for a continued effective screening program in the City of Saint Paul, without duplication of services, is to continue to use current practices, and to explore the development of certain aspects of the program to improve enforcement results.

The City investigates prohibited discharges as part of its regular tunnel, outfall and pond inspection program. The City also investigates complaints and issues identified in the monitoring program. The Department of Safety and Inspections carries out enforcement on

property code violations. Under Chapter 45 of City Code, the City is authorized to collect via assessment its cost of abating property-related health and safety problems when an owner has failed to perform the work following notice by the City. The City may assess property owners to recover unpaid city charges.

Continue existing programs as outlined in the program overview, and continue to develop and improve documentation of program activities. GIS mapping will be implemented as a tool to support various activities. Information that is gained through the inspection program will be used to compile data on non-stormwater discharges, storage of hazardous materials, and activities or operations that may be potential water pollution point sources. The City will continue to investigate prohibited discharges as part of its regular tunnel, outfall and pond inspection program.

Standard Operating Procedures and Checklists

- The Parks Department uses a Spill Reporting form and instructions (See Appendix). Form is completed in the event of a spill if petroleum or hydraulic spills greater than five gallons, and other materials spill of any size. The Minnesota Duty Officer is notified, as required, in the event of a reported spill.
- The Parks Department and the Department of Public Works have Clean Water Policies which are distributed, reviewed, and signed by all field staff. (See Appendix)

Staff Training

- A fact sheet was developed and distributed with the adoption of the new ordinance (See Appendix). Several staff meetings were held throughout the development of the ordinance.

MCM 3: Illicit Discharge Detection & Elimination

BMP 3.4 INDUSTRIAL ACTIVITIES MANAGEMENT PROGRAM

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

A map of the industrial land use areas in the City is included in the Appendix. Complaints in the ROW are handled by the Public Works ROW inpectors. Those that originate on private property are referred to DSI. The City coordinates with the MPCA Industrial Stormwater Program for sites that are permitted by the MPCA.

MCM 4: Construction Site Erosion & Sediment Control

BMP 4.1: DEVELOPMENT & REDEVELOPMENT CONTROL PROGRAM

Description

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

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

Assessment Process for Annual Reporting

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

2014 Activities

Program Overview

Saint Paul Code of Ordinances, Part II – Legislative Code, Title VI - Building and Housing, Chapter 52 Stormwater Runoff contains erosion and sediment control requirements, and stormwater management requirements for new developments and other land-disturbing construction activities. Construction activities and new development projects are reviewed through the City's Site Plan Review process. This review provides comments that are integrated into a final plan submittal that is subsequently routed to the City's Departments for approval. The Department of Safety and Inspections reviews projects for compliance with the erosion &

sediment control requirements and water quality requirements. The Sewer Utility reviews projects for rate control, flood protection and capacity issues.

Site Plan Review

DSI and Public Works staff provides a detailed review of site plans and a track process to identify stormwater management opportunities and to review all site plans from a sustainable water quality perspective. During 2014, City Departments reviewed 128 site plans, of which 71 received final approval with the appropriate permits issued. Continued attention to erosion and sediment control plan submittals, along with increased awareness in the industry, provided for better compliance during site inspections.

Requirements

The ordinance addresses development sites, utility excavations, demolition projects and all other land disturbing activities of 1 acre or more. For disturbances less than 1 acre, erosion and sedimentation control practices must be installed and inspected before land disturbing activities begin. Sites disturbing more than 10,000 square feet need to submit an erosion and sediment control plan as part of the City's Site Plan Review process. City Zoning Code Chapter 33 requires a grading permit for the placement, movement and removal of fifty cubic yards of fill and to incorporate stabilization methods on soil stockpiles greater than 10 cubic yards, if left for more than 10 days.

Inspection and Enforcement

Ongoing site inspections are performed by Public Works ROW and DSI inspectors. In 2014, DSI inspectors conducted 276 erosion control inspections at 167 properties. 8 properties were issued stop work orders in 2014 due to erosion control non-compliance. 75 erosion control corrections were required on 55 private developments.

Inspectors may issue a warning notice citation or a "Stop Work Order". Failure of the permittee to comply with the ordinance will constitute a violation and will be considered a nuisance pursuant to the laws of the State of Minnesota. If there is a demonstrated failure to comply, the City reserves the right to terminate a permit at any time. The City then has the option of proceeding with the necessary restoration of the site. This restoration would be done at the expense of the owner/permittee. Increased awareness of the ordinance, improving plan submittals and a continued compliance based inspection program resulted in a continued rise in compliance. Inspections were coordinated with the Capitol Region and Ramsey-Washington Metro Watershed Districts.

New public and private developments and other projects that disturb one acre or more will be inspected for erosion and sediment control. This effort will lead to a continued awareness of the problems associated with construction site sediment. This will also result in a continuing increase in the overall rate of compliance citywide. The City will continue to study options to

increase compliance, and to help limit the amount of erosion and sediment loss associated with construction projects.

Standard Operating Procedures and Checklists

The City of Saint Paul utilizes standard forms for both public and private construction sites. The standard form utilized for documenting field inspections on private projects is found in the Appendix. The forms supplement a database which tracks multiple levels of information including inspections for erosion control. The City has developed the following standard operating procedures (SOPs) and checklists for Erosion and Sediment Control (ESC) on public and private construction sites:

- The City of Saint Paul utilizes a standard form for both public and private construction sites.
- Public Works Right-of-Way Division uses a form when ROW inspectors inspect Utility Installation work. This form was distributed at the annual Utility review meeting. (See Appendix.)
- Continue to improve SOPs and checklists and distribute to appropriate parties.
- City staff will continue to develop performance measures and to improve data collection, tracking and analysis. The City will also pursue means of measuring and understanding water quality impacts.
- Erosion control plans and inspections are tracked in the City's AMANDA system.
- Handouts and worksheets are distributed to all relevant applicants.
- Requested database programming resources from department administration in 2014 in order to develop and implement standardize procedures regarding erosion control for site plan review and field inspection.

Staff Training

- ESC information was distributed at the City's Annual Utility Project Review meeting in 2014.
- Erosion Control Inspection Training and Coordination was held in April of 2014. This training session involved 12 city staff and 4 watershed district staff (2 Ramsey-Washington, 2 Capitol Region). The purpose was to discuss proper control measures, administrative steps such as reporting and tracking, and enforcement actions.
- City of Saint Paul inspectors are trained and certified through the University of Minnesota's Erosion and Stormwater Management Certification Program. This includes Department of Public Works Street Construction inspectors, Department of Safety and Inspections Building inspectors and 3 Parks Environmental Services staff. The certification includes a recertification component within a 3-year period, which ensures training stays current with techniques and regulations.

- Three Parks Environmental Services staff remained current with Erosion and Sediment Management training from the University of Minnesota (2 – Inspector/Installer, 1 – Construction Site Management).

MCM 4: Construction Site Erosion & Sediment Control

BMP 4.2 MUNICPAL CONTROL PROGRAM

Description

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

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

Assessment Process for Annual Reporting

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

2014 Activities

Municipal site projects go through the site plan review process and are inspected by the building inspectors for erosion and sediment control. Please see the description of this program in BMP 4.1. The standard form utilized for documenting field inspections for street reconstruction projects is intended to be handwritten in the field and included in the project file. Staff started using the forms in 2011. During 2014, Public Works Construction inspectors continued to work with internal forces and watershed district staff on erosion and sediment control compliance.

Staff Training

- ESC information was distributed at the City's Annual Utility Project Review meeting in 2014.
- Erosion Control Inspection Training and Coordination was held in April of 2014. This training session involved 12 city staff and 4 watershed district staff (2 Ramsey-Washington, 2 Capitol Region). The purpose was to discuss proper control measures, administrative steps such as reporting and tracking, and enforcement actions.

- City of Saint Paul inspectors are trained and certified through the University of Minnesota's Erosion and Stormwater Management Certification Program. This includes Department of Public Works Street Construction inspectors, Department of Safety and Inspections Building inspectors and 3 Parks Environmental Services staff. The certification includes a recertification component within a 3-year period, which ensures training stays current with techniques and regulations.
- Three Parks Environmental Services staff remained current with Erosion and Sediment Management training from the University of Minnesota (2 – Inspector/Installer, 1 – Construction Site Management).

MCM 5: Post-Construction Stormwater Management

BMP 5.1: DEVELOPMENT & REDEVELOPMENT MITIGATION PROGRAM

Description

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

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

Assessment Process for Annual Reporting

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

2014 Activities

Ongoing Stormwater Management

Redevelopment of existing sites provides an opportunity to lessen the impacts of urbanization on the Mississippi River and other Saint Paul water resources. During 2014, Stormwater Best Management Practices (BMPs) were installed on sites reviewed through the Site Plan Review process. BMP types that were constructed include:

- Rain gardens
- Pervious pavement
- Infiltration areas
- Stormwater ponds
- Underground infiltration/filtration and detention facilities

Plan Review

Stormwater management plans are required for all construction projects, which disturb one acre or more of land. These plans are reviewed through the Site Plan review process and approved by the Department of Safety and Inspections and the Saint Paul Public Works Sewer Utility. Sites disturbing less than one acre are also required to provide runoff rate control, if the

project disturbs greater the 10,000 square feet. In addition, sites under one acre are encouraged to incorporate green infrastructure stormwater BMPs into their design as a means of satisfying other city codes, such as parking requirements. The City updated its Off-Street Parking Code to include stormwater landscaping requirements in June of 2010. In July of 2010, the City began implementation of the green building policy requirements for city building projects and private projects receiving more than $200,000 in City funding to facilitate design and construction of stormwater quality practices. A description of the site plan review process is accessible on the City's website (www.stpaul.gov/index.aspx?NID=1073). This provides subsequent links describing requirements, review process, and submittals

- Provision of on-site, off-site or regional stormwater facilities
- Maximizing infiltration by minimizing the amount of impervious surface
- Employing natural drainage and vegetation

Staff Training

- City staff from multiple departments attended the Minnesota Water Resources Conference and the Clean Water Summit. The topic of the 2014 Clean Water Summit hosted by the University of Minnesota Landscape Arboretum was Green Infrastructure for Clean Water: Costs & Benefits to Our Communities.

MCM 5: Post-Construction Stormwater Management

BMP 5.2 COMPLIANCE PROGRAM for PRIVATE SITE CONTROLS

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

City ordinance requires the design to minimize the need of maintenance and to provide access for equipment and personnel. The facilities must have a plan of operation and maintenance that ensures effective removal of pollutants. The ordinance also allows the City right of entry and inspection. In 2014, the City began a comprehensive review of its stormwater policies. This project is expected to be completed in January of 2016. The City coordinates with the CRWD and RWMWD in the development of BMP database and procedures to ensure that private BMPs are maintained.

MCM 5: Post-Construction Stormwater Management

BMP 5.3 MUNICIPAL MITIGATION PROGRAM

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

- **Stormwater Modeling –**The East Kittsondale storm sewer system modeling project was completed in 2014. A map showing the completed modeling projects in the City is included in the Appendix.

- **Street Reconstruction Projects** – In 2014, volume control BMPs were installed for the Montreal and Western projects for a total of 18,354 cubic feet of volume control constructed. Boulevard rain gardens were constructed in the Montreal and Montana/Greenbrier projects.

- **Hampden Park Water Quality Improvement Project -** Project is a subsurface infiltration project constructed in 2014. The system is comprised of a rock encased perforated pipe network providing treatment to a static volume of approximately 32,000 cubic-feet. Other components of the project included a Vortech pretreatment structure to remove sediments and floatables and various park enhancements. The subwatershed directed to this system is approximately 7 acres, with many public streets being reconstructed between 2013-2015. Construction costs related to the Hampden Park Infiltration Project were $680,000.

- **Highland Ravine Stabilization Project:** Parks and Recreation partnered with the Capitol Region Watershed District to allow the watershed to implement the 50-acre Highland Ravine Stabilization Project to fulfill the first two recommendations of an earlier feasibility study. The project 1) stabilized the ravine area by grading and installing rock check dams in the gullies to slow runoff and 2) restored the woodland area with native vegetation.

- **Hidden Falls Regional Park** - Parks and Recreation received a $118,000 Conservation Partners Legacy Grant to enhance approximately 59 acres of floodplain forest in Hidden Falls Regional Park.

- **Clean Water Projects at CHS Field** - CHS Field is a regional ballpark in the heart of the Lowertown neighborhood of Saint Paul. To reduce consumption of potable water as well as the amount of polluted runoff flowing to the Mississippi River, the City of Saint Paul, Saint Paul Saints, Metropolitan Council and Capitol Region Watershed District collaborated to collect and store rainwater and use it for irrigation and other uses at CHS Field. A 27,000- gallon steel cistern treats rainwater used to irrigate the ball field and flush toilets. Non greywater toilets in the park include water-saving fixtures.

- **Trout Brook Nature Sanctuary** – a 40-acre nature sanctuary, developed on a previous brownfield site, including a stormwater management system that intercepts stormwater runoff from the neighborhood. The system consists of filtration ponds with iron enhanced sand filters, wetland complexes, a day-lighted portion of Trout Brook, and pre-settlement vegetation

- **Swede Hollow Park** - A stormwater study was completed by Emmons & Olivier Resources, Inc. (EOR) for Swede Hollow Park to evaluate the potential to improve water quality in the park, including opportunities to daylight stormwater into stream channels or wetlands.

- Parks and Recreation received $64,000 of in-kind labor from Conservation Corps Minnesota for installation and maintenance of stormwater best management practices in Saint Paul. Funding was made possible through the Legacy amendment.

Staff Training

- City staff from multiple departments attended the Minnesota Water Resources Conference and the Clean Water Summit. The topic of the 2014 Clean Water Summit hosted by the University of Minnesota Landscape Arboretum was Green Infrastructure for Clean Water: Costs & Benefits to Our Communities.

MCM 5: Post-Construction Stormwater Management

BMP 5.4 STORMATER RUNOFF VOLUME REDUCTION PLAN

Description

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

Assessment Process for Annual Reporting

- Narrative of progress towards plan development and implementation.

2014 Activities

The City submitted its Volume Reduction Plan to the MPCA in January of 2014. This plan provided a summary of the City's volume reduction projects, identified opportunity sites and identified areas in the City where there are limitations on the construction of volume reduction BMPs. In 2014, the City began a comprehensive review of all stormwater related policies. This project is planned to be completed in January of 2016.

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.1: STORM SEWER SYSTEM OPERATION & MAINTENANCE

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

The City's stormwater system includes 450 miles of storm sewers, 28 ponding areas, 4 lift stations, numerous water quality best management practices and over 26,000 catch basins. The Sewer Maintenance section allocates substantial resources to cleaning, inspecting and maintaining the City's stormwater system. All installed stormwater facilities are maintained and operated in accordance with adopted policies and ordinances. All storm sewer pipes are cleaned and inspected in advance of City street reconstruction projects. Where defects are observed, repairs are made at the time of discovery or during the reconstruction project. The City also regularly inspects, cleans and maintains stormwater ponding areas. Storm sewer tunnels are inspected every two years.

In 1995, the City completed a ten-year sewer separation program by constructing 189 miles of storm sewer and 12 miles of sanitary sewer (some combined sewer was converted to storm sewer). In 1997, the City began a 20-year rehabilitation program for its storm and sanitary sewer system. The Sewer Utility complies with MnDOT's Standard Specifications for Construction, and has its own set of Standard Plates.

Storm Sewer and Storm Tunnels

The 3.6 mile long St. Anthony Park storm tunnel system was originally constructed in the 1960s and 1970s. The tunnel liner was severely damaged with numerous holes and cracks, which were primarily caused by large rain events that pressurize the tunnel. When the tunnel liner is

fractured or holes are present, stormwater is allowed to wash away the friable St. Peter Sandstone, resulting in large voids behind the liner.

A four phase tunnel rehabilitation project was started in the fall of 2009 and was completed in 2013. Phase V of the tunnel rehabilitation project was completed in the spring of 2014. The final phase will take an additional two years and $7 million to complete. Tunnel projects typically include the following components: sealing cracks and holes in the tunnel liner, filling large voids behind the tunnel liner, replacing sections of tunnel liner too badly damaged to be repaired and installing stainless steel straps on the inside surface of the tunnel liner to reinforce the cracked liner.

Pump Stations

The City has four stormwater flood control pump stations that are located along the Mississippi River. These pump stations provide interior drainage during flood events on the Mississippi River. The stormwater flood control pump stations are inspected and operated twice per year. All of the stations are connected to the City's Supervisory Control and Data Acquisition system.

- Inspected 46,145 feet of storm sewer
- Cleaned 45,801 feet of storm sewer
- Repaired 10 feet of storm sewer

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.2: CATCH BASIN/MANHOLE OPERATION & MAINTENANCE

Description

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

Assessment Process for Annual Reporting

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

Catch Basins

A catch basin is an inlet to the storm drain system. A field survey of the City's catch basins using GPS equipment located all city owned catch basins. The total number of catch basins inventoried was 26,200. As part of the City's Residential Street Vitality Program (RSVP), existing catch basins within a street reconstruction project area are replaced with new catch basins. Cleaning catch basins, while ensuring proper runoff conveyance from City streets, also removes accumulated sediments, trash and debris. Catch basins that are reported as plugged or damaged are given a priority for repair and cleaning. Sewer Maintenance has set a goal of cleaning 2,000 catch basins per year. Augmenting this effort is the street sweeping program, carried out by the Street Maintenance Division. The street sweeping program targets the pick-up of street sediment, debris and leaves prior to their reaching catch basins.

2014 Activities

- Catch basins inspected: 1,470
- Catch basins cleaned: 5,453
- Catch basins repaired: 291
- Manholes inspected: 1624
- Manholes cleaned: 72
- Manholes repaired: 139

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.3: OUTFALL OPERATION & MAINTENANCE

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

Storm Drain Outfalls

A storm drain outfall is the point where the storm sewer system discharges to receiving waters. Outfalls are inspected on a 5-year schedule. Outfall inspections include an evaluation of the general condition of structure, determination of significant erosion and identification of any non-stormwater discharges. When indications of non-stormwater discharges are observed, they are reported to the appropriate City staff for follow-up investigation and resolution and reported to the Minnesota Duty Officer, as required. Any identified structural repairs or maintenance work is prioritized and scheduled within the constraints of available personnel, funding and coordination with other essential operations. The Mississippi River outfalls were inspected in 2013 and are planned to be inspected in 2015. In 2014, repairs were completed on the Sumac outfall and an outfall at Childs Road and Warner Road was replaced.

MCM 6: Pollution Prevention & Good Housekeeping

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

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

Stormwater Ponds

Saint Paul's stormwater ponding areas are constructed to collect and detain flows from storm events and in some cases to also improve water quality. These ponds are designed to reduce peak flow rates in downstream storm sewers. A map showing the stormwater ponding areas in the City of Saint Paul is found in the Appendix. The Appendix also contains the tributary area and design capacity for each of the City's ponding areas and a list of stormwater ponding areas by watershed. The City's stormwater ponding areas are inspected by Sewer Maintenance staff after major rainfall events. Routine maintenance is completed as needed based on the inspection results.

The City implemented a program to evaluate its ponding areas for major sediment removal in 2002. This program involves an initial inspection, prioritization, survey, timber removal, sediment removal and inlet/outlet reconstruction. Major sediment removal took place in a majority of the City's ponds in the winters of 2002/2003 and 2003/2004. The estimated cycle for sediment removal from ponding areas is 20 years. In 2013/2014, six stormwater ponds were cleaned, including Sylvan/Acker, Phalen Golf Course Pond 7, Birmingham/York, Etna/Third, Hazel/Ross and Hazel/Nokomis. Approximately 8,400 Cubic yards of sediment was removed. Project included re-installation of rip rap at inlet and outlet structures and vegetation restoration by seeding and erosion control blankets. Sediment was tested and disposed of in accordance with state guidelines.

Over 1,300 cubic yards of sediment were removed from the largest stormwater pond on the Phalen Golf Course. Ramsey County Public Works dredged two stormwater ponds at the Como Golf Course.

Structural Pollution Control Devices

The city constructs water quality and volume control BMPs as required by the MPCA Construction Permit and Watershed District Rules. Since 2006, the City has constructed BMPs, including infiltration trenches and rain gardens. In 2014, an inventory of constructed BMPs was developed and entered into the City's asset management system. BMPs will be added each year once as-builts are received. The BMPs are programmed to be cleaned annually, beginning in 2015. In 2014, the Ramsey-Washington Metro Watershed District conducted BMP inspections. Several BMPs were cleaned by the City as a result of the inspection results.

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.5: HANDLING & DISPOSAL of REMOVED MATERIALS

Description

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

Assessment Process for Annual Reporting

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

Program Overview

Material is collected from catch basin sumps, the storm sewer system, ponding areas and water quality BMPs. Removed substances are screened for visual or olfactory indications of contamination. If contamination of the material is suspected, representative samples are selected for an environmental analysis. Contaminated substances are disposed of in a landfill or another site that is approved by the Minnesota Pollution Control Agency. Uncontaminated sediments are disposed in the same manner as street sweepings, as reported in Section IV: Street Management Program. During cleaning operations, sediment control measures are applied as needed to prevent removed material from re-entering the storm drain system.

2014 Activities

- Material removed from catch basins: 1,568 tons
- Material removed from stormwater ponds: 9,700 cubic yards

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.6 STREET SWEEPING PROGRAM

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

Street Sweeping

The City of Saint Paul conducts a street and alley cleaning program to promote the health and welfare of its citizens and to reduce the amount of pollutants to receiving waters from stormwater discharges. Sweeping is a major operation for the Street Maintenance Division and is done every month of the year, day and night. Elgin Pelican mechanical sweepers handle the vast majority of the sweeping. An Elgin Crosswind regenerative air sweeper is utilized downtown every weekday.

Residential street spring sweeping was completed on June 6, 2014. The primary material swept in the spring is debris from winter months. Fall sweeping was done during the last week of October and the first half of November. Typically, the fall sweep is timed so that a majority of the leaves are down and enough time is allowed to sweep all Saint Paul streets before the first snow. Currently, the wide variety of trees with varying leaf drop times makes it impossible to wait for all of the leaves to drop. To compensate for this, touch up sweeping continues most years through November and early December. In the interest of continued improvement to our sweeping program, workers attend training and best management practices are implemented.

Street Sweeping

Streets and alleys are divided into classes, each of which receives a different level of service as defined below:

Class I-A & B Downtown or Loop streets

Downtown or loop streets are within the following boundaries: Kellogg on the south, 12th on the north, Broadway on the east and Main on the west. These streets are swept approximately two times per week during the spring, summer, fall and winter as weather allows. All routine maintenance, including patching and repairing of street surfaces, is performed on an as-needed basis.

Class II - Outlying Commercial and Arterial Streets

These streets, which have business or commercial properties fronting on them, are the City's major arteries. They have heavy volumes of both vehicular and pedestrian traffic. Typical examples are University, Snelling, West 7th, East 7th, Rice, Payne, Arcade, Summit and Grand. Class II streets are typically swept or cleaned six to ten times annually on the following schedule: every two weeks in April, May, October and November for spring and fall cleanup and every 3 to 6 weeks in June through September for litter, tree debris and sediment. Occasional winter sweeping is also done. All routine maintenance, including patching and repairing of street surfaces, is done on a scheduled or as-needed basis. In 2014, Class II maintenance priorities were shifted from sweeping to patching and paving operations. The result of this shift in operations was less frequent sweeping between the spring and fall sweeps.

Class III - Residential Streets

In the spring, all residential streets, including oiled, paved and intermediate streets, receive a thorough sweeping. Patching and repairing is done on a scheduled or as-needed basis. All existing paved and oiled streets are on the 8 year cycle chip seal list. Approximately 70 miles of paved streets were chip sealed in 2013. Oil and sand sealing of oiled streets is no longer done. The City recycles the reclaimed chip seal rock. This material is no longer hauled to the landfill. In the fall, streets are swept for leaf pickup. Due to the early winter that started on November 10, 2014, approximately 50% of the residential streets were swept in the fall. In the spring of 2015, the spring residential sweep started at the point the operation stopped in the fall. All material swept up during the fall cleanup is hauled to a commercial composting facility.

Class IV - Oiled and Paved Alleys

All oiled and paved alleys are swept during the late spring and summer. All routine maintenance, including patching and repairing of the alley surfaces, is performed on a scheduled or as-needed basis. All existing paved and oiled alleys are now on an 8-year cycle chip seal list. Oil and sand sealing of oiled alleys is no longer done.

Class V and VI - Unimproved Streets and Alleys

Unimproved streets and alleys are right-of-ways that have not been developed. There are approximately 50 miles of unimproved streets and approximately 288 miles of unimproved assessed alleys in the City. Because they are City right-of-ways, the City has the responsibility to perform minimal repairs and maintenance work on them to make them passable and to reduce hazards. The maintenance and repair of these streets and alleys consists of patching, minor blading, and placing of crushed rock or other stabilized material.

Disposal

The materials collected from street sweeping are delivered to the City's Pleasant and View yard. The City's hauling contractor hauls the material away to have it screened and disposed of properly. The contractor composts the organic materials, which are mostly collected in the fall sweep.

Street Maintenance has a Hazardous Waste Disposal Policy in place. Any hazardous materials collected from City streets are disposed of in environmentally acceptable means. In 2001, the sweepings collected from City streets and alleys were tested and found to be within the Environmental Protection Agency's guidelines for recycling purposes, after screening out waste and debris. Approximately 7 to 10% of swept up material is disposed of in a landfill. Street Maintenance also services over 360 trash receptacles and disposes of refuse from neighborhood cleanups each year.

2013 Street Sweeping Quantities (Cubic Yards)*

Class	Spring/Summer	Fall
I & II - Downtown & Arterials	9,520	3,556
III – Residential & Alleys	10,150	19,096
Totals	19,670	22,652

* This table represents 2013 quantities. Due to the change in accounting systems, these quantities are not available for 2014. Quantities for 2015 will be available for the next annual report.

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.7: ROADWAY DEICING MATERIALS MANAGEMENT

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

Snow and Ice Control

Minnesota weather conditions may require ice control from late September through early May. Frost forming on bridge decks is usually the first and last ice control event of the winter season. From early November through mid-April, the need for pavement treatment is determined by temperature and precipitation. Frequency of snow events through the winter season influences amounts of material used. The City's foremost objective is to maintain safe roads for all users. The consequences of icy roads are longer travel times, adverse economic impact, accidents and injuries.

Salt is the primary material used to melt snow and ice. Salt and treated salt is effective to 15°F and 0°F respectively, but factors such as darkness, continuing snow, type and quantity of precipitation, all reduce melting performance. Sand is sometimes used to enhance traction, usually when temperatures are below 0°F and snowfall amount is likely to be greater than 3 inches. Specific application rates are decided upon for each snow event and adjusted to the minimum amount necessary to achieve the desired results.

Saint Paul uses treated salt for pavement temperatures below 15°F and regular salt for temperatures from 15°F and above. Salt brine is used to pre-wet salt from the salt spreaders, making the salt more effective. The benefits of pre-wetted salt are better melting performance, less bounce, residual value and reduction in amount of salt used. All salt trucks are presently fitted with salt pre-wetting equipment. Public Works developed and adopted a formal Salt Management Plan in the fall of 2011.

Storage of De-icing Materials

Salt and mixed piles of sand and salt are covered year round to eliminate runoff. Storage facilities are located at the following locations:

873 N. Dale Street
310 South Victoria Street

Snow and Ice Control

The 2014 winter season was above average for January through May and closer to normal in November and December. Six snow emergencies were declared early in 2014. Typically 3 or 4 snow emergencies are declared during this period. It is anticipated that ice control materials used for 2015 will be similar to 2014 quantities.

2014 Ice Control Material Quantities

	Jan to March	Nov to Dec	Total
Salt (tons)	6,302	5,172	11,474
Sand (tons)	3,673	1,600	5,273
Treated Salt (tons)	4,543	702	5,245
Brine (gallons)	132,326	9,615	141,941
Brine with Mg (gallons)	0	0	0

Employee Training

Saint Paul Public Works is an advocate of networking and regularly attends events such as the American Public Works Association North American Snow Conference and the Fresh Water Society Road Salt Symposium. All operators attended a Snow and Ice Control training session in November 2014. Attendees received certification from the MPCA. The main purpose of this session was to train employees to get the most out of every application, maintaining the safest roads possible in the most economical way, while protecting the environment. The session addressed the following: abrasives, salt, pre-wetting. anti-icing, equipment calibration and material storage. Public Works and Parks staff annually attends the Road Salt Symposium. The Minnesota Snow and Ice Control Handbook and Saint Paul Public Works Salt Management Plan are available to all employees and are used as a guide in our best practices.

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.8: CITY PARKING LOT & EQUIPMENT YARD MANAGEMENT

Description

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

a) Saint Paul Parks and Recreation – parks, recreation centers, maintenance facilities

b) Planning & Economic Development –city owned parking lots

c) Public Works

- Dale Street Facility includes Street Maintenance, Traffic Operations and Municipal Equipment
- Sewer Maintenance
- Asphalt Plant

Assessment Process for Annual Reporting

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

2014 Activities

The Parks Department and the Department of Public Works have Clean Water Policies which are distributed, reviewed, and signed by all field staff. (See Appendix)

Dale Street Facility Sediment Control Structure: Public Works hired WSB and Associates to complete a Facility Improvements Feasibility Report for four Public Works facilities and one Parks and Recreation facility. In 2012, a large pre-fabricated sediment control and collection structure was constructed at the Public Works' Dale Street Facility. This structure is inspected and cleaned as necessary.

Parks and Recreation Wash Stations: Contracted with ESD Waste2Water, Incorporated to complete site visits and provide five proposals for installation of permanent or portable equipment wash stations. Parks will seek funding for future installation.

Employee Training

- Saint Paul Public Works is an advocate of networking and regularly attends events such as the American Public Works Association North American Snow Conference and the Fresh Water Society Road Salt Symposium. All operators attended a Snow and Ice Control training session in November 2014. Attendees received certification from the MPCA. The main purpose of this session was to train employees to get the most out of every application, maintaining the safest roads possible in the most economical way, while protecting the environment. The session addressed the following: abrasives, salt, pre-wetting. anti-icing, equipment calibration and material storage. Public Works and Parks staff annually attends the Road Salt Symposium. The Minnesota Snow and Ice Control Handbook and Saint Paul Public Works Salt Management Plan are available to all employees and are used as a guide in our best practices.
- Utility Coordination Meeting, February 2014. This training involved municipal employees and utility businesses. The purpose was to educate regarding identification of illicit discharges, associated hazards, prevention, and containment.
- Illicit Discharge Training and Program Development, November 2014. This training session involved 8 city staff. The purpose was to educate municipal employees regarding illicit discharges and discuss enforcement including current procedures to receive, track and enforce violations as well as areas where process development is needed.
- A fact sheet was developed and distributed with the adoption of the new ordinance (See Appendix). Several staff meetings were held throughout the development of the ordinance.

MCM 6: Pollution Prevention & Good Housekeeping

BMP 6.9: FIELD OPERATIONS MANAGEMENT

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

The Parks Department and the Department of Public Works have Clean Water Policies which are distributed, reviewed, and signed by all field staff. (See Appendix)

Employee Training

- Saint Paul Public Works is an advocate of networking and regularly attends events such as the American Public Works Association North American Snow Conference and the Fresh Water Society Road Salt Symposium. All operators attended a Snow and Ice Control training session in November 2014. Attendees received certification from the MPCA. The main purpose of this session was to train employees to get the most out of every application, maintaining the safest roads possible in the most economical way, while protecting the environment. The session addressed the following: abrasives, salt, pre-wetting. anti-icing, equipment calibration and material storage. Public Works and Parks staff annually attends the Road Salt Symposium. The Minnesota Snow and Ice Control Handbook and Saint Paul Public Works Salt Management Plan are available to all employees and are used as a guide in our best practices.
- Utility Coordination Meeting, February 2014. This training involved municipal employees and utility businesses. The purpose was to educate regarding identification of illicit discharges, associated hazards, prevention, and containment.
- Illicit Discharge Training and Program Development, November 2014. This training session involved 8 city staff. The purpose was to educate municipal employees regarding illicit discharges and discuss enforcement including current procedures to receive, track and enforce violations as well as areas where process development is needed.
- A fact sheet was developed and distributed with the adoption of the new ordinance (See Appendix). Several staff meetings were held throughout the development of the ordinance.

MCM 7: Monitoring & Analysis

BMP 7.1: Cooperative Monitoring Program

Description

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

Assessment Process for Annual Reporting

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

History

As part of the two part application for the NPDES permit, the City of Saint Paul conducted stormwater monitoring at 5 sites for one season. From 2001 through 2004, the Cities of Saint Paul and Minneapolis and the Minneapolis Park and Recreation Board participated in a joint stormwater monitoring program, as required by the stormwater permit. Minneapolis Park Board staff conducted the monitoring program. The Stormwater Monitoring Program Manual was completed by Minneapolis Park Board staff and submitted separately to the MPCA in April of 2001. The joint monitoring agreement was submitted to the MPCA in 2002.

Sampling sites were identified in the Stormwater Monitoring Program Manual. The sampling sites were selected from the sites used in the stormwater permit application monitoring program. Five sites were chosen, representative of the following land use types: two residential sites, two industrial/commercial sites and one mixed use site. Two sites were located in Minneapolis and three were in Saint Paul. The permit required two years of mercury monitoring, which was conducted in 2002 and 2003.

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

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

2014 Activities

Monitoring Program

CRWD operates multiple stormwater monitoring stations, including a number of full water quality monitoring stations. The Capitol Region Watershed District 2014 Monitoring Report is available on the district website at www.capitolregionwd.org.

In 2014, the City conducted the Stormwater Quantity and Quality Monitoring Program. Monitoring was completed at several stormwater volume reduction BMPs in the City of Saint Paul. Electronic water monitoring equipment was used to collect water quantity and quality data on a continuous basis from stormwater BMPs, which included:

- Water level in 8 BMPs
- Flow volumes at 5 of the BMPs
- Composite water quality sampling at 4 of the BMPs
- Groundwater at 6 locations

Analysis of the collected data generated valuable information related to the performance of each BMP. This information included:

- Average infiltration rates measured in the BMPs exceeded the rates recommended in the Minnesota Stormwater Manual and watershed district rules for specific soil types.
- The BMPs are more effective at reducing stormwater volume and pollutant loads to downstream water bodies than is currently being recognized by the watershed districts.
- The Dynamic Method for sizing volume reduction BMPs was shown to be more accurate than the Simple Method. Allowing the use of the Dynamic Method in demonstrating compliance with watershed district rules would generate significant cost savings to the public.

A map summarizing the CRWD and City monitoring sites in Saint Paul can be found in the Appendix. The City's BMP monitoring program can be found on the City's Stormwater page at http://www.stpaul.gov/index.aspx?NID=2686.

Stormwater Runoff and Water Quality Modeling

In 2010, the City completed the first phase of a program that includes stormwater modeling, a citywide volume reduction inventory and plan to address stormwater on the 2010 Residential Street Reconstruction Program. The modeling includes the development of an XPSWMM and P8 modeling and uses the CRWD monitoring data for calibration. Three major subwatersheds, as well as the 2010 street reconstruction subwatersheds, were modeled. In 2011, the City began modeling as a component of the storm tunnel rehabilitation program. The Saint Anthony Park and Davern subwatersheds have been modeled. In 2012, the City began modeling the Phalen Creek storm sewer interceptor. The East Kittsondale storm sewer system modeling

project was completed in 2014. Other modeling projects were completed in support of the Sewer Utilities projects. The citywide modeling map is found in the Appendix. These models will be used by the City in the development of future stormwater programs and projects.

Pollutant Loading Calculations

The estimation of pollutant loadings is found in the Appendix. In addition, the average concentrations and annual loading results for the subwatersheds monitored by the CRWD can be found in Capitol Region Watershed District's 2014 Monitoring Report. This includes Como, East Kittsondale, Phalen Creek, St. Anthony Park and Troutbrook subwatersheds.

MCM 8: Discharges to Impaired Waters with a TMDL

BMP 8.1: TMDL Program

Description

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

Assessment Process for Annual Reporting

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

2014 Activities

The City is participating in the Metro Chloride Project and the Upper Mississippi River Bacteria TMDL process. Through the LMRWMO, the City participated in a WRAPs Project that was completed in 2014, which included Pickerel Lake.

Como TMDL

This is a categorical TMDL for which CRWD is the aggregator. The TMDL Annual Report Form can be found in the Appendix. Outfalls that drain to Como Lake can be found in the Outfall Inventory in the Appendix.

Appendix

Minnesota Pollution Control Agency

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Permit No. MN 0061263

June 2015

Budget	2014	2015	2016	2017	2018	2019
Storm Sewer Projects						
Stormwater Quality Improvements	$955,310	$974,416	$1,000,000	$1,000,000	$1,500,000	$1,500,000
Storm Sewer Tunnel Rehabilitation	$3,000,000	$3,060,000	$3,121,200	$3,183,624	$3,247,296	$3,312,242
Pond Cleaning Project	$100,000	$102,000	$104,040	$106,121	$108,243	$110,408
Storm Sewer Outfall Repair	$230,000	$234,600	$239,292	$244,078	$248,959	$253,939
	$4,285,310	**$4,371,016**	**$4,464,532**	**$4,533,823**	**$5,104,499**	**$5,176,589**
Storm Sewer Maintenance						
Storm Sewer Cleaning, Inspection & Repair	$191,907	$195,745	$199,660	$203,653	$207,726	$211,881
Pond Inspection & Maintenance	$148,217	$151,181	$154,205	$157,289	$160,435	$163,644
Catch Basin Inspection, Cleaning & Repair	$980,726	$1,000,341	$1,020,347	$1,040,754	$1,061,569	$1,082,801
Manhole Cleaning, Inspection & Repair	$209,076	$213,258	$217,523	$221,873	$226,311	$230,837
	$1,529,926	**$1,560,525**	**$1,591,735**	**$1,623,570**	**$1,656,041**	**$1,458,325**
Stormwater Modeling & Monitoring						
Stormwater Modeling	$50,000	$51,000	$52,020	$53,060	$54,122	$55,204
Stormwater Monitoring	$181,000	$184,620	$188,312	$192,079	$195,920	$199,839
	$231,000	**$235,620**	**$240,332**	**$245,139**	**$250,042**	**$255,043**
Street Maintenance	**$2,160,325**	**$2,203,532**	**$2,247,602**	**$2,292,554**	**$2,338,405**	**$2,385,173**
Street Sweeping						
Public Education Program	**$66,875**	**$68,213**	**$69,577**	**$70,968**	**$72,388**	**$73,835**
Storm drain stenciling including door hangers						
Metro Clean Water Campaign						
Adopt a Storm Drain						
Total Budget	**$8,273,436**	**$8,438,905**	**$8,613,778**	**$8,766,054**	**$9,421,375**	**$9,348,966**

2% used for annual inflation

DEPARTMENT OF SAFETY AND INSPECTIONS
Bob Kessler, Director

CITY OF SAINT PAUL
Christopher B. Coleman, Mayor

375 Jackson Street, Suite 220
Saint Paul, Minnesota 55101-1806

***Telephone**: 651-266-9090*
***Facsimile**: 651-266-9124*
***Web**: www.stpaul.gov/dsi*

Standard Operating Procedures for Erosion and Sediment Control Complaint

1) Someone sees an erosion and sediment control issue (dirt on street, etc).
- They should call the City Complaints Office: 651-266-8989

2) Complaint is passed on from Complaints Office to Senior Building Inspector (651-266-9021)

3) Building Inspector follows up on complaint using DSI Erosion and Sediment Control Worksheet

4) If Building Inspector determines source is from the Public Right-of-Way (ROW) or from City Construction Projects the complaint will be forwarded to the Public Works Inspectors –
- For Private Utility Construction in ROW: 651-487-7250 (General Number for ROW Permit Section)
- For City Construction Projects: 651-266-6081 (Street Engineering Construction Division)

Public Works Inspector will inspect and follow up accordingly

5) First Inspection
- DSI Erosion and Sediment Control Worksheet completed
- If site is non-compliant: Building Inspector issues immediate verbal order, if possible, or issues a written order if no one is on site, to address situation, sets a compliance date based on the nature of the complaint, and notes details of non-compliance in Worksheet

6) Second Inspection
- Building Inspector Conducts 2nd inspection of site after compliance date
- 2nd DSI Erosion and Sediment Control Worksheet completed
- If continued non-compliance: Building Inspector issues written orders, sets a new compliance date based on the nature of the complaint, and notes details of non-compliance in Worksheet

7) Third Inspection
- Building Inspector Conducts 3rd inspection of site after compliance date
- 3rd DSI Erosion and Sediment Control Worksheet completed
- If continued non-compliance, proceed with stopping construction work at the site, or submitting the violation to the City Attorney for potential prosecution, or pursue abatement if sediment crosses boundary of the site and project is greater than 1 acre.

DEPARTMENT OF SAFETY AND INSPECTIONS
Bob Kessler, Director

CITY OF SAINT PAUL
Christopher B. Coleman, Mayor

375 Jackson Street, Suite 220
Saint Paul, Minnesota 55101-1806

***Telephone**: 651-266-9090*
***Facsimile**: 651-266-9124*
***Web**: www.stpaul.gov/dsi*

Erosion and Sediment Control Worksheet

Property Address:

Inspector:

Permit # (if applicable):

Inspection Date:

Re-inspection Date:

Inspection Type:

Size of Site:

Inspection Results

Sewer Inlet Protection:

Comments:

Street Condition:

Comments:

Rock Entrance:

Comments:

Concrete Washout Area:

Comments:

Silt Fence/Sediment Control:

Comments:

Stock Pile Erosion Control:

Comments:

Site Erosion Control:

Comments:

Corrective Action:

Comments:

CITY OF SAINT PAUL
Christopher B. Coleman, Mayor

Public Works
Right-of Way Division

Telephone: 651-266-6151
Facsimile: 651-266-9765
Email: PW-ROWpermits@ci.stpaul.mn.us

EROSION AND SEDIMENT CONTROL FOR UTILITY PROJECTS IN THE RIGHT-OF-WAY

It is essential to prevent dirt, debris, oils and other waste from entering storm drains or water resources.

Erosion and sediment control devices are **REQUIRED** for any utility construction or grading project that will result in significant land disturbing activity in the public right-of-way.

- Sediment control practices (inlet protection and perimeter control /silt fence) must be installed **BEFORE** any land disturbance activities begin.
- Temporary land stabilization practices should be installed:
  - Daily over all temporary stockpiles on or near street (including plastic cover and temporary down drains); *and*,
  - Within 7 days after work is completed over all disturbed areas not on or near the street (including temporary seeding of spoil piles though seeding and mulching).

Refer to the Mn/DOT Pocketbook Guide (June 2009) for guidance to preventing pollutants from leaving construction sites. Note: general operations, including dewatering and concrete washout, begin on page 57.
http://www.dot.state.mn.us/environment/pdf_files/erosion-sediment-control-handbook.pdf

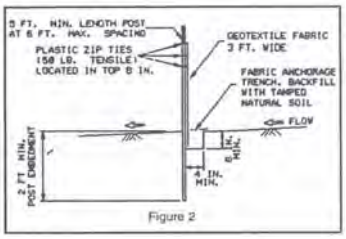


Figure 2

SILT FENCE

Silt fence is used as perimeter control to keep sediment on-site and away from areas you want to protect. For work in the right-of-way, silt fence can be installed between the top of the curb and the disturbed boulevard.

TEMPORARY SEEDING AND MULCHING OR PLASTIC COVER

Temporary seeding and mulching is to quickly provide temporary cover that will protect the soil from erosion until establishment of permanent stabilization. Applicable areas include any topsoil stockpiles and any areas disturbed by grading activities.

For areas that must be stabilized each day (located on or near the street) plastic cover should be used instead.

STORM DRAIN INLET PROTECTION

Storm drain inlet protection prevents sediment from entering a storm drain by surrounding or covering the inlet with a filtering material. This allows sediment-laden runoff to pond and settle before entering the storm drain.

The type of filter used will depend on inlet type (curb inlet or drop inlet), slope, and amount of flow. Some commercial inlet filters are placed in front of or on top of an inlet, others are placed inside the inlet and under the grate.

DAILY AND AS-NEEDED STREET SWEEPING

Street sweeping is used to clean the pavement and curb-line area on a regular basis to remove sediment, debris, and other pollutants from road and parking lot surfaces that are a potential source of pollution to waterways.

CITY OF SAINT PAUL
Christopher B. Coleman, Mayor

Public Works
Right-of-Way Division

Telephone: 651-487-7250
Fax: 651-487-7245

ROW Erosion and Sediment Control Worksheet

Project: **Project File No.**:

Property Address:

Inspection Date: **Re-inspection Date**:

Inspection Type: **Size of Site**:

Inspection Results

Sewer Inlet Protection:

Comments:

Street Condition:

Comments:

Silt Fence/Sediment Control:

Comments:

Stock Pile On or Near Street:

Comments:

Stock Pile Not On or Near Street:

Comments:

Corrective Action:

Comments:

SPILL REPORTING FORM

City of Saint Paul - Department of Parks and Recreation

INSTRUCTIONS

EMPLOYEE: Form should be filled out as completely as possible, on the same day as the spill occurred, by the individual involved in the spill. Describe all the events in as much detail as possible, especially the cleanup activities. If you have any questions regarding this form, contact your supervisor, or Environmental Services staff (651-632-5111). When completed, return form to your supervisor.

SUPERVISOR: Please return form as soon as possible to Adam Robbins, Como Central Service Facility.

Date of Spill:_____ Name (PRINT):_____

Time of spill:_____ Supervisor:_____

Section:_____ Phone number to reach you:_____

What was spilled?:_____

How much was spilled?:_____

Did the spill flow into a sewer? If yes, what type of sewer (sanitary, storm or unknown)?

_____

What type of surface did the spill occur on (soil, concrete, etc)?:

_____

Location of Spill (Be specific- address, intersection, exact location):

_____

_____

Describe what was happening when the spill occurred:

_____

_____

_____

What caused the spill (overfill, broken line, etc)? Be specific:

_____

Describe how the spill was cleaned up:

_____

_____

How were the spill cleanup materials disposed of?:

_____

List the names of other employees involved in the spill or cleanup:

_____

Was the MN Duty Officer called (651-649-5451)? _____

If yes: Who called?_____ Date_____Time_____

Duty Officer Report #:_____PCA Spill #_____

Employee Signature:_____

Spill Kit Instructions

Stop source of spill, if it can be safely done. If not, immediately call the Minnesota Duty Officer.

Contain spill. Wear gloves. Your first priority is to protect the spill from flowing into a storm sewer or drain. Use the 3" x 4' socks to create a barrier between the spill storm sewers/drains. Use the pillows to absorb pools of contained material (up to a half gallon per pillow). Small spills can be cleaned up with the absorbent pads.

Contact your supervisor or Environmental Services staff as soon as it is safe/practical to do so. If neither are available, contact the MN Duty Officer.

Complete a spill report form for all spills, **regardless of size**. The Minnesota Duty Officer must be notified for:

Petroleum (gasoline, diesel, hydraulic fluid, oil) spills of unknown amounts or over 5 gallons
Non-petroleum (antifreeze, pesticides, etc) spills of any amount

Phone Numbers
Environmental Services – (651) 632-5111
MN Duty Officer – (651) 649-5451

Disposal of used materials:
Used socks, pads and pillows should be placed in yellow hazardous waste bags found in the spill kit. Materials used to soak up petroleum spills should be disposed of in the 55 gallon barrel marked "Used Oil Sorbents" in the fuel shed at the Como Central Service Facility. For instructions on how to dispose of materials used to clean up non-petroleum substances, contact your supervisor or Environmental Services staff.

Replace used spill kit items promptly. All materials found in your spill kit are available from the Storeroom at the Como Central Service Facility.

FACILITY SPILL KIT INVENTORY	**qty**	**type**
	30	17"x19" pads
kit absorbs ~8 gallons	3	3"x4' socks
	4	2"x10"x10" pillows
	4	Hazardous Waste Bags
	2	Pair Nitrile Gloves
	4	Spill Reporting Forms

VEHICLE SPILL KIT INVENTORY	**qty**	**type**
	10	17"x19" pads
kit absorbs ~5 gallons	2	3"x4' socks
	2	Hazardous Waste Bags
	1	Pair Nitrile Gloves
	4	Spill Reporting Forms

G:\Div\A-OPERATIONS\Environmental Services\Leaks-Spills-Clean Ups\spill kits.xls

SAINT PAUL PARKS AND RECREATION

POLICY

DEPARTMENT

NUMBER: DIV. 4.4.2
PLACEMENT: Physical Resource Management
SUBJECT: Water Protection Policy

EFECTIVE DATE: 03/2010
UPDATED: 03/10

PURPOSE: To protect natural water bodies through the use of best management practices by all employees working near rivers, streams, lakes, ponds, and/or near storm sewers and impervious surfaces that lead to such water.

SCOPE: All Parks and Recreation employees.

POLICY STATEMENT:
As stewards of the environment, employees will take all precautionary measures to protect local water resources. The Department is committed to maintaining compliance with applicable environmental laws and regulations and to continually improve operations to prevent pollution of waterways that can harm local ecosystems and public health. This policy applies to any intentional act or unintentional act resulting from poor or neglectful work practices.

PROCEDURES (AND/OR REQUIREMENTS, EXPECTATIONS):

1. No dirt, silt, vegetation, organic material, debris, or other foreign materials will be deposited into any river, lake, stream, pond, or into any sewer system that leads to such water.

2. Employees will not blow, broom, sweep, whip, or shovel anything including dirt, silt, sand, debris, weeds, or other organic material into such body of water.

3. While performing work near such water, all debris will be picked up and removed from the site to be properly disposed of. In the event that an employee is not sure of proper disposal, the Supervisor should be called immediately.

4. No dirt, grass, organic material, debris or other foreign materials shall be intentionally deposited onto streets or other impervious surfaces without a plan for its immediate removal. This includes anything that may enter the sewer system. Exception: Sand/salt/deicers approved for controlling snow and ice when used appropriately.

5. When sweeping boulevards or edging curbs, a plan is required to immediately remove all dirt and debris deposited into the street. This may mean coordinating the clean up with Public Works or other street sweepers prior to the start of the job. If rain is expected, work should be delayed.

REQUIRED ITEMS AND/OR RELATED INFORMATION:

SECTION MANAGER'S RESPONSIBILITIES	SUPERVISOR'S RESPONSIBILITIES	EMPLOYEE'S RESPONSIBILITIES
Ensure all employees under his/her jurisdiction are aware of this policy and procedures.	Advise all employees of this policy and procedures.	Adhere to the policy.
Ensure that supervisors in his/her section enforce this policy and procedures.	Ensure that employees follow this policy and procedures.	Follow the procedures.
	Issue warnings or initiate disciplinary action as needed to ensure employee compliance.	Ask for additional training if needed.

Owner: Karin Misiewicz, Parks Supervisor **Next Review Date:** 02/11

G:\Div\A-ADMINISTRATION\POLICY\Division-wide Policies\4.0 Physical Resource Management\DIV. 4.4.2 Water Protection Policy.doc

DEPARTMENT OF PUBLIC WORKS
Policy and Procedures
Water Protection
Number:_____ Effective Date: November 1, 2010, Revision Date:

POLICY STATEMENT:
As stewards of the environment, employees will take all precautionary measures to protect local water resources. The Department of Public Works is committed to maintaining compliance with applicable environmental laws and regulations and to continually improve operations to prevent pollution of waterways that can harm local ecosystems and public health. This policy applies to any intentional act or unintentional act resulting from poor or neglectful work practices.

PROCEDURES (AND/OR REQUIREMENTS, EXPECTATIONS):

1. No dirt, silt, vegetation, organic material, debris, or other foreign materials will be deposited into any river, lake, stream, pond, or into any sewer system that leads to such water.

2. Employees will not blow, broom, sweep, whip, or shovel anything including dirt, silt, sand, debris, weeds, or other organic material into such body of water.

3. While performing work near such water, all debris will be picked up and removed from the site to be properly disposed of. In the event that an employee is not sure of proper disposal, the Supervisor should be called immediately.

4. No dirt, grass, organic material, debris or other foreign materials shall be intentionally deposited onto streets or other impervious surfaces without a plan for its immediate removal. This includes anything that may enter the sewer system. Exception: Sand/salt/deicers approved for controlling snow and ice when used appropriately.

5. When sweeping streets or edging curbs, a plan is required to immediately remove all dirt and debris deposited into the street. This may mean coordinating the clean up with other street sweepers prior to the start of the job. If rain is expected, work should be delayed.

Policy Approval:

Rich Lallier, Public Works Director

Date: November 1, 2010

Owner: Rich Lallier	**Next Review Date:** November 1, 2010

CITY OF SAINT PAUL
Mayor Christopher B. Coleman

390 City Hall
15 West Kellogg Boulevard
Saint Paul, MN 55102

Telephone: 651-266-8510
Facsimile: 651-228-8513

Fact Sheet

Chapter 51. Allowable Discharges to the Storm Sewer System

What is the focus of the new ordinance?

This ordinance is intended to prevent pollution from entering the City's storm sewer system, which discharges directly to our lakes and the Mississippi River. The ordinance formally defines what is allowed and prohibited.

Prohibitions include, but are not limited to:

- Motor oil, paint, solvents, or other liquids poured into a catch basin;
- Grass, leaves, or landscape material intentionally disposed in the street or waters;
- Sanitary connections to the storm system; or,
- Wash water, concrete wash out to the street or other improper disposal of waste.

Why is the ordinance needed?

The Minnesota Pollution Control Agency regulates Saint Paul's stormwater under the federal Clean Water Act. This serves to protect water quality in lakes and rivers. Under this permit, the City is obligated to enact regulatory controls to prevent pollutants from entering the storm sewer system.

What is the City currently doing to address this and how will this help?

- The City educates citizens on how to prevent pollution going into the storm sewer system by working with volunteer groups to stencil "don't pollute, drains to river" graphics on city storm drains and distribute multi-lingual door hangers.
- The City addresses municipal maintenance operations by implementing policies and procedures to avoid improper behaviors leading to stormwater pollution.
- Improper discharges to the storm sewer system are currently addressed on a complaint basis.

Several existing ordinances indirectly address pollution prohibitions, but lack specificity. The new ordinance clarifies and strengthens pollution prevention controls. It better positions the City to take enforcement steps, if necessary. Public Works and DSI jointly share enforcement responsibilities.

How does this ordinance affect citizens, businesses, or other constituents?

It is difficult to generalize due to the range of potential circumstances and impacts of prohibited discharges – from raking leaves into the street to dumping oil into a storm drain.

This ordinance will primarily be used to respond to public complaints. Awareness and education about the new ordinance, and avoiding water quality impacts, will be stressed. Enforcement in the form of abatement letters may be taken, depending on the circumstance and threat to water quality.

City Hall and Court House
15 West Kellogg Boulevard
Phone: 651-266-8560

File Number: Ord 13-6

Creating Chapter 51 of the Legislative Code controlling the introduction of non-stormwater discharges to the City's municipal separate storm sewer system.

THE COUNCIL OF THE CITY OF SAINT PAUL DOES ORDAIN

Section 1.

That Leg. Code Chapter 51 is hereby re-enacted to read as follows:

Chapter 51. Allowable Discharges to the Storm Sewer System

Sec. 51.01. Purpose.

This ordinance is adopted in accordance with the City's National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer (MS4) permit which authorizes the discharge of stormwater to surface water. Pursuant to permit regulations, the City is required to control the introduction of non-stormwater discharges to the City's municipal separate storm sewer system.

Sec. 51.02. Definitions.

For the purposes of this chapter, the terms used in this chapter have the meanings defined as follows:

City. "City" means the City of Saint Paul and its officials, employees, or duly authorized agents.

Clean Water Act. The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) and subsequent amendments thereto.

Groundwater. Water contained below the surface of the earth in the saturated zone including, without limitation, all waters whether under confined, unconfined, or perched conditions, in near surface unconsolidated sediment or in rock formations deeper underground.

MPCA. The Minnesota Pollution Control Agency.

MS4 (Municipal Separate Storm Sewer System). The system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains that is: owned and operated by the City, or other public entity, and designed or used for collecting or conveying stormwater, and which is not used for collecting or conveying sewage.

National Pollutant Discharge Elimination System (NPDES) Stormwater Discharge Permit. A permit issued under the Clean Water Act (Section 301, 318, 402, and 405) and United States Code of Federal Regulations Title 33, Section 1317, 1328, 1342, and 1345 authorizing the discharge of pollutants to water of the United States.

Non-Stormwater Discharge. Any substance not composed entirely of stormwater.

Prohibited Discharge. Any introduction of non-stormwater discharge to the City's municipal separate storm sewer system or to surface waters within the City, unless specifically exempted under section 51.03(b) of this chapter.

Person. "Person" means any individual, association, organization, partnership, firm, corporation, or other entity recognized by law, acting as either the owner or as the owner's agent.

Pollutant. Any substance which, when introduced as non-stormwater, has potential to or does any of the following:

(1) Interferes with state designated water uses;
(2) Obstructs or causes damage to waters of the state;
(3) Changes water color, odor, or usability as a drinking water source through causes not attributable to natural stream processes affecting surface water or;
(4) Adds an unnatural surface film on the water;
(5) Adversely changes other chemical, biological, thermal, or physical condition, in any surface water or stream channel; or
(6) Harms human life, aquatic life, or terrestrial life.

Stormwater. Defined under Minnesota Rule 7077.0105, subpart 41(b), and means precipitation runoff, stormwater runoff, snow melt runoff, and any other surface runoff or drainage.

Surface Water. Ponds, lakes, rivers, streams, and wetlands.

Sec. 51.03. Non-Stormwater Discharges.

(a) No person shall cause any non-stormwater discharges to enter the City's municipal separate storm sewer system, or to any surface waters within the City, unless specifically exempted under paragraph (b) of this section.

(b) The following allowable discharges are exempted from this section:
(1) Non-stormwater that is authorized by an NPDES point source permit obtained from the MPCA;
(2) Fire fighting activities and fire suppression systems;
(3) Dye testing for which the City has received written notification prior to the time of the test;
(4) Water line flushing or other potable water sources;
(5) Landscape irrigation or lawn watering;
(6) Diverted stream flows;
(7) Rising groundwater;
(8) Groundwater infiltration to storm drains;
(9) Uncontaminated pumped groundwater;
~~(8)~~(10) Foundation or footing drains (but not including active groundwater dewatering systems);
~~(9)~~(11) Air conditioning condensation;
~~(11)~~(12) Springs;
~~(12)~~(13) Non-commercial washing of vehicles;
~~(13)~~(14) Natural riparian habitat and wetland flows;

~~(14)~~(15) Dechlorinated swimming pool water;
~~(15)~~(16) Street wash water discharges;
~~(16)~~(17) Activities undertaken by the City, or by written authority of the City, deemed necessary to protect public health, welfare, or safety; and,
~~(17)~~(18) Any other water source not containing a pollutant.

(c) No person shall intentionally dispose of substances including, but not limited to, grass, leaves, dirt, or landscape material into the City's municipal separate storm sewer system or to any surface waters within the City.

Sec. 51.04. Prohibited MS4 Connections.

No person shall construct, use, or maintain any connection to intentionally convey non-stormwater to the City's municipal separate storm sewer system. This prohibition expressly includes, without limitation, connections made in the past regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection. A person is considered to be in violation of this ordinance if the person connects a line conveying non-stormwater to the storm sewer system, or allows such a connection to continue.

Sec. 51.05. Suspension of Storm Sewer System Access, Emergencies.

The City may, without prior notice, suspend MS4 discharge access to a person where it is determined that suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or public waters. If the violator fails to comply with a suspension order issued in an emergency, the City may take any step deemed necessary to prevent or minimize damage to the storm sewer system or public waters, or to minimize danger to persons.

Sec. 51.06. Access, Administrative Search Warrants.

If access to any part of a premises from which stormwater is discharged has been refused and, upon a demonstration of probable cause to believe that there may be a violation of this chapter, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, the City may seek an administrative search warrant from a court of competent jurisdiction.

Sec. 51.07. Criminal Violation, Enforcement.

Any person failing to comply with or violating any section of this chapter shall be guilty of a misdemeanor and, upon conviction thereof, may be punished by fine, by imprisonment, or both, as provided under section 1.05 of this Code. All City approvals and permits shall be suspended until the violation(s) of this Chapter are corrected. Nothing in this section shall preclude the City from concurrently seeking the enforcement of the provisions of this chapter in a court of competent jurisdiction by civil action to enjoin any continuing violation(s).

Sec. 51.08. Each Day a Separate Offense.

A separate offense shall be deemed committed upon each day during or when a violation occurs or continues.

Sec. 51.09. Public Nuisance

A violation of this ordinance is a public nuisance subject to abatement pursuant to City Code Chapter 45. When the City finds that a person has violated or failed to meet a requirement of this section, the person is deemed to have created a public nuisance per se subject to an injunction or any other appropriate remedy to prevent activities which would create further violations or compel a person to perform an abatement or remediation of the violation which the City may seek from a

court of competent jurisdiction. All city approvals and permits shall be suspended until abatement of the nuisance condition(s). Nothing in this section shall preclude the City from concurrently seeking the enforcement of the provisions of this Chapter by criminal prosecution.

Sec. 51.10. Administration.

The departments of safety and inspections or public works, as the case may be, shall as determined, be responsible for the administration, implementation, and enforcement of the provisions of this Chapter.

Section 2.

This Ordinance shall be in full force and effect thirty days (30 days) from and after its passage, approval, and publication.

At a meeting of the City Council on 2/13/2013, this Ordinance was Passed.

Yea: 7 Councilmember Bostrom, Councilmember Brendmoen, Councilmember Carter III, City Council President Lantry, Councilmember Stark, Councilmember Thune, and Councilmember Tolbert

Nay: 0

Vote Attested by Council Secretary Trudy Moloney **Date** 2/13/2013

Approved by the Mayor Chris Coleman **Date** 2/20/2013

Metro WaterShed Partners & Clean Water MN

2014 Annual Program Report

MINNESOTA WATER
LET'S KEEP IT CLEAN

INDEX PAGE

Table of Contents

Metro Watershed Partners 2014 Activities & Accomplishments…… 3

Clean Water MN Media Campaign 2014 Activities & Accomplishments…….. 9

Metro WaterShed Partners 2014 Financial Report……13

Metro WaterShed Partners 2014 Report

Introduction

Metro WaterShed Partners is a coalition of more than seventy public, private and non-profit organizations in the Twin Cities metro area. Through collaborative educational outreach, the Metro Watershed Partners promote a public understanding that inspires people to act to protect water in their watershed. Since 1996, Watershed Partners have cooperated through educational projects, networking, and resource-sharing.

The mission of the Metro WaterShed Partners is two-fold:

- to provide and promote collaborative watershed education products with consistent messages to the general public, local government staff and elected officials, and
- to provide WSP members a place and means for an information clearinghouse, a source of idea generation, and the coordination, collaboration, and support for watershed education programs.

In 2014, we remained a viable collective of mutually supporting watershed educators that create and implement effective educational programs. In response to our fund-raising letter, members contributed $19,150 this year to support our monthly meetings, exhibit checkout, administrative support and state fair outreach.

Leadership

The work of **Metro WaterShed Partners** is guided by a steering committee that includes stormwater education professionals from cities, watersheds, non-profit organizations and government agencies. In 2014, our steering committee members were:

Anne Weber, City of St. Paul Public Works
Angie Hong, Washington Conservation District,
Cole Landgraf, Minnesota Pollution Control Agency
Erica Sniegowski, Nine Mile Creek Watershed District
Jessica Bromelkamp, Rice Creek Watershed District
Laura Adler, City of Edina
Lyndon Torstenson, National Park Service, Mississippi National River & Recreation Area
Peggy Knapp, Freshwater Society
Telly Mamayek, Minnehaha Creek Watershed District
Tracy Fredin, Hamline University, Center for Global Environmental Education

2014 Accomplishments

Networking and Sharing Resources

The WaterShed Partners hold monthly meetings that provide members with the means to gather, share information, generate ideas, and form partnerships that support watershed education in the state of Minnesota. These meetings keep our membership up to date on new developments in the field of water resources and water education by featuring presentations by experts in fields such as watershed management, education, marketing, legislation and outreach.

In 2014, WaterShed Partners' held ten meetings. A total of 335 people attended these meetings, with an average of thirty-four per meeting. This is an increase of more than a hundred total attendees and an average increase of ten members per meeting. Much of this increase is due to the popular Eric Eckl workshop, *More than a Message,* held in February at Hamline University, which had 80 attendees. We are pleased to see our partners continuing to demonstrate energy for collaboration and information sharing; we plan to continue offering workshops and events our partners will find useful in 2015 and beyond.

(See next page for a list of 2014 meeting topics and presenters.)

WaterShed Partners listserv

The Metro Watershed Partners' listserv is a forum for information sharing to an audience of watershed educators, legislators and industry professionals throughout the state.

In 2014, the Metro WaterShed Partners listserv continued to provide more than one hundred user-members with an effective tool for promoting educational programs, sharing information about professional programs, and exchanging information with other watershed educators, legislators and businesses. The email address for the listserv is watershedpartners@listserv.hamline.edu. If you would like to send and receive emails from the listserv, send a request to Jana Larson at jlarson25@hamline.edu.

2014 PARTNER MEETINGS — TOPICS AND PRESENTERS

January	Pat Sweeney, Fresh Water Society	*Ground Water Sustainability*
February	Eric Eckl, Water Words that Work	*More Than a Message*
March	Brook Asleson, MPCA	*Chloride Management Plan*
April	John Olson, Science Specialist, MN Department of Education; Pete Cleary, Dodge Nature Center; Sue Powell, Principal, Garlough Environmental Magnet School; Janine Kohn, Minnesota Project WET Coordinator for the Department of Natural Resources	*Panel discussion: Working Effectively with K-12 teachers*
May	Steve Woods, Fresh Water Society	*What's Going on at Fresh Water Society*
June	Dave Wall, MPCA *Nitrogen in Minnesota Rivers: Conditions, Trends, Sources, and Reductions* Dr. Carrie Jennings, Glacial Geologist, Minnesota DNR *The Minnesota River in Context: a Brief History* Representative Rick Hansen *Legislative Update on Water, Agriculture and Nitrogen*	Seventh annual boat trip — this year departing from Watergate Marina aboard the Magnolia Blossom—to explore the confluence of the Minnesota and Mississippi Rivers.
July	SUMMER BREAK	
August	Sam Geer and Michael Keenan, reGEN Land Design	*Gardening at the Water's Edge*
September	CLEAN WATER SUMMIT	
October	Jenn Radtke, Washington Conservation District, and Sean Gosiewski, Alliance for Sustainability	*Working with faith communities to raise awareness and change behavior to protect clean water*
November	Christie Manning, Macalester College Fred Rozumalski, Barr Engineering Sandy Spieler, Heart of the Beast Theater Anna Eleria, Capitol Region Watershed District Angie Hong, East Metro Water Resources Education Partnership	Roundtable Discussion: *Sustainability, Behavior Change, and Making the Invisible Visible*
December	End of the year potluck	Strategy discussion continued from November roundtable

Education and Outreach at the Minnesota State Fair and Community Events

Attendance at the fair hit a new record this year, with 1,824,830 visitors. The WaterShed Partners had two exhibits, at the DNR building and at the Eco-experience, where 800,000 people were exposed to our messages about keeping Minnesota water clean.

Eco Experience: The Metro WaterShed Partners partnered with Hamline University to develop and host the Eco-action exhibit at the Minnesota State Fair's Eco Experience building. The exhibit featured *StormDrain Goalie* outreach tools: a photo booth; an iPad game; multimedia kiosks; StormDrain Goalie Air Hockey; and three portable, museum-quality Exhibits-in-a-Box focused on the science of Eutrophication, taking action to reduce run-off, and the urban water cycle. The exhibit raises awareness about the importance of protecting water in Minnesota and to asks people to commit to take action at home to prevent run-off pollution.

This year, we hired a local photo booth company, *Snap Yourself,* to run the StormDrain Goalie photo booth and manage the social media sharing process. We took 3,213 photos during the fair, printed 2,800 photos for people to take home, got 858 new "likes" for our Facebook page, and StormDrain Goalie Facebook posts reached more than 15,000 people during the fair. Additionally, 260,000 people visited the Eco Experience this year and saw our exhibit.

Minnesota Department of Natural Resources (DNR) building:
Approximately 500,000 (one in four) fair-goers visit the DNR building each year. This year our exhibit was a huge hit! We created a new *StormDrain Goalie* foosball table (see below) which was a centerpiece of the DNR building and always in play. The exhibit also featured two new *Exhibit-in-a-Box* table-top displays focused on stormwater pollution prevention and Eutrophication, a *StormDrain Goalie* iPad game, table-top watershed map puzzles and two interactive computer kiosks.

Exhibit-in-a-Box, on Eutrophication.

Minnesota WILD:
The Minnesota Wild hockey team has formed a partnership with Hamline University and the Metro WaterShed Partners to host the *StormDrain Goalie* photo booth at Wild games in 2014-2015. On December, 2014, *StormDrain Goalie* was at the Xcel Energy Center for a home game. We talked to lots of Wild fans about protecting clean water, took more than 150 photos, and reached nearly 600 fans with our Facebook posts. We look forward to StormDrain Goalie reaching more Wild fans in 2015.

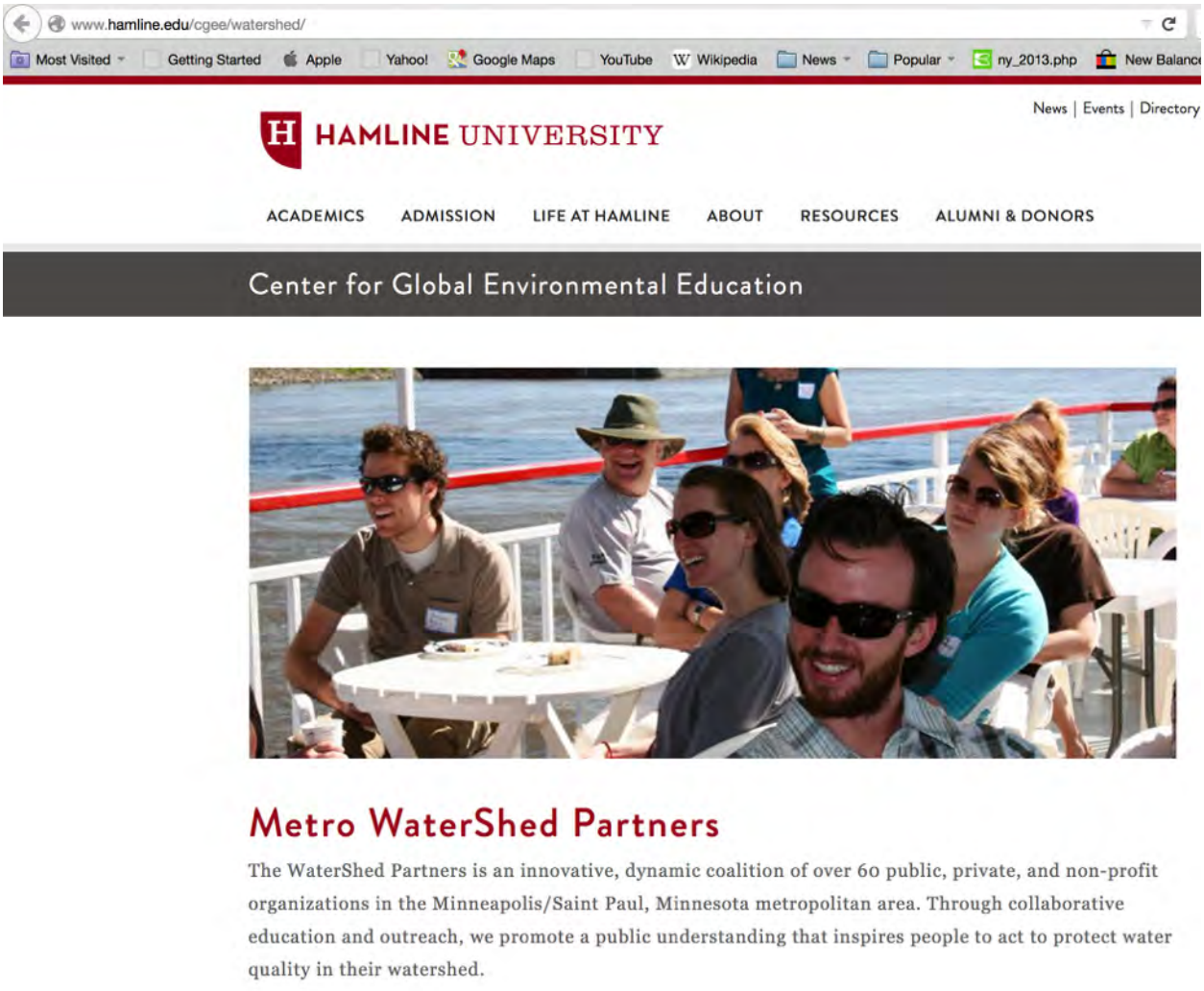
Community events:
Throughout the year, the Metro WaterShed Partners make our tabletop exhibits available free of charge to organizations doing education and outreach on non-point source pollution and preservation of clean water. In 2014, the Metro Children's Water Festival, Coon Rapids, Eden Prairie, East Isles Green Team, West Metro Water Alliance, and the Center for Global Environmental Education used these exhibits to implement clean water education throughout the state. If you are interested in checking out one of our kiosks or table-top exhibits for an event in your community, you can find more information and a check-out form at: http://www.hamline.edu/education/environmental/cgee/watershed/exhibit/index.html

WaterShed Partners website

The WaterShed Partners website is hosted by Hamline University at: www.hamline.edu/cgee/watershed. The site contains:

- information about our monthly meetings
- an archive of minutes, agendas and presentations from past meetings
- our most recent annual report
- information on becoming a member and contributing membership funds to support our partnership and outreach activities
- a directory of partners
- information on borrowing our circulating exhibits
- general information and a brief history of the partnership

Please contact Jana Larson if you have questions or need help finding the information you are looking for: jlarson25@hamline.edu.



Clean Water Minnesota
2014 Media Campaign Report

Introduction

Clean Water Minnesota is a collaborative outreach project of the Metro WaterShed Partners. Working together, we develop and deliver innovative storm water education messages to the Twin Cities metro area and beyond. We place storm water pollution prevention messages on radio, television, billboards and more – a feat not possible for any one of our partners alone.

Media Campaign Leadership

The WaterShed Partners steering committee oversees the work of Clean Water Minnesota; Jana Larson from Hamline University serves as project manager for campaign fundraising and activities. We regularly ask stakeholders to tell us how to best serve the needs of MS4s.

Strategic Planning in 2015

In 2015, Clean Water Minnesota will be working with communications expert Eric Eckl, founder of Water Words that Work, LLC, to evaluate and improve our communication and outreach strategies. We need to raise $300,000 over the next three years to develop new tools and implement new strategies. If we succeed, you can expect a new and improved MS4 toolkit, on a new MS4toolkit.org site, with new photography, templates and messages to use in your communications; new and improved PSAs, delivered via new media outlets; a more sophisticated social media strategy; and a new CleanWaterMN.org website targeting homeowners in the Twin Cities metro area. If you would like more information, or want to find out how you can support this process, contact Jana Larson: jlarson25@hamline.edu.

2014 Accomplishments

Clean Water Minnesota put storm water pollution prevention messages on radio during Minnesota Twins' games, on print ads in the Twins ballpark, and ran PSA's on Comcast television. We continued to promote Clean Water MN at the Minnesota State Fair, and through our *StormDrain Goalie* Facebook page.

Clean Water Minnesota made approximately 4,343,000 impacts with messages about clean water in 2014.

Purchased Media

This year, the Clean Water Minnesota campaign had more than 3.5 million media impressions on radio, TV, and at the ballpark during Minnesota Twins' games.

Twins Radio Network

Dates: June 2014
Placements: 32 in-game ads, plus 8 bonus spots during game delays.
Ballpark bathroom stall ads: 30 signs
Total Investment: $9,985.00
Total Impressions: 2,561,000
Audience: Twin City Metro Area

Twins games were broadcast on 1500 ESPN Twin Cities during the 2014 regular season. According to the 2011 Scarborough Research release, Twins Radio reached 45% of the Twin Cities adult population (57% of adult males). 900,000 metro area residents listen to each game.

The following ad played during Minnesota Twins baseball games:

"Mowing your lawn? Grass clippings that blow onto streets and sidewalks flow into lakes and rivers, feeding algae, which turns water green. Keep clippings on your lawn. The fish thank you. Clean streets, clean water. More at clean-water-m-n-dot-org."

Print ad placed in bathroom stalls at Twins Stadium.

Television Public Service Announcements (PSAs)

Comcast Spotlight Cable Television PSAs

Dates: October 2014
Placements: 66 paid spots, plus 86 bonus spots across all markets and and additional 1,727 bonus spots in select zones.
Total Investment: $7,922.00
Total Impressions: 959,687
Audience: Statewide

In 2014, Clean Water Minnesota ran 30-second PSAs on the following networks: A&E, CNN, DISC, FOOD Network, HGTV, HIST, and TNT

Comcast Cable featured the following public service announcement:

“Plop” Fish Bowl PSA – 30 seconds

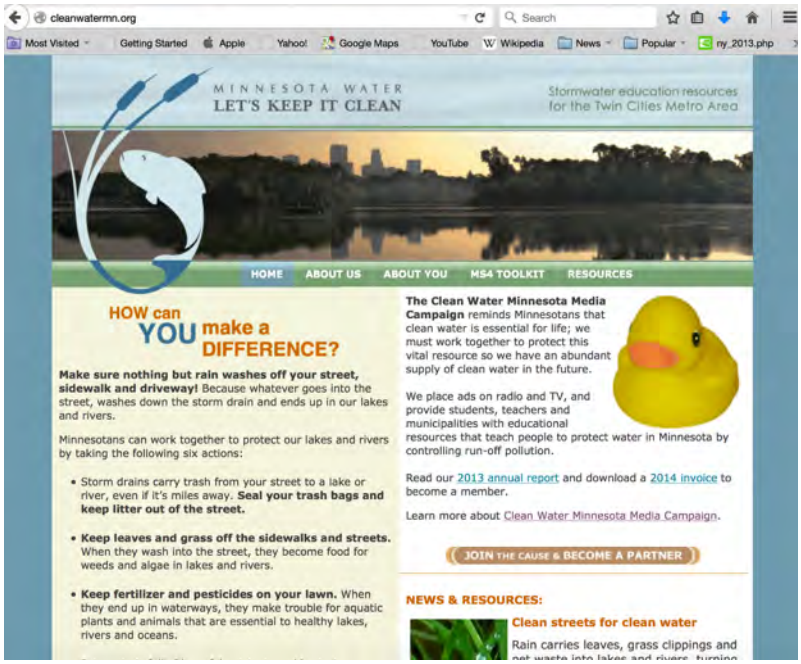
Adapted from a PSA produced by the City of Austin, Texas, “Plop” features a fish bowl that becomes increasingly contaminated as common stormwater pollutants ‘plop’ into the fish bowl.

“Your street connects directly to lakes and rivers. If your car drips oil or antifreeze on the ground (pause) it washes into storm drains, and into our lakes and rivers. If you spread lawn fertilizer into the street (pause) or you’re not careful with leaves and yard waste (pause) they wash into storm drains too. If your car drips oil or antifreeze on the ground (pause) it washes into storm drains. And when you don’t pick up after your pet – well, you get the picture. More at clean-water-m-n-dot-org.”

Distribution of “Fowl Water” and “Plop” DVDs

Copies of the “Plop” and “Fowl Water” DVDs were distributed to 1 municipality in 2014. The DVDs are played on community cable television stations, on television monitors in public buildings, and at educational events.

Online Stormwater Pollution Prevention Education at www.cleanwatermn.org



The Clean Water MN website launched in 2005. Though we plan to update this site in the coming year or so, it is still a viable site, full of great resources for clean water educators.

Resources most frequently accessed on cleanwatermn.org:

- Minnesota MS4 Toolkit: Developed in 2009 by the Washington Conservation District, with support from the Minnesota Pollution Control Agency, the toolkit contains materials for use in municipal stormwater pollution prevention education. http://cleanwatermn.org/MS4-Toolkit.aspx

- Image Gallery: A repository of high quality, seasonally appropriate photographs for use in water education materials. This is a stellar source of free downloadable images for use in print or on the web. If you own the copyright to an image you would like to share, please contact us and/or use the document upload tool to add the photograph to our image gallery. You can find a link to the image gallery on the MS4 toolkit homepage; use link above.

- Document Upload Tool: The document upload tool allows MS4 educators to upload documents, brochures, posters, images and other resources to the MS4 Toolkit for others to use. http://cleanwatermn.org/getdoc/c3507554-5c63-4127-b6c3-d42923afd7d2/Doc-Upload.aspx

Social media

The *StormDrain Goalie* Facebook page more than 1,400 followers. In 2014, our posts about clean water reached approximately 43,000 people.

2014 Financial Report

In response to our fund-raising letters, members contributed $19,150 to the WaterShed Partners in support of meetings, state fair outreach, administration, exhibit maintenance, development and checkout. Supporting members of the Clean Water Minnesota Media Campaign gave $48,625 to support media outreach in the metro area.

Supporting Members of the Metro Watershed Partners and the Clean Water Minnesota Media Campaign in 2014

City of Andover
Bassett Creek Watershed Management Commission
City of Bloomington
Capitol Region Watershed District
Carver County
City of Columbia Heights
Dakota County
City of Eden Prairie
Elm Creek Watershed Management Commission
City of Excelsior
City of Faribault
Lower Mississippi River Watershed Management Organization
City of Minneapolis
Minnehaha Creek Watershed District
City of Minnetonka
Mississippi National River and Recreation Area, National Park Service
City of New Brighton
Ramsey Washington Metro Watershed District
Rice Creek Watershed District
City of Rochester
City of Saint Paul
Shingle Creek Watershed Management Commission
City of Shoreview
South Washington Watershed District
West Mississippi Watershed Management Commission

2014 WaterShed Partners Financial Report

REVENUE	Inkind	Cash	Total
Purchased Media Funds Rollover		$3,001.62	$3,001.62
1. WaterShed Partners coordination	$61,538.59	$25,250.00	$86,788.59
2. Watershed Partner Exhibit	$18,010.00	$4,000.00	$22,010.00
3. Media Campaign	$79,600.00	$48,625.00	$128,225.00
Total Revenue	**$159,148.59**	**$80,876.62**	**$240,025.21**
EXPENSE			
1. WaterShed Partner Coordination/Administration	**Cash/ In-kind**		**Total**
Principle Investigator	$2,500.00	$2,500.00	$5,000.00
Program Coordinator	$7,600.00	$15,000.00	$22,600.00
Steering Committee	$32,400.00		$32,400.00
Watershed meeting hosting	$2,500.00		$2,500.00
Web site maintenance/list serve	$2,400.00		$2,400.00
Boat Trip and Roundtable Expenses		$6,075.06	$6,075.06
Materials/supplies/operating expenses	$2,138.59	$364.76	$2,503.35
Accounting/indirect fees	$12,000.00		$12,000.00
Subtotal	**$61,538.59**	**$23,939.82**	**$85,478.41**
2. WaterShed Exhibit Implementation			
WaterShed Exhibit Coordination	$8,000.00	$1,000.00	$9,000.00
WaterShed Exhibit Development/Implementation	$6,000.00	$1,843.00	$7,843.00
WaterShed Exhibit Transportation	$910.00		$910.00
Exhibit Maintenance	$500.00	$2,401.00	$2,901.00
Storage/checkout	$2,600.00		$2,600.00
Subtotal	**$18,010.00**	**$5,244.00**	**$23,254.00**
3. Clean Water MN Media Campaign			
Purchased Media	$20,900.00	$17,842.00	$38,742.00
Printing & Postage		$284.73	$284.73
Meeting Expenses			$0.00
Eco-experience/ social marketing exhibit implementation	$15,000.00	$6,185.90	$21,185.90
Eco-experience/ social marketing conceptualization/management	$29,200.00	$11,800.00	$41,000.00
Campaign Coordination web site management	$10,500.00	$10,500.00	$21,000.00
Web Hosting Fee		$814.17	$814.17
Fiscal Agency Fee, Hamline University	$4,000.00	$4,000.00	$8,000.00
Subtotal	**$79,600.00**	**$51,426.80**	**$131,026.80**
TOTAL 2014 Expenditures	**$159,148.59**	**$80,610.62**	**$239,759.21**

FRIENDS OF THE MISSISSIPPI RIVER

Working to protect the Mississippi River and its watershed in the Twin Cities area.

360 North Robert Street
Suite 400
Saint Paul, MN 55101

651-222-2193
www.fmr.org
info@fmr.org

St. Paul Water Quality Education Project
2014 Final Report
Submitted by Friends of the Mississippi River
January 15, 2015

This report summarizes Friends of the Mississippi River's activities in fulfillment of our 2014 Water Quality Education Program contract with the City of St. Paul. The Program Objectives were:

1. To involve St. Paul residents and community members in hands-on learning experiences about urban runoff pollution and ways to prevent it.
2. To facilitate school service learning initiatives including storm drain stenciling, litter cleanups and/or habitat restoration as key components.
3. To stencil storm drains with the message "Keep 'em Clean—Drains to River," and distribute educational door-hangers to residents and businesses in the stenciled neighborhoods.

These objectives were met through three key program areas, which are described in greater detail in this report:

1. Storm drain stenciling and cleanups
2. Extra education
3. Community educational workshops, events and tours

What follows are descriptions of activities, outreach and promotion efforts, and specific accomplishments for each program area.

STORM DRAIN STENCILING

Description:
Storm drain stenciling is a service-learning program in which community volunteers receive a 30-40 minute lesson about urban runoff pollution and ways to prevent it, then spray paint the message "Keep 'em Clean – Drains to River" next to storm drains on St. Paul city streets. Volunteers also distribute educational door hangers and pick up trash along their way. In addition to stenciling outings, FMR also coordinates 2-4 litter-cleanups/restoration outings within the City each year.

Outreach:
In 2014, storm-drain stenciling and cleanups were promoted using the following means:

- Emailing previous-years' stenciling participants

- Contacting past participants and potential new contacts (St. Paul schools, after-school programs and service-learning programs)
- Posting on FMR's website, social media (Facebook and Twitter pages), as well as announcements in FMR's email newsletter, *Mississippi Messages*
- Postings on other websites including VolunteerMatch, TwinCities.com/Pioneer Press, Do It Green, TC Daily Planet, Next Step, Green Hands USA, Minnesota Parent and 1Mississippi/River Network
- Announcement at Big River Journey teacher trainings in January 2014
- Special Facebook advertising campaign to run in December 2014 targeting teachers and others who work with youth or groups in Central and Phalen ZIPS to increase awareness of the program in areas of need of more stenciling.

Accomplishments:

Stenciling:

In 2014, Katie Clower (Youth & Community Engagement Coordinator) worked on this grant from January, 2014 to March, 2014 before leaving to take another position. Kate Clayton (Assistant Stewardship Coordinator), at Friends of the Mississippi River starting in April, and Adam Flett (Stewardship Events Coordinator) facilitated storm drain stenciling outings with 41 different school and college groups, community groups, corporations and residents of the City of St. Paul. **In total, FMR engaged 1,173 volunteers to stencil 2,699 storm drains and distribute 6,049 educational door hangers within the City, for a total of 2106.5 hours of volunteer work.** A list of the 41 groups, with contact information, event dates and goals achieved, is attached at the end of this report.

FMR surpassed the goals set out in the contract for volunteer numbers (goal: 1,100), volunteer-hours (goal: 1,650), door hangers distributed (goal: 4,000) and number of storm drains stenciled (goal: 1,650).

This year, 9 scheduled stenciling outings were canceled due to weather or canceled by group leaders for various reasons. These 9 events were never successfully rescheduled. Because a similar number of hours are spent on planning an outing whether or not that outing is canceled, these cancellations lead to a higher ratio of program-hours/volunteers. However, because of high demand for this program, they did not substantially affect the total number of volunteers FMR was able to engage.

Cleanups/Invasive Species Pulls:

FMR facilitated 2 invasive species pulls this year, engaging a total of 89 volunteers contributing 163 hours. The first outing was a brush haul at Ames Lake, and the second was a garlic mustard pull at Lake Phalen wetlands. A list of groups, with contact information, event dates and goals achieved, is attached at the end of this report. For both outings, FMR provided general education about the water quality benefits of restoring natural areas and gloves as well as coordinated through the City of St. Paul Parks and Recreation Department.

Two additional cleanups were scheduled but subsequently canceled; both events were canceled by the group leaders for various reasons. Neither of the events could be rescheduled.

Equipment:
FMR staff coordinated the purchase, storage and maintenance of storm drain stenciling supplies, including door hangers, for the 2014 season. Below is an inventory of supplies remaining at the end of the 2014 season. See previous reports for a comparison with prior years.
Equipment Inventory:
Gloves: Plenty
Clipboards: 26
Goggles: 43
Paint: 15
Brushes: 51
Vests: 80
Cones: 21
Buckets: 25
Trash Bags: Best Guess 120
Flyers/Door Hangers: 3.5 boxes, approx. guess 6000

Stencils:
Drains to River – old w/ fish: 1
Drains to River – new but all used once or twice: 10
Drains to River—new but prototype and floppy: 17
Drains to Creek – old, w/ fish: 23
Drains to Lake – new: 25
Drains to Lake – old: 23
Hmong language: 7
Somali language: 12

EXTRA EDUCATION

Description:
Additional water-quality education programming, separate from the lessons included in storm drain stenciling outings, is provided to schools and community groups in multiple formats including classroom presentations, interpretive field trips, participation in special events (i.e. the Children's Water Festival) or through tabling at local fairs or expos. Each educational program includes information about urban runoff pollution and methods for its prevention, but additional topics may include the water cycle, watersheds, erosion, wetlands, river ecosystems, landscape change, habitat restoration and environmental justice. These presentations are designed to increase knowledge of urban non-point source pollution and related environmental issues, and may include demonstrations, PowerPoint presentations, science experiments, games and/or group discussions. Primarily Katie Clower or Kate Clayton provided extra education, with assistance from Adam Flett.

Outreach:
In 2014, extra educational programs were promoted using the following means:
- Emailing previous-years' stenciling participants
- Contacting past participants and potential new contacts (St. Paul schools, after-school programs and service-learning programs)

- Posting on FMR's website, social media (Facebook and Twitter pages), as well as announcements in FMR's email newsletter, *Mississippi Messages*
- Postings on other websites including VolunteerMatch, TwinCities.com (Pioneer Press), Do It Green, TC Daily Planet, Next Step, Green Hands USA, 1Mississippi, Craigslist, River Network, etc.
- Announcement at Big River Journey teacher trainings in January 2014
- Tabling at the opening of Hillcrest Library for families interested in working with FMR

Accomplishments:
This year, FMR coordinated **24 classroom presentations, 2 interpretive field trips and 1 special event presentation, providing extra education to a total of 680 participants** in the City of St. Paul**.** Lessons averaged 1 hour. FMR also tabled and provided water-quality education at 2 St. Paul community events: Children's Waterfest and St. Paul Open Streets. A list of the extra education groups and/or venues, with contact information, event dates and lesson topics, is attached at the end of this report.

Note: some of FMR's programming on the East Side was funded through the McNeely Foundation

COMMUNITY EDUCATIONAL WORKSHOPS, EVENTS AND TOURS

Description:
FMR's community educational workshops, events and tours in 2014 included our River Friendly Homes and Gardens: In-Home Water Stewardship workshops and Landscape for the River Workshops, as well as a make-and-take rain barrel workshop.

Stewardship Events Coordinator Adam Flett coordinated all of the educational workshops, events and tours, with assistance from other FMR staff. Planning for the workshops included researching, developing and initiating our River Friendly Homes and Gardens: In-Home Water Stewardship workshops (focusing primarily on pollutants like household cleaners, household hazardous wastes, pharmaceuticals, triclosan, microbeads and others, and water conservation techniques); and for our Landscape for the River workshops (updating information on the impact of stormwater pollutants on water quality, best practices for raingarden design and installation, benefits and techniques for composting in residential yards and gardens, rain barrel assembly, installation and use, watershed-friendly lawn care strategies, and local resources related to these topics). Staff also updated a host of printed materials on these topics that were distributed at the workshops.

Specific descriptions of each event follow.

Brewing Clean Water: In-Home Water Stewardship Workshops:
A spin on our "River Friendly Homes and Gardens: In-Home Water Stewardship" workshop, these focused primarily on pollutants like household cleaners, household hazardous wastes, pharmaceuticals, triclosan, microbeads and others, and water conservation techniques. This PowerPoint presentation provided participants with a number of opportunities to reduce impacts from polluted runoff, and allowed for discussion on contaminants of emerging concern. These events were also part of another FMR program, "Brewing Clean Water," a pilot program that enables FMR and Brewer's to unite around clean water interests, and provides a new venue

for delivering our message to new and old FMR participants. They were very popular, and had no trouble filling up.

- Flat Earth Brewery, August 6, 2014 (21 participants)
- Tin Whiskers Brewing Company, October 28, 2014 (35 participants)

Landscape for the River Workshops: FMR staff presented the workshop "Gardening for a Rainy Day: Native Plants, Raingardens and Lawn Care for Water Quality". This PowerPoint presentation focuses on urban homeowner education related to conserving water and reducing runoff pollution. In addition to providing an overview of stormwater management practices and issues related to urban runoff pollution, the workshop introduces alternative lawn-care practices, landscaping with native plant species, proper use of lawn fertilizer, rain gardens, rain barrels, backyard composting, green roofs, pervious pavement, soil testing and more. Participants are provided with handouts listing local resources for additional education, cost-share programs, or purchasing supplies. The workshop was presented at the following venues:

- Mississippi Market on W. 7th, January 13, 2014 (22 participants)
- Wilder Center in St. Paul, December 4, 2014 (30 participants)

Make and Take Rain Barrel Workshop: This workshop is similar to the previous one, but has a specific focus on rain barrels and provides an opportunity for participants to assemble and take home their own 55-gallon rain barrel. The barrels were donated by Coca-Cola, and conversion kits were purchased at a reduced price by workshop participants. The "Make and Take Rain Barrel Workshop" began with a condensed version of the "Gardening for a Rainy Day" workshop, with additional information on the benefits, construction, use, installation and maintenance or rain barrels. Participants were then guided through assembling their own rain barrel, which they took with them to install and use at home. The workshop was presented at the following venue:

- Wellstone Center/Neighborhood House, July 29, 2014 (27 participants, 25 barrels)

Science Museum Event – "Our Water in a Changing World":
A large-format educational presentation was held on February 13, 2014, in partnership with the Science Museum of Minnesota. Speakers Pat Hamilton of the Global Change Initiative at the Science Museum of Minnesota and Prof. Sarah Hobbie of the Hobbie Lab at the University of Minnesota addressed the potential impacts of climate change on local ecosystems, water resources and stormwater management. Approximately 250 people attended the event, and responses were very positive. (Note: this event was funded by FMR's 2013 contract with the city of St. Paul.

Outreach:
Participants for the workshops, tour and Science Museum event were recruited using the following means:

- Email or posts to various daily and community newspapers both print and online
- Posting on FMR's website and announcements in FMR's Mississippi Messages and through social media, including Facebook and Twitter
- Posting on various online event calendars: Mississippi National River and Recreation Area/National Park Service, Minnesota Environmental Forum, Minnesota Environmental

Partnership, MNOEA's Next Step, TwinCities.com/PioneerPress, BlueThumb, Do It Green, TC Daily Planet, Northern Gardener, Forum of Women in the Environmental Field, Minnesota Master Naturalist, GreenHandsUSA, Minnesota Waters, Riverfront Development Corporation, 1Mississippi (Mississippi River Network) and Good Age and MN Parent websites.

- Emailing to all St. Paul FMR contacts, including numerous partner and civic organizations such as community organizations and neighborhood groups and local institutions such as the Science Museum of Minnesota, the Department of Natural Resources, Metropolitan Council, Friends of the Parks and Trails of St. Paul, and additional various foundation, student and civic groups
- Emailing to special interest groups, such as garden clubs, home school group outing organizers, biology club members and others
- Postcard sent to 1,029 St. Paul contacts, a blend of individual and organizational contacts, for December workshop

Accomplishments:
A total of 385 people participated in community events. The following table summarizes event participation in 2014:

Name	Date	Location	# Participants
Landscape for the River Workshop	1/13/14	Mississippi Market	22
Our Water in a Changing World	2/13/14	Science Museum of MN	250
Make and Take Rain Barrel Workshop	7/29/14	Wellstone Center	27
Brewing Clean Water: In-Home Stewardship Workshop	8/6/14	Flat Earth Brewery	21
Brewing Clean Water: In-Home Stewardship Workshop	10/28/14	Tin Whiskers Brewing Company	35
Landscape for the River Workshop	12/4/14	Wilder Center	30

Photos:
Photographs of the events listed in this report can be viewed on FMR's Flickr site at the following links:

- Science Museum Event https://www.flickr.com/photos/friendsmissriv/sets/72157641125609813/
- "Gardening for a Rainy Day" Workshops: https://www.flickr.com/photos/friendsmissriv/sets/72157639814316474/
- "Make and Take Rain Barrel Workshop": https://www.flickr.com/photos/friendsmissriv/sets/72157645634177438/
- Tour of Indian Mounds Park: https://www.flickr.com/photos/friendsmissriv/sets/72157645948538789/
- "Brewing Clean Water": https://www.flickr.com/photos/friendsmissriv/sets/72157649064420045/


Drains to River
Storm
Drains
Keep em'
Clean

KEEP THESE OUT OF STORM DRAINS

PET WASTE

Desechos de mascotas

Quav tsiaj yug

LEAVES, GRASS & TRASH

Hojas, hierba y basura

Nplooj ntoos, Nyom & Khib Nyiab

HAZARDOUS WASTES

Residuos peligrosos

Khoom Phem Siv Tas Lawm

MANTENGA FUERA DE LOS DRENAJES PARA TORMENTAS
MUAB COV NTAWM NO TSHEM TAWM NTAWM LUB QHOV DEJ NQIS

Keep storm drains clean. These drains are part of the storm sewer system, which carries rainfall and snowmelt directly from your neighborhood to our lakes and rivers.

What You Can Do

1. **Keep leaves and grass clippings out of street.**
   Mantenga las hojas y las hierbas o el cesped podados fuera de la calle.
   Muab cov nplooj ntoos thiab nyom tshem tawm ntawm txoj kev.

2. **Keep fertilizer off paved surfaces and sweep up excess.**
   Mantenga el fertilizante fuera de las superficies pavimentadas y limpie los excesos.
   Txhob muab cov tshuaj ywg nyom tso rau ntawm cov kev luam yas thiab muab cov tshuaj seem cheb mus.

3. **Don't litter and pick up pet waste.** **No arroje basura en la vía pública. Recoja los desechos de sus mascotas.**
   Tsis txhob pov khib nyiab. Khaws tej quav tsiaj yug.

4. **Wash your car on the lawn or at a carwash - not in the driveway or street.**
   Lave su vehículo en el jardín o en un lavadero – no lo haga en el entrada de su casa o en la calle.
   Ntxuav koj lub tsheb rau ntawm cov nyom ntawm koj tog tsev los yog tom lub chaw ntxuav tsheb - tsis txhob ntxuav rau ntawm lub chaw nres tsheb los yog tom kev.

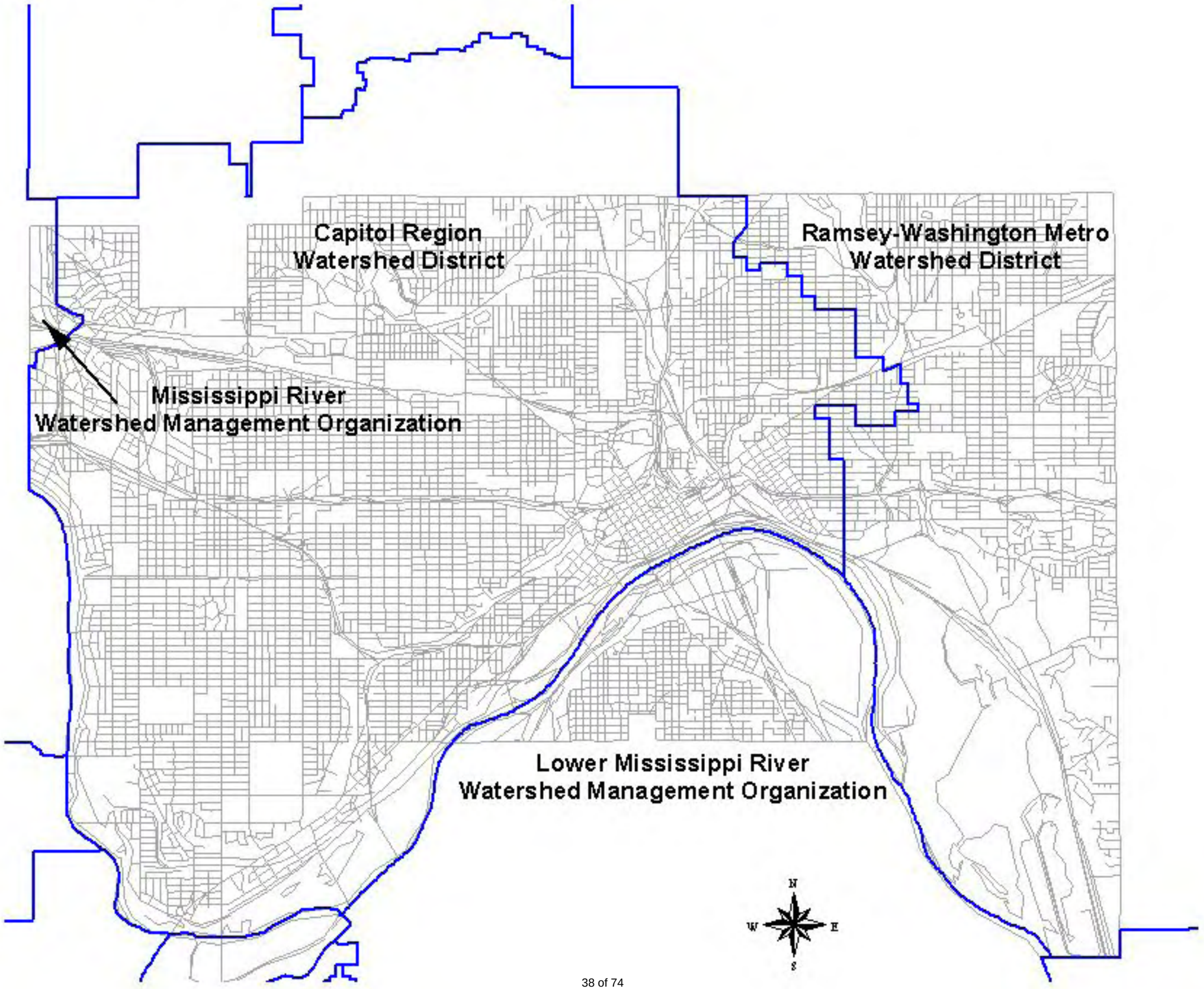
5. **Keep your vehicle tuned up and clean up any oil leaks or spills from paved surfaces.**
   Mantenga su vehículo en buenas condiciones y limpie cualquier pérdida de aceite o salpicaduras en las superficies pavimentadas.
   Saib xyuas thiab tu koj lub tsheb thiab tu tej roj uas tau txeej los yog nchuav rau tej kev luam yas.

6. **Properly dispose of paint and other household hazardous wastes.**
   Deshágase adecuadamente de restos de pinturas y de otros residuos domésticos peligrosos.
   Muab cov xim tha thiab lwm cov khoom phem hauv vaj tsev pov tseg kom zoo.

7. **Shovel snow first and only apply salt when it is above 15° F.**
   Retire la nieve con una pala primero y aplique sal cuando esté sobre los 15ºF.
   Thob daus ua ntej thiab tsuas siv ntsev.

Recycling & Disposal Guide
ramseyatoz.co.ramsey.mn.us
www.stpaul.gov/publicworks
www.fmr.org

Watershed Organizations in Saint Paul



City of St. Paul

Stormwater Monitoring Program

The Most Livable City in America

Figure 1-1

2014 Monitoring Site Location Map

36" MNDOT CONNECTION
24" LAUDERDALE CONNECTION
12" FORCEMAIN FROM FALCON HEIGHTS AND ROSEVILLE
36" PIPE FROM ROSEVILLE & RAMSEY COUNTY CONNECTION
30" RAMSEY COUNTY & ROSEVILLE CONNECTION
TROUT BROOK CONNECTION
I-35 DRAINAGE
48" CULVERT FROM RAMSEY COUNTY & MAPLEWOOD
96" U of M CONNECTION
College Park
Jobs Corps (RG)
AHUG
Hillcrest Knoll Park
Hayden Heights (RG)
Flandrau/Hoyt Pond
Case Pond
Victoria Street Orchard (RG)
Dale Street Facility
Wilder (RG)
Beacon Bluff
Hampden Park Co-op (RG)
Hamline-Midway Library
St. Albans Street Fire Station 18 (RG)
Arundel Street
Edgecumbe (RG)
Cleveland/Bayard (St. Kates)
RWMWD 72" ARCH CULVERT FROM BATTLE CREEK
CULVERTS FROM MAPLEWOOD & RAMSEY COUNTY
CULVERTS FROM WEST ST. PAUL
FISH CREEK

N
W E
S

0 2,500 5,000 10,000 Feet

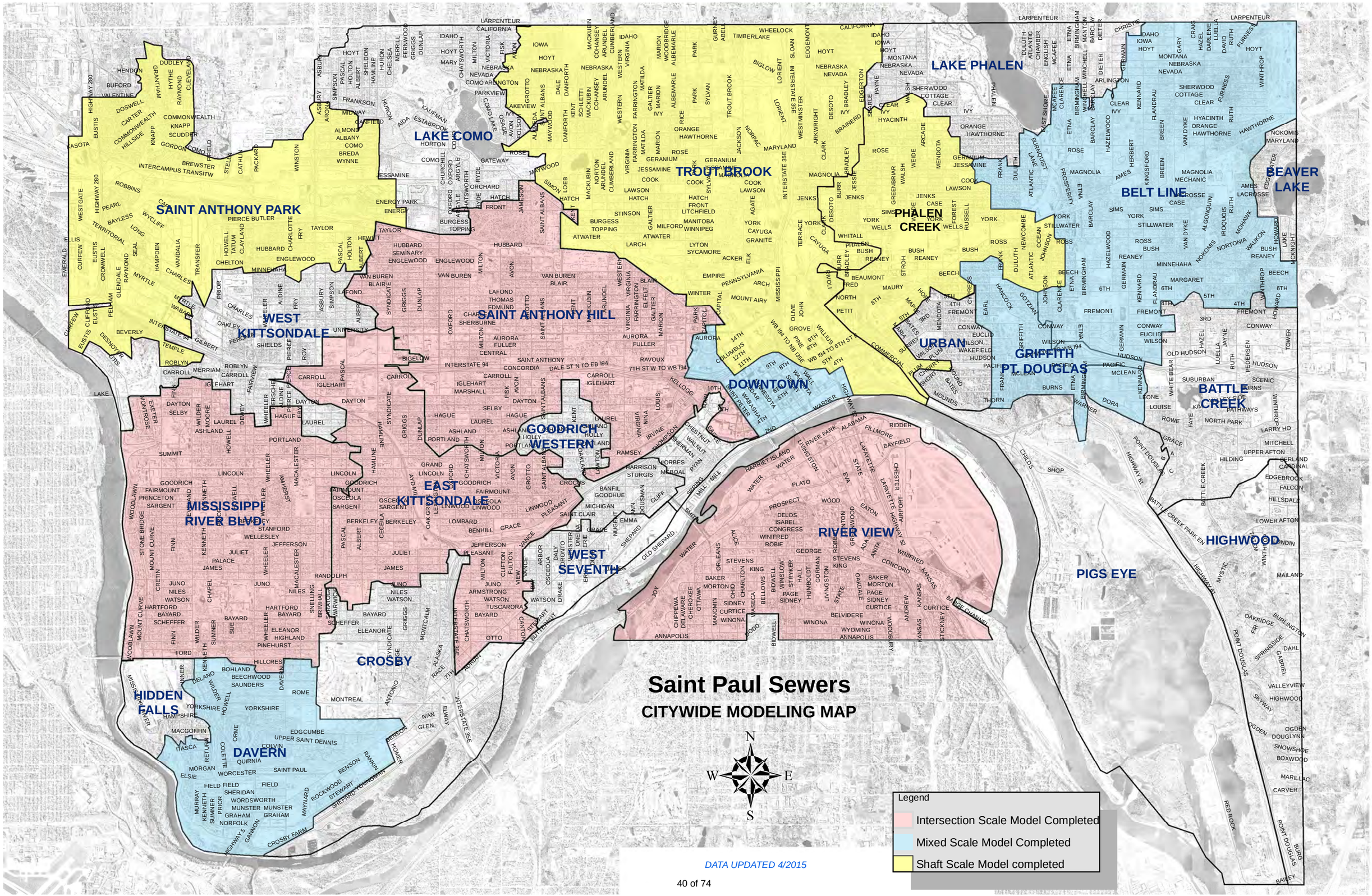
Legend

- Raingarden/Infiltration Basin
- Infiltration Trench
- Pervious Pavement
- Capitol Region Watershed District
- Lower Mississippi River WMO
- Mississippi WMO
- Ramsey/Washington/Metro WD
- 2013 Monitoring Locations
- 2014 Monitoring Locations
- Rain Gauge Locations
- Inflows

Outfalls

- 30" - 48"
- 50" - 72"
- > 72"

WSB & Associates, Inc.


LAKE PHALEN
LAKE COMO
TROUTBROOK
SAINT ANTHONY PARK
BELT LINE
PHALEN CREEK
BEAVER LAKE
WEST KITTSONDALE
SAINT ANTHONY HILL
URBAN
GRIFFITH
PT DOUGLAS
DOWNTOWN
BATTLE CREEK
GOODRICH
WESTERN
EAST KITTSONDALE
MISSISSIPPI RIVER BLVD
WEST SEVENTH
RIVER VIEW
HIGHWOOD
PIGS EYE
CROSBY
HIDDEN FALLS
DAVERN
Saint Paul Sewers
CITYWIDE MODELING MAP
N
W
E
S
Legend
Intersection Scale Model Completed
Mixed Scale Model Completed
Shaft Scale Model completed
DATA UPDATED 4/2015

WSB & Associates, Inc.
engineering • planning • environmental • construction

477 Temperance Street
St. Paul, MN 55101
Tel: 651-286-8450
Fax: 651-286-8488

Memorandum

To: ***Anne Weber, City of St. Paul***

From: ***Jesse Carlson***

Date: ***June 30, 2015***

Re: ***Estimates of Annual and Seasonal Pollutant Loads***
WSB Project No. 01610-130

The City of St. Paul is a Phase I MS4 permittee and is required to evaluate their annual and seasonal pollutant loads.

2013 Pollutant Loading Calculations

Event mean concentrations for snowmelt, grab, and storm composites were gathered from the Capitol Region Watershed District's (CRWD) 2013 Annual Monitoring Report. 2014 monitoring data was not used because the previous year's loading assessment was based on 2012 monitoring data. Base flow grabs were excluded because this information could not be extrapolated for all watersheds. For four of the watersheds, monitoring data existed and the respective loadings were summarized using this data. For the remaining sites, annual and seasonal means were calculated for each of the pollutants based on CRWD's data (see Table 1). The watersheds are represented in Figure 1. The following formula was used to calculate the annual/seasonal flow weighted mean concentration for each pollutant:

$$C = \frac{\sum(F_i \times C_i)}{\sum(F_i)} \quad (1)$$

C = annual/seasonal flow weighted mean concentration [mg/L]
F_i = the flow for an individual event [cf]
C_i = the mean concentration for an individual event [mg/L]

Based on these calculated flow weighted means, the Simple Method was used to calculate each watershed's pollutant loading:

$$L = 2.72\left(\frac{PP_jR_v}{12}\right)(CA) \quad (2)$$

L = pollutant loading for the year/season [lb]
P = rainfall depth for the year/season [in]
P_j = correction factor for storms that produce no runoff [.]
R_v = runoff coefficient [.]
A = area of the watershed [acre]

Values used in loading calculations:
C = Table 1
P = Table 2
P_j = 0.85
R_v and A = Table 3

Table 1. Average Event Mean Concentrations for Year/Season

Parameter	**Cl**	**TKN**	**Total P**	**NO2+NO3**	**TSS**	**VSS**
Units	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]
Annual	145.0	1.12	0.139	0.917	63.9	17.1
Winter	167.6	0.84	0.048	0.994	15.2	5.5
Spring	97.6	1.81	0.274	0.680	151.7	48.0
Summer	129.1	1.31	0.193	0.866	101.5	25.3
Fall	161.7	0.90	0.091	0.985	27.6	7.3

The annual/seasonal precipitation values from 2013 for 8 different St. Paul sites are provided in the Table 2. Each watershed was assigned precipitation data from the nearest precipitation site (see Table 3). December was not included in the calculations because its precipitation fell in the form of snowfall and did not result in runoff. Tables 4-8 contain the annual and seasonal pollutant loadings for each of the City's watersheds.

Table 2. Precipitation Sites' Data [in]

Season/Date	**Conway**	**Edgecumbe**	**Engine House 18**	**Hayden Heights**	**Orchard**	**US Job Corps**	**Wilder**	**HD**
Annual	33.73	33.19	29.94	32.73	30.99	32.72	31.82	34.49
Winter (Jan-Mar)	4.08	4.08	4.08	4.08	4.08	4.08	4.08	4.08
Spring (Apr-May)	12.31	12.31	10.6	11.92	10.54	12.11	10.64	12.31
Summer (Jun-Aug)	11.21	10.67	10.26	11.26	11.21	11.17	11.53	11.97
Fall (Sep-Nov)	6.13	6.13	5	5.47	5.16	5.36	5.57	6.13

Table 3. Watershed Inventory

Watershed	Area [acre]	Runoff Coefficient [.]	Precipitation Site [.]
Battle Creek	1,089	0.54	Conway
Beaver Lake	278	0.33	Conway
Belt Line	2,882	0.55	Hayden
Crosby	1,446	0.45	Edgecumbe
Davern	1,277	0.55	Edgecumbe
Downtown	669	0.75	Engine House 18
East Kittsondale	1,870	0.62	Edgecumbe
Fish Creek	46	0.70	US Job Corp
Goodrich/Western	424	0.63	Engine House 18
Griffith/Pt. Douglas	458	0.61	Conway
Hidden Falls	237	0.55	Edgecumbe
Highwood	1,139	0.50	Conway
Lake Como	1,240	0.47	Orchard
Lake Phalen	995	0.42	Wilder
Mississippi River Blvd.	2,373	0.58	Edgecumbe
MRWMO	135	0.52	Conway
Phalen Creek	1,406	0.62	Wilder
Pigs Eye	2,995	0.40	Conway
Riverview	2,658	0.57	Conway
St. Anthony Hill	2,542	0.64	Engine House 18
St. Anthony Park	2,467	0.68	US Job Corp
Trout Brook	3,959	0.62	Orchard
Urban	339	0.57	Wilder
West Kittsondale	847	0.67	Orchard
West Seventh	450	0.60	Edgecombe

Table 4. Annual Pollutant Loadings (lbs)

	Cl	TKN	Total P	NO2+NO3	TSS	VSS
Battle Creek	562,667	4,344	540	3,560	248,027	66,263
Beaver Lake	59,692	461	57	378	26,313	7,030
Belt Line	1,515,437	11,701	1,456	9,587	668,013	178,467
Crosby	700,417	5,408	673	4,431	308,748	82,485
Davern	663,845	5,126	638	4,200	292,627	78,178
Downtown	344,954	2,663	331	2,182	152,058	40,624
East Kittsondale	1,075,947	8,307	1,034	6,807	474,283	126,710
Fish Creek	21,861	169	21	138	9,636	2,574
Goodrich/Western	223,380	1,725	215	1,413	98,467	26,307
Griffith/Pt. Douglas	264,357	2,041	254	1,672	116,530	31,132
Hidden Falls	159,588	1,232	153	1,010	70,347	18,794
Highwood	528,996	4,084	508	3,347	233,184	62,298
Lake Como	526,429	4,065	506	3,330	232,053	61,995
Lake Phalen	378,133	2,920	363	2,392	166,683	44,531
Mississippi River Blvd.	1,285,585	9,926	1,235	8,133	566,693	151,398
MRWMO	89,030	687	86	563	39,245	10,485
Phalen Creek	774,202	5,978	744	4,898	341,273	91,175
Pigs Eye	1,130,911	8,732	1,086	7,155	498,512	133,183
Riverview	546,133	4,217	525	3,455	240,738	64,316
St. Anthony Hill	1,418,821	10,955	1,363	8,976	625,424	167,089
St. Anthony Park	1,541,825	11,905	1,481	9,754	679,645	181,574
Trout Brook	2,126,784	16,421	2,043	13,455	937,498	250,463
Urban	165,657	1,279	159	1,048	73,022	19,509
West Kittsondale	604,297	4,666	580	3,823	266,377	71,166
West Seventh	250,854	1,937	241	1,587	110,578	29,542

Table 5. Seasonal Pollutant Loadings (lbs) **Winter/Snowmelt (Jan - Mar)**

	Cl	TKN	Total P	NO2+NO3	TSS	VSS
Battle Creek	78,708	393	23	467	7,113	2,576
Beaver Lake	8,350	42	2	50	755	273
Belt Line	218,462	1,090	63	1,295	19,742	7,149
Crosby	99,571	497	29	590	8,998	3,258
Davern	94,372	471	27	560	8,528	3,088
Downtown	54,362	271	16	322	4,913	1,779
East Kittsondale	152,956	763	44	907	13,823	5,005
Fish Creek	3,152	16	1	19	285	103
Goodrich/Western	35,203	176	10	209	3,181	1,152
Griffith/Pt. Douglas	36,979	184	11	219	3,342	1,210
Hidden Falls	22,687	113	7	135	2,050	742
Highwood	73,998	369	21	439	6,687	2,422
Lake Como	80,150	400	23	475	7,243	2,623
Lake Phalen	56,070	280	16	332	5,067	1,835
Mississippi River Blvd.	182,758	912	52	1,084	16,516	5,981
MRWMO	12,454	62	4	74	1,125	408
Phalen Creek	114,799	573	33	681	10,374	3,757
Pigs Eye	158,196	789	45	938	14,296	5,177
Riverview	76,395	381	22	453	6,904	2,500
St. Anthony Hill	223,594	1,115	64	1,326	20,206	7,317
St. Anthony Park	222,334	1,109	64	1,318	20,092	7,276
Trout Brook	323,806	1,615	93	1,920	29,262	10,597
Urban	24,564	123	7	146	2,220	804
West Kittsondale	92,005	459	26	546	8,314	3,011
West Seventh	35,661	178	10	211	3,223	1,167

Table 6. Seasonal Pollutant Loadings (lbs) **Spring (Apr-May)**

	Cl	TKN	Total P	NO2+NO3	TSS	VSS
Battle Creek	138,235	2,563	388	964	214,931	67,925
Beaver Lake	14,665	272	41	102	22,802	7,206
Belt Line	371,528	6,889	1,044	2,590	577,663	182,559
Crosby	174,876	3,243	491	1,219	271,903	85,929
Davern	165,745	3,073	466	1,156	257,706	81,443
Downtown	82,213	1,524	231	573	127,827	40,397
East Kittsondale	268,637	4,981	755	1,873	417,684	132,001
Fish Creek	5,446	101	15	38	8,468	2,676
Goodrich/Western	53,238	987	150	371	82,776	26,160
Griffith/Pt. Douglas	64,946	1,204	182	453	100,981	31,913
Hidden Falls	39,845	739	112	278	61,952	19,579
Highwood	129,962	2,410	365	906	202,069	63,860
Lake Como	120,526	2,235	339	840	187,398	59,223
Lake Phalen	85,116	1,578	239	593	132,340	41,824
Mississippi River Blvd.	320,978	5,952	902	2,238	499,066	157,720
MRWMO	21,873	406	61	152	34,008	10,748
Phalen Creek	174,269	3,231	490	1,215	270,958	85,631
Pigs Eye	277,839	5,152	781	1,937	431,992	136,523
Riverview	134,172	2,488	377	935	208,615	65,929
St. Anthony Hill	338,147	6,270	950	2,357	525,760	166,156
St. Anthony Park	384,140	7,123	1,079	2,678	597,272	188,756
Trout Brook	486,929	9,029	1,368	3,395	757,092	239,264
Urban	37,288	691	105	260	57,977	18,323
West Kittsondale	138,354	2,565	389	965	215,117	67,984
West Seventh	62,632	1,161	176	437	97,382	30,776

Table 7. Seasonal Pollutant Loadings (lbs) **Fall Summer(Jun-Aug)**

	Cl	TKN	Total P	NO2+NO3	TSS	VSS
Battle Creek	166,506	1,690	249	1,117	130,887	32,573
Beaver Lake	17,664	179	26	119	13,886	3,456
Belt Line	464,215	4,712	695	3,116	364,910	90,812
Crosby	200,494	2,035	300	1,346	157,605	39,222
Davern	190,026	1,929	284	1,275	149,376	37,174
Downtown	105,256	1,068	158	706	82,740	20,591
East Kittsondale	307,990	3,126	461	2,067	242,105	60,251
Fish Creek	6,645	67	10	45	5,223	1,300
Goodrich/Western	68,160	692	102	457	53,579	13,334
Griffith/Pt. Douglas	78,229	794	117	525	61,494	15,304
Hidden Falls	45,682	464	68	307	35,910	8,937
Highwood	156,542	1,589	234	1,051	123,054	30,624
Lake Como	169,556	1,721	254	1,138	133,284	33,169
Lake Phalen	122,001	1,238	183	819	95,902	23,867
Mississippi River Blvd.	367,999	3,735	551	2,470	289,277	71,990
MRWMO	26,346	267	39	177	20,710	5,154
Phalen Creek[1]	249,788	2,535	374	1,676	196,354	48,865
Pigs Eye	334,662	3,397	501	2,246	263,071	65,469
Riverview	161,613	1,640	242	1,085	127,041	31,616
St. Anthony Hill	432,924	4,394	648	2,906	340,313	84,691
St. Anthony Park	468,666	4,757	701	3,145	368,409	91,683
Trout Brook	685,009	6,952	1,025	4,597	538,472	134,005
Urban	53,447	542	80	359	42,014	10,456
West Kittsondale	194,636	1,975	291	1,306	152,999	38,076
West Seventh	71,807	729	107	482	56,446	14,047

Table 8. Seasonal Pollutant Loadings (lbs) **Fall (Sep-Nov)**

	Cl	TKN	Total P	NO2+NO3	TSS	VSS
Battle Creek	114,041	634	64	695	19,475	5,132
Beaver Lake	12,098	67	7	74	2,066	544
Belt Line	581,429	3,234	326	3,542	99,291	26,163
Crosby	144,270	802	81	879	24,637	6,492
Davern	136,737	761	77	833	23,351	6,153
Downtown	64,246	357	36	391	10,971	2,891
East Kittsondale	221,621	1,233	124	1,350	37,846	9,972
Fish Creek	3,994	22	2	24	682	180
Goodrich/Western	41,603	231	23	253	7,105	1,872
Griffith/Pt. Douglas	53,580	298	30	326	9,150	2,411
Hidden Falls	32,872	183	18	200	5,613	1,479
Highwood	107,217	596	60	653	18,309	4,824
Lake Como	97,754	544	55	595	16,693	4,399
Lake Phalen	73,819	411	41	450	12,606	3,322
Mississippi River Blvd.	264,802	1,473	149	1,613	45,220	11,915
MRWMO	18,045	100	10	110	3,081	812
Phalen Creek	151,139	841	85	921	25,810	6,801
Pigs Eye	229,213	1,275	129	1,396	39,143	10,314
Riverview	110,690	616	62	674	18,903	4,981
St. Anthony Hill	264,248	1,470	148	1,610	45,126	11,891
St. Anthony Park	281,678	1,567	158	1,716	48,102	12,675
Trout Brook	394,928	2,197	222	2,406	67,442	17,771
Urban	32,339	180	18	197	5,523	1,455
West Kittsondale	112,213	624	63	684	19,163	5,049
West Seventh	51,670	287	29	315	8,824	2,325

City of St. Paul
Loading Assessment

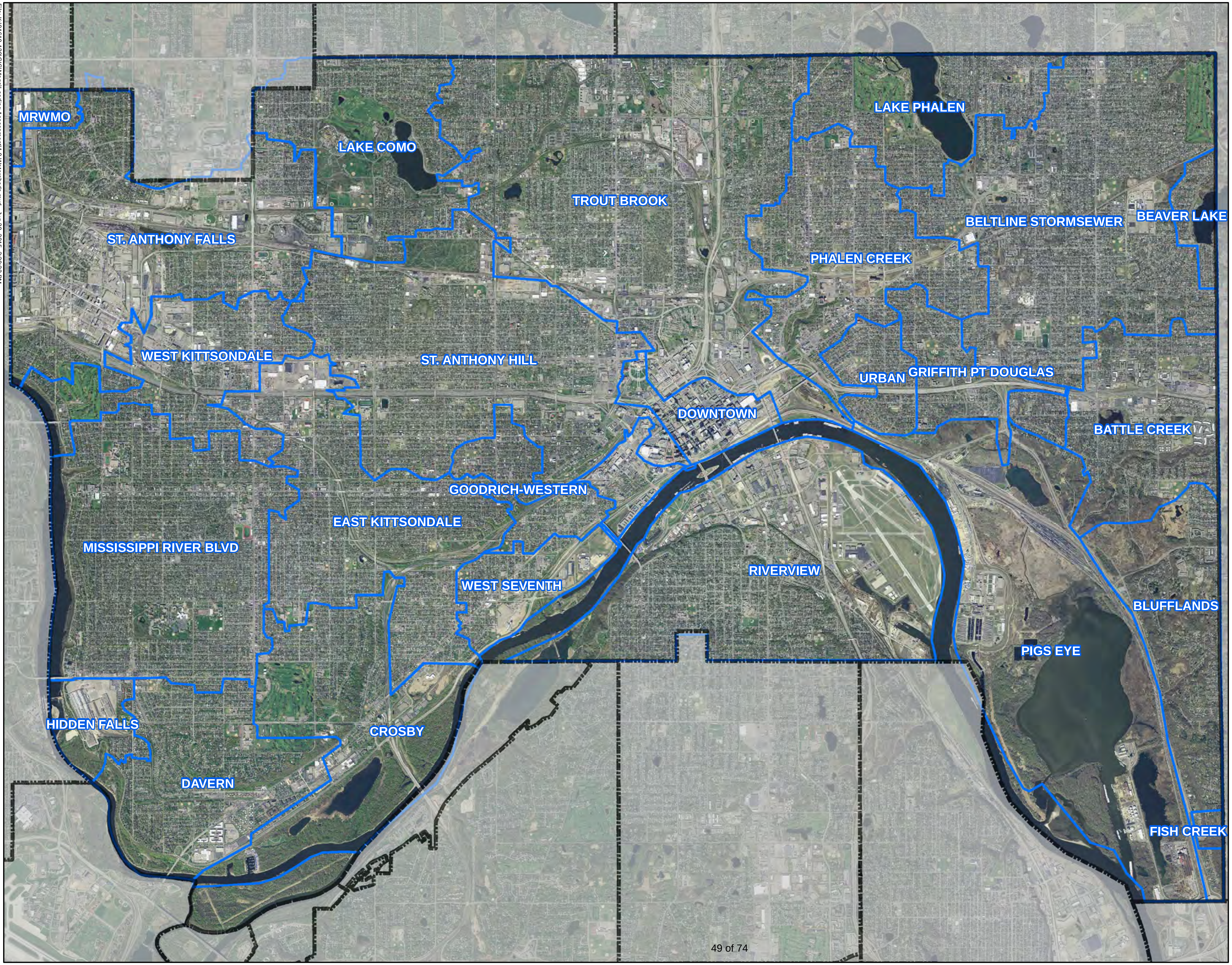


Figure 1. Watersheds

N W E S

0 2,000 4,000 8,000 Feet

Legend

Major Subwatersheds

Outfall Inventory

Outfall	Location	Watershed	Pipe Size	Acres
	Bridal Veil Creek			
005	South of Buford	Bridal Veil	42"	
	Mississippi River			
010	Eustis	St. Anthony Park	tunnel	2467
020	Lotus	Miss. River Blvd.	tunnel	31
030	Marshall	Miss. River Blvd.	tunnel	121
040	West Kittsondale	West Kittsondale	tunnel	977
050	Otis	Miss. River Blvd.	tunnel	14
060	Portland Ave	Miss. River Blvd.	tunnel	508
070	Summit	Miss. River Blvd.	16" cast iron	30
080	Goodrich	Miss. River Blvd.	tunnel	456
090	Princeton	Miss. River Blvd.	tunnel	150
095	Berkeley	Miss. River Blvd.	24"	
100	Jefferson	Miss. River Blvd.	tunnel	139
110	Randolph	Miss. River Blvd.	tunnel	39
115	Hartford	Miss. River Blvd.	tunnel	580
120	Scheffer	Miss. River Blvd.	tunnel	8
130	Highland Parkway	Miss. River Blvd.	tunnel	165
135	Hidden Falls	Hidden Falls	48"	269
140	Sheridan	Davern	tunnel	145
145	West 7th	Davern	30"	30
150	Davern	Davern	tunnel	963
151	Watergate Marina	Crosby	21"	

Outfall Inventory

Outfall	Location	Watershed	Pipe Size	Acres
156	Elway	Crosby	60"	
158	Elway	Crosby	90"	820
160	Otto	E. Kittsondale	tunnel	177
170	Bay	E. Kittsondale	tunnel	1699
180	Sumac	West 7th	tunnel	8
190	Drake	West 7th	tunnel	158
195	Fountain Cave	West 7th	42"	39
200	Richmond	West 7th	20"	142
201	Richmond	West 7th	42"	
206	Western	West 7th	30"	98
210	Smith -1992	Good/West	tunnel	424
220	Sherman	Downtown	48"	41
230	Chestnut	Downtown	27"	82
240	Eagle	Downtown	3'x5' brick	77
~~250~~	~~Ontario~~ abandoned	~~Downtown~~	~~24"~~	
260	Market	Downtown	24"	
270	St. Peter	St. Anthony Hill	tunnel	2653
280	Cedar	Downtown	tunnel	
290	Minnesota	Downtown	tunnel	115
295	Robert	Downtown	tunnel	5
300	Jackson	Downtown	36"	27
310	Sibley	Downtown	48"	10
~~315~~	~~Wacouta~~	~~Downtown~~	~~12"~~	~~10~~

Outfall Inventory

Outfall	Location	Watershed	Pipe Size	Acres
320	Broadway	Downtown	7'x8' concrete	115
325	Troutbrook	Troutbrook	dual 10'	4025
330	Plum	Phalen Creek	tunnel	1406
340	Urban	Urban	48" brick	328
343	Warner and Childs	Pig's Eye	24"	
346	Warner and Childs	Pig's Eye	18"	
350	Beltline (RWMWD's)	Beltline	9'	3524
~~352~~	~~off Child's Road~~	~~Pig's Eye~~	~~12"~~	
~~354~~	~~off Child's Road~~	~~Pig's Eye~~	~~12"~~	
~~356~~	~~off Child's Road~~	~~Pig's Eye~~	~~12"~~	
360	Battle Creek	Pig's Eye	36"	
365	Wyoming	Riverview	30" culvert	8
380	Page and Barge Ch Rd	Riverview	42"	69
385	Robie and Witham	Riverview	54"	
390	Robie and Kansas	Riverview	42"	264
400	Airport	Riverview	12"	
405	Chester St	Riverview	tunnel	326
407	Eva St	Riverview	36"	
410	Custer St	Riverview	tunnel	188
420	Moses St	Riverview	5'6"	95
430	Belle	Riverview	2-36"x40"	37
440	Riverview	Riverview	2-77"x121"	801
460	Chippewa and Baker	Riverview	16"	71

Outfall Inventory

Outfall	Location	Watershed	Pipe Size	Acres
	Upper Lake			
152	Springfield	Crosby	15"	
	Crosby Lake			
153	Rankin	Crosby	27"	
154	Homer	Crosby	30"	
155	Leland	Crosby	30"	
	Fairview North Pond			
500	Tatum & Pierce Butler	St. Anthony Park	6'	
510	Pierce Butler & Aldine	St. Anthony Park	54"	
	Lake Como			
520	Arlington & Chelsea	Como	60"	310
530	Chatsworth North	Como	36"	201
540	Milton North	Como	36"	79
550	Parkview East	Como	18"	17
560	Ivy East	Como	18"	24
570	Wheelock Pkwy East	Como	24"	23
580	Rose East	Como	36"	30
590	Victoria South	Como	30"	49
600	Chatsworth South	Como	24"	75
610	Horton West	Como	15"	311
620	Park West	Como	36"	50

Outfall Inventory

Outfall	Location	Watershed	Pipe Size	Acres
	Loeb Lake			
630	Jessamine	Troutbrook	36"	
	Lake Phalen			
680	Arlington West	Phalen	72"	380
690	Blomquist South	Phalen	36"	71
700	Arlington East	Phalen	42"	209
710	between Hoyt & Neb.	Phalen	42"	69
720	Larpenteur East	Phalen	84"	17
	Beaver Lake			
726	Lacrosse	Beaver	15"	
728	Ames	Beaver	15"	
730	Rose North	Beaver	42"	67
740	McKnight North	Beaver	21"	22
	Suburban Pond			
---	Suburban & VanDyke (RWMWD's)	Battle Creek	102"	
750	Suburban & WB Ave	Battle Creek	27"	
760	Suburban & Hazel	Battle Creek	54"	
	Little Pig's Eye Lake			
770	near fish hatchery	Griffith/Pt. Douglas	72"	
	Pig's Eye Lake			
780	Burlington	Highwood	66"	
784	Winthrop @ Lower Afton	Highwood	30"	

Outfall Inventory

Outfall	Location	Watershed	Pipe Size	Acres
786	Morningside @ Lower Afton	Highwood	18"	
790	Springside Drive	Highwood	33"	
791	Highwood	Highwood	48"	
	Battle Creek			
~~800~~	~~N. Park Drive & Faye~~	~~Battle Creek~~	~~33"~~	
808	Sandralee	Battle Creek	24"	
810	Ruth	Battle Creek	42"&73-1/2" arch	
812	Warren	Battle Creek	18"	
814	Cutler	Battle Creek	24"	
816	Nelson	Battle Creek	24"	
818	Winthrop & Larry Ho	Battle Creek	30"	
820	Winthrop & N. Park Dr	Battle Creek	36"	
825	Michael N	Battle Creek	33"	
826	Michael S	Battle Creek	30"	
830	McKnight & N. Park Dr	Battle Creek	36"	
836	A Street	Battle Creek	18"	

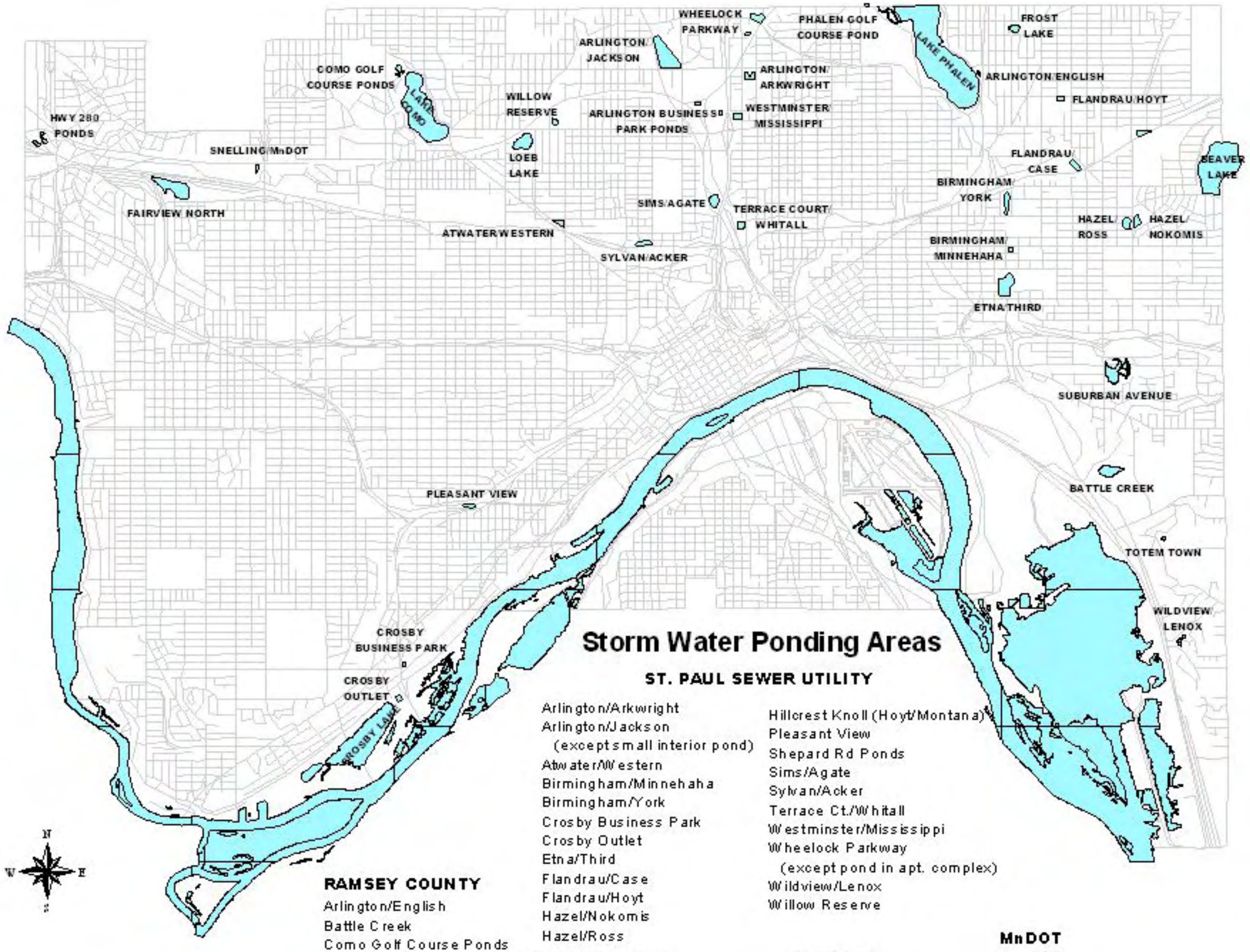
LAKE COMO
LAKE PHALEN
TROUT BROOK
BELT LINE
BEAVER LAKE
PHALEN CREEK
ST. ANTHONY PARK
WEST KITTSONDALE
ST. ANTHONY HILL
URBAN
BATTLE CREEK
GRIFFITH
PT. DOUGLAS
DOWNTOWN
GOODRICH
WESTERN
EAST KITTSONDALE
MISSISSIPPI RIVER BLVD
PIGS EYE
HIGHWOOD
WEST SEVENTH
RIVERVIEW
CROSBY
HIDDEN FALLS
DAVERN

City of Saint Paul

Watersheds

Watershed Inventory

Watershed	WS#	Area (acres)	Population (2000 Census)	Percent Impervious	Runoff Coefficient
Beaver Lake	1	278	2,070	31	0.33
Belt Line	2	2,882	30,994	56	0.55
Lake Phalen	3	995	7,626	41	0.42
Trout Brook	4	3,959	37,665	63	0.62
Lake Como	5	1,240	9,753	47	0.47
St. Anthony Park	6	2,467	13,140	70	0.68
Phalen Creek	7	1,406	18,418	64	0.62
St. Anthony Hill	8	2,542	36,410	66	0.64
Griffith/Pt. Douglas	9	458	5,264	63	0.61
W. Kittsondale	10	847	7,732	69	0.67
Urban	11	339	4,491	58	0.57
Battle Creek	12	1,089	8,201	54	0.54
Downtown	13	669	6,097	78	0.75
E. Kittsondale	14	1,870	18,353	64	0.62
Mississippi River Blvd.	15	2,373	27,251	59	0.58
Goodrich/Western	16	424	5,010	64	0.63
Pigs Eye	17	2,995	913	39	0.40
Riverview	18	2,658	14,860	58	0.57
Highwood	19	1,139	5,216	50	0.50
W. Seventh	20	450	2,543	61	0.60
Crosby	21	1,446	8,804	45	0.45
Davern	22	1,277	6,628	56	0.55
Hidden Falls	23	237	1,263	56	0.55
Total		34,040	278,706		



Storm Water Ponding Areas

ST. PAUL SEWER UTILITY

Arlington/Arkwright
Arlington/Jackson
(except small interior pond)
Atwater/Western
Birmingham/Minnehaha
Birmingham/York
Crosby Business Park
Crosby Outlet
Etna/Third
Flandrau/Case
Flandrau/Hoyt
Hazel/Nokomis
Hazel/Ross
Hillcrest Knoll (Hoyt/Montana)
Pleasant View
Shepard Rd Ponds
Sims/Agate
Sylvan/Acker
Terrace Ct./Whitall
Westminster/Mississippi
Wheelock Parkway
(except pond in apt. complex)
Wildview/Lenox
Willow Reserve

RAMSEY COUNTY

Arlington/English
Battle Creek
Como Golf Course Ponds
Surburban Avenue
Totem Town

ST. PAUL PARKS

Phalen Golf Course Pond

RAILROAD

Fairview/North

MnDOT

Hwy. 280
Snelling/MnDOT

City of Saint Paul

Storm Water Ponding Area Inventory

Ponding Area	Drainage Area (acres)	Population 2000 Census	Pond Area (acres)	Storage Capacity (Acre-feet
Arlington/Arkwright	302.3	4001	5	20.4
Arlington/Jackson	699.4	6562	14.5	75.6
Atwater/Western	127.3	1230	2.7	13.3
Birmingham/Minnehaha	41.0	457	0.9	2.5
Birmingham/York	146.5	2050	2.2	9.5
Crosby Business Park	39.6	198	1	5.52
Crosby Outlet	866.0	6295	5.5	40.6
Etna/Third	244.0	2457	4.7	25.1
Flandrau/Case	95.2	1331	0.7	3
Flandrau/Hoyt	479.5	4582	1.9	20.8
Hazel/Nokomis	73.0	511	2.3	6.3
Hazel/Ross	67.8	949	4	3.8
Pleasant View	164.5	2053	2.3	14.5
Sims/Agate	174.6	1357	5.3	12.8
Sylvan/Acker	376.9	3617	2.1	11.7
Terrace Ct./Whitall	4.7	28	0.5	0.5
Westminister/Mississippi	123.4	1912	2.2	10.1
Wheelock Parkway	19.0	265	1.3	1.7
Wildview/Lenox	19.3	111	0.73	2.2
Willow Reserve	372.1	3669	20.3	42.6
Total	4436.2	43633.6		

Drainage area only includes area in St. Paul.

Storage capacity is for a 100 year storm in acre-feet.

Storm Water Ponding Areas by Watershed Area

Beaver Lake	None
Belt Line	Birmingham/Minnehaha Birmingham/York Etna/Third Flandrau/Hoyt Flandrau/Case Hazel/Nokomis Hazel/Ross Hillcrest Knoll (Hoyt/Montana)
Lake Phalen	Arlington/English Phalen Golf Course Pond
Trout Brook	Arlington/Jackson Arlington/Arkwright Atwater/Western Sims/Agate Sylvan/Acker Terrace Ct./Whitall Westminster/Mississippi Wheelock Parkway Willow Reserve
Lake Como	Como Golf Course Ponds
St. Anthony Park	Fairvew/North Highway 280 Snelling/MnDOT
Phalen Creek	None
St. Anthony Hill	None
Griffith/ Pt. Douglas	None
W. Kittsondale	None
Urban	None
Battle Creek	Battle Creek Surburban Avenue
Downtown	None

E. Kittsondale	Pleasant View
Mississippi River Blvd.	None
Goodrich/ Western	None
Pigs Eye	None
Riverview	None
Highwood	Totem Town Wildview/Lenox
W. Seventh	None
Crosby	Crosby Business Park Crosby Outlet
Davern	None
Hidden Falls	None

NPDES/SDS PERMITTED FACILITIES IN ST PAUL (Non-storm water discharges)

Permit #	Permittee	Facility Address	Waterbody	Use	Type of Discharge
MN0062669	Archdiocese of St. Paul/Minneapolis	226 Summit Ave. St. Paul, MN 55102	Miss R	Religious Organization	Industrial
MN0053988	Ashland Chemical Inc.	395 James Ave. St. Paul, MN 55102	Miss R	Mixed, Manufac. Liq. Gas Prod.	Industrial
MN0058246	Buckbee Mears	245 E. 6th St. St. Paul, MN 55101	Miss R	Plating and Polishing	Industrial
MN0059765	Captain Ken's Foods Inc.	344 S. Robert St. St. Paul, MN 55107	Miss R	Canned specialties	Industrial
MNG790065	Conoco Philips Petroleum Co	1817 Randolph Ave. St. Paul, MN 55105	Miss. R.	Gasoline Service Stations	Groundwater pumpout
MN0000612	Diamond Products Co.	310 E. 5th St. St. Paul, MN 55101	Miss R	Perfumes, cosmetics, toilet prep	Industrial
MN0064696	Flint Hill Resources	P.O. Box 64596 St. Paul, MN 55164	Miss. R		Industrial
MN0002178	Ford Motor Co.	966 S. Miss. River Blvd. St. Paul, MN 55116	Miss. R	Motor vehicles & car bodies	Industrial
MNG255013	Gross-Given Mfg. Co.	75 W. Plato Blvd. St. Paul, MN 55107	Miss R	Automatic merchandising machine	Noncontact cooling water
MNG250041	Mann Theatres Grandview	1830 Grand Ave. St. Paul, MN 55105	Miss R	Motion picture theater	Noncontact cooling water
MNG250040	Mann Theatres Highland	760 S. Cleveland St. Paul, MN 55116	Miss R	Motion picture theater	Noncontact cooling water

NPDES/SDS PERMITTED FACILITIES IN ST PAUL (Non-storm water discharges)

Permit #	Permittee	Facility Address	Waterbody	Use	Type of Discharge
MN0025470	Metro Council	230 E. 5th St. St. Paul, MN 55102	Miss R	H20, sew, pipe & com. & powr	Domestic
MNG790115	Metro Council Metro Transit	400 Snelling Ave. N. St. Paul, MN 55114	Miss R		Groundwater pumpout
MN0054640	Minnesota Brewing Co./ Gopher State	882 W. 7th St. St. Paul, MN 55102	Miss. R	Malt beverages	Industrial
MN0053571	NSP High Bridge	501 Shepard Rd. St. Paul, MN 55102	Miss. R	Heavy construction, nec.	Dredging
MN000084	NSP High Bridge Plant	501 Shepard Rd St. Paul, MN 55102	Miss. R	Electrical services	Industrial
MNG255066	Pearson Candy Co.	2140 W. 7th St. St. Paul, MN 55116	Miss R	Salted & roasted nuts & seeds	Noncontact cooling water
MNG990031	Peavey Red Rock Term.	1061 Red Rock Rd. St. Paul, MN 55119	Miss. R.		Dredging
MNG250100	St. Paul Pioneer Press	345 Cedar St. St. Paul, MN 55101	Miss R	Newspaper: publishing & print	Noncontact cooling water
MN0054577	St. Paul Pioneer Press	#1 Ridder Circle St. Paul, MN 55107	Miss R	Newspaper: publishing & print	Industrial
MN0054739	St. Paul Port Authority	1500 Energy Pk. Dr. St. Paul, MN 55108	Miss R	Steam & air conditioning sup	Industrial
MNG250072	St. Paul River Centre	143 W. 4th St. St. Paul, MN 55102	Miss R	Prof. Sports clubs and promoters	Noncontact cooling water

NPDES/SDS PERMITTED FACILITIES IN ST PAUL (Non-storm water discharges)

Permit #	Permittee	Facility Address	Waterbody	Use	Type of Discharge
MN0045829	St. Paul Water Utility	1900 N. Rice St. Roseville, MN 55113	Troutbrook	Water supply	Water Treatment
MN0002968	United Hospitals Inc.	333 N. Smith Ave. St. Paul, MN 55102	Miss R	Gen. medical/ surgical hospital	Industrial
MN0050580	USCOE River dredging Construction & Ops.	190 5th St. E. St. Paul, MN 55101	Miss. R	Heavy construction, nec.	River dredging
MN0066303	US Bank National Assoc.	60 Livingston St. S. St. Paul, MN 55107	Miss R		Industrial
MN0059277	Versa Companies	867 Forest St. St. Paul, MN 55106	Miss R	Gray iron foundries	Industrial
MN0048984	Waldorf Corp.	2250 Wabash Ave. St. Paul, MN 55114	Miss R	Corrugated/solid fiber boxes	Industrial
MN0062031	St. Paul Commercial- Galtier	175 E. 5th St. St. Paul, MN 55101	Miss R	Operators of apartment buildings	Industrial
MN0057606	Zeller-World Trade	30 E. 7th St. St. Paul, MN 55101	Miss R	Operators of nonresidential buildings	Industrial
MN0049816	3M St. Paul	Building 21-2W-05	Miss R	Surgical & medical instruments	Industrial
MNG255045	528 Partnership LLP	345 E. Plato Blvd. St. Paul, MN 55107	Miss. R	Commercial print, Lithographic	Noncontact cooling water

City of Saint Paul

Industrial Land Use

Pollutant Source Locations
Stormwater Modeling
Volume Reduction Inventory
2010 RSVP Stormwater Study
City of St. Paul, MN

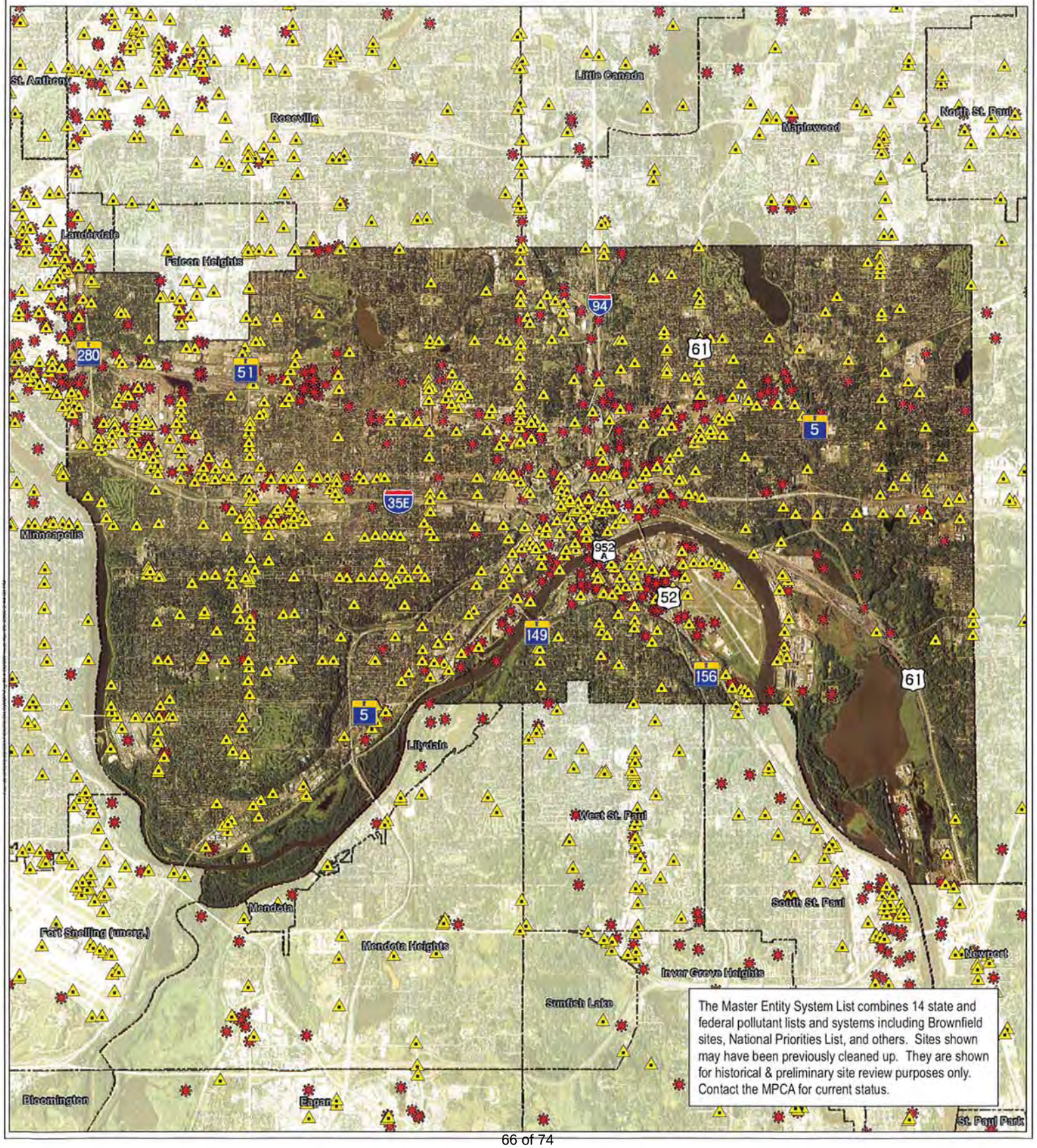
Legend

- Leaking Underground Storage Tank
- Pollution Source Locations

N
W E
S

0 7,500 15,000 Feet

WSB & Associates, Inc.



The Master Entity System List combines 14 state and federal pollutant lists and systems including Brownfield sites, National Priorities List, and others. Sites shown may have been previously cleaned up. They are shown for historical & preliminary site review purposes only. Contact the MPCA for current status.

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, MN 55155-4194

TMDL Annual Report Form

Municipal Separate Storm Sewer Systems (MS4) Program

Doc Type: Annual Report

Form Information

This form is to be completed annually by MS4s in order to track the completed BMP activities and to calculate the cumulative loading reduction for specific pollutants of concern associated with each applicable WLA. Navigate through this form using the tabs at the bottom of the page. All information is collected in accordance with Part III.E of the MS4 Permit.

Green Tabs (REQUIRED): user-input worksheet
Blue Tabs (hidden*): optional user-input worksheet
Yellow Tabs (hidden*): reference worksheet

*Reveal hidden spreadsheet tabs by navigating to Home->Cells->Format->Hide & Unhide->Unhide Sheet

Please refer to the Guidance for Completing the TMDL Reporting Form in the Minnesota Stormwater Manual for additional assistance and instructions. Sections of the guidance are hyperlinked throughout this spreadsheet.

User Information

Date Updated: 6/8/2015

Permittee: Capitol Region Watershed District

Permit ID: MS400206

Contact Name: Anna Eleria

Contact Phone: 651-644-8888

Contact email: anna@capitolregionwd.org

Mailing address: 1410 Energy Park Dr., Suite 4, Saint Paul, MN 55108

Reporting Year	Data Entry Date	Entered by	Notes
2014	6/8/2015	Anna Eleria	

BMP - Activities Completed Spreadsheet

For MPCA use only			Required		Optional	Required						Optional		Required: Place an "X" in a cell if the BMP applies to the TMDL shown in the column
														Como Lake: Excess Nutrients TMDL
Entry ID	Permittee	MS4 ID	Reporting year	BMP/Activity	BMP Description	Location and ID Information Needed?	BMP ID	y-coord	x-coord	Coordinate system (e.g. lat-long, UTM)	Who owns this BMP/activity?	If applicable, name other owner(s)	Year when BMP was implemented	Note(s)	Como Lake - Phosphorus
MS400000-1	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9815	-93.166	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Asbury RG South	X
MS400000-2	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9817	-93.166	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Asbury RG North	X
MS400000-3	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9826	-93.159	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Frankson McKinley RG	X
MS400000-4	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9845	-93.161	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Arlington McKinley RG	X
MS400000-5	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9855	-93.162	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Pascal RG South	X
MS400000-6	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9856	-93.162	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Pascal RG Middle	X
MS400000-7	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9858	-93.162	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Pascal RG North	X
MS400000-8	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	04-001CF	44.9815	-93.156	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Hamline Midway RG	X
MS400000-9	Capitol Region Watershed District	MS400206	2014	Infiltrator	Underground infiltration	Complete columns H through K	04-001CF	44.9844	-93.156	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Pascal Project - Como Golf Course Pond	X
MS400000-10	Capitol Region Watershed District	MS400206	2014	Constructed_basin	Wet pond/wet detention pond	Complete columns H through K	04-001CF	44.9874	-93.153	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2008	Como Regional Pond	X
MS400000-11	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9864	-93.163	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Arlington-Hamline Facility	X
MS400000-12	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9864	-93.163	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Infiltration Trench 1	X
MS400000-13	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9864	-93.161	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Infiltration Trench 2	X
MS400000-14	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9864	-93.16	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Infiltration Trench 3	X
MS400000-15	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9845	-93.165	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Infiltration Trench 4	X
MS400000-16	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9846	-93.164	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Infiltration Trench 5	X
MS400000-17	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9846	-93.163	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Infiltratin Trench 6	X
MS400000-18	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	04-001CF	44.9846	-93.159	Lat-long	Permittee (you)	CRWD, Roseville, Falcon Heights, Saint Paul, Ramsey County	2007	Infiltration Trench 7	X

Entry ID	Permittee	MS4 ID	Reporting year	BMP/Activity	BMP Description	Location and ID Information Needed?	BMP ID	y-coord	x-coord	Coordinate system (e.g. lat-long, UTM)	Who owns this BMP/activity?	If applicable, name other owner(s)	Year when BMP was implemented	Note(s)		Como Lake - Phosphorus
MS400000-19	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration basin	Complete columns H through K	08-008	44.9926	-93.15	Lat-long	Other	Rainbow Foods, Roseville	2008	Roseville Rainbow Foods - CRWD Permit Project		X
MS400000-20	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration basin	Complete columns H through K	07-020	44.9832	-93.153	Lat-long	Other MS4 permittee	Saint Paul	2007	Como Zoo Polar Bear Exhibit - CRWD Permit Project		X
MS400000-21	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration basin	Complete columns H through K	09-009	44.978	-93.136	Lat-long	Other MS4 permittee	Saint Paul	2009	Victoria Street IB #1 - CRWD Permit Project		X
MS400000-22	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration basin	Complete columns H through K	09-009	44.9779	-93.136	Lat-long	Other MS4 permittee	Saint Paul	2009	Victoria Street IB #2 - CRWD Permit Project		X
MS400000-23	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	10-014	44.9698	-93.142	Lat-long	Other MS4 permittee	Saint Paul	2010	Front-Victoria RSVP IT #1 - CRWD Permit Project		X
MS400000-24	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	10-014	44.9689	-93.141	Lat-long	Other MS4 permittee	Saint Paul	2010	Front-Victoria RSVP IT #2 - CRWD Permit Project		X
MS400000-25	Capitol Region Watershed District	MS400206	2014	Infiltrator	Infiltration trench	Complete columns H through K	10-014	44.9731	-93.136	Lat-long	Other MS4 permittee	Saint Paul	2010	Front-Victoria RSVP IT #3 - CRWD Permit Project		X
MS400000-26	Capitol Region Watershed District	MS400206	2014	Filter	Permeable pavement with underdrain	Complete columns H through K	10-014	44.973	-93.136	Lat-long	Other MS4 permittee	Saint Paul	2010	Front-Victoria RSVP Permeable Pavement - CRWD Permi		X
MS400000-27	Capitol Region Watershed District	MS400206	2014	Infiltrator	Underground infiltration	Complete columns H through K	11-018	44.9817	-93.153	Lat-long	Other MS4 permittee	Saint Paul	2011	Como Zoo Gorilla Forest - CRWD Permit Project		X
MS400000-28	Capitol Region Watershed District	MS400206	2014	Infiltrator	Underground infiltration	Complete columns H through K	12-002	44.9918	-93.147	Lat-long	Other	Walgreens, Saint Paul	2012	Larpenteur Walgreens - CRWD Permit		X
MS400000-29	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	10-020	44.9756	-93.15	Lat-long	Other MS4 permittee	Saint Paul	2010	Como Pool RG #1 - CRWD Permit Project		X
MS400000-30	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	10-020	44.9758	-93.15	Lat-long	Other MS4 permittee	Saint Paul	2010	Como Pool RG #2 - CRWD Permit Project		X
MS400000-31	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	10-020	44.9758	-93.15	Lat-long	Other MS4 permittee	Saint Paul	2010	Como Pool RG #3 - CRWD Permit Project		X
MS400000-32	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	10-020	44.9756	-93.149	Lat-long	Other MS4 permittee	Saint Paul	2010	Como Pool RG #4 - CRWD Permit Project		X
MS400000-33	Capitol Region Watershed District	MS400206	2014	Infiltrator	Bioretention with no underdrain (rain garden)	Complete columns H through K	10-020	44.9761	-93.148	Lat-long	Other MS4 permittee	Saint Paul	2010	Como Pool RG #5 - CRWD Permit Project		X
MS400000-34	Capitol Region Watershed District	MS400206	2014	Supplemental_public_education_outreach	Publications	No ID information needed	NA	NA	NA	NA	Other MS4 permittee	Roseville		Roseville stormwater management webpage updates		X
MS400000-35	Capitol Region Watershed District	MS400206	2014	Supplemental_public_education_outreach		No ID information needed	NA	NA	NA	NA	Other MS4 permittee	Saint Paul, CRWD		Como Lake Spring Cleanup		X
MS400000-36	Capitol Region Watershed District	MS400206	2014	Improved_lawn_turf_vegetation_soil_practices	Yard waste collection	No ID information needed	NA	NA	NA	NA	Other MS4 permittee	CRWD, Saint Paul		Como Subwatershed Neighborhood Leaf Litter Cleanups		X
MS400000-37	Capitol Region Watershed District	MS400206	2014	BMP_improvement_enhancement_retrofitting	Clean and repair stormwater structures	No ID information needed	NA	NA	NA	NA	Other MS4 permittee	Ramsey County, Saint Paul		Como Golf Course Maintenance Dredging		X
MS400000-38	Capitol Region Watershed District	MS400206	2014	BMP_improvement_enhancement_retrofitting		No ID information needed	NA	NA	NA	NA	Other MS4 permittee	Ramsey County, Saint Paul		Como Lake Aeration System		X

Entry ID	Permittee	MS4 ID	Reporting year	BMP/Activity	BMP Description	Location and ID Information Needed?	BMP ID	y-coord	x-coord	Coordinate system (e.g. lat-long, UTM)	Who owns this BMP/activity?	If applicable, name other owner(s)	Year when BMP was implemented	Note(s)		Como Lake - Phosphorus
MS400000-39	Capitol Region Watershed District	MS400206	2014	Supplemental_street_sweeping	Street sweeping	No ID information needed	NA	NA	NA	NA	Other MS4 permittee	Saint Paul, Roseville, Falcon Heights, Ramsey County				X
MS400000-40	Capitol Region Watershed District	MS400206	2014	BMP_improvement_enhancement_retrofitting	BMP maintenance	No ID information needed	NA	NA	NA	NA	Permittee (you)	CRWD, Saint Paul, Roseville, Falcon Heights, Ramsey County		Catch basin cleaning		X
MS400000-41	Capitol Region Watershed District	MS400206	2014	BMP_improvement_enhancement_retrofitting	Clean and repair stormwater structures	No ID information needed	NA	NA	NA	NA	Permittee (you)	CRWD, Saint Paul, Roseville, Falcon Heights, Ramsey County		Stormwater BMP maintenance		X
MS400000-42	Capitol Region Watershed District	MS400206	2014	Supplemental_public_education_outreach	Presentations	No ID information needed	NA	NA	NA	NA	Permittee (you)	CRWD, Saint Paul, Roseville, Falcon Heights, Ramsey County		Public education activities		X
MS400000-43	Capitol Region Watershed District	MS400206	2014	Supplemental_employee_education_training	Staff training	No ID information needed	NA	NA	NA	NA	Permittee (you)	CRWD, Saint Paul, Roseville, Falcon Heights, Ramsey County		Municipal training on winter road, parking lot and sidewalk maintenance		X
MS400000-44																
MS400000-45																
MS400000-46																
MS400000-47																
MS400000-48																
MS400000-49																
MS400000-50																
MS400000-51																
MS400000-52																
MS400000-53																
MS400000-54																
MS400000-55																
MS400000-56																
MS400000-57																
MS400000-58																
MS400000-59																
MS400000-60																
MS400000-61																
MS400000-62																
MS400000-63																
MS400000-64																
MS400000-65																
MS400000-66																
MS400000-67																
MS400000-68																
MS400000-69																
MS400000-70																
MS400000-71																
MS400000-72																
MS400000-73																
MS400000-74																
MS400000-75																
MS400000-76																
MS400000-77																
MS400000-78																
MS400000-79																
MS400000-80																
MS400000-81																
MS400000-82																
MS400000-83																
MS400000-84																
MS400000-85																
MS400000-86																
MS400000-87																
MS400000-88																
MS400000-89																
MS400000-90																
MS400000-91																
MS400000-92																
MS400000-93																
MS400000-94																
MS400000-95																
MS400000-96																
MS400000-97																
MS400000-98																
MS400000-99																
MS400000-100																
MS400000-101																
MS400000-102																
MS400000-103																
MS400000-104																

Cumulative Reductions Spreadsheet

Category 1: Summary of quantitative reductions (Annual Pollutant Load Reduction).											Optional	
Permittee	MS4 ID	TMDL project	Units	2014	2015	2016	2017	2018	2019	2020	Calculation method	Notes
Capitol Region Watershed District	**MS400206**	Como Lake - Phosphorus	pounds reduced	140							P8, WinSLAMM,	

Category 2: Summary of qualitative reductions (# of BMPs).										Optional
Permittee	MS4 ID	TMDL project	2014	2015	2016	2017	2018	2019	2020	Notes
Capitol Region Watershed District	**MS400206**	Como Lake - Phosphorus	24							

Non-implemented activities (BMP Inventory)

Permittee	MS4 ID	BMP description	Status	Reporting year	Notes (Optional)	Place an "X" in a cell if the activity applies to the TMDL shown in the column: Como Lake - Phosphorus
Capitol Region Watershed District	**MS400206**	Gotfried's Pit Improvement Project	Discontinued	2014	Construction was completed in 2012, however, this project provided primarily flooding reduction benefits	
Capitol Region Watershed District	**MS400206**	**Roselawn Ave. Street Reconstruction Project**	Under construction	2015	Construction completed in 2010, however, BMP performance not yet estimated.	x
Capitol Region Watershed District	**MS400206**	**Falcon Heights Street Reconstruction Project**	Under construction	2015	Construction completed in 2014, however, BMP performance not yet estimated.	x
Capitol Region Watershed District	**MS400206**	**Curtis Pond Stormwater Improvement Project**	Under construction	2015	Construction completed in 2014, however, BMP performance not yet estimated.	x
Capitol Region Watershed District	**MS400206**	**Gotfried's Pit Subwatershed Feasibility Study**	Planned	2018	Roseville	x
Capitol Region Watershed District	**MS400206**	**Roseville public education on snow removal**	Planned	2015	Roseville	x
Capitol Region Watershed District	**MS400206**	**Roseville Design Standards Review and Revisions**	Planned	2015	Roseville	x
Capitol Region Watershed District	**MS400206**	**Roseville Public Education Partnerships**	Planned	2016	Roseville	x
Capitol Region Watershed District	**MS400206**	**Roseville Parks Renewal Program - Stormwater Improvements**	Planned	2016	Roseville	x
Capitol Region Watershed District	**MS400206**	**County Road Maintenance Program - Drainage Improvements**	Planned	2015	Ramsey County	x
Capitol Region Watershed District	**MS400206**	**County 5-Year Transportation Improvement Program - Stormwater BMPs**	Planned	2015	Ramsey County	x
Capitol Region Watershed District	**MS400206**					
Capitol Region Watershed District	**MS400206**					
Capitol Region Watershed District	**MS400206**					
Capitol Region Watershed District	**MS400206**					
Capitol Region Watershed District	**MS400206**					
Capitol Region Watershed District	**MS400206**					

Provide an up-dated narrative describing any adaptive management strategies used (including projected dates) for

CRWD, Saint Paul, Roseville, Falcon Heights, Ramsey County and Roseville are working together to implement cost-effective stormwater best management practices to achieve the categorical wasteload allocation for phosphrus in Como Lake. As reported, CRWD and its partners have achieved 50% of its load reduction goal. There are number of recent completed projects that will be reported next year that shall show continued progress towards achieving the TMDL goal for Como Lake. The partners are conducting subwatershed feasibility studies and other efforts to identify opportunities for implementing stormwater BMPs. The partners are also conducting an in-depth inventory of existing BMPs constructed in the Como Park area that will be included in next year's TMDL report.

Provide an up-dated narrative describing any adaptive management strategies used (including projected dates) for making progress toward achieving each applicable WLA
CRWD, Saint Paul, Roseville, Falcon Heights, Ramsey County and Roseville are working together to implement cost-effe