MINNEHAHA CREEK
WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

Meeting: Board of Managers
Meeting date: 7/9/2020
Agenda Item #: 11.2
Request for Board Action

Title:	Approval of Maple Plain Local Water Management Plan
Resolution number:	20-056
Prepared by:	Name: Kate Moran Phone: 952-641-4520 kmoran @minnehahacreek.org
Reviewed by:	Name/Title: Becky Christopher, Policy Planning Manager
Recommended action:	Approval of City of Maple Plain Local Water Management Plan
Schedule:	Date: N/A
Budget considerations:	Fund name and code: N/A
Past Board action:	Res # 09-003 Title: City of Maple Plain Local Water Resources Management Plan - Approval Res # 18-004 Title: Approval and adoption of MCWD Watershed Management Plan for the implementation period 2018-2027

Summary:

Background

MN Statutes § 103B.235 and MN Rules § 8410.0160 grant watershed districts the authority to review and approve local water management plans (LWMPs). Under this framework, watershed districts can assign responsibilities to local government units (LGUs) for carrying out implementation actions defined in the watershed plan. The LWMP is a required element of the LGU comprehensive land use management plan which LGU's were required to adopt by the end of 2018.

The Minnehaha Creek Watershed District (MCWD or District) adopted its new Watershed Management Plan (Plan) in January 2018. The Plan is rooted in the District's Balanced Urban Ecology policy (BUE) as the principal strategy to accomplish its mission. The BUE policy recognizes the inter-dependence of the natural and built environment and that both benefit through a holistic planning approach. The BUE policy establishes the guiding principles of focus in areas of highest resource needs, flexibility to respond to emerging opportunities as a result of land use change in real time, and pursuing clean water goals in partnership with our communities.

The Plan establishes the District as a regional water planning agency. The Plan provides rationale for subwatershed-based planning and prioritization by which to focus implementation efforts for the 2018-2027 Plan cycle. The District has prioritized the subwatersheds of Minnehaha Creek, Six Mile Creek-Halsted Bay and Painter Creek-Jennings Bay based on a combination of resource needs and opportunities for management of some of the State's most prized recreational natural resources of Lake Minnetonka and Minnehaha Creek – including the Minneapolis Chain of Lakes.

In addition to these focused planning and implementation efforts, the District's approach watershed-wide is to remain responsive to opportunities created by local land use change or partner initiatives. The District's responsive approach relies on early and effective coordination by the District's communities to help identify opportunities to integrate plans and investments. As opportunities arise, the District will evaluate them against the resource needs and priorities defined

for each subwatershed in the District's Plan and determine the appropriate response. The District has a wide range of services it can mobilize to address resource needs and support partner efforts, including data collection and diagnostics, technical and planning assistance, permitting assistance, education and capacity building, grants, and capital projects.

Integration of land use and water planning is the primary focus of the LWMP requirements set forth in the District's Plan. To effectively integrate the goals of MCWD and its LGUs in a way that maximizes community benefits and effectively leverages public funds, the District has invited a partnership framework with its communities. In addition to the legally required elements of LWMPs, as defined in State statute and rules, the MCWD Plan requires communities to propose a coordination plan which describes how the LGU and MCWD will share information and work together to integrate land use and water planning. Specifically, the purpose of a MCWD/LGU coordination plan is to:

1. Establish a framework to be informed as to current LGU land use and infrastructure planning and enable early coordination of land use and water resources management
2. Foster LGU development regulation that integrates water resource protection before plans are fixed
3. Identify and capitalize on project opportunities for improved water resources outcomes while maximizing other public and private goals

As established in the District's Plan, MCWD will prioritize implementation efforts and resource deployment based on its established priorities and LGU commitment to coordination. This commitment is demonstrated through the coordination plan and its implementation by the LGU.

Maple Plain LWMP Summary

The City of Maple Plain (City) has submitted its LWMP for MCWD review and approval. District staff reviewed the LWMP and provided detailed comments regarding the goals and requirements of the District's Plan for consideration and incorporation into the LWMP.

The City is split between two watershed districts and occupies approximately 0.3 square miles within the MCWD's Painter Creek subwatershed. The southeast portion of the City within the MCWD boundary drains to a wetland that is a Department of Natural Resources (DNR) Regionally Significant Ecological Area. This wetland drains into Katrina Lake that flows into Painter Creek which then discharges into Jennings Bay of Lake Minnetonka. The Painter Creek subwatershed was identified as a priority area in the District's Plan due to the its size, the impairments of Jennings Bay (nutrients) and Painter Creek (*E. coli*), and the opportunity for restoration of major wetland systems.

As a required element of the LWMP, the City has developed a MCWD-City Coordination Plan (attached) which serves as a framework to support ongoing communication and promote value-added collaboration between the City and MCWD. The Coordination Plan covers the following areas: annual meeting, planning coordination, land use coordination, regulatory coordination, small area plans, MS4 system, funding, and communication and outreach.

The City has not proposed to acquire implementation authority for any MCWD water resource regulation and has proposed that the District retain Local Government Unit status for the Wetland Conservation Act.

Recommendation:

Staff has verified that the LWMP meets the requirements of Minnesota Statutes §103B.235, Minnesota Rules 8410.0160, and the MCWD Watershed Management Plan and recommends approval.

Supporting documents:

1. Overview Figure of Maple Plain
2. Maple Plain and MCWD Coordination Plan
3. Maple Plain LWMP

MINNEHAHA CREEK
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RESOLUTION

Resolution number: 20-056

Title: Approval of Maple Plain Local Water Management Plan

WHEREAS, on January 11, 2018, the MCWD adopted its Watershed Management Plan (WMP) pursuant to Minnesota Statutes §103B.231 and Minnesota Rules 8410, which describes how the MCWD will fulfill its responsibilities under the Metropolitan Surface Water Management Act for implementation over the period 2018-2027, and which is guided by the organizational strategy and approach defined through the Balanced Urban Ecology policy; and

WHEREAS, the Balanced Urban Ecology policy prioritizes partnership with the land use community to integrate policy, planning, and implementation in order to leverage the value created when built and natural systems are in harmony; and

WHEREAS, the Balanced Urban Ecology policy rests on the guiding principles of focusing in areas of highest resource needs, being flexible to respond to opportunities that arise through land use changes, and working in partnership to achieve the MCWD's goals; and

WHEREAS, on watershed district adoption of its WMP, cities and towns (local government units or LGUs) within the watershed must prepare local water management plans (LWMPs) that meet content requirements of Minnesota Statutes §103B.235, Minnesota Rules 8410.0160 and the WMP; and

WHEREAS, the LWMP is a primary tool to provide a framework for increased early coordination of land use and water planning through the coordination plan that is a required component of the LWMP and the content of which is described in the WMP, Appendix A; and

WHEREAS, the MCWD will prioritize implementation efforts and resource deployment based on its established priorities and LGU commitment to coordination as demonstrated through the coordination plan and its implementation by the LGU; and

WHEREAS, the City of Maple Plain (City) has revised its LWMP and submitted it to the MCWD for review and approval; and

WHEREAS, MCWD staff reviewed the draft LWMP, provided detailed written comments on the LWMP, and thereafter worked with City staff to achieve the development of a proposed LWMP for consideration by the MCWD Board of Managers; and

WHEREAS, the Metropolitan Council has reviewed the LWMP and provided its written comments to the MCWD in a letter on March 24, 2020, and the MCWD has fully considered the comments; and

WHEREAS, the LWMP states that the City does not choose to exercise sole regulatory authority but, instead, wishes that the MCWD continue to require permits for the use and development of land, and otherwise exercise its regulatory authority, within the meaning of Minnesota Statutes §103B.211, subd. 1(a)(3); and

WHEREAS, the LWMP states that the City elects for the District to continue to act as the Local Government Unit responsible to implement the Minnesota Wetland Conservation Act; and

WHEREAS, the LWMP contains a coordination plan that meets the standards set forth in the MCWD WMP, Appendix A; and

WHEREAS, the MCWD has determined that the final revised LWMP meets the requirements of Minnesota Statutes § 103B.235, Minnesota Rules 8410.0160, and is consistent with the MCWD WMP including Appendix A, "Local Water Plan Requirements";

NOW, THEREFORE, BE IT RESOLVED, that the Minnehaha Creek Watershed District Board of Managers hereby approves the City of Maple Plain Local Water Management Plan; and

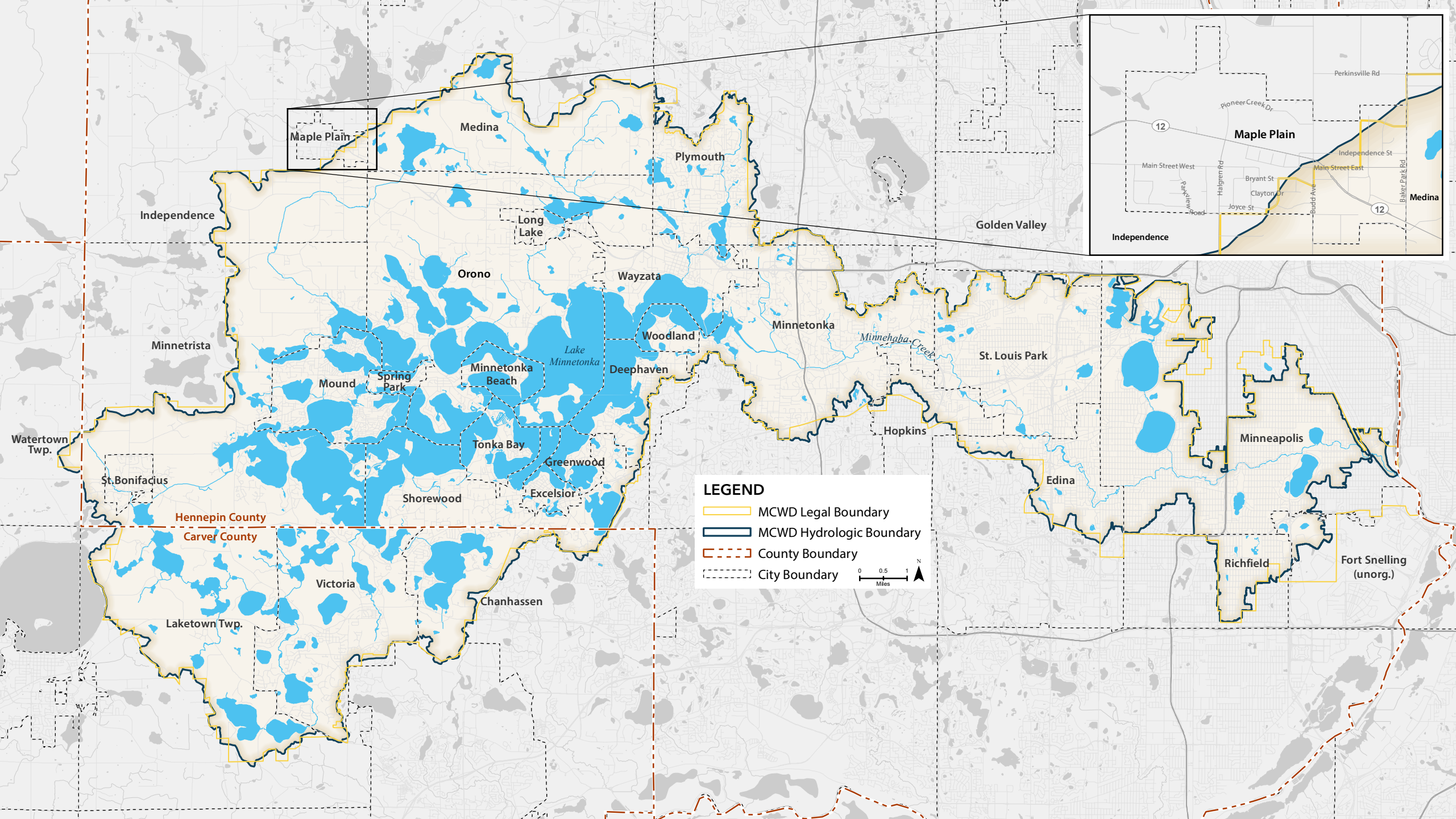
BE IT FURTHER RESOLVED, that the Board approves the associated coordination plan and adopts it on behalf of the MCWD; and

BE IT FINALY RESOLVED that the City is to adopt and implement its LWMP within 120 days, and to notify the MCWD within 30 days thereafter that it has done so.

Resolution Number 20- **056** was moved by Manager _____, seconded by Manager _____. Motion to adopt the resolution ___ ayes, ___ nays, ___abstentions. Date: 7/9/2020

_____ Date: _____

Secretary


Maple Plain
Medina
Plymouth
Independence
Long Lake
Orono
Wayzata
Golden Valley
Minnetonka
Minnetrista
Lake Minnetonka
Woodland
Minnehaha Creek
St. Louis Park
Mound
Spring Park
Minnetonka Beach
Deephaven
Hopkins
Minneapolis
Watertown Twp.
Tonka Bay
Greenwood
St.Bonifacius
Excelsior
Edina
Shorewood
Hennepin County
Carver County
Victoria
Chanhassen
Richfield
Fort Snelling (unorg.)
Laketown Twp.
Perkinsville Rd
Pioneer Creek Dr
12
Maple Plain
Independence St
Main Street West
Main Street East
Halgren Rd
Bryant St
Clayton Dr
Parkview Road
Joyce St
Budd Ave
Baker Park Rd
Medina
LEGEND
MCWD Legal Boundary
MCWD Hydrologic Boundary
County Boundary
City Boundary
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Appendix E

MCWD Coordination Plan

MINNEHAHA CREEK WATERSHED COORDINATION PLAN

The following Communication Plan outlines a relationship between the City of Maple Plain (the City) and the Minnehaha Creek Watershed District (the MCWD). The purpose of this Communication Plan is to maintain awareness of the needs and opportunities for successful surface water management within the City, and to promote successful partnership towards implementation of projects to meet the surface water management needs. It is anticipated that the City Engineer will be the primary contact between the City and the MCWD for the Communication Plan. The following agreements comprise the coordination plan:

- Annual meeting: The City and the MCWD agree to meet annually to review progress in the *Local Surface Water Management Plan* implementation. The annual meeting will be scheduled by the City Engineer. The meeting will include review of the annual National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) report and activity from the previous year.

  The annual meeting will include discussion about yearly updates to the City's Capital Improvement Program (CIP). The discussion will be a time for the MCWD to coordinate projects, discuss potential funding opportunities, including funding opportunities internal to the MCWD and through external sources, and provide comments.

- Planning Coordination: The City agrees to notify and consult with the MCWD regarding updates to road & infrastructure and parks & recreation planning efforts. Updates are to be sent by the City Engineer to the MCWD for review and comment at a minimum of once per year.

- Land Use: The City agrees to notify the MCWD with requests for land use approvals for review and comment. This includes, but is not limited to, requests for prospective development/redevelopment and receipt of preliminary plats. The MCWD agrees to notify the City upon receipt of preliminary plats. Additionally, the City and the MCWD agree to provide mutual notice of significant events related to prospective development/redevelopment.

- Small Area Plans: The City agrees to notify the MCWD with updates to the institution and completion of small area plans and other focused development/redevelopment actions. Updates are to be sent by the City Engineer to the MCWD at a minimum of once per year.

- MS4 System: In addition to a review of the MS4 system at the annual meeting, the City agrees to notify the MCWD of any significant alterations to the MS4 system throughout the year, for the purpose of keeping the MCWD's hydrologic and hydraulic model up to date.

- Watershed District Updates: Throughout the year, the MCWD agrees to notify the City of any amendments to the current *Watershed Management Plan*, as well as any updates to the MCWD CIP. Additionally, the MCWD agrees to notify the City with significant events related to prospective (re)development.

- Public Communications and Education: The City agrees to promote the Educational Workshops and Events put on by the MCWD. The City and the MCWD agree to coordinate when possible to avoid replicating educational programs.

- Funding: In order to assist the City in implementing projects related to surface water management, the MCWD agrees to continue to provide information regarding upcoming grants and other funding opportunities, both internal and external to the MCWD.

- Wetland Conservation Act: The City names the MCWD as the LGU authority for the Wetland Conservation Act.

- Regulatory Coordination: The City and the MCWD agree to coordinate activities regarding regulation of surface water management, including ensuring applicants are aware of permitting authority of both parties, holding pre-application meetings, sharing complaint information, coordinating compliance inspections, and coordinating regulatory enforcement. Coordination will be carried out between the City Engineer and MCWD staff over phone and email, and through in-person meetings if necessary.

Local Surface Water Management Plan

2020

Stantec Project 193801808

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EXECUTIVE SUMMARY

This Local Surface Water Management Plan (LSWMP) serves as a comprehensive planning document to guide the City of Maple Plain in conserving, protecting, and managing its surface water resources. This plan has been created to meet the requirements detailed in Minnesota Statutes 103B (Metropolitan Surface Water Management Act), Minnesota Rules 8410, and requirements of the local watershed management organizations. This document provides an inventory of water resource related information including the results of assessments conducted by other governmental units, both local and state. From this inventory and assessment, Maple Plain sets forth its goals and policies and implementation program.

The plan is organized as follows:

- **Section 1** offers an introduction to and purpose of this Plan and includes organizational information on the location of components within this document.
- **Section 2** provides an inventory of land and water resources within the City, including a description of the physical setting, available water resources data, and land use maps.
- **Section 3** documents the regulatory agencies and their role in the City's surface water management.
- **Section 4** describes past studies and plans related to surface water management.
- **Section 5** identifies the stormwater management agreements between Maple Plain and other entities.
- **Section 6** provides a current assessment of surface water management in Maple Plain, including the NPDES permitting process and a regulatory standards comparison. This section also includes the identification of issues and corrective actions, including flooding and stormwater rate control problems.
- **Section 7** lists the goals and policies identified to address surface water management needs in the City, relating to land development and resource management.
- **Section 8** summarizes capital projects planned with known funding sources to implement the goals and policies listed in Section 7, and potential activities and funding mechanisms.
- **Section 9** outlines the continued administration of this plan with respect to plan amendments.

The appendices provide additional detail:

- **Appendix A** provides the Joint Powers Agreement forming the Pioneer-Sarah Creek Watershed Management Commission.
- **Appendix B** provides the stormwater BMP inspection schedule for Maple Plain.
- **Appendix C** provides the full stormwater conveyance map for Maple Plain.
- **Appendix D** provides the Minnehaha Creek Watershed District and Pioneer-Sarah Creek Watershed Management Commission rules and regulations.
- **Appendix E** provides the Coordination Plan with the Minnehaha Creek Watershed Management District.

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SECTION 1 – PURPOSE AND SCOPE

1.1 PURPOSE

This Local Surface Water Management Plan will serve as a comprehensive planning document to guide the City of Maple Plain in conserving, protecting, and managing its surface water resources. This plan has been created to meet the requirements detailed in Minnesota Statutes 103B and Minnesota Rules 8410, administered by the Minnesota Board of Water and Soil Resources. This plan is also consistent with the goals and policies of the Metropolitan Council's *2040 Water Resources Policy Plan*, and the watershed districts that have jurisdiction within the City: the Minnehaha Creek Watershed District and the Pioneer-Sarah Creek Watershed Management Commission. This plan may be periodically amended to remain current with local practices and policies.

1.2 SCOPE

This Plan serves multiple purposes including statutory and rule compliance. Minnesota Statute 103B.235 defines content for Local Surface Water Management Plans. According to the statute's text, each local plan, in degree of detail required in the watershed plan, shall:

(1) describe existing and proposed physical environment and land use;
(2) define drainage areas and the volumes, rates, and paths of stormwater runoff;
(3) identify areas and elevations for stormwater storage adequate to meet performance standards established in the watershed plan;
(4) identify regulated areas; and,
(5) set forth an implementation program, including a description of official controls and, as appropriate, a capital improvement program.

Minnesota Rules 8410, administered by the Board of Water and Soil Resources, provide more detail on local plan content. Though the BWSR guidance applies specifically to watershed management organizations, this guidance has historically been used to frame expectations for municipal plans. According to Minnesota Rules 8410.0161, local plans must include:

1. Executive summary.
2. Water resource management-related agreements, including going power agreements.
3. Existing and proposed physical environment and land use.
4. Existing or potential water resource-related problems.
5. A local implementation program describing solutions to the water resource-related problems identified.
6. Amendment procedures.

The reader will find that Maple Plain has structured its LSWMP to provide the information required by 8410 without holding strictly to the outline contained in the rules. Through this document, the City provides signposts identifying where a statutory or rulemaking requirement might be addressed.

The Maple Plain LSWMP must address requirements of the Minnesota Pollution Control Agency's Municipal Separate Storm Sewer System (MS4) program. This program is designed to reduce the sediment and pollution that enters groundwater and surface waters to the maximum extent practicable. The MS4 program is regulated through the National Pollutant Discharge Elimination System (NPDES) permits. These NPDES permits require the development of Storm Water Pollution Prevention Programs (SWPPP).

The Maple Plain LSWMP must also satisfy Metropolitan Council requirements as contained in their *2040 Water Resources Policy Plan*. These requirements build on those of Minnesota Rules 8410. Beyond state level requirements and those of Metropolitan Council, this plan must be consistent with those of the watershed districts that have jurisdiction in the City. Often, watershed districts outline specific content for local plans that go beyond that required by statute and rule.

SECTION 2 – LAND AND WATER RESOURCES INVENTORY

2.1 LOCATION AND HISTORY

The City of Maple Plain is a near fully developed city located in Hennepin County. The City lies on US Highway 12, with a total land area of 829 acres (825 acres of which are land, and 4 acres of which are open water). it shares its west boundary with Medina and all other boundaries with Independence, shown in Figure 1. The most recent census data for the City, as well as population projections, are given in Table 2.1.

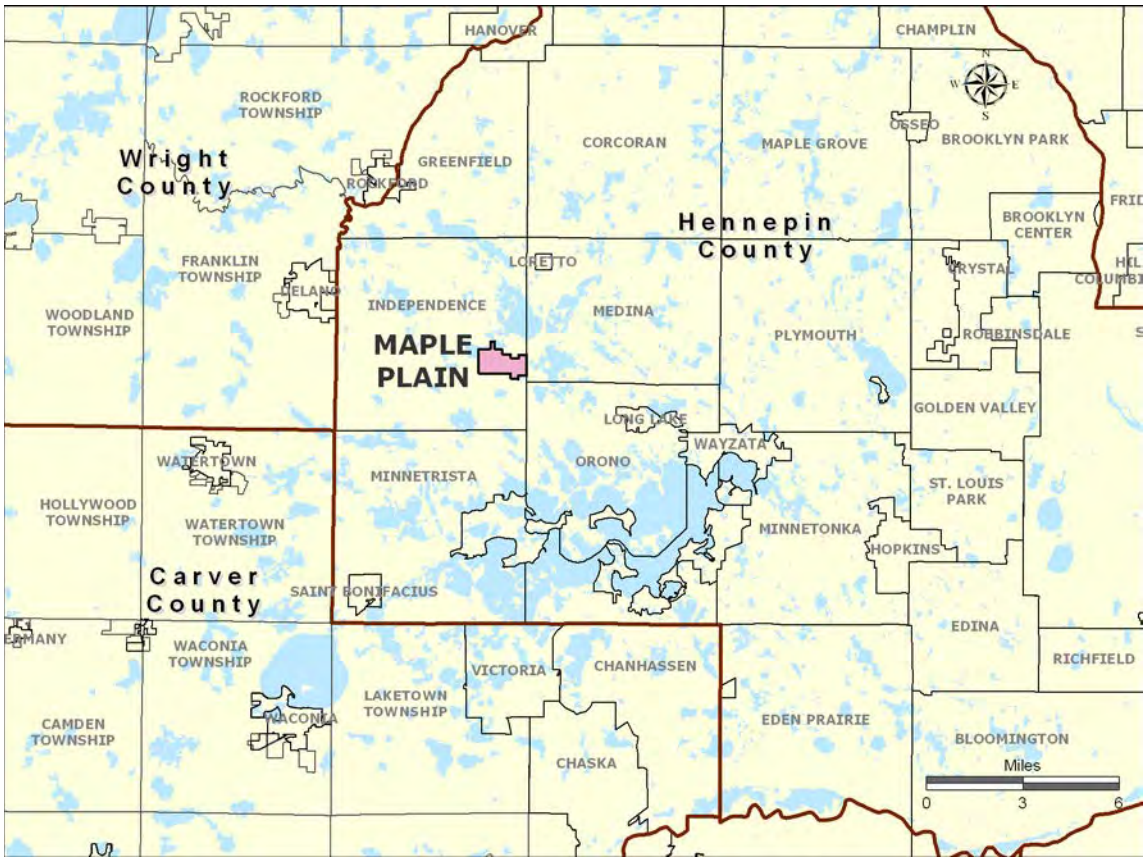

Figure 1: Location Map

TABLE 2.1 – MAPLE PLAIN POPULATION

Year	Population	Households	Employment
2010	1,768	723	-
2020	1,900	790	2,000
2030	2,100	890	2,200
2040	2,300	1000	2,300

Source: Metropolitan Council 2040 Water Resources Policy Plan

The City of Maple Plain lies within the boundaries of two watershed management organizations: the Minnehaha Creek Watershed Management District and the Pioneer-Sarah Creek Watershed Management Commission. The boundaries of jurisdiction for each of these organizations are shown in Figure 2.

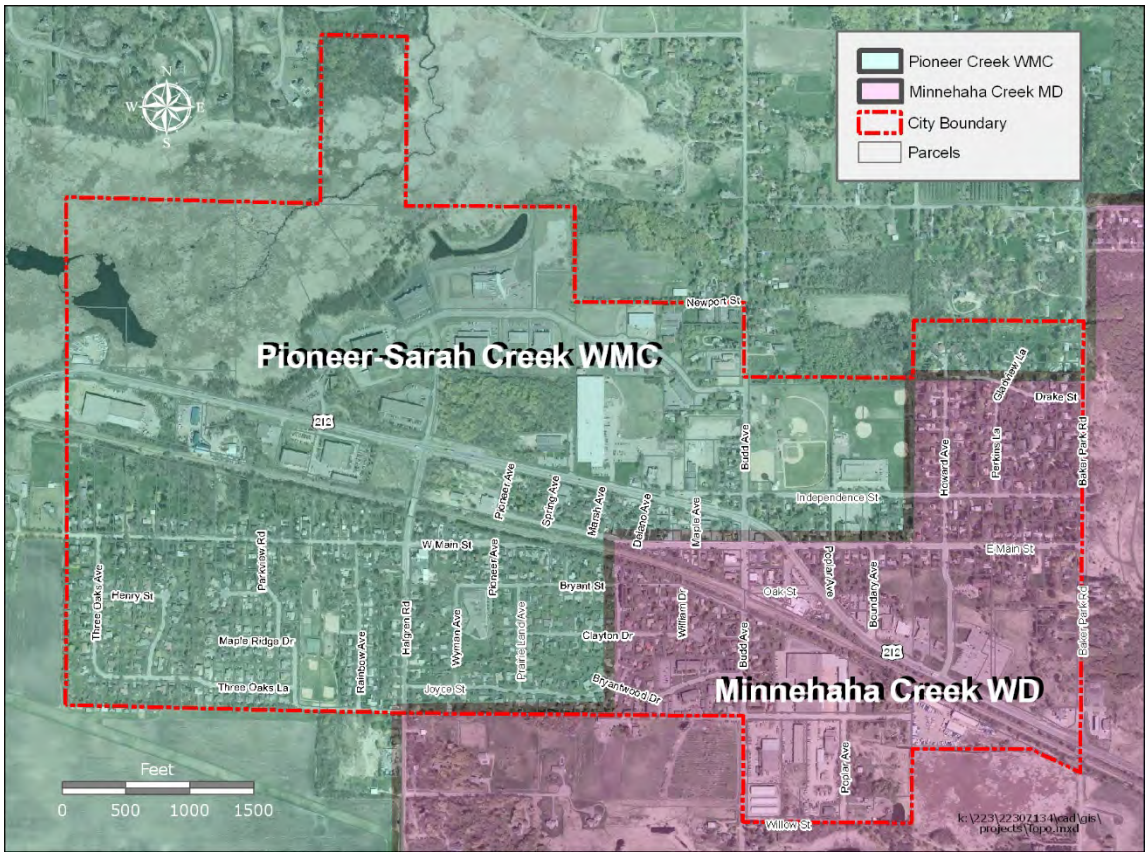

Figure 2: Watershed management organizations jurisdiction boundaries within Maple Plain

2.2 TOPOGRAPHY

Topography within the City consists of a wide ridge spanning from southwest to northeast at an elevation of approximately 1,030 feet above sea level. The north side of the ridge drops to the northwest approximately 70 feet to the floodplain of Pioneer Creek. The south side of the ridge drops to the southeast approximately 30 feet to a wetland area adjacent to Katrina Lake in Medina.

2.3 SOILS

The soils within the City of Maple Plain have generally moderate infiltration rates and create a high to moderate susceptibility to groundwater contamination. The hydrologic soil classification map is shown in Figure 3.

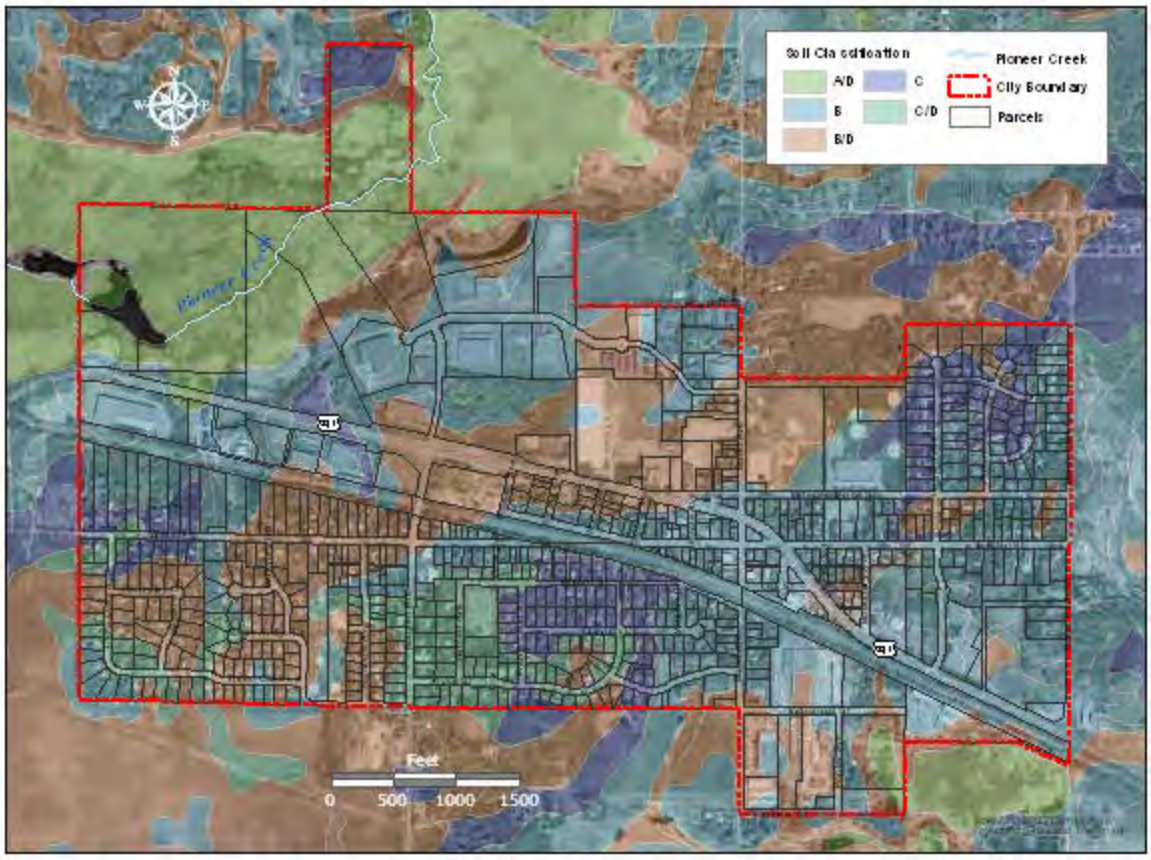

Figure 3: Soil classification for the City

The four soil classifications are defined as follows:

Group A – These soils have high infiltration rates even when thoroughly wetted. The infiltration rates range from 0.3 to 0.5 inches per hour. These soils consist chiefly of deep, well drained to excessively drained sands and gravel. Group A soils have a high rate of water transmission, therefore resulting in a low runoff potential.

Group B – These soils have moderate infiltration rates ranging from 0.15 to 0.30 inches per hour when thoroughly wetted. Group B soils consist of deep moderately well to well drained soils with moderately fine to moderately coarse textures.

Group C – These soils have slow infiltration rates ranging from 0.05 to 0.15 inches per hour when thoroughly wetted. Group C have moderately fine to fine texture.

Group D – These soils have very slow infiltration rates ranging from 0 to 0.05 inches per hour when thoroughly wetted. Group D soils are typically clay soils with high swelling potential, soils with high permanent water table, soils with a clay layer at or near the surface, or shallow soils over nearly impervious material.

Dual Hydrologic Soil Types – These include A/D, B/D, and C/D. These soils behave like D soils when wet, and act like A, B, or C when dry.

For design purposes, infiltration rates based on hydrologic soil groups according to the Minnesota Stormwater Manual should be used. The hydrologic soil groups in the City of Maple Plain are predominantly Type B (over 40%). There is a band of dual hydrologic soil Type B/D spanning from the southwest to the northeast of the City. Dual hydrologic soil Types A/D and B/D underlie the wetland areas in the northwest and southeast corners of the City. The remaining soils are hydrologic soil groups C and C/D, and these types are in pockets in the northeast and southwest corners of the City. Additional information on the geology and soils for the City is included in the Hennepin County Soil Survey.

2.4 GEOLOGY

The Upper Cambrian St. Lawrence and Franconia bedrock formations lying beneath Maple Plain create a single wide ridge underlying the entire City. The depth to bedrock within the City ranges from about 200 feet to nearly 300 feet in the northwest and southeast corners of the City. Above the bedrock lie surficial Quaternary glacial and fluvial deposits that consist mainly of clayey glacial till. There is a pocket of loamy glacial till in the southeast corner of the City, and to the west of it, a smaller pocket of Lacustrine clay and silt from the Des Moines and Grantsburg sublobe deposits. A separate pocket of post-glacial organic deposits lies in the floodplain area of Pioneer Creek in the northwest corner of the City. Additional geological information can be found in the Geological Atlas of Hennepin County (Minnesota Geologic Survey, 1989).

2.5 GROUNDWATER

Within the City, groundwater wells serve the City's municipal drinking water needs. Four municipal wells exist in the city. Well #1 is an emergency backup well, with a capacity of 125 gallons per minute (gpm). Well #2 is currently inactive, and has been capped but not sealed. Well #3 is an active well, with a capacity of 700 gpm. Well #4 is also an active well, with a capacity of 500 gpm. Wells #1, 2 & 4 draw from the Wonewoc Aquifer, while well #3 draws from the Mount Simon Aquifer. Each of these wells has a groundwater appropriation permit from the DNR. Information on the DNR permit number for each well, its location, permitted volume, and number of gallons withdrawn each year can be downloaded from the DNR's website at www.dnr.state.mn.us.

The City adopted a Wellhead Protection Plan (WHP) in 2013. Part 1 of the WHP identifies a large drinking water supply management area (DWSMA) in the center of Maple Plain, as shown in Figure 4. However, a vulnerability assessment concluded that the DSWMA vulnerability was very low. No direct hydraulic connection was found between surface water and the aquifer. However, care should still be taken to construct infiltration BMPs outside of the DWSMA when possible.

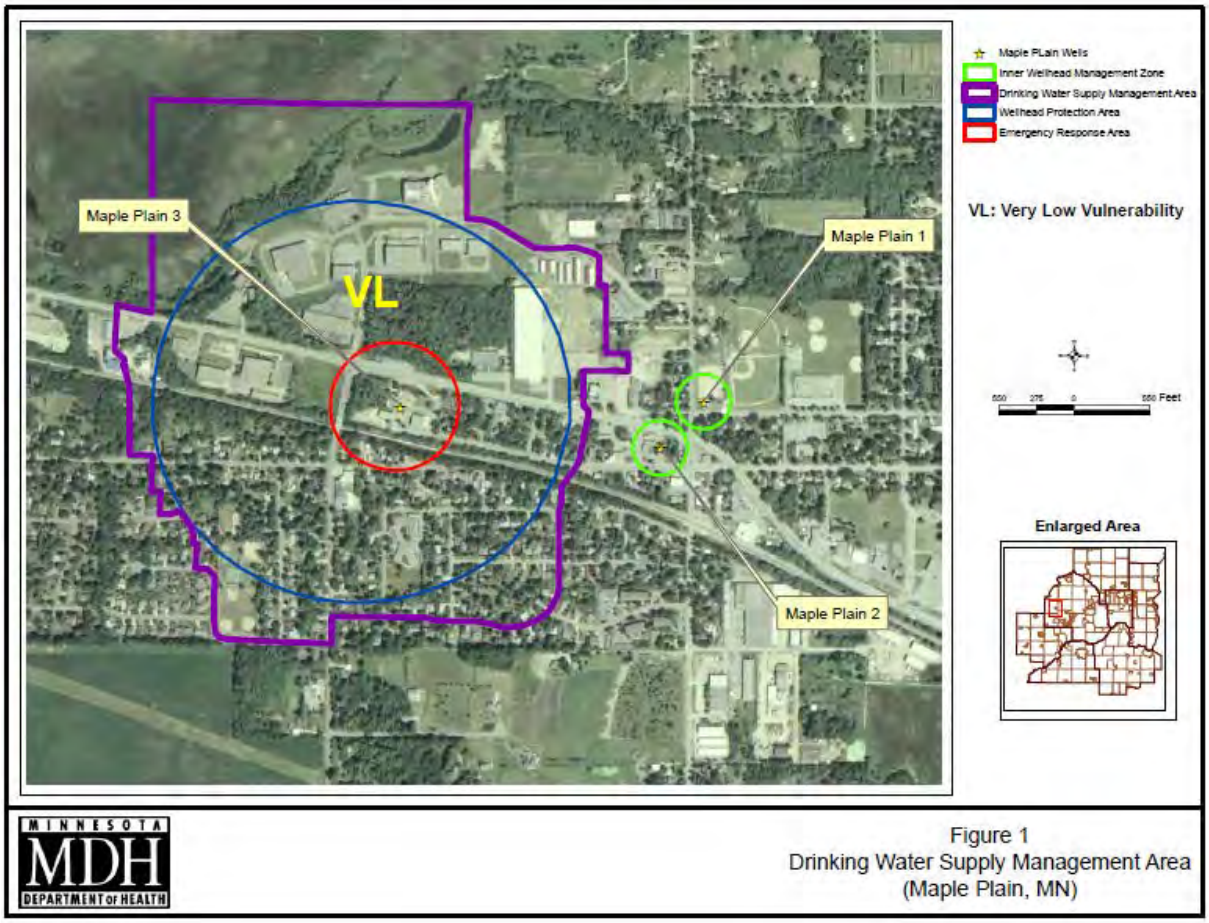

Figure 4: Wellhead protection area identified in the WHP (taken from WHP Part 1 report)

2.6 CLIMATE

Climate data for the Twin Cities are published by the National Weather Service (NWS) station at Chanhassen, MN. The NWS is a branch of the National Oceanic and Atmospheric Administration (NOAA). Table 2.2 provides a summary of average precipitation data for the Twin Cities area.

TABLE 2.2 – AVERAGE MONTHLY PRECIPITATION (INCHES), 1971-2016

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
0.90	0.84	1.80	2.68	3.47	4.52	3.86	4.16	2.80	2.24	1.71	1.12	30.1

Rainfall frequency estimates are used as design tools in water resource projects. Rainfall frequencies are summarized in the National Oceanographic and Atmospheric Administration's (NOAA) Atlas 14-Point Precipitation Frequency Estimates. Previously, Technical Paper No. 40, Rainfall Frequency Atlas of the United States (NOAA), was used to determine rainfall frequency estimates. The use of Atlas 14 estimates provides an advantage to Technical Paper No. 40, as estimates are based on data from denser networks with longer periods of record, and regional frequency analyses and new spatial interpolation techniques are used. Table 2.3 lists rainfall frequencies applicable to the City of Maple Plain.

TABLE 2.3 – 24-HOUR RAINFALL DEPTHS AND FREQUENCY

Recurrence Interval (yrs)	24-hr Rainfall Depth (in)
2	2.86
5	3.56
10	4.24
50	6.21
100	7.22

2.6 WATER RESOURCES

2.6.1 MAJOR BODIES OF WATER

There are no major water bodies such as lakes or rivers within Maple Plain. However, a large Department of Natural Resources (DNR) protected Public Water Wetland occurs in the southeast part of the City and drains to Katrina Lake. Katrina Lake's water quality is a concern for Hennepin Parks. Katrina Lake discharges to Painters Creek, which ultimately conveys the City of Maple Plain's stormwater runoff to Jennings Bay of Lake Minnetonka. The Painter Creek subwatershed has been labeled as a priority subwatershed by the MCWD, due to the high degradation of Jennings bay and *E. Coli* impairment of Painter Creek.

2.6.2 PIONEER CREEK

Pioneer Creek passes through the northwest corner of Maple Plain. Pioneer Creek serves as Lake Independence's only outlet. Pioneer Creek drains into Ox Yoke Lake, which then drains into Rice Lake in Wright County, which drains into the Crow River. Within Maple Plain Pioneer Creek passes through a large wetland area that is a DNR protected water. Regulated floodplain occurs over Pioneer Creek and its adjacent wetland areas and within this regulated floodplain base flood elevations have been established.

2.6.2 WETLANDS

Wetlands within the City are shown on Figure 5, which illustrates both the National Wetland Inventory and the Minnesota Department of Natural Resources Public Waters. These wetlands provide habitat to many species of plants and animals. Wetlands also affect local water quality. The aquatic plants in a healthy wetland will slow and filter water moving through the wetland, take up excess nutrients and pollutants, and promote settling of sediment.

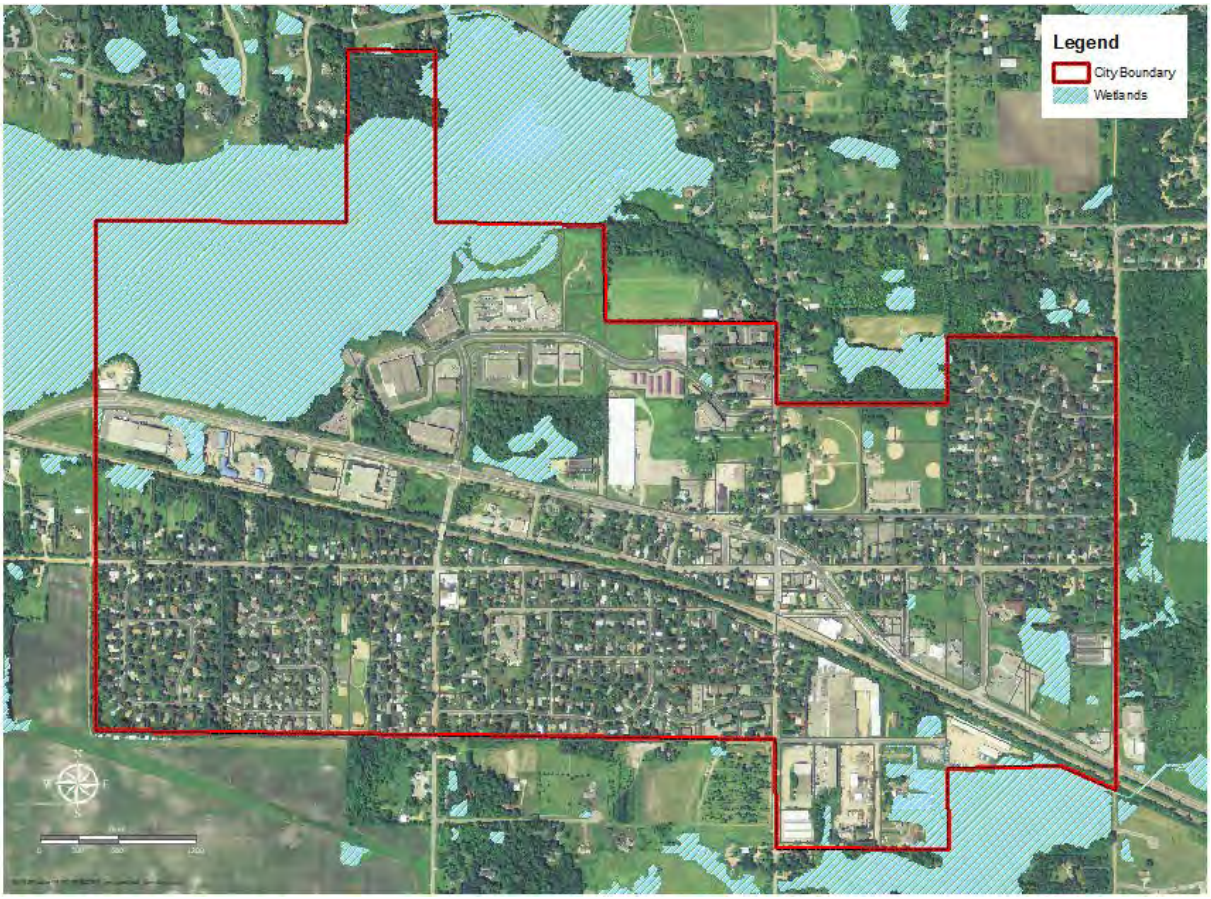

Figure 5: National Wetland Inventory within Maple Plain

2.6.3 IMPAIRED WATERS

Pioneer Creek, which flows through Maple Plain, is listed on the Minnesota Pollution Control Agency's list of impaired waters, lakes and streams in the state that do not meet federal water quality standards. Additionally, Maple Plain ultimately drains to the Crow River and Jennings Bay of Lake Minnetonka, both of which are included on the list. Specific impairments are shown in Table 2.4. Section 3.7 includes discussion on impaired waters and the TMDL process.

TABLE 2.4 – IMPAIRED WATERS RECEIVING DISCHARGE FROM MAPLE PLAIN

Impaired Water	Year Listed	Affected Use	Pollutant or Stressor	TMDL Approved
Pioneer Creek 07-0102-05-653 07-0102-05-654	2016	Aquatic Life	Dissolved Oxygen	2027*
	2016	Aquatic Life	Aquatic Macroinvertebrate bioassessments	2027*
	2016	Aquatic life	Fish bioassessments	2027*
	2016	Aquatic recreation	*E. coli*	2017

Impaired Water	Year Listed	Affected Use	Pollutant or Stressor	TMDL Approved
Lake Minnetonka - Jennings Bay 27-0133-15	1998	Aquatic consumption	Mercury in fish tissue	2008
	2008	Aquatic recreation	Nutrient/ eutrophication	n/a
Crow River – South Fork 07-0102-05-508	1998	Aquatic consumption	Mercury in fish tissue	2008
	2002	Aquatic life	Fish bioassessments	2027*
	2004	Aquatic life	Turbidity	2017
	2006	Aquatic recreation	Fecal coliform	2017
	2016	Aquatic life	Aquatic Macroinvertebrate bioassessments	2027*
	2016	Aquatic life	Nutrient/ eutrophication	2027*

***** TMDL target completion year

2.7 NATURAL RESOURCES

As a small community, Maple Plain relies on regional facilities to serve its recreational needs. These include Lake Rebecca Park Reserve/Lake Sarah Regional Park three miles northwest of town, Baker Park Reserve immediately east of town, the Luce Line trail to the south, and the City of Independence's Pioneer Park which lies immediately west of Maple Plain. In consideration of the significant regional facilities near Maple Plain, access to open space has not been an issue for its residents.

2.8 PLANNING AND LAND USE

Maple Plain's last comprehensive plan was adopted in 2008. The City's next comprehensive plan, in which this Local Surface Water Management Plan is included as an appendix, includes updates to the goals and policies related to water and natural resources. Maple Plain is near full development, with more redevelopment occurring than new development. The total land area of Maple Plain is approximately 829 acres. Current land uses within the City are shown in Figure 6. Proposed Land Use is shown in Figure 7.

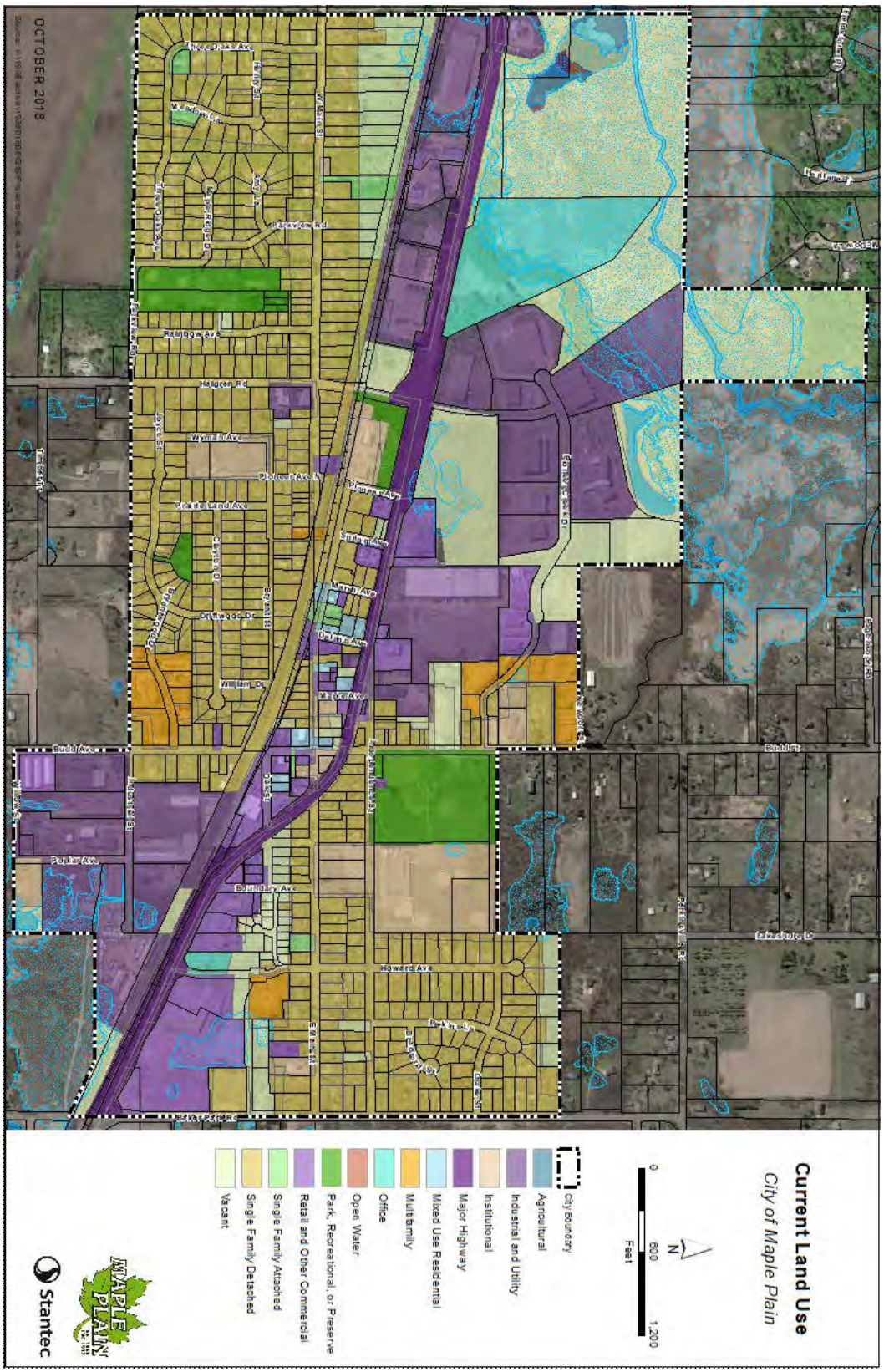

Figure 6: Current Land Use

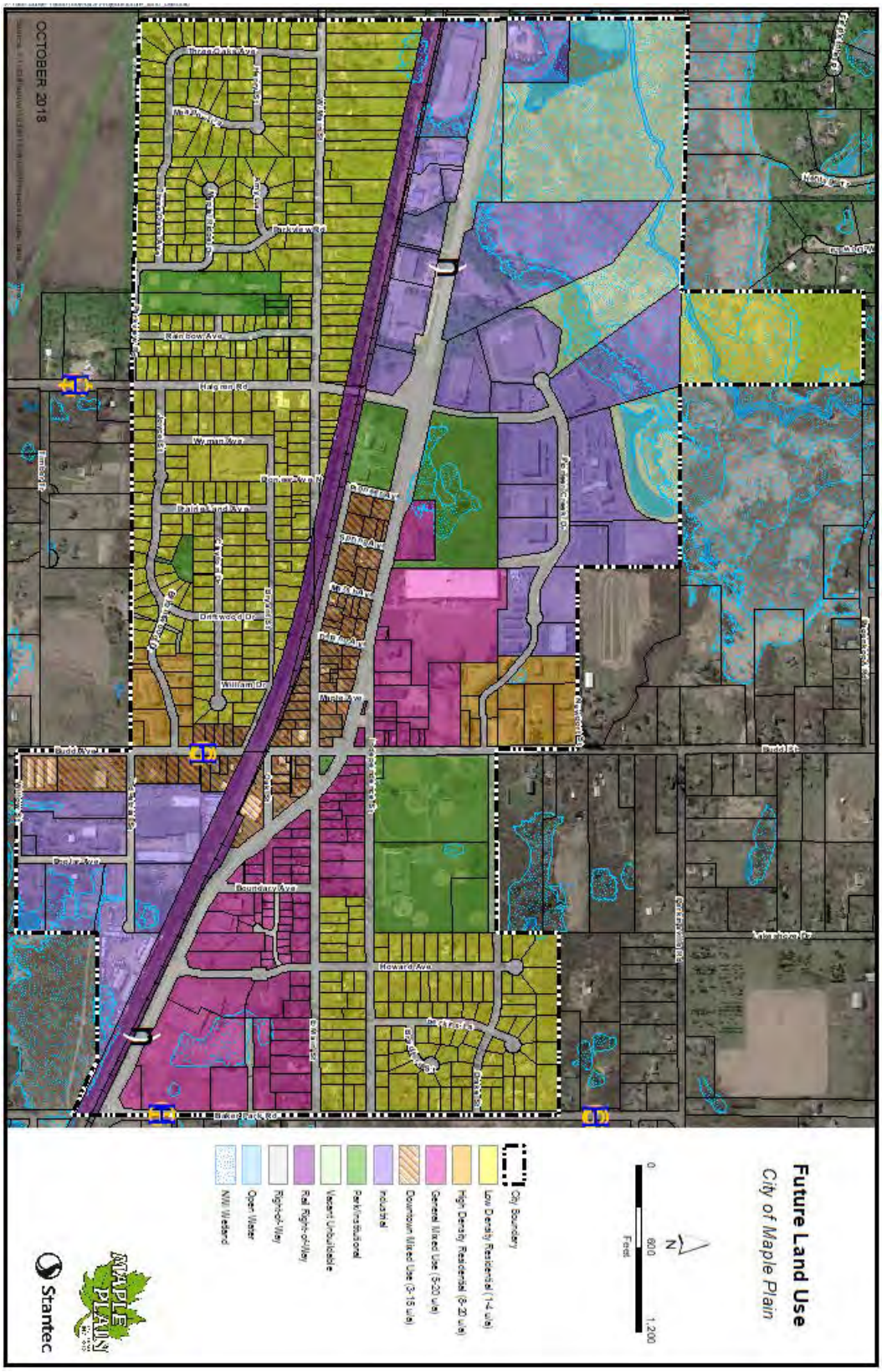

Figure 7: Future Land Use

SECTION 3 – REGULATORY SETTING

3.1 OVERVIEW

This section describes the City's current surface water resources management programs and practices and the agencies and organizations having roles in the City's management of these resources. Table 3.1 summarizes the City's and other agencies' respective regulatory controls related to water resources management and protection.

Acronyms used in Table 3.1 are described in Sections 3.2-3.19.

TABLE 3.1 – REGULATORY CONTROLS

Official Control	Responsibility	Mechanism
Erosion and Sediment Control	City, MPCA, MCWD, PSCWMC	• NPDES General Permit – SWPPP MCM 4 – Construction site stormwater runoff control • NPDES General Permit – SWPPP MCM 5 – Post-construction stormwater management • City Code 50.100: Regulations regarding erosion control for construction site runoff • City Code 150.60: Excavation permits • City Code 151.043: Standards for floodway conditional uses • City Code 153.031: Industrial zoning district • City Code 153.150: Tree preservation • MCWD – Erosion Control Rule • PSCWMC – Erosion and Sediment Control Rule
Shoreland	n/a	• There are no shorelines within the City of Maple Plain
Floodplain	City, MCWD, PSCWMC	• City Code 151.04: Floodway District • City Code 151.05: Flood Fringe District • MCWD – Floodplain Alteration Rule • PSCWMC – Floodplain Alteration Rule
Wetlands	City, MPCA, DNR, USACE, MCWD, PSCWMC	• NPDES General Permit – SWPPP MCM 5 – Post-construction stormwater management • NPDES General Permit – SWPPP MCM 6 – Pollution prevention • DNR – Public Waters Work Permit • USACE – Section 404, Clean Water Act • City Code 50.108: Minimum construction site best management practices • MCWD – Wetland Protection Rule • MCWD – Dredging Rule • PSCWMC – Wetland Alterations Rule • PSCWMC – Buffer Strips Rule
Illicit Discharge	City, MPCA, MCWD, PSCWMC	• NPDES General Permit – SWPPP MCM 3 – Illicit discharge detection and elimination • City Code 50.20 - 50.40: Illicit discharges and connections • MCWD – Illicit Discharge Rule

Official Control	Responsibility	Mechanism
Water Quality	City, MPCA, MCWD, PSCWMC	• NPDES General Permit • MCWD – Illicit Discharge Rule • MCWD – Stormwater Management Rule • PSCWMC – Stormwater Management Rule • City Code 50.100: Regulations regarding erosion control for construction site runoff
Water Quantity	City, MPCA, MCWD, PSCWMC	• NPDES General Permit – SWPPP MCM 1 – Public education and outreach • NPDES General Permit – SWPPP MCM 4 – Construction site stormwater runoff control • MCWD – Appropriations Rule • MCWD – Stormwater Management Rule • PSCWMC – Stormwater Management Rule • City Code 50.100: Regulations regarding erosion control for construction site runoff

3.2 CITY SERVICES

The City is in charge of all Maple Plain's public facilities, and the Public Works crew maintains city roads, parks, sanitary and storm sewers, and conducts periodic improvements to address water quality issues such as erosion repair and pond dredging. Wastewater is collected in the City sewer system and conveyed through the Metropolitan Council trunk sanitary system to the Blue Lake Wastewater Treatment Plant in Shakopee, MN. The Public Works Department, City Engineer, and City Planner coordinate with watershed management organizations and other outside agencies in water resource management and conservation. The Maple Plain Planning Commission manages comprehensive planning. The City's current regulations are available on the City's website at https://www.mapleplain.com/city-code.

Maple Plain now constructs developer's agreements that outline requirements for privately owned stormwater facilities. These maintenance agreements address long term operation and maintenance issues and are part of the City's SWPPP under MCM 4 and MCM 5..

3.3 HENNEPIN COUNTY

Hennepin County was created in 1852 by the Minnesota Territorial Legislature and is one of Minnesota's original nine counties. The County provides many services to Maple Plain residents, including health services and property records. Hennepin County Conservation Services provides technical and funding assistance to cities within the County regarding natural resources issues.

Hennepin County was the first county to begin groundwater planning in 1988, with authority delegated to the conservation district. In 1994, Hennepin County prepared a groundwater management plan, which received state approval. The County never formally adopted the Plan, however, County managers have made progress on many of the plan's objectives. The groundwater management plan's objectives include delineation of wellhead protection areas around public supply wells, ranking and mapping environmental hazards throughout the County, and adopting contingency plans for groundwater supply.

3.4 HENNEPIN CONSERVATION DISTRICT

In the 1930's, Soil and Water Conservation Districts were created in response to national concern over erosion and floods. These Districts were organized along county boundaries with the purpose of managing and directing conservation programs and assisting landowners in conserving soil and water resources. The Hennepin Soil and Water Conservation District (HCD) was established in 1949 through State Statute 103C. Today HCD is involved in a wide variety of land and water resources conservation issues including landowner assistance for sustainable land use practices and working with cities to develop growth management strategies.

3.5 THREE RIVERS PARK DISTRICT

Three Rivers Park District is an independent, special park district established by the State Legislature in 1957. As a special park district, Three Rivers Park District is charged with the responsibilities of acquisition, development and maintenance of large park reserves, regional parks and regional trails for the benefit and use of the citizens of suburban Hennepin County, Scott County, the metropolitan areas, and the State of Minnesota.

The Three Rivers Park District is also responsible for managing the Park District's water resources in cooperation with the surrounding communities and watershed management organizations in a way that is environmentally-responsible and that will maintain lake water quality at or above the levels experienced in 1989. There is no Three Rivers Park District land within the City of Maple Plain, but the southeast portion of the City drains into Katrina Lake within the District’s Baker Park Reserve.

3.6 WATERSHED MANAGEMENT ORGANIZATIONS (WMO)

In 1955, the Minnesota State Legislature established the Watershed Act. This act provided the means to create watershed districts, special purpose units of local government with broad authority to regulate land use planning, flood control and conservation issues, to protect and manage water resources. There are currently 46 watershed districts in the state, and 14 in the seven-county metropolitan area. Watershed districts have the authority to:

- Adopt rules with the power of the law to regulate, conserve and control the use of water resources within the district;
- Contract with units of government, as well as private and public corporations, to carry out water resources management projects;
- Hire staff and contract with consultants;
- Assess properties for benefits received and levy taxes to finance direct administration;
- Accept public and private grant funds, and encumber debt;
- Acquire property necessary for projects;
- Construct and operate drainage systems, dams, dikes, reservoirs and waters supply systems; and
- Enter upon lands within and without the district to conduct investigations.

In 1982, the legislature approved the Metropolitan Surface Water Management Act, Chapter 103B of Minnesota Statutes. This act requires all local governments within the seven-county metropolitan area to address surface water management through participation in a Watershed

Management Organization (WMO). A WMO can be organized as a watershed district, as a Joint Powers Agreement (JPA) among municipalities, or as a function of county government. There are 36 joint powers WMOs and ten watershed districts within the seven-county metropolitan area. These entities prepare watershed plans to:

- Protect, preserve, and use natural surface and groundwater storage and retention systems;
- Minimize public capital expenditures needed to correct flooding and water quality problems;
- Identify and plan for means to effectively protect and improve surface and groundwater quality;
- Establish more uniform local policies and officials controls for surface and groundwater management;
- Prevent erosion of soil into surface water systems;
- Promote groundwater recharge;
- Protect and enhance fish and wildlife habitat and water recreational facilities; and
- Secure the other benefits associated with the proper management of surface and groundwater.

The City of Maple Plain is located within the jurisdictional boundaries of the Minnehaha Creek Watershed District and the Pioneer-Sarah Creek Watershed Management Commission. Both watershed management organizations have authority to review and approve this Local Surface Water Management Plan.

3.6.1 MINNEHAHA CREEK WATERSHED DISTRICT (MCWD)

The Minnehaha Creek Watershed District (MCWD) is a local unit of government responsible for managing and protecting water resources within one of the most urbanized watersheds in Minnesota. The watershed area is roughly 180 square miles that drain into Minnehaha Creek, which then discharges into the Mississippi River. The MCWD's vision is for "a landscape of vibrant communities where the natural and built environments in balance create value and enjoyment." Goals of the MCWD include water quality, water quantity, ecological integrity, and thriving communities. The MCWD updated its 2007 *Watershed Management Plan* in 2017, which outlines water quality and quantity issues throughout the watershed and goals for the next ten years in terms of mitigating these issues.

3.6.2 PIONEER-SARAH CREEK WATERSHED MANAGEMENT COMMISSION (PSCWMC)

PSCWMC was formed in 1978 and covers portions of Greenfield, Independence, Loretto, Maple Plain, Medina, and Minnetrista. PSCWMC administration is provided by the Hennepin Conservation District. PSCWMC covers approximately 0.8 square miles in Maple Plain. The PSCWMC published its *Third Generation Watershed Management Plan* in 2015. The Commission requires a plan review to be completed by the local permitting authority for development or redevelopment if any part of the development is within a 100-year floodplain or upland flood storage area and/or the project changes the timing, storage, or carrying capacity of any tributaries of the 100-year floodplain.

When a project plan transcends municipal boundaries a Commission review is required. Additionally, PSCWMC requires Maple Plain to review permit plans involving the alteration of waterways, culvert or bridge installations or replacements in waterways. This would be in addition to any state or federal permits that might pertain to these activities.

3.7 METROPOLITAN COUNCIL

Established by the Minnesota Legislature in 1967, the Metropolitan Council is the regional planning organization for the Twin Cities, seven-county area. The Council manages public transit, housing programs, wastewater collection and treatment, regional parks and regional water resources. Council members, of which there are seventeen members, are appointed by the Minnesota Governor.

The Metropolitan Council reviews municipal comprehensive plans, including this Local Surface Water Management Plan. The Council adopted the *2040 Water Resources Management Policy Plan* in 2015, establishing expectations to be met in local plans. The Council's goals focus on water quality standards and pollution control, "to reduce the effects of non-point source pollution on the region's wetlands, lakes, streams and rivers."

3.8 STATE BOARD OF WATER AND SOIL RESOURCES (BWSR)

The Minnesota Board of Water and Soil Resources works through local government agencies to implement Minnesota's water and soil conservation policies. The BWSR is the administrative agency for soil and water conservation districts, watershed districts, watershed management organizations, and county water managers. The BWSR is responsible for implementation of the Metropolitan Surface Water Management Act and the Wetland Conservation Act. Staff members are located in eight field offices throughout the state.

First established in 1937 as the State Soil Conservation Committee, the agency became part of the University of Minnesota in the 1950s, transferred to the Department of Natural Resources in 1971, and then transferred to the Department of Agriculture in 1982. In 1987, the State Legislature established the current Board of Water and Soil Resources. The Board consists of 17 members, appointed by the governor to four-year terms. Multiple state and local agencies are represented on the Board. In 1992, the BWSR adopted rules (8410), establishing the required content for Local Surface Water Management Plans.

3.9 MINNESOTA POLLUTION CONTROL AGENCY (MPCA)

The MPCA is the state's lead environmental protection agency. Created by the State Legislature in 1967, the MPCA is responsible for monitoring environmental quality and enforcing environmental regulations to protect land, air, and water in the state of Minnesota. The MPCA regulates the City's management of wastewater, stormwater and solid waste. The MPCA administers the federal Clean Water Act (CWA) in Minnesota.

The MPCA is the permitting authority in Minnesota for the Municipal Separate Storm Sewer Systems (MS4) program under the National Pollutant Discharge Elimination System (NPDES), the federal program administered by the Environmental Protection Agency to address polluted stormwater runoff. Certain MS4s in Minnesota are subject to stormwater regulation under the

Clean Water Act and Minnesota Rule 7090. There are multiple ways for a City or township to be subject to the MPCA's stormwater regulation under the MPCA's general permit. The MPCA regulates the entire jurisdiction of a city (or township) that is located fully or partially within an urbanized area as determined by the latest Decennial Census and that owns or operates an MS4. Consequently, Maple Plain has developed a stormwater pollution prevention program (SWPPP) to address six minimum control measures: 1) public education, 2) public involvement, 3) illicit discharge detection and elimination, 4) construction site runoff control, 5) post-construction runoff control, and 6) pollution prevention in municipal operations. As the SWPPP is reviewed and updated as necessary on an annual basis, a copy of the SWPPP is not included in this LSWMP as it would eventually become outdated.

In addition to the NPDES program, the MPCA is required to publish a list of impaired waters; lakes and streams in the state that are not meeting federal water quality standards. For each water body on the list, the MPCA is required to conduct a study to determine the allowable Total Maximum Daily Load (TMDL) for each pollutant that exceeds the standards. The 2018 MPCA list of impaired waters identifies 2,627 TMDL reports needed for the lakes, rivers and streams in the state. Local governments are required to incorporate completed TMDL studies into their Local Surface Water Management Plans and review their SWPPPs to determine if additional BMPs are needed to comply with the TMDL waste load allocation. Table 2.4 identifies impaired waters within the City of Maple Plain.

In response to these multiple regulatory activities, the MPCA published the *Minnesota Stormwater Manual* providing stormwater management tools and guidance. The Manual presents a unified statewide approach to stormwater practices.

3.10 MINNESOTA DEPARTMENT OF NATURAL RESOURCES (DNR)

Originally created in 1931 as the Department of Conservation, the DNR has regulatory authority over the natural resources of the state. DNR divisions specialize in waters, forestry, fish and wildlife, parks and recreation, land and minerals, and related services. The Division of Waters administers programs in lake management, shoreland management, dam safety, floodplain management, wild and scenic rivers, the Public Waters Inventory (PWI), and permitting of development activity within public waters.

3.11 MINNESOTA DEPARTMENT OF HEALTH (MDH)

The MDH manages programs to protect public health, including implementation of the Safe Drinking Water Act (SDWA). The MDH has regulatory authority for monitoring water supply facilities such as water wells, surface water intakes, water treatment, and water distribution systems. The MDH is also responsible for the development and implementation of the wellhead protection program. It should be noted that the City does not have jurisdictional areas within the source water protection area for surface water intakes identified in the source water assessments conducted by the Minnesota Department of Health.

3.12 MINNESOTA ENVIRONMENTAL QUALITY BOARD (EQB)

The EQB is comprised of five citizen members and the heads of ten state agencies that play an important role in Minnesota's environment and development. The EQB develops policy, creates long-range plans and reviews proposed projects that may significantly influence Minnesota's environment.

3.13 MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT)

Within the City, MnDOT administers several state highway systems. MnDOT approval is required for any construction activity within state rights-of-way. MnDOT also administers a substantial amount of funding for transportation projects completed in the City. Anticipated activities of MnDOT are periodically published in their State Transportation Improvement Plan (STIP).

3.14 U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

The EPA develops and enforces the regulations that implement environmental laws enacted by Congress, however the MPCA bears responsibility for implementing many of the resulting programs within Minnesota. The NPDES program and the Impaired Waters List are both the result of the Clean Water Act, administered by the EPA.

3.15 U.S. ARMY CORP OF ENGINEERS (USACE)

Under Section 404 of the Clean Water Act, including subsequent modifications, the EPA and the USACE regulate the placement of fill into all wetlands of the U.S. In 1993, there was a modification of the definition of "discharge of dredged material" to include incidental discharges associated with excavation. This modification meant that any excavation done within a wetland required the applicant to go through Section 404 permitting procedures. In 1998, however, this decision was modified so that excavation in wetlands is now regulated by the USACE only when it is associated with a fill action.

3.16 FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

FEMA manages federal disaster mitigation and relief programs, including the National Flood Insurance Program (NFIP). This program includes floodplain management and flood hazard mapping.

3.17 NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

The Natural Resources Conservation Service (NRCS) is a division of the U.S. Department of Agriculture. Formerly named the Soil Conservation Service (SCS), the NRCS provides technical advice and engineering design services to local conservation districts across the nation. The *Soil Survey of Hennepin County, Minnesota* was published by the Soil Conservation Service in 1974. The SCS also developed hydrologic calculation methods that are widely used in water resources design.

3.18 U.S. GEOLOGICAL SURVEY (USGS)

The USGS provides mapping and scientific study of the nation's landscape and natural resources. USGS maps provide the basis for many local resource management efforts.

3.19 U.S. FISH AND WILDLIFE SERVICE (USFWS)

The USFWS works to conserve and protect the nation's fish, wildlife, plants and habitat. The USFWS developed the National Wetlands Inventory (NWI) beginning in 1974, to support federal, state and local wetland management work.

SECTION 4 – RELATED STUDIES, PLANS AND REPORTS

4.1 STUDIES COMPLETED BY THE MCWD

In addition to their 2018 *Watershed Management Plan,* the Minnehaha Creek Watershed District has completed studies that are relevant to stormwater management in the City. These studies include the Hydrologic, Hydraulic and Pollutant Loading Study (2003), Functional Assessment of Wetlands (2003), and two Annual Monitoring Reports. The following provides information on these four studies, but the full text of these studies can be found on the MCWD website (http://minnehahacreek.org/project).

Hydrologic, Hydraulic, and Pollutant Loading Study

The MCWD, with Emmons and Olivier Resources, Inc., compiled a multi-year *Hydrologic, Hydraulic, and Pollutant Loading Study* in 2003. Goals of this watershed study were: 1) to document the nature of the physical and biological characteristics of the watershed, 2) to quantify the amount of water moving through the watershed and assess its quality; 3) to gather public input to assist in problem identification and determination of solutions, and 4) to provide the study results to implementation partners.

Functional Assessment of Wetlands

The MCWD also conducted a Functional Assessment of Wetlands in 2003. The purpose of this assessment was to provide a comprehensive inventory and assessment of wetlands in the watershed. Wetlands were assigned to one of four categories – Preserve, or Manage 1, 2, or 3. These management categories will be used to determine regulation standards for each wetland based on an evaluation of their existing conditions.

Annual Monitoring Reports

Two annual Monitoring reports have been completed by the MCWD (1968-1988; 1992 to 2016). These reports summarize water quality monitoring data collected throughout the watershed.

4.2 STUDIES COMPLETED BY THE PSCWMC

In addition to their 2015 *Third Generation Watershed Management Plan*, the Pioneer-Sarah Creek Watershed Management Commission, with local, state, and federal partners, published a *Watershed Restoration and Protection Strategy* (WRAPS) report in July 2017. The goal of WRAPS was to summarize past water quality monitoring, identify impaired waters and those in need of protection, and develop strategies for restoring and protecting these waters. Key findings from the report include:

- Primary sources of phosphorus include manure, agricultural runoff, sediment release, and urban and rural watershed runoff
- Primary sources of *E. coli* include livestock, wildlife, and human waste

Surface water management strategies included in this report include:

- Increased buffer zones
- Reduced internal loading in lakes, possibly through alum treatment, aquatic plant management, and/or carp control
- Identify and implement livestock and farmland best management practices
- Identify and implement manure best management practices
- Improve urban and suburban stormwater management

The full *Watershed Restoration and Protection Strategy* report can be found on the Minnesota Pollution Control Agency website (https://www.pca.state.mn.us/).

4.3 STUDIES COMPLETED BY THE USACE

In 2010 the USACE completed a Draft Painter Creek Feasibility study, identifying potential ways to restore the water quality in Jennings Bay and the surrounding watershed. This study built upon a Feasibility Study for the Painter Creek Subwatershed, published by the MCWD in 2004. The study identified four major wetland restoration projects, and, as of 2017, being updated.

SECTION 5 – WATER RESOURCES RELATED AGREEMENTS

Water resources agreements can include water supply and conveyance agreements, stormwater utility service agreements, and cost sharing agreements, between cities or WMOs.

Maple Plain was signatory to the 1984 Joint Powers Agreement, along with Corcoran, Greenfield, Independence, Loretto, Medina, Minnetrista, Watertown Township, and Hennepin Conservation District, which established the Pioneer-Sarah Creek Watershed District. This agreement is included in full as Appendix A.

Should the City enter into any other agreements with adjacent cities or other agencies, this LSWMP will be amended to include information on the details of those agreements.

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SECTION 6 – CURRENT ASSESSMENT

6.1 OFFICIAL CONTROLS

Codes and ordinances (official controls) are necessary tools supporting implementation of this Local Surface Water Management Plan. Many of the stated goals and policies specifically reference City codes that exist or need to be created. The City's MS4 permit includes a summary of ordinances required to comply with NPDES requirements.

After adoption of this Local Surface Water Management Plan, all applicable portions of City Code will need to be updated to achieve consistency with local watershed plans. Per Minnesota Statute, this implementation step must be completed within 180 days after adoption of this plan. In addition, over time, codes must be updated to remain consistent with City goals, policies, and practices. Table 6.1 assesses the status of City codes related to surface water management.

TABLE 6.1 – SURFACE WATER MANAGEMENT RELATED CODES

Chapter	Sections	Code Name	Status
50	20-40	Illicit Discharges and Connection	Update as needed as required by MS4 permit
50	100-110	Regulations Regarding Erosion Control for Construction Site Runoff	Update as needed as required by MS4 permit
150	60-62	Excavation Permits	Update as needed as required by MS4 permit
151	40-43	Floodway District	Update as needed as required by MS4 permit
151	55-59	Flood Fringe District	Update as needed for Flood Insurance
153	31	Industrial Zoning District	Update as needed as required by MS4 permit
153	150-162	Tree Preservation	No update is necessary

The City contains a number of stormwater best management practice systems (BMPs), all of which are infiltration zones owned by the City, as shown in Figure 8. To ensure that all BMPs are being properly maintained the City follows inspection guidelines, included as Appendix B.

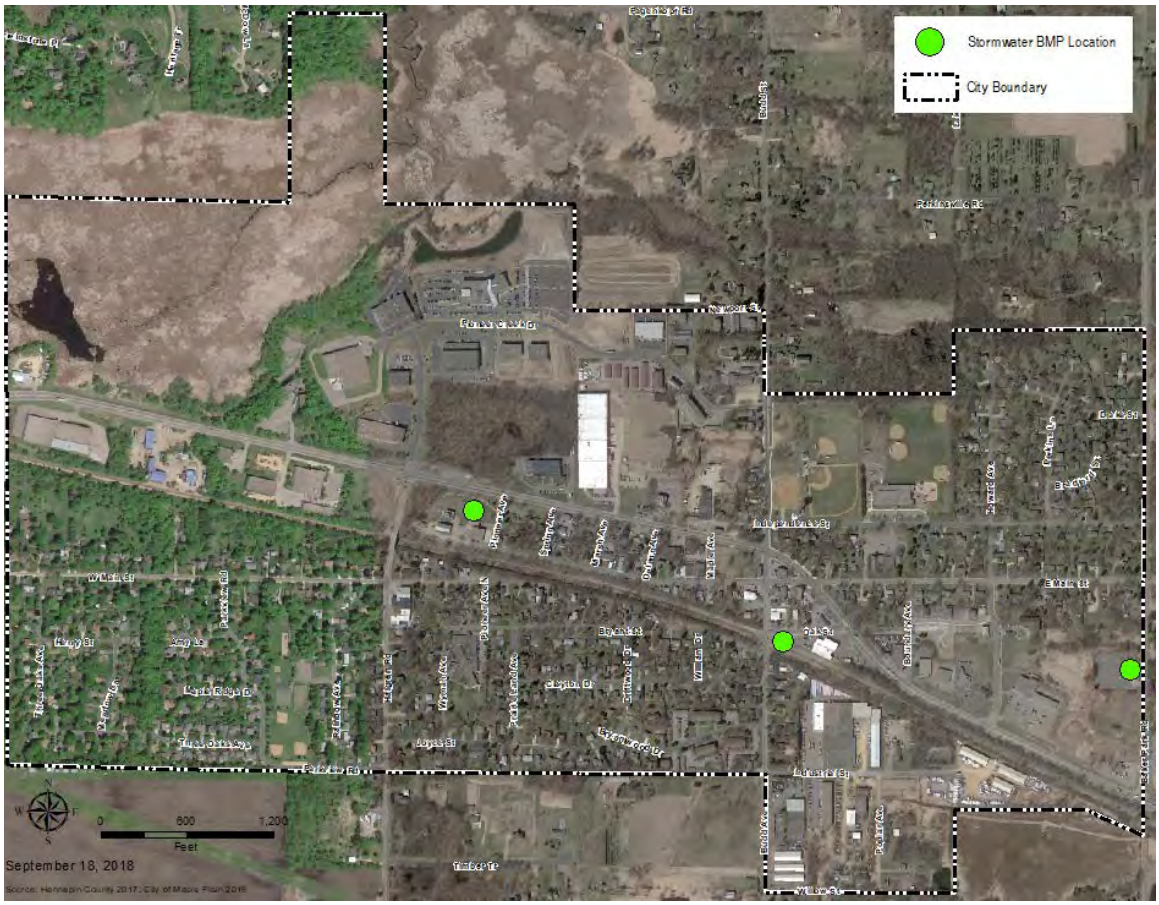

Figure 8: Stormwater BMPs in Maple Plain

6.2 HYDROLOGIC AND HYDRAULIC MODEL

The Minnehaha Creek Watershed District (MCWD) completed hydrologic and hydraulic modeling for areas in Maple Plain within its jurisdiction, which covers the southeastern corner of the City. This model was created using PLOAD and WiLMS as part of the MCWD's 2003 *Hydrologic, Hydraulic, and Pollutant Loading Study* (HHPLS).

Within the City of Maple Plain, the HHPLS did not identify any landlocked subwatershed units, specific locations where there are known or modeled flooding issues, or locations where existing and future high pipe peak flow velocities may require erosion control measures or energy dissipaters at inlets and outlets. There are no Key Conservation Areas located in Maple Plain, as identified by MCWD. The Drake Street Drainage Improvement, item #1 in Table 8.1, aims to improve the drainage in the northeast corner of the City.

The City of Maple Plain has previously completed a review of the City's hydrologic and pollutant loadings. The physical system was mapped to establish watershed sub-basins and runoff paths. Sub-basin boundaries were delineated using two- and ten-foot contour topography data and the City's storm sewer system layout. This exercise resulted in seven sub-basins within Maple Plain, five draining to PSCWMC and two draining to MCWD, labeled PSC-1 through PSC-5 and MC-1 &

MC-2, respectively. Figure 9 shows Maple Plain's subwatersheds. A full map of the storm sewer conveyance system is shown in Appendix C.

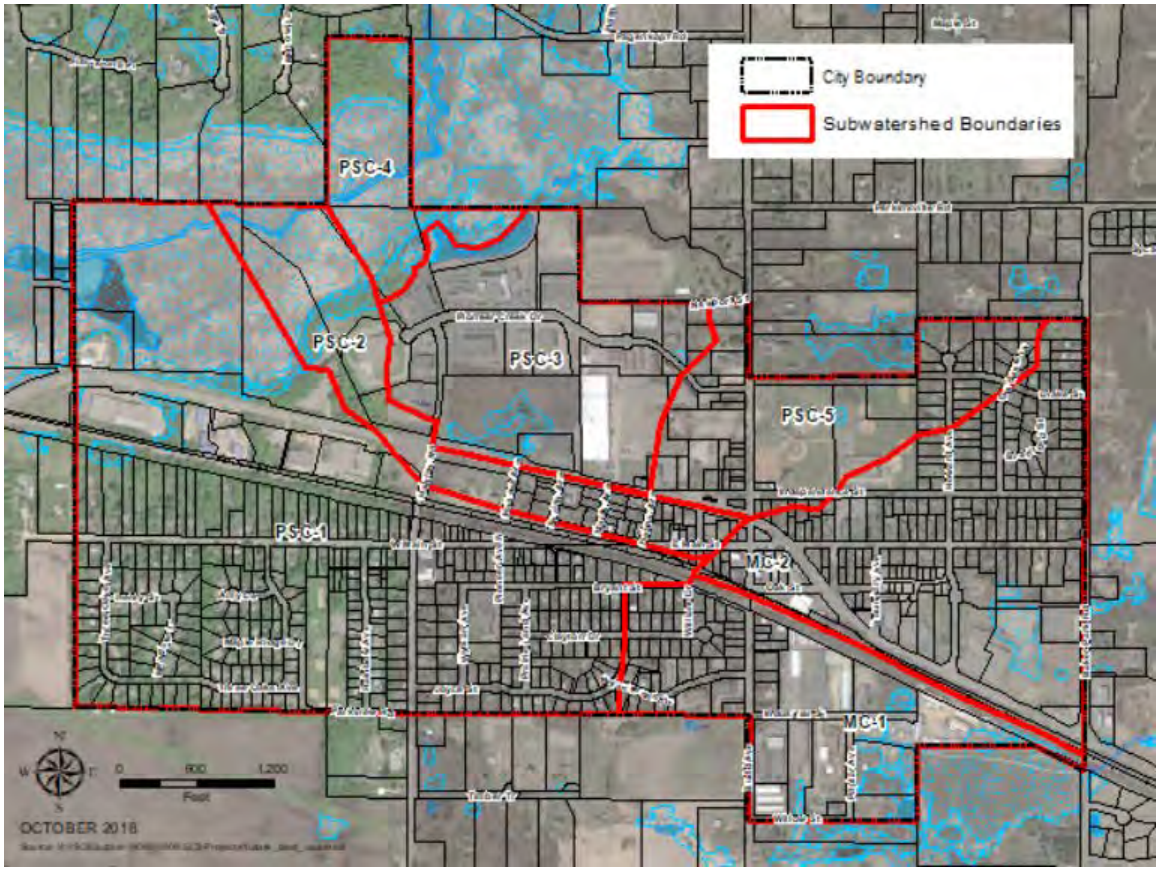

Figure 9: Subwatersheds within Maple Plain

6.3 WETLAND MANAGEMENT

From the *2040 Water Resources Management Policy Plan*, the Metropolitan Council requires the City to include the following in the LSWMP Update:

> *'All communities need to include a wetland management plan or a process and timeline to prepare a plan. At a minimum, the wetland management plan should incorporate a function and value assessment for wetlands. Other items to address in the plan include the pretreatment of stormwater prior to discharge into all wetland types, and the use of native vegetation as buffers for high quality wetlands. Buffers should be consistent with the functions and values identified in the plan.'*

In areas of the City under MCWD jurisdiction, the MCWD is identified as the Local Government Unit (LGU) responsible for the administration and enforcement of the Wetland Conservation Act (WCA). In areas of the City under PSCWMC jurisdiction, the PSCWMC is identified as the LGU responsible for the administration and enforcement of the WCA. WCA requires anyone proposing to drain, fill, or excavate a wetland first to try to avoid disturbing the wetland; second, to try to minimize any impact on the wetland; and, finally, to replace any lost wetland acres, functions, and

values. Certain wetland activities are exempt from the act, allowing projects with minimal impact or projects located on land where certain pre-established land uses are present to proceed without regulation.

Neither the PSCWMC nor the City has undergone a wetland functions and values assessment. The MCWD performed a Functional Assessment of Wetlands (FAW) from 2001-2003 in the Painters Creek subwatershed, in which the MCWD portion of Maple Plain is located. The study identified two small pockets of forested wetlands and one large shallow marsh wetland. The western pocket of forested wetland was classified by MCWD as Preserve, and the eastern pocket was not classified. A majority of the large shallow marsh wetland was classified as Manage 2, with a smaller portion of it classified as Manage 3. None of the wetlands located within the MCWD portion of Maple Plain were noted for having exceptional or high values for aesthetics, fish habitat, vegetative diversity, or wildlife habitat. The eastern pocket of forested wetland was identified as having moderate restoration potential, but the other forested wetland and shallow marsh wetland were not evaluated in the study for restoration potential.

The City of Maple Plain will work with the MCWD and PSCWMC to ensure that a full wetland management plan is completed that incorporates a function and value assessment for wetlands.

6.4 IMPAIRED WATERS AND TMDLS

Section 303(d) of the Federal Clean Water Act requires that states create impaired waters lists for waterbodies that do not meet water quality standards due to the presence of a pollutant or stressor. Impaired waters lists are published biannually, following monitoring and assessment of the waterbody. Total Maximum Daily Loads (TMDLs), developed for impaired water bodies, specify the maximum pollutant amount that the waterbody can receive to meet water quality standards. A TMDL is the sum of waste load allocations, load allocations, and a margin of safety. Waste load allocations are expressed in numeric form, and municipal stormwater sources fall under waste load allocations because they are regarded as point sources. Load allocations are those loads that do not fall under NPDES permit areas.

Information for impaired waters identified in Maple Plain are identified in Table 2.4 in Section 2.6.3. The absence of a waterbody from the 303(d) list does not necessarily mean the waterbody is meeting its designated use(s). It may be that it has either not been sampled or there is not enough data to make an impairment determination.

As part of the NPDES program, the City of Maple Plain is required to review all discharges from their MS4 system to impaired waters, as defined by the current USEPA approved 303(d) list. As a part of this review they are required to do the following:

1. Review the Impaired Waters List to determine whether there are any impaired waters located within five miles of the City's boundaries that receive discharge from the City's MS4. For waters that are impaired only for mercury, the review process stops here.

2. Identify the location(s) of discharge(s) from the City's MS4 to the impaired waters. Discharges may include pipes, outlets, ditches, swales, street gutters, or other discrete conveyances for stormwater runoff.

3. Delineate the watershed area within the City's jurisdiction that discharges to each impaired water.

4. Prepare an impaired water evaluation addressing the hydrology, land use, and other characteristics of each watershed area delineated.

5. Prepare an impaired waters report. This report will address the results of the impaired waters evaluation along with a determination of whether changes to the City's SWPPP are warranted to reduce the impact from the City's MS4 stormwater discharge to each impaired water.

6. The City will incorporate the changes identified in the impaired waters report into the City's SWPPP and be reported through the annual reporting process.

At some point, a strategy would be developed that would lead to attainment of the applicable water quality standard for these impaired waters. The process of developing this strategy is commonly known as the Total Maximum Daily Load (TMDL) process and involves the following phases: 1) Assessment and listing, 2) TMDL study, 3) Implementation plan development and implementation, and 4) Monitoring effectiveness of implementation efforts.

Responsibility for implementing the requirements of the Federal Clean Water Act falls to the U.S. Environmental Protection Agency. In Minnesota, the EPA delegates much of the program responsibility to the Minnesota Pollution Control Agency (MPCA). Information on the MPCA program can be obtained at the following web address: http://www.pca.state.mn.us/water/tmdl/index.html.

6.5 NPDES PERMITTING PROCESS

The MPCA has designated the City of Maple Plain as an NPDES Phase II MS4 community (MN Rules 7090). The NPDES State Disposal System (SDS) General Permit (MNR040000) for discharges of stormwater associated with Municipal Separate Stormwater Systems (MS4s) was issued initially in 2003, and the permit is updated every five years. The permit application outlined Maple Plain's Stormwater Pollution Prevention Plan (SWPPP), to address six minimum control measures:

1. Public education and outreach
2. Public participation/involvement
3. Illicit discharge detection and elimination
4. Construction site stormwater runoff control
5. Post-construction stormwater runoff control
6. Pollution prevention in municipal operations

The City's SWPPP contains several best management practices within each of the listed control measures. These were identified using a self-evaluation and input process with City staff.

Many of the goals and policies discussed in this Local Surface Water Management Plan are related to requirements listed in the NPDES program. Per the requirements of the MS4 Permit, the City will review their SWPPP and update as necessary on an annual basis.

The City will coordinate water resource educations effort with outside agencies to complete the City's goals as outlined in their MS4 SWPPP, which may include fulfilling their public education requirements by obtaining educational information and assistance from local WMOs.

6.6 SUMMARY OF STORMWATER MANAGEMENT GOALS AND POLICIES

A summary of the stormwater management policies from the WMOs, including those policies identified in the MCWD *Watershed Management Plan* and the PSCWMC *Third Generation Watershed Management Plan* applicable to Maple Plain, is included in Appendix D. These rules vary in content and may be more restrictive than City standards. Although the City requests that the WMOs continue to exercise regulatory authority, the City reserves the right to create rules and standards stricter than the rules of the regulating WMO. Whenever Maple Plain's and another jurisdiction's enforceable rules differ, the stricter rules or standards will be enforced.

Where a specific watershed policy directly impacts the City of Maple Plain, the policy will be incorporated into the City's stormwater management policies in Section 7 of this LSWMP.

6.7 WATER-RESOURCE RELATED PROBLEMS AND POSSIBLE CORRECTIVE ACTIONS

An assessment of existing and potential water resource-related problems is summarized below. These problems have been identified based on current information available to the City and include those listed in the surface water management plans of the two WMOs with jurisdiction in the City. Possible corrective actions have been listed for each problem and those to which the City commits itself are incorporated into an implementation program (Section 8).

6.7.1 WATER QUALITY

	Problem, Issue, or Concern	Corrective Action
6.7.1.1	Pioneer Creek is listed as in impaired water for dissolved oxygen, aquatic macroinvertebrate bioassessments, fish bioassessments, and *E. coli.*	Maple Plain will adjust its stormwater management programs as necessary to implement its share of a waste load allocation.
6.7.1.2	The Crow River is listed as an impaired water for turbidity, fish IBI, fecal coliform, and mercury. Pioneer Creek drains into Deer Creek, which drains into the Crow River.	Maple Plain will adjust its stormwater management programs as necessary to implement its share of a waste load allocation.
6.7.1.3	Water quality impacts associated with residential pollution such as fertilizers.	With the statewide inception of the phosphorus-containing fertilizer ban in 2005, this issue will be resolved over time as lawns leach less and less fertilizer bound to soil particles. Educate residents on the importance of using

	Problem, Issue, or Concern	Corrective Action
		phosphorus-free fertilizer on natural and water resources.
6.7.1.4	Degraded water quality as a result of an increase in impervious surface area due to development.	PSCWMC has developed and is implementing a non-degradation policy for the DNR Public Wetlands within Maple Plain. The City has brought its own policies into line by aiming for treatment levels that achieve non-degradation during development and redevelopment activities.
6.7.1.5	Rough fish in Katrina Lake and the creek and wetlands likely contribute to internal loadings from sediments. No fish or aquatic vegetation surveys have been completed on Katrina Lake. All of Maple Plain's discharge into the MCWD's Painter Creek Subwatershed passes through Katrina Lake first.	Cooperate with Three Rivers Park District and the MCWD to identify possible activities to improve water quality in Katrina Lake.
6.7.1.6	Jennings Bay of Lake Minnetonka is listed as an impaired water for excess nutrients and eutrophication, biological indicators, and mercury. Total Phosphorus and Total Suspended Solids loads to MCWD Painter Creek Subwatershed is noted as a concern in MCWD Plan.	Implement Painter Creek Subwatershed Phosphorus Reduction Plan.
6.7.1.7	Degradation of drainageway on north edge of Northside Park.	Implement Creek Cleaning Project east of Budd Avenue N.
6.7.1.8	Pollution of ditch south of Industrial Street on east side of City, which discharges to the east wetland.	Implement Ditch Cleaning Project in the Industrial District.

6.7.2 FLOODING AND STORMWATER RATE CONTROL

	Problem, Issue, or Concern	Corrective Action
6.7.2.1	Increased rates and volumes of stormwater runoff as a result of an increase in impervious surface area due to development.	Cooperate with PSCWMC and MCWD to implement water quantity policies and standards through development plan reviews. Adopt a flood plain management ordinance. Adopt policies requiring major stormwater storage facilities to accommodate 100-year critical duration event.
6.7.2.2	Poor maintenance of private drainage-ways (i.e., private ditches and draintile).	The City of Maple Plain will seek maintenance understandings or agreements on private drainage features.
6.7.2.3	Poor drainage along Drake Street.	Implement Drake Street Drainage Improvement project.

6.7.3 EROSION AND SEDIMENTATION

	Problem, Issue, or Concern	Corrective Action
6.7.3.1	Construction site erosion.	Continue implementing SWPPP directives. Develop erosion and sedimentation ordinance.
6.7.3.2	Erosion along the banks of Pioneer Creek.	Identify and address erosion problems in collaboration with PSCWMC. Develop erosion and sedimentation ordinance.
6.7.3.3	Erosion caused by commercial activities.	Continue implementing SWPPP directives. Develop erosion and sedimentation ordinance.
6.7.3.4	Degradation and pollution of ravine on West side of City stretching from Three Oaks Drive to US Highway 12. This ravine outlets into Pioneer Creek, an impaired water.	Implement a Ravine Study to assess improvements needed, and then North and South Ravine Cleanup Projects.

6.7.4 IMPACT OF LAND USE PRACTICES AND DEVELOPMENT ON WATER RESOURCES

	Problem, Issue, or Concern	Corrective Action
6.7.4.1	Impacts for fish and wildlife resources, including decreased floristic diversity and impacted wildlife habitat, as a result of stormwater.	Cooperate with PSCWMC and MCWD to implement water quantity policies and standards through development plan reviews.
6.7.4.2	Conservation and restoration of degraded wetlands.	Consider partnering with PSCWMC to undertake a wetland functions and values assessment. Develop a Wetland Management Plan. For wetlands in MCWD, consider protection and restoration of wetlands receiving high to moderate restoration potential. Assess wetlands not covered in the MCWD FAW 2001-2003 for restoration potential.
6.7.4.3	Intensive land uses along US Highway 12 corridor threaten ecological integrity.	The policies of this LSWMP lead to practices that mitigate for potentially dense development.
6.7.4.4	Development and increased impervious coverage change hydrology to surface-fed wetlands or affect recharge to groundwater-fed wetlands.	The policies of this LSWMP lead to practices that mitigate for increased imperviousness.

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SECTION 7 – GOALS AND POLICIES

7.1 SUMMARY

The City has a strong interest in protecting and managing its valuable water and natural resources, recognizing the relationships between resource protection, land use management, development and redevelopment, and fiscal responsibility. The City of Maple Plain promotes sustainable stormwater management practices for meeting its water resource management goals. The City of Maple Plain values its small town atmosphere, sense of community, learning opportunities through its Discovery Center, and natural setting adjacent Baker Park Reserve, wetlands, and creeks. Sustainable surface water management is well-aligned with the City's values. Sustainable practices capture rain water as near as possible to the point where it fell. Sustainable practices avoid collecting and conveying runoff through gutters, catch basins, and pipes. Rather, sustainable practices look to the absorption and infiltration of runoff through innovative and aesthetically-pleasing landscape design and conserved natural areas.

The City requests that the MCWD continue to exercise regulatory authority in areas within Maple Plain under MCWD jurisdiction. Likewise, the City requests that the PSCWMC continue to exercise regulatory authority in areas within Maple Plain under PSCWMC jurisdiction.

The goals and policies outlined in this plan are grouped by their relationship to the key issues listed below:

- **Section 7.2 - Land Development and Redevelopment** – Goals and policies to prevent flooding and adverse impacts to water resources from land disturbance and impervious surfaces.
- **Section 7.3 - Water Resource Management** – Goals and policies for managing Maple Plain's wetlands, lakes, and groundwater, to preserve the functions and values of these resources.
- **Section 7**.4 - **Management of Floodplains and Natural Areas –** Goals and policies for managing floodplains and other natural areas within Maple Plain.
- **Section 7.5 - Citywide Program Elements** – Goals and policies for managing water resources and drainage systems on a citywide scale, to effectively achieve surface water management goals.
- **Section 7.6 - Support of Other Agencies** – Goals and policies to coordinate local surface water management with the work of watershed management organizations and state agencies.

The goals and policies listed below are consistent with the NPDES MS4 General Permit and the City of Maple Plain's SWPPP. These goals are also in alignment with the MCWD's *Watershed Management Plan* and PSCWMC's *Third Generation Watershed Management Plan*.

7.2 LAND DEVELOPMENT AND REDEVELOPMENT

Overall Goal: *Manage land disturbance from new development, redevelopment, street reconstruction projects, or any other public or private land disturbing activity that creates new impervious surface to prevent flooding and adverse impacts to water resources through the cooperation with the stormwater management standards identified by the MCWD and PSCWMC, who have jurisdiction in Maple Plain. To make this process effective, the City will strive through an up-front stormwater assessment and planning process to incorporate best management practices that focus on treating runoff at the source and not in typical end of pipe treatments. The incorporation of these Best Management Practices will coincide with the guidance provided in the Minnesota Stormwater Manual.*

Policy 1: All redevelopment must make efforts toward reducing existing discharge rate, existing nutrient loading and existing runoff volume. If reductions are not feasible, the project proposer will submit to the City a detailed analysis of why these reductions are not feasible. At a minimum, existing conditions for these parameters must be maintained.

Policy 2: The City will amend or modify its subdivision ordinance to facilitate stormwater quantity and quality performance measures identified in its Local Surface Water Management Plan.

Policy 3: The City will consider water quality retrofits on existing City properties as a means of providing treatment to currently developed areas without treatment.

Policy 4: The City references the following documents as guidance for Best Management Practices in Maple Plain: The Minnesota Pollution Control Agency's Protecting Water Quality in Urban Areas and its Minnesota Stormwater Manual, and the Metropolitan Council's Minnesota Urban Small Sites BMP Manual.

Policy 5: In areas of floodplain alteration, the City of Maple Plain will forward preliminary plats to the MCWD and/or PSCWMC, as applicable, for their review prior to these plats being approved by the City.

7.2.1 RATE CONTROL

Goal: Control the rate of stormwater runoff from development to reduce downstream flooding and erosion.

Policy 1: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to stormwater rate control. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to stormwater rate control.

Policy 2: If the development or redevelopment activity occurs upstream of a known flood problem area, the City reserves the right to seek additional rate control as a means to mitigate this flooding.

Policy 3: Analysis of drainage for establishing rate control shall account for the highest and best use of all land within the drainage's tributary area. In this manner future redevelopment can better be accommodated.

7.2.2 FLOOD PREVENTION AND FLOODPLAIN MANAGEMENT

Goal: Provide adequate storage and conveyance of runoff to protect the public safety and minimize property damage.

Policy 1: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to flood prevention, floodplain management, and floodplain alteration. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to flood prevention, floodplain management, and floodplain alteration.

Policy 2: The volume of runoff may not increase due to a project when the receiving area of this runoff is landlocked and not capable of handling the increased volume of runoff. Anyone proposing increased runoff volume to landlocked areas shall have proper rights over the landlocked property to handle water from the development. Outletting will not be permitted unless there is a demonstrated threat to public structures or public safety.

Policy 3: Flood storage for those landlocked depressions with no outlet present must accommodate the volume generated by back-to-back 100-yr, 24-hr storm events or the 100-yr, 10-day storm events assuming frozen soil conditions, whichever is greater. Accommodate means that the calculated high water level provides freeboard to low structures.

Policy 4: The City will consider each development and redevelopment project as an opportunity to review flood protection within the larger drainage and will oversize facilities as necessary to accomplish citywide flood control.

Policy 5: The City shall require that ponds, outlets, rate control structures and stormwater drainageways are included in a drainage or utility easements.

Policy 6: Two feet of separation shall be provided from a calculated 100-year high water level and the low elevation of ground for an adjacent structure. In cases of land-locked basins two feet of freeboard shall be provided to back-to-back 100-yr events or five feet of freeboard shall be provided to a single event. Whichever standard causes the higher ground at structure elevation shall be used.

7.2.3 VOLUME CONTROL

Goal: *Reduce pollutant loads and impacts to water bodies and encourage groundwater recharge, by reducing the volume of stormwater runoff from development and redevelopment areas.*

Policy 1: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to stormwater volume control. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to stormwater volume control.

Policy 2: The City will encourage small scale and site appropriate volume reduction Best Management Practices (BMPs), including, but not limited to, filtration and infiltration bioretention BMPs, porous pavement systems, urban forestry, underground infiltration units, water reuse BMPs (rain barrels and cisterns), reduction of impervious surface, and green roofs.

Policy 3: Where existing soils, previous contamination, wellhead protection, or high groundwater (as detailed in the Minnesota Stormwater Manual) preclude infiltration, filtration BMPs will be used.

7.2.4 NUTRIENT AND SEDIMENT LOADING

Goal: Reduce the nutrient and sediment loads discharged from City projects, land development and redevelopment projects.

Policy 1: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to nutrient and sediment loading. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to nutrient and sediment loading.

Policy 2: In areas of redevelopment where ponding is not feasible or available, in-line stormwater treatment systems will be required to treat stormwater runoff. These systems include, but are not limited to, filtration and infiltration bioretention Best Management Practices (BMPs), porous pavement systems, urban forestry, underground infiltration units, and green roofs.

Policy 3: Pretreatment of stormwater runoff to the Nationwide Urban Runoff Program (NURP) or Minnesota Pollution Control Agency guidelines in design and construction of new or modifications to existing stormwater conveyance systems, wherever possible and feasible.

Goal: Facilitate WMO review of development projects to manage nutrient and sediment loading.

Policy 4: The City will coordinate development review activities with the watershed organizations. Each water organization will continue permitting within their separate jurisdictions.

7.2.5 EROSION AND SEDIMENT CONTROL

Goal: Prevent sediment from construction sites from entering the City of Maple Plain's or adjacent jurisdictions' surface water resources.

Policy 1: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to erosion and sediment control. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to erosion and sediment control.

Policy 2: The City will periodically review and revise its Construction Site Stormwater Runoff Control Ordinance to maintain conformance with the NPDES construction permit, the City's MS4 permit, guidance from Metropolitan Council and the requirements of the watershed management organizations.

Policy 3: The City will inspect storm water retention and treatment basins and outlets every year to determine if the basin's retention and treatment characteristics are adequate to meet its design function. Based on this inspection, retention basins that are identified for maintenance will be prioritized on a cost benefit basis and basin maintenance will be performed as funds become available.

Policy 4: Portions of the City's storm sewer system will be periodically inspected. During these inspections, debris present at trash grates and catch basins grates will be removed so as to provide reasonable assurances that the system will operate in an unobstructed manner during rainfall events.

Policy 5: The City will sweep the paved, curb-and-gutter streets at least semi-annually as stipulated in its current SWPPP.

Policy 6: Storm sewer outfalls will be inspected annually. Inspection shall include evidence of scouring or the presence of significant deposition of silt at the storm sewer outfall. Scouring problem areas will be noted and stabilized. In areas where silt deposition is evident which is indicative of significant erosion upstream, an inspection will be made of the upstream watershed to identify the source of erosion.

Policy 7: On an annual basis and as required under its NPDES permit, the City will prepare an inspection report that indicates the areas inspected and the maintenance activities completed on the storm water system. This inspection report will be available at the City Offices.

7.3 RESOURCE MANAGEMENT

Overall Goal: *Protect the City's wetlands, lakes, streams, groundwater, and natural areas to preserve the functions and values of these resources for future generations through the Wetland Conservation Act, buffer standards, groundwater protection rules and coordination with outside agencies.*

7.3.1 WETLAND MANAGEMENT

Goal: *Protect and preserve wetlands to maintain or improve their function and value.*

Policy 1: The City will utilize Pioneer-Sarah Creek Watershed Management Commission (Hennepin County Environmental Services staff) and Minnehaha Creek Watershed District to administer Minnesota's Wetland Conservation Act within the City.

Policy 2: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to wetland management. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to wetland management.

Policy 3: The City will support Pioneer-Sarah Creek Watershed Management Commission in completing a Wetland Inventory and Assessment of wetlands not already studied in the

Minnehaha Creek Watershed District Functional Assessment of Wetlands study and will adopt a wetland management plan once this assessment is complete.

Policy 4: The City will require that, prior to development activities or public projects a wetland delineation must be completed, including a field delineation and report detailing the findings of the delineation. The wetland submittals provided the watershed organizations must be included in the City development application and must include a functional assessment of the wetlands using the Minnesota Routine Assessment Methodology.

Policy 5: The City will encourage natural buffer zones around wetlands and assist the watershed organizations in implementing their buffer requirements. Buffer areas should not be mowed or fertilized, except that harvesting of vegetation may be performed to reduce nutrient inputs to wetlands.

Policy 6: The NPDES Stormwater Construction Permit requires pretreatment of stormwater before discharge into wetlands. The City will require that runoff be pre-treated prior to discharge to wetlands, lakes and streams and will seek to eliminate direct discharge as opportunities arise.

Policy 7: The City will utilize wetland management plans created by its watershed organizations.

Policy 8: Maple Plain will require removal of floating debris for a 2-year event for new or redeveloped treatment pond outlets when these ponds discharge into wetlands, lakes or streams.

7.3.2 LAKE MANAGEMENT

Goal: Improve water quality and protect resource values of lakes.

Policy 1: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to the management of lakes. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to the management of lakes.

Policy 2: The City will cooperate with the Three Rivers Park District and the Minnehaha Creek Watershed District to identify possible activities to improve water quality in Katrina Lake and Jennings Bay of Lake Minnetonka.

7.3.3 STREAM MANAGEMENT

Goal: Improve water quality, provide wildlife habitat, and protect the resource value of streams.

Policy 1: In areas under MCWD jurisdiction the City adopts by reference all MCWD rules and regulations pertaining to the management of streams and streambanks. In areas under PSCWMD jurisdiction the City adopts by reference all PSCWMD rules and regulations pertaining to the management of streams and streambanks.

Policy 2: The City will implement the standard contained here to reduce erosion potential in Pioneer Creek and Painters Creek.

Policy 3: The City will work to address the dissolved oxygen impairment in Pioneer Creek by improving hydrology and water quality through wetland systems to decrease sediment oxygen demand and improving water quality.

7.3.4 GROUNDWATER RECHARGE AND PROTECTION

Goal: *Protect groundwater resources and groundwater-dependent surface water and natural resources*

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Policy 1: The City will cooperate with Hennepin County, the Minnesota Department of Health, the PSCWMC, and the MCWD to identify and protect critical groundwater resources areas.

Policy 2: The City will cooperate with other agencies to implement actions identified in the Hennepin County Groundwater Protection Plan.

7.4 MANAGEMENT OF FLOODPLAINS AND NATURAL AREAS

Overall Goal: *Manage the City's floodplains and natural areas to preserve the functions and values of these resources for current and future generations.*

Overall Policy: The City will manage floodplains and natural areas through implementation of local zoning codes and agency regulations.

7.4.1 FLOODPLAIN MANAGEMENT

Goal: Control development in flood prone areas to protect the public safety and minimize property damage.

Policy 1: The City will regulate land development within floodplain areas to ensure that floodplain capacity and flood elevations are not adversely impacted by development, and that new structures are protected from damage.

Policy 2: The City will create and adopt a Floodplain Management Ordinance that is in conformance with WMO standards and policies.

7.4.2 NATURAL AREA MANAGEMENT

Goal: Protect and enhance natural areas within the City to provide conservation of City's natural setting, habitat connection, and water resource benefits.

Policy 1: The City will review land use and development decisions with the intent to preserve natural resources, connect environmental corridors, and provide buffers for streams and wetlands.

Policy 2: The City will support programs to maintain and restore the resource value of natural areas.

7.5 CITYWIDE PROGRAM ELEMENTS

Overall Goal: Manage water resources and drainage systems on a citywide scale, including monitoring and maintenance of drainage systems, targeted pollution prevention, public education, system reconstruction projects, and equitable collection of supporting funds.

7.4.1 POLLUTION PREVENTION

Goal: *Detect and address urban pollutants discharged to storm sewers.*

Policy 1: The City will address pollutant sources through enforcement of codes and public education.

Policy 2: The City will develop and maintain an effective spill response plan.

Policy 3: The City will complete employee training in the operation, maintenance and inspection of stormwater facilities, as included in the SWPPP.

Policy 4: The City will work with the PSCWMC to implement appropriate BMPs to meet the required load reductions under the *E. coli* 2017 TMDL.

Policy 5: The City will adopt practices in accordance with the Twin Cities Metro Area Chloride TMDL to reduce chloride impairment in the Metro area.

7.4.2 MONITORING AND MAINTENANCE

Goal: *Maintain the function and effectiveness of stormwater management structures through monitoring and maintenance.*

Policy 1: The City will continue to conduct semi-annual street sweeping.

Policy 2: The City will continue maintenance of ditches and MS4 conveyances by removing litter and clearing tree-fall.

Policy 3: The City will inspect and monitor the construction and installation of all new stormwater facilities and require that such facilities be surveyed to create as-built drawings.

Policy 4: The City will require developers through maintenance agreements to provide a minimum one-year guarantee that stormwater management facilities are properly installed, maintained, and functioning.

Policy 5: Private facilities, such as stormwater ponds, will be inspected and maintained by private landowners, not the City.

7.4.3 PUBLIC EDUCATION

Goal: Inform and educate residents about stormwater pollution, the effects of urban runoff, the need to protect natural resources, and the role that sustainable stormwater management can serve in mitigating urban runoff.

Policy 1: The City will implement a public education and outreach program as identified in the City's NPDES permit.

Policy 2: The City will develop and maintain a public education program for landowners to promote reduction of nutrient and sediment loading to water bodies. The City will encourage residents and landowners to practice environmentally-friendly lawn care, use native plantings or natural landscapes where practical, redirect rooftop downspouts to pervious areas such as lawns or raingardens, use porous pavements where practical, and reuse rooftop runoff water through rain barrels and cisterns. To encourage residents toward more sustainable stormwater management, the City will implement practices on its own City projects that can be replicated by homeowners and business owners on their own properties.

Policy 3: The City will coordinate public education work with the Hennepin Conservation District and local WMOs.

Policy 4: The City will promote citizen and volunteer efforts to protect, restore, and enhance local water and natural resources.

Policy 5: The City will use available opportunities through its public meetings, website, Comprehensive Plan, school district's Discovery Center, or interpretive elements at parks and open space sites to inform its residents about the value of local water resources, the effects of stormwater runoff, and opportunities for stewardship of water and natural resources and application of sustainable stormwater management.

7.4.4 FUNDING

Goal: *Secure adequate funding to support implementation of the Local Surface Water Management Plan.*

Policy 1: The City will cost-effectively manage the plan to balance surface water goals with available resources.

Policy 2: The City will seek grant funds or other resources to assist with special projects or implementation of plan goals.

7.6 SUPPORT OF OTHER AGENCIES

Overall Goal: *Cooperate and coordinate local surface water management with the work of local WMOs and state agencies.*

Policy 1: The City will cooperate and collaborate with the local water management organizations in their efforts to maintain and improve water quality in the city.

Goal: Facilitate WMO review of development projects and enforcement of watershed standards.

Policy 2: The City will coordinate development review activities with the WMOs. The City will defer to the governing WMO for review of stormwater management within new developments and redevelopment.

Goal: Cooperate with other organizations to complete management plans and studies for water and natural resources in Maple Plain.

Policy 3: The City will work with local watershed management organizations, Hennepin County, and others when appropriate and as resources are available to participate in resource management plans or studies that benefit water and natural resources.

Goal: Cooperate with other organizations working to protect groundwater resources.

Policy 4: The City will cooperate with the County and water management organizations to implement the recommendations of the Hennepin County Groundwater Plan, to protect groundwater quality by reducing the potential for transport of stormwater pollutants into the groundwater, and maintaining the functions of groundwater recharge areas.

Policy 5: The City will support well-sealing programs developed by Hennepin County and the Minnesota Department of Health.

SECTION 8 – IMPLEMENTATION

8.1 OVERVIEW

The City has developed an implementation program based on the information developed in earlier sections of this Local Surface Water Management Plan. This program reflects the needs and concerns of many stakeholders including the City Council, City Staff, citizens, watershed management organizations, and funding capabilities.

This Section summarizes the implementation items identified in Sections 6 and 7 of this LSWMP, prioritizes these items, and presents a preliminary cost estimate to complete the items based on the best available information. It should be noted that estimated costs presented in the section are preliminary and are presented for long-term budget planning purposes.

8.2 IMPLEMENTATION ACTIVITIES

The City's current, overall Capital Improvement Plan includes several projects that address issues identified in Section 6, and goals and policies identified in Section 7. A summary of those projects is provided in Table 8.1, showing proposed start year, responsibility and budgeted cost. The City will use the implementation project information presented in Table 8.1 to update their current CIP, as necessary. The City updates its Capital Improvement Plan on an annual basis. Table 8.1 includes planned projects for the time period 2018-2028, after which the City will reassess its implementation in the 2028 LSWMP. Some projects have PSCWMC codes, from previous submittals. The cost of these projects has been updated to account for inflation.

TABLE 8.1 –IMPLEMENTATION PROJECTS

Activity #	Activity	Proposed Start	Budgeted Cost	Funding Source	PSCWMC Code
1	Drake Street Drainage Improvement	2020	$12,000	City, private sources	-
2	Ravine Study	2020	$3,500	City, PSCWMC	MP-4
3	North Ravine Cleanup	2022	$343,200	City, PSCWMC, Clean Water Legacy Grant	MP-5
4	South Ravine Cleanup	2024	$312,000	City, PSCWMC, Clean Water Legacy Grant	MP-6
5	Clean Ditch – Industrial District	2026	$36,000	City	-
6	Creek Cleaning – East of Budd	2028	$66,000	City, PSCWMC	MP-1

8.3 POTENTIAL FUNDING

Implementation of the proposed studies, programs, and improvements identified in this plan will affect City finances. To quantify this effect, a review of the ability of the City to fund these studies, programs, and improvements is required. Below is a listing of various sources of revenue that the City will attempt to utilize:

- Existing stormwater utility
- Grant and partnership monies possibly secured from various agencies for projects, including MCWD, Hennepin County, Mn/DOT, the MPCA, the DNR, and others
- General fund, reserve fund
- General Obligation Bonds
- Project funds could be obtained from watershed district levies as provided for in Minnesota Statutes Chapter 103D.905 for those projects being completed by or in cooperation with, the MCWD.
- Special assessments for local improvements performed under authority of Minnesota Statutes Chapter 429.
- Revenue generated by Watershed Management Special Tax Districts provided for under Minnesota Statutes Chapter 473.882.
- Other sources potentially including tax increment financing, tax abatement, state aid, and others.

The City's stormwater utility is the primary source for the studies, programs, and improvements identified in this Plan.

8.3.1 MCWD COST SHARING PROGRAMS

The City of Maple Plain will look for opportunities in developed areas to install retrofit water quality improvement BMPs to improve the overall water quality in the City. Cost share programs are identified in the MCWD implementation plan that could provide partnering opportunities to locate, design and install retrofit BMPs. The current 2018 MCWD *Watershed Management Plan* calls for the development of a new grant program, information on which is expected to be released later in 2018. Once these programs are made-known and established, the City will look for ways to utilize these grant programs through partnership with the MCWD.

8.3.2 PSCWMC OPPORTUNITIES

The City of Maple Plain will look for opportunities to apply for grants offered by the PSCWMC for projects within the PSCWMC or that help meet PSCWMC TMDLs.

8.3.3 MINNESOTA CLEAN WATER FUND

The City of Maple Plain will look for opportunities to apply for grants offered by Minnesota Board of Water & Soil Resources through their Clean Water Fund. A number of projects have been identified, as noted in Table 8.1, which could qualify for grants.

8.4 COORDINATION PLAN

Communication and coordination between the City and the MCWD is essential to effective water resource management. A draft of a Communication Plan, based on Section 5 of Appendix A of

the MCWD *Watershed Management Plan*, is included in Appendix E. The Communication Plan outlines a relationship between the City and the MCWD, with the purpose of maintaining awareness of needs and opportunities and successfully implementing projects in partnership to meet these needs. The MCWD will communicate with City Engineer regarding the coordination plan.

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SECTION 9 – ADMINISTRATION

9.1 REVIEW AND ADOPTION PROCESS

Review and adoption of this Local Surface Water Management Plan will follow the procedure outlined in Minnesota Statutes 103B.235:

'After consideration but before adoption by the governing body, each local government unit shall submit its water management plan to the watershed management organization[s] for review for consistency with the watershed plan. The organization[s] shall have 60 days to complete its review.'

'Concurrently with its submission of its local water management plan to the watershed management organization, each local government unit shall submit its water management plan to the Metropolitan Council for review and comment. The council shall have 45 days to review and comment upon the local plan. The council's 45-day review period shall run concurrently with the 60-day review period by the watershed management organization. The Metropolitan Council shall submit its comments to the watershed management organization and shall send a copy of its comments to the local government unit.'

'After approval of the local plan by the watershed management organization[s], the local government unit shall adopt and implement its plan within 120 days, and shall amend its official controls accordingly within 180 days.'

9.2 AMENDMENTS TO PLAN AND FUTURE UPDATES

This Local Surface Water Management Plan will be incorporated into the City's 2040 Comprehensive Plan update and will be applicable until 2028, at which time an updated plan will be required. This timeline marks a change from previous updates; previously, Local Surface Water Management Plan updates were done when the water districts or water management organizations updated their Watershed Management Plans. Periodic amendments may be required to incorporate changes in local practices. Changes to the MCWD *Watershed Management Plan* or the PSCWMC *Third Generation Watershed Management Plan* may necessitate revisions to this plan. Plan amendments will be incorporated by following the review and adoption steps outlined above. Minnesota state statue requires municipalities to update local surface water management plans within two years following a watershed district update.

If amendments to the Local Surface Water Management Plan are minor, MCWD and PSCWMC review is not required. The City will conduct a public hear on proposed LSWMP amendments. Notice of the public hear and description of the proposed amendments shall be published in the local newspaper at least ten days prior to the date of the hearing. At the hearing, the City will hear all comments on the proposed LSWMP amendments.

Appendix A

Joint Powers Agreement

AMENDED AND RESTATED
JOINT POWERS AGREEMENT ESTABLISHING
THE PIONEER-SARAH CREEK WATERSHED MANAGEMENT COMMISSION

RECITALS

WHEREAS, on July 29, 1993, pursuant to statutory authority, the Cities of Corcoran, Greenfield, Independence, Loretto, Maple Plain, Medina and Minnetrista, the Town of Watertown, and the Hennepin Conservation District adopted a "Joint Powers Agreement to Protect and Manage the Pioneer-Sarah Creek Watersheds" (the "Joint Powers Agreement"); and

WHEREAS, in 2000 the City of Corcoran withdrew from the Agreement; and

WHEREAS, in 2001 the Town of Watertown withdrew from the Agreement; and

WHEREAS, the Cities of Greenfield, Independence, Loretto, Maple Plain, Medina and Minnetrista wish to amend and restate the Agreement's terms in this document.

NOW, THEREFORE, pursuant to the authority conferred upon the parties by Minn. Stat §§ 471.59 and 103B.201, et seq., the parties to this Agreement do mutually agree as follows:

SECTION ONE
DEFINITIONS

For purposes of this Agreement, each of the following terms, when used herein with an initial capital letter, will have the meaning ascribed to it as follows:

"Agreement" means the Joint Powers Agreement, as amended and restated in this document.

"Board" means the Board of Commissioners of the Commission.

"BWSR" means the Minnesota Board of Water and Soil Resources.

"Commissioner" means an individual appointed by a governmental unit to serve on the Board. The term Commissioner shall include both the representative and alternate representative appointed to serve on the Board.

"Pioneer-Sarah Creek Watershed" or "Watershed" means the area within the mapped area delineated on the map filed with BWSR, as may be amended. A complete legal description defining the boundary of the Pioneer-Sarah Creek Watershed is attached hereto and made apart hereof.

"Governmental Unit" means any signatory city or township,

"Member" means a governmental unit that enters into this Agreement.

"Watershed Management Organization ("WMO") means the organization created by this Agreement, the full name of which is "Pioneer-Sarah Creek Watershed Management Commission." The Commission shall be a public agency of its respective governmental units.

SECTION TWO
ESTABLISHMENT

The parties create and establish the Pioneer-Sarah Creek Watershed Management Commission. The Commission membership shall include the Cities of Greenfield, Independence, Loretto, Maple Plain, Medina and Minnetrista. In addition to other powers identified in this Agreement, the Commission shall have all of the authority for a joint powers watershed management organization identified in Minn, Stat. § 103B.211.

SECTION THREE
PURPOSE STATEMENT

The purpose of this Agreement is to establish an organization within the Pioneer-Sarah Creek Watershed to (a) protect, preserve, and use natural surface and groundwater storage and retention systems, (b) minimize public capital expenditures needed to correct flooding and water quality problems, (c) identify and plan for means to effectively protect and improve surface and groundwater quality, (d) establish more uniform local policies and official controls for surface and groundwater management, (e) prevent erosion of soil into surface water systems, (f) promote groundwater recharge, (g) protect and enhance fish and wildlife habitat and water recreational facilities, and (h) secure the other benefits associated with the proper management of surface and ground water, as identified in Minn. Stat. § 103B,201, including but not limited to aesthetic values when owned by the public or constituting public resources, as defined in Minn. Stat. Ch. 116B.

The Commission's Members agree to (a) provide a forum for exchanging information in the management of land use and land use techniques and control, (b) provide a forum for resolution of intergovernmental disputes relating to management and protection of the Pioneer-Sarah Creek Watershed;

and (c) cooperate on a united basis on behalf of all units of government within the Pioneer-Sarah Creek Watershed with all other levels of government for the purpose of facilitating natural resource protection and management in the Watershed.

SECTION FOUR
BOARD OF COMMISSIONERS

4.1. Appointment. The governing body of the Commission shall be its Board. Each Member shall be entitled to appoint one representative to serve on the Board and one alternate who may sit when the representative is not in attendance, and said representative or alternative representative shall be called a "Commissioner." It is expected that each Member ensure that its Commissioner will attend each meeting of the Board.

4.2. Term. Each Member shall determine the term length for its Commissioner's appointment to the Board. The representatives to the Commission shall serve at the pleasure of the governing body of the Member appointing such representative to the Commission. The Commission and its Members shall fill all Board vacancies pursuant to Minn. Stat. § 103B.227, subd. 1 and 2, as may be amended from time to time.

4.3. Compensation. Commissioners shall serve without compensation from the Commission, but this shall not prevent a Member from providing compensation to its Commissioner for serving on the Board.

4.4. Officers. No later than the first meeting in February of each year, the Commission shall elect from its membership a chairperson, a vice-chairperson, a treasurer and a secretary and such other officers as it deems necessary to reasonably carry out the purposes of this Agreement. No Commissioner may be elected to more than one office. All officers shall hold office for terms of one year and until their successors have been elected by the Commission. An officer may be reelected to the same office for unlimited terms. A vacancy in an office shall be filled from the Board membership by election for the remainder of the unexpired term of such office. The officers' duties include the following:

A. Chairperson. The Chairperson shall preside at all Board meetings and shall have all the same privileges of discussion, making motions and voting, as do other

Commissioners. The Chairperson may delegate certain responsibilities to the Executive Secretary as necessary to carry out the duties of the office.

B. Vice-Chairperson. The Vice-Chairperson shall, in the absence or disability of the Chairperson, perform the duties and exercise the powers of the Chairperson.

C. Treasurer. The Treasurer shall have the custody of the funds and securities of the Commission and shall keep full and accurate accounts of receipts and disbursements in books belonging to the Commission and shall deposit all monies and other valuable effects in the name and to the credit of the Commission in such depository as may be designated by the Commission. He/she shall disburse funds of the Commission as approved by the Commission and shall render to the Commission at regular meetings, or as the Board may request, an account of all his/her transactions as Treasurer and of the financial condition of the Commission. The Treasurer may delegate certain duties to the Executive Secretary as necessary to carry out the duties of the office.

D. Secretary. The Secretary shall attend all Board meetings, shall act as clerk of such meetings, and shall record all votes and the minutes of all proceedings. He/she shall give notice of all Board meetings. The Secretary may delegate certain duties to the Executive Secretary as necessary to carry out the duties of the office.

4.5. Executive Secretary. The Commission may appoint an Executive Secretary to coordinate activities of the Commission, accept delegated duties by the Commission officers, and accept business duties not assigned to officers. All notices to the Commission shall be delivered or served at the office of the Executive Secretary.

4.6. Quorum and Voting. A majority of all Commissioners with voting privileges shall constitute a quorum. Once a quorum is present, a majority vote is required for approval on an action, unless as provided otherwise in this Agreement.

4.7. Meetings. The Board shall schedule meetings at least quarterly (every three months) on a uniform day and place selected by the Commission. Written notice of the location and time of all Commission meetings shall be sent to all Commission representatives and alternate representatives and to the Clerk of each Member. Special meetings may be held at the call of the Chairperson or by any three Commissioners by giving not less than 72 hours written notice of the time, place and purpose of such meeting.

SECTION FIVE
COMMISSION POWERS AND DUTIES

5.1. Watershed Management Plan. The Commission shall develop a watershed management plan including a capital improvement program in conformance with Minn. Stat. § 103B.231. The Commission shall adopt the plan within 120 days after BWSR's approval of the plan. After adoption, the Commission shall implement the watershed management plan and enforce the regulations set out in the plan. A copy of the adopted plan shall be filed with the clerk of each Member governmental unit.

5.2. Local Water Management Plans. The Commission shall review Members' local water management plans as required by Minn, Stat. § 103B.235, subd. 3.

5.3. Review Services.

A. Where the Commission is authorized or requested to review and make recommendations on any matter, the Commission may charge a reasonable fee for such review services. The Commission's standard fee schedule, as amended from time to time, will be a part of the Commission's Rules.

B. The Commission may charge an additional fee when it determines that a particular project will require extraordinary and substantial review services. Before undertaking such review services, the Commission shall provide the party to be charged the additional fee with written notice of the services to be performed and the additional fee therefor. Unless said party objects within 5 business days of receipt of such written notice to the amount of the additional fee to be charged, such review services shall be performed and the party shall be responsible for the cost thereof. If said party objects to the proposed additional fee for such services within 5 business days and the party and the Commission are unable to agree on a reasonable alternative amount for review services, such extraordinary and substantial review services shall not be undertaken by the Commission.

The Members recognize that from time to time the Commission provides review services regarding a violation under the Minnesota Wetland Conservation Act, and that there currently is no statutory mechanism in place that allows the Commission to recover its costs from the wetland violator

for these review services. Therefore, when the Commission provides review services regarding a violation under the Minnesota Wetland Conservation Act, the Commission may seek reimbursement for these services from the Member where the subject property is located.

C. Upon request of any Member, the Commission shall review and evaluate any dispute between the Member and other unit(s) of government regarding land use and natural resource protection and management.

5.4 Public Participation.

A. Technical Advisory Committee. A Technical Advisory Committee ("TAC") to the Commission is hereby created. TAC members and one or more alternate members shall be appointed by the governing body of each Member. TAC members may be, but need not be, Commissioners. TAC members shall serve at the pleasure of the governing body of each Member that appoints them and are not required to meet statutory qualifications for Commissioners. TAC members will undertake projects/tasks as requested or assigned to the TAC by the Commission and may participate in meetings of the Commission pertaining to those assigned projects/tasks.

B. Citizen Advisory Committee. If a need is determined by the Commission, the Commission will establish a Citizen Advisory Committee to the Commission, particularly to review and comment on specific projects undertaken by the Commission pursuant to the Watershed Management Plan.

5.5. Rules. The Commission shall adopt rules for (a) conducting its business, including but not limited to additional duties of the Commission's officers, (b) the scope of responsibilities of the Technical Advisory Committee and the Citizen Advisory Committee, if one is established, and (c) preparing the annual work plan.

5.6. Contracts. The Commission may make such contracts, and enter into any such agreements, as it deems necessary to make effective any power granted to it by this Agreement. No Commissioner shall receive a direct financial benefit from any contract made by the Commission. Every contract for the purchase or sale of merchandise, materials or equipment by the Commission shall be let in

accordance with the Uniform Municipal Contracting Law (Minn. Stat. § 47L345) and the Joint Exercise of Powers statute (Minn. Stat. § 47L59). In accordance with Minn. Stat. § 471.59, subd. 3, contracts let and purchases made under this Agreement shall conform to the statutory requirements applicable to the Member cities with a population over 2,500.

5.7. Employment. The Commission may contract for services, may use staff of other governmental agencies, may use staff of the Members and may employ such other persons as it deems necessary. Where staff services of a Member are utilized, such services shall not reduce the financial contribution of such Member to the Commission's operating fund unless utilization of staff service is substantial and the Commission so authorizes.

5.8. Public/Private Organizations. The Commission may cooperate or contract with the State of Minnesota or any subdivision thereof or federal agency or private or public organization to accomplish the purposes for which it is organized.

5.9. Annual Financial, Activity and Audit Reports; Newsletter. The Commission shall submit to its Members and BWSR a financial report, an activity report and an audit report for the preceding fiscal year, in compliance with state law. The Commission shall publish and distribute an annual newsletter in compliance with state law. The Commission shall transmit to the clerk of each Member copies of the reports/newsletter in a format ready for publication. Each Member shall publish/distribute the reports/newsletter as it deems necessary. All of the Commission's books, reports and records shall be available for and open to examination by any Member at all reasonable times.

5.10. Gifts, Grant, Loans. The Commission may, within the scope of this Agreement, accept gifts, apply for and use grants or loans of money or other property from the United States, the State of Minnesota, a unit of government or other governmental unit or organization, or any person or entity for the purposes described herein; may enter into any reasonable agreement required in connection therewith; may comply with any laws or regulations applicable thereto; and may hold, use and dispose of such money or property in accordance with the terms of the gift, grant, loan or agreement relating thereto.

5.11. Boundary Change in the Pioneer-Sarah Creek Watershed.

A. Enlargement. Proceedings for the enlargement of the Pioneer-Sarah Creek Watershed shall be initiated by a request from affected Member(s) to the Commission, or as mandated by law. Such request should include a map and legal description of the affected area. In reviewing such a request, the Commission should consider, among other things, (a) whether the affected area is contiguous to the existing Pioneer-Sarah Creek Watershed, (b) whether the affected area can be feasibly administered by the Commission; and (c) the reasons why it would be conducive to the public health and welfare to add the area to the existing Pioneer-Sarah Creek Watershed. Upon deliberation, if it appears to the Commission that the enlargement of the Watershed as requested would be for the public welfare and public interest and the purpose of resource management would be served, or that in fact the enlargement is mandated by law, the Commission shall by its findings and order enlarge the Pioneer-Sarah Creek Watershed and file a copy of said findings and order with the appropriate governmental offices.

B. Transfer of Territory. Proceedings to transfer territory that is within the Pioneer-Sarah Creek Watershed to the jurisdiction of another watershed management organization or a watershed district shall be initiated by a request from affected Member(s) to the Commission, or as mandated by law. Such request should include a map and legal description of the affected area. Upon deliberation, if it appears to the Commission that the transfer of territory as requested would be for the public welfare and public interest and the purpose of resource management would be served, the Commission shall by its findings and order change the Pioneer-Sarah Creek Watershed boundaries accordingly and file a copy of said findings and order with the appropriate governmental offices.

5.12. Subdistricts. The Commission may define and designate drainage subdistricts within the Watershed and shall have authority to separate the Watershed into such different subdistricts and to allocate capital improvement costs to a subdistrict area if that subdistrict is the only area that materially benefits from the capital improvement.

5.13. Monitor Water Quality. In connection with its water management plan, the Commission will establish a comprehensive water quality-monitoring plan for lakes and streams within the Watershed.

The Commission will also establish goals for judging the adequacy of its water quality protection programs.

5.14 Ratification. The Commission may, and where required by this Agreement shall, refer matters to the governing bodies of the Members for ratification. Within 60 days, the governing bodies of the Members shall take action upon any matter referred for ratification.

5.15. Statutory Powers. The Commission may exercise all other powers necessary and incidental to the implementation of the purposes and powers set forth herein and as outlined and authorized by Minn. Stat. §§ 103B.201, et seq,

SECTION SIX
FINANCIAL MATTERS

6.1. Depositories/Disbursements. The Commission may collect and receive money and services subject to the provisions of this Agreement from the parties and from any other sources approved by the Commission and it may incur expenses and make expenditures and disbursements necessary and incidental to the effectuation of the purposes of this Agreement. The Board shall designate a national, state, or private bank or banks as a depository of Commission funds, Funds may be expended by the Commission in accordance with procedures established herein. Orders, checks and drafts shall be signed by two officers.

6.2. General Administration. Each voting Member agrees to contribute each year to a general fund to be used for general administration purposes including, but not limited to, salaries, rent, supplies, development on an overall plan, insurance, bonds, and to purchase and maintain devices to measure hydrological and water quality data. The funds may also be used for normal maintenance of facilities and capital improvements. The annual contribution by each voting Member shall be based on its share of the taxable market value of all real property within the Watershed.

6.3. Budget Approval and Appeal Process. On or before July 1 of each year, the Board shall adopt a budget for the following calendar year for the purpose of providing funds to conduct the Commission's business in accordance with its annual work plan, Budget approval shall require a

majority vote of all Commissioners eligible to vote. At least 45 days before each Member governmental unit must certify its levy to Hennepin County, the Commission shall certify the budget to the clerk of each Member governmental unit together with a statement of the proportion of the budget to be provided by each Member. The schedule of payments by the Members shall be determined by the Board in such a manner as to provide for an orderly collection of the funds needed.

The governing body of each Member agrees to review the budget, and the Board shall upon notice from any Member received prior to August 15, hear objections to the budget, and may amend the budget (except the fee due cannot be increased), and then give notice to the Members of any and all modifications or amendments.

SECTION SEVEN
CAPITAL IMPROVEMENT PROGRAM

7.1. Assessments. If a capital improvement ordered by the Commission may result in payment from any Member, or if a capital improvement ordered by the Commission may result in a levy by a Member against privately or publicly owned land within the Watershed, said capital improvement shall follow the statutory procedure outlined in Minn. Stat. Ch, 429, except as herein modified.

7.2. Preliminary Reports/Public Hearings. For those improvements initiated by the Commission or so designated in the Commission's watershed management plan to be constructed by the Board, the Board shall secure from its engineers or some other competent person a preliminary report advising it whether the proposed improvement is feasible and as to whether it shall best be made as proposed or in connection with some other improvement and the estimated cost of the improvement as recommended.

The Board shall then hold a public hearing on the proposed improvement after mailed notice to the clerk of each Member governmental unit within the Watershed. The Commission shall not be required to mail or publish notice except by said notice to the clerk, Said notice shall be mailed not less than 45 days before the hearing, shall state the time and place of the hearing, the general nature of the improvement, the estimated total cost and the estimated cost to each Member governmental unit. The

Board may adjourn said hearing to obtain further information, may continue said hearing pending action of the Member governmental units or may take such other action as it deems necessary to carry out the purpose of this Commission.

A resolution setting forth the order for a capital improvement project shall require a favorable vote by (a) at least two-thirds of all Commissioners eligible to vote, and (b) all Commissioners representing Members who will directly benefit from the project. In all cases other than to order a capital improvement project, a majority vote of all Commissioners eligible to vote shall be sufficient to adopt an action. The order shall describe the improvement, shall allocate in percentages the cost between the Member governmental units, shall designate the engineers to prepare plans and specifications, and shall designate the Member who will contract for the improvement.

After the Board has ordered the improvement or if the hearing is continued while the Member governmental units act on said proposal, it shall forward said preliminary report to all Member governmental units with an estimated time schedule for the construction of said improvement. The Board shall allow an adequate amount of time, and in no event less than 45 days, for each Member governmental unit to conduct hearings, in accordance with the provisions of the aforestated Chapter 429 or the charter requirements of any Member city, or to ascertain the method of financing which said Member governmental unit will utilize to pay its proportionate share of the costs of the improvement. Each Member governmental unit shall ascertain within a period of 90 days the method it shall use to pay its proportionate share of the costs.

If the Commission proposes to use Hennepin County's bonding authority as set forth in Minn. Stat. § 103B.251, or if the Commission proposes to certify all or any part of a capital improvement to Hennepin County for payment, then and in that event all proceedings shall be carried out in accordance with the provisions set forth in said Section 103B,251.

The Board shall not order and no engineer shall prepare plans and specifications before the Board has adopted a resolution ordering the improvement. The Board may direct one of its Members to prepare plans and specifications and order the advertising for bids upon receipt of notice from each Member

governmental unit who will be assessed that it has completed its hearing or determined its method of payment or upon expiration of 90 days after the mailing of the preliminary report to the Members.

7.3. Appeals/Arbitration. Any Member governmental unit being aggrieved by the Board's determination as to the cost allocation of said capital improvement shall have 30 days after the Commission resolution ordering the improvement to appeal said determination. Said appeal shall be in writing and shall be addressed to the Board asking for arbitration, The determination of the Member's appeal shall be referred to a Board of Arbitration. The Board of Arbitration shall consist of three persons; one to be appointed by the Board of Commissioners, one to be appointed by the appealing Member governmental unit, and the third to be appointed by the two so selected. In the event the two persons so selected do no appoint the third person within 15 days after their appointment, then the Chief Judge of the Hennepin County District Court shall have jurisdiction to appoint, upon application of either or both of the two earlier selected, the third person to the Board of Arbitration. The third person selected shall not be a resident of any Member governmental unit and if appointed by the Chief Judge said person shall be a person knowledgeable in the subject matter. The arbitrators' expenses and fees, together with the other expenses, not including attorney fees, incurred in the conduct of the arbitration shall be divided equally between the Commission and the appealing Member, Arbitration shall be conducted in accordance with the Uniform Arbitration Act, Minn, Stat. Ch. 572,

7.4. Contracts for Capital Improvements. All contracts which are to be let as a result of the Board ordering a capital improvement, and for which two or more Member governmental units shall be responsible for the costs, shall be let in accordance with the provisions of Minn. Stat, § 429.041. The bidding and contracting of said work shall be let by any one of the Member governmental units, as ordered by the Board, after compliance with the statutory requirements. Contracts and bidding procedures shall comply with the legal requirements applicable to statutory cities.

The Commission shall not have the authority to contract in its own name for any improvement work for which a special assessment will be levied against any private or public property under the provisions of Chapter 429 or under the provisions of any Member city charter. These contracts shall be

awarded by action of the governing body of a Member and shall be in the name of a Member governmental unit. This section does not preclude the Commission from proceeding under Minn. Stat. § 103B.251.

7.5. Contracts with Other Governmental Bodies. The Commission may exercise the powers set forth in Section 7.4 but said contracts for a capital improvement shall require a majority vote of all Commissioners eligible to vote.

7.6. Supervision, All improvement contracts shall be supervised by the entity awarding the contract. The Commission staff shall also be authorized to observe and review the work in progress and the Members agree to cooperate with the Commission staff in accomplishing its purposes. Representatives of the WMO shall have the right to enter upon the place or places where the improvement work is in progress for the purpose of making reasonable tests and inspections, The Commission staff shall report and advise and recommend to the Board on the progress of the work,

7.7. Land Acquisition. The Commission shall not have the power of eminent domain and shall not own any interest in real property. All interests in lands shall be held in the name of the Member wherein said lands are located.

7.8. Capital Improvement Fund. The Commission shall establish an improvement fund or funding mechanism for each capital improvement project. The Commission may fund all or part of the cost of a capital improvement contained in the capital improvement program of the plan in accordance with Minn. Stat. § 103B.251, The Commission and Hennepin County may establish a maintenance fund to be used for normal and routine maintenance of an improvement constructed in whole or in part with money provided by Hennepin County pursuant to Minn, Stat, § 103B.251. The levy and collection of an ad valorem tax levy for an improvement, payment of bonds, or maintenance shall be by Hennepin County based upon a tax levy resolution adopted by a majority vote of all eligible Members of the Board and remitted to the County on or before the date prescribed by law each year. If it is determined to levy for maintenance, the Commission shall be required to follow the hearing process established by Minn. Stat.

Ch. 103D. Mailed notice shall also be sent to the clerk of each Member governmental unit at least 30 days before the hearing.

7.9. Capital Improvement Cost Allocation.

A. All costs of improvements designated in the Board's adopted watershed management plan for construction by the Board, which the Board determines will benefit only one Member, shall be paid for entirely by that Member.

B. All costs of improvements designated in the Board's adopted watershed management plan for construction by the Board, which the Board determines benefit more than one Member, shall be apportioned by the Board by the following bases:

(1) A negotiated amount to be arrived at by the Members who have lands in the subdistrict responsible for the capital improvement; or

(2) On the basis of each Member's share of the taxable market value of all real property within the Watershed; or

(3) Capital costs allocated under option (2) above may be varied by the Commission by a favorable vote by (a) at least two-thirds of all Commissioners eligible to vote and (b) all Commissioners representing Members who will directly benefit from the project, if (i) any Member community receives a direct benefit from the capital improvement which benefit can be defined as a lateral as well as a trunk benefit, or (ii) the capital improvement provides a direct benefit to one or more Members which benefit is so disproportionate as to require in a sense of fairness a modification in the formula.

C. If the project is constructed and financed pursuant to Minnesota Statutes 103B.251, the Members understand and agree that said costs will be levied on all taxable property in the watershed as set forth in the statute.

SECTION EIGHT
WITHDRAWAL FROM AGREEMENT

Withdrawal of any Member may be accomplished by filing written notice with the Commission and the other Members 60 days before the effective date of withdrawal. No Member may withdraw from this Agreement until the withdrawing Member has met its full financial obligations for the year of withdrawal and prior years.

SECTION NINE
DISSOLUTION OF COMMISSION

9.1. This Agreement may be terminated upon the unanimous consent of the parties. If the Agreement is to be terminated, a notice of the intent to dissolve the Commission shall be sent to Hennepin County and BWSR at least 90 days before the date of dissolution.

9.2. In addition to the manner provided in Section 9.1 for termination, any Member may petition the Commission's Board to dissolve the Commission. Upon 90 days notice in writing to the clerk of each member governmental unit and to Hennepin County and BWSR, the Board shall hold a hearing and upon a majority vote of all Commissioners eligible to vote, the Board may by Resolution recommend that the Commission be dissolved. Said Resolution shall be submitted to each Member governmental unit and if ratified by three-fourths of the governing bodies of all eligible Members within 60 days, said Board shall dissolve the Commission allowing a reasonable time to complete work in progress and to dispose of personal property owned by the Commission.

9.3. Winding Up. Upon dissolution, all personal property of the Commission shall be sold and the proceeds thereof, together with monies on hand after payment of all obligations, shall be distributed to the Members. Such distribution of Commission assets shall be made in approximate proportion to the total contributions to the Commission for such costs made by each Member, All payments due and owing for operating costs under Section 6.2, or other unfilled financial obligations, shall continue to be the lawful obligation of the Members. In no event may this Agreement be terminated until all of the planning and plan implementation provisions of the Act, which are required of a watershed management organization, have been completed.

SECTION TEN
MISCELLANEOUS PROVISIONS

10.1. Special Assessments. The Commission shall not have the power to levy a special assessment upon any privately or publicly owned land. All such assessments shall be levied by the Member wherein said lands are located. The Commission shall have the power to require any Member to contribute the costs allocated or assessed according to the other provisions of this agreement.

10.2. Member's Construction Projects that Will Affect Pioneer-Sarah Creek. Each Member agrees that it will not directly or indirectly collect or divert any additional surface water to or from Pioneer-Sarah Creek or its tributaries without approval from the Commission. Such approval may be granted by the Commission for a Member to proceed with the construction or reconstruction of improvements within the individual corporate Member's boundaries and at said Member's sole cost upon a finding (a) that there is an adequate outlet, (b) that said construction is in conformance with the overall plan, and (c) that the construction will not adversely affect other Members.

10.3. Member Vote Suspension for Failure to Contribute. Any Member who is more than 60 days in default in contributing its proportionate share to the general fund shall have the vote of its Board representative suspended pending the payment of its proportionate share. Any Member who is more than 60 days in default in contributing its proportionate share of the cost of any improvement to the contracting Member shall upon request of the contracting Member have the vote of its Board representative suspended, pending the payment of its proportionate share, Any Member whose Board representative vote is under suspension shall not be considered as an eligible Member as such membership affects the number of votes required to proceed on any matter under consideration by the Board.

10.4. Amendment. The Commission may recommend changes and amendments to this Agreement to the Members. Amendments shall be acted upon by the Members within 90 days of referral. Amendments shall be evidenced by appropriate resolutions of the Members filed with the Commission and shall, if no effective date is contained in the amendment, become effective as of the date all such filings have been completed.

10.5. Termination of Prior Agreement. By executing this document, the parties hereby agree to terminate the prior joint powers agreement, adopted July 29, 1993.

10.6. Counterparts. This Agreement and any amendment may be executed in several counterparts and all so executed shall constitute one Agreement or amendment, binding on all of the parties hereto notwithstanding that all of the parties are not signatory to the original or the same counterpart.

10.7. Effective Date. This Agreement shall be in full force and effect when all governmental units delineated in Section 2 have executed this Agreement. All Members need not sign the same copy.

10.8. Duration. This Agreement shall have an unlimited duration.

10.9. Statutory References. All statutory references include all future amendments.

CITY OF GREENFIELD

By: Thomas J Swanson
Its Mayor

Attest: Krista Okerman
Its City Clerk

Dated: 8/17/04

CITY OF INDEPENDENCE

By: Louis D Johnson
Its Mayor

Attest: Lori Hunt
Its City Clerk

Dated: 2-24-04

CITY OF LORETTO

By: Kenneth C Tree
Its Mayor

Attest: Kelly Sprinnell
Its City Clerk

Dated: 3/9/2004

CITY OF MAPLE PLAIN

By: Jack Vigen
Its Mayor

Attest: Dennis J Anderson
Its City Clerk

Dated: 3/23/04

CITY OF MEDINA

By: _____
Its Mayor

Dated: 3-16-04

Attest: _____
Its City Clerk

CITY OF MINNETRISTA

By: _____
Its Mayor

Dated: 3/15/04

Attest: _____
Its City Clerk

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Appendix B

Stormwater BMP Inspection Schedule

Introduction

The NPDES Phase II permit requires annual inspection of ponds/sediment basins; MS4 outfalls; structural pollution control devices (SPCD); and exposed stockpile, storage and material handling areas. Example checklists have been included in this section for your use. These checklists are intended to assist you in meeting NPDES Phase II inspection permit requirements.

MPCA MS4 General Permit Inspection Requirements

Based on these inspections the City must determine necessary measures to maintain proper operation and to prevent environmental impacts. These measures should be completed as soon as possible, and if they are not done in the same calendar year a schedule for completion should be included in the annual report.

In addition, a summary of results from all inspections should be included in the annual report. These records should include dates of inspection and responses to inspections, including dates of repair completion and major additional protection measures. The City may elect to submit copies of the attached inspection checklists or provide the MPCA with a summary based on the requested data from the MPCA Annual Report Form.

Records of inspection results should be kept, including as appropriate, the date, antecedent weather conditions, sediment storage and capacity remaining, and any maintenance performed or recommended for a minimum of 3 years beyond the permit expiration date.

Ponds / Sediment Basins

Inspection Frequency: 20% annually on a rotating basis

Definition: Stormwater treatment ponds designed to manage flow rate, quality, and quantity of the City's storm sewer system (MS4).

Examples: Retention ponds, Detention Ponds, Infiltration basins, and Dry Ponds

MS4 Outfalls

Inspection Frequency: 20% annually on a rotating basis

Definition: Any discharge from the City's storm sewer system such as pipes, channels, or other discrete conveyances (not overland flow) which do one of the following:

1. Discharge into a natural receiving water such as a wetland, creek, river, or lake.
2. Discharge into another MS4 system. For example, this could be a storm sewer manhole upstream from a property line to the adjacent community.

Examples: Flared end, Swale, Weir, Flume, Culvert, Manhole

Structural Pollution Control Devices (SPCD)

Inspection Frequency: 100% annually. However, if patterns of maintenance become apparent in the first two years the frequency of inspections should be adjusted. If maintenance was required during each of the first two years, inspections should be increased to twice per year. If no maintenance was required during the first two years, inspections only need to be completed once every two years.

Definition: Any treatment device within the City's storm water system designed to control pollutants.

Examples: Sump manholes/catchbasins, Skimmer structures, Grit chambers, Swirl separators, Oil and grease separators, Filters, Infiltration trenches, Flammable traps, Storm water inlet traps, and a variety of other devices

Exposed Stockpile, Storage and Material Handling Areas

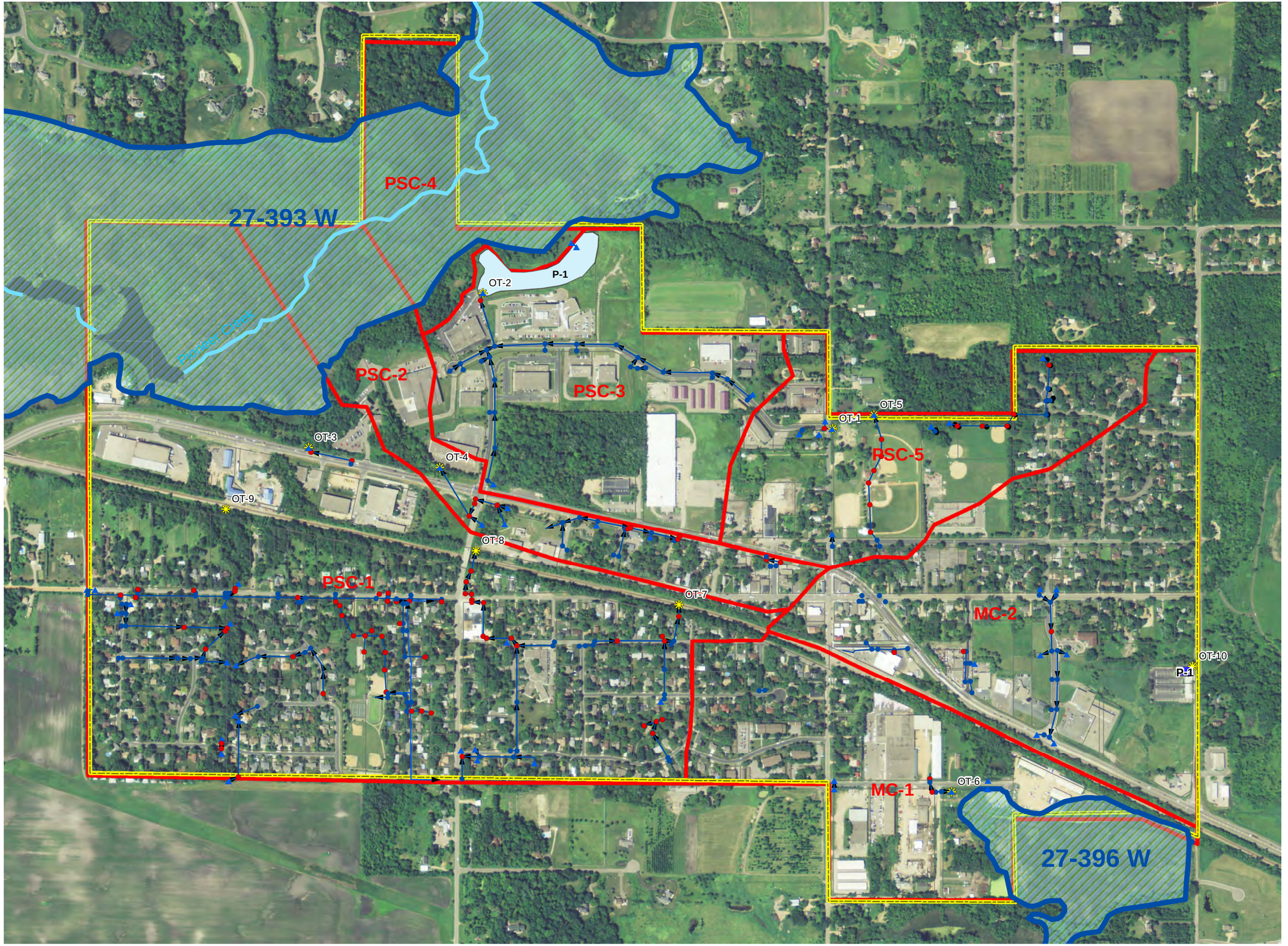
Inspection Frequency: 100% annually. However, if patterns of maintenance become apparent in the first two years the frequency of inspections should be adjusted. If maintenance was required during each of the first two years, inspections should be increased to twice per year. If no maintenance was required during the first two years, inspections only need to be completed once every two years.

Examples: soil, sand/aggregate, compost, salt, scrap metal/debris, pressure treated wood

Appendix C

Stormwater Sewer Map

Stormwater System Map



Legend

- Outfalls
- Creek
- Public Pond
- Private Pond
- Storm Sewer
- MH
- CB
- FES
- Wetlands
- City Boundary
- Subwatershed District

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JANUARY 2020

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Appendix D

WMO Rules and Regulations

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted April 24, 2014
Effective June 6, 2014

EROSION CONTROL RULE

1. POLICY. It is the policy of the Board of Managers to require preparation and implementation of erosion control plans for land-disturbing activities, in order to limit erosion from wind and water; reduce flow volumes and velocities of stormwater moving off site; reduce sedimentation into water bodies; and protect soil stability during and after site disturbance. These measures should reflect the following principles:

(a) Minimize, in area and duration, exposed soil and unstable soil conditions.

(b) Minimize disturbance of natural soil cover and vegetation.

(c) Protect receiving water bodies, wetlands and storm sewer inlets.

(d) Retain sediments from disturbed properties on site.

(e) Minimize unintentional off-site sediment transport on trucks and equipment.

(f) Minimize work in and adjacent to water bodies and wetlands.

(g) Maintain stable slopes.

(h) Avoid steep slopes and the need for high cuts and fills.

(i) Minimize disturbance to the surrounding soils, root systems and trunks of trees and vegetation adjacent to site activity that are intended to be left standing.

(j) Prevent and/or mitigate the compaction of site soils.

2. PERMIT REQUIREMENT. Unless specifically exempted by section 3, Exemptions, of this rule, land-disturbing activity shall require a permit incorporating an erosion control plan approved by the District and shall be conducted in accordance with that plan. Applicants must provide a financial assurance pursuant to the District's Financial Assurance Rule. A Fast-Track permit may be issued for routine erosion control projects on a finding that the application:

(a) Complies with the submission requirements of section 4, Permit Application, of this rule;

(b) Includes an erosion control plan that:

(1) Complies with section 5, Erosion Control Plan, of this rule; and

(2) Provides for maintenance and inspection in accordance with sections 9, Maintenance, and 10, Notification and Inspection, of this rule.

Any request for a variance from a requirement of this rule must be decided by the Board of Managers.

3. EXEMPTIONS. The following land-disturbing activity shall not be subject to the requirements of this rule:

(a) Activity that:

(1) disturbs an area of less than 5,000 square feet; and

(2) involves the grading, excavating, filling or storing on site of less than 50 cubic yards of soil or earth material.

(b) Agricultural activity.

(c) Emergency activity immediately necessary to protect life or prevent substantial physical harm to person or property, provided that erosion control measures, including any necessary remedial action, are implemented as soon as possible.

(d) Activity otherwise subject to this rule, where the District has entered into a written agreement with the municipality where the activity takes place providing that the District will not exercise erosion control permitting authority within the city under the circumstances in question.

4. PERMIT APPLICATION. A written application for an erosion control permit shall be submitted by the owner of a site or an authorized representative. The application shall contain the following:

(a) Site address.

(b) Property owner's name, address and telephone number.

(c) Names, addresses, telephone numbers and responsibilities of all contractors, subcontractors and other persons who will engage in the land-disturbing activities.

(d) Name, address and telephone number of a single individual responsible for overseeing implementation of the erosion control plan on site.

(e) Documentation of all applicable federal, state, county, municipal or township applications for the proposed action or a statement that uch approval is not required.

(f) Application date.

(g) Signature of each property owner with a certification that he or she understands that the proposed activity must be conducted in compliance with this rule and the approved erosion control plan, and that the application is complete and accurate to the best of his or her belief.

When a property owner is not a natural person, the application shall bear a signature of one authorized to act on the owner's behalf and documentation of the signatory's authority.

(h) An erosion control plan as described at section 5, Erosion Control Plan, of this rule.

(i) A soils engineering report as described at section 6, Soils Engineering and Geology Reports, of this rule, if requested by the District.

(j) A geological report as described at section 6, Soils Engineering and Geology Reports, of this rule, if requested by the District.

(k) A copy of the NPDES permit number for projects that require an NPDES permit from the Minnesota Pollution Control Agency.

(l) An erosion control inspection plan in accordance with section 10, Notification and Inspection, of this rule for all projects disturbing ¼ acre or greater.

5. EROSION CONTROL PLAN. The erosion control plan is a stand-alone document that shall include the following:

(a) Site plans for existing and final proposed conditions drawn to appropriate scale. The plans shall contain:

(1) The site location in relation to surrounding roads, steep slopes, other significant geographic features, buildings and other significant structures.

(2) Existing and final grades, and the direction of flow for all pre- and post-construction runoff from the site.

(3) Site property lines.

(4) Identification and location of all existing and planned underground utilities, to be concentrated in corridors where safe, practical and feasible.

(5) Identification of all receiving waterbodies and/or stormwater conveyance systems to which the site discharges. Specification of the Impaired or Special Management waters status of each receiving waterbody or conveyance system.

(6) Identification and location of all onsite water features and facilities, including any lake, stream or wetland; any natural or artificial water diversion or detention area; any surface or subsurface drainage facility or stormwater conveyance; and any storm sewer catch basin.

(7) Location of all trees and vegetation on site, with identification of that which is intended to be retained. Installation of protective fencing so as to exclude all fill and equipment from the drip line or critical root zone, whichever is greater, of all vegetation to be retained.

(8) Location of buildings and structures on site.

(9) Proposed grading or other land-disturbing activity including areas of grubbing, clearing, tree removal, grading, excavation, fill and other disturbance; areas of soil or earth material storage; quantities of soil or earth material to be removed, placed, stored or otherwise moved on site; and delineated limits of disturbance.

(10) Locations of proposed runoff control, erosion prevention, sediment control and temporary and permanent soil stabilization measures, including, but not limited to: inlet protection, perimeter control, temporary and permanent soil stabilization, concrete wash areas, slope breaks, energy dissipation, rock construction entrance, silt curtains.

(11) Detail showing the location of all areas where compaction is to be prevented and/or mitigated. These areas shall be protected from construction vehicle traffic where practical and feasible. These areas include but are not limited to: filtration and infiltration stormwater facilities and areas that are proposed to be permanently landscaped as greenspace.

(12) The location of all onsite, existing and proposed stormwater management facilities, including, but not limited to: infiltration basins, bio-filtration basins, stormwater ponds, porous pavers, underground storage and swales.

(13) Location of any MCWD-regulated buffers on site (existing or to be established).

(b) Plans and specifications must be provided showing all proposed runoff control, erosion prevention, sediment control and temporary and permanent soil stabilization measures, in accordance with the following criteria:

(1) Plans and specifications shall conform to the provisions of "Stormwater Compliance Assistance Toolkit for Small Construction Operators" and/or the "2005 MN Stormwater Manual." (Minnesota Pollution Control Agency, 2004)

(2) All erosion and sedimentation controls proposed for compliance with this rule shall be in place before any land-disturbing activity commences.

(3) Plans shall provide that stockpiles of soil or other materials subject to erosion by wind or water shall be covered, vegetated, enclosed, fenced on the downgradient side or otherwise effectively protected from erosion in accordance with the amount of time the material will be on site and the manner of its proposed use.

(4) Silt fence shall conform to Sections 3886.1 and 3886.2, Standard Specifications for Construction, Minnesota Department of Transportation (2000 ed.), as it may be amended.

(5) Plans shall provide that all fabric fences used for erosion and sedimentation control and all other temporary controls shall not be removed until the District has determined that the site has been permanently re-stabilized and shall be removed within 30 days thereafter.

(6) Plans shall provide for permanent stabilization of all areas subject to land disturbance, retention of native topsoil on site wherever practical and feasible, and specify at least six inches of topsoil or organic matter be spread and incorporated into the underlying soil during final site treatment wherever topsoil has been removed.

(7) A detailed schedule indicating dates and sequence of land-alteration activities: implementation, maintenance and removal of erosion and sedimentation-control measures, and permanent site-stabilization measures.

(c) The District may waive specific submittal requirements of this section at the request of an applicant proposing to landscape an improved property upon a finding by the District that such requirements are not needed to assess the characteristics of the property and the adequacy of proposed control measures,

6. SOILS ENGINEERING AND GEOLOGY REPORTS. On a determination that the condition of the soils is unknown or unclear and that additional information is required to find that an applicant's proposed activity will meet the standards and purposes of this rule, the District may require soil borings or other site investigation to be conducted and may require submission of a soils engineering or geology report. The report shall include the following as requested by the District:

(a) Data and information obtained from the requested site investigation.

(b) A description of the types, composition, permeability, stability, erodibility and distribution of existing soils on site.

(c) A description of site geology.

(d) Conclusions and revisions, if any, to the proposed land-disturbing activity at the site or the erosion control plan, including revisions of plans and specifications.

7. ADDITIONAL INFORMATION. The District may require any additional information or data, as it finds relevant and necessary to evaluate and act on an application.

8. FINANCIAL ASSURANCE. The District may require the applicant to file a bond or other financial assurance in accordance with the Financial Assurance Rule. The assurance must be in the form of a performance bond, a letter of credit or a cash escrow. The assurance shall be maintained until:

(a) Final site stabilization and removal of erosion and sedimentation controls, as determined by the District, and the payment of all fees and amounts due to the District;

(b) Forty-five (45) days after written notification to the District under paragraph 10(b)(5), if the District has failed to respond in writing; or

(c) Such earlier time as the District may advise the applicant in writing.

9. MAINTENANCE. The permittee shall be responsible at all times for the maintenance and proper operation of all erosion and sediment control management practices. On any property on which land-disturbing activity has occurred pursuant to a permit issued under this rule, the permittee shall, at a minimum, maintain and repair all disturbed surfaces and all erosion and sediment control management practices and soil stabilization measures every day work is performed on the site. Specific maintenance requirements are as follows:

(a) All exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(b) The normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from the site, or diverts water around a site must be stabilized. Stabilization must be completed within 24 hours of connecting to a surface water. Portions of the ditch that are under construction must be stabilized within 24 hours after the construction activity in that portion has ceased.

(c) Sediment control practices must minimize sediment from entering surface waters, including curb and gutter systems and storm sewer inlets.

(d) Sediment control practices must be established on all downgradient perimeters before any upgradient land-disturbing activities begin. These practices shall remain in place until the District has determined that the site soils have been permanently stabilized.

(e) The timing of the installation of sediment control practices may be adjusted to accommodate short-term activities such as clearing or grubbing or passage of vehicles. Any short-term activity must be completed as soon as possible and the sediment control practices must be installed immediately after the activity is completed. However, sediment control practices must be installed before the next precipitation event even if the activity is not completed.

(f) All storm drain inlets must be protected by BMPs determined by the District to be appropriate, during construction until all sources with potential for discharging to the inlet have been stabilized.

(g) Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

(h) In order to maintain sheet flow and minimize rills and gullies, there shall be no unbroken slope length of greater than 30 feet for slopes with a grade of 3:1 or steeper.

(i) Temporary stockpiles must have effective sediment controls in place to prevent discharge to surface waters including stormwater conveyances such as curb and gutter.

(j) Vehicle tracking of sediment from the construction site must be minimized by BMPs such as rock construction entrances, wash racks or equivalent practices. Street sweeping must be used if such BMPs are not adequate to prevent sediment from being tracked off site.

(k) During construction of an infiltration or biofiltration system, rigorous prevention and sediment controls must be used to prevent the discharge of sediment into the infiltration/biofiltration area. Infiltration/biofiltration areas must not be excavated to final grade until the contributing drainage area(s) has been constructed and finally stabilized.

(l) Dewatering or basin draining (e.g. pumped discharges, trench/ditch cuts for drainage) related to the construction activity that may have turbid or sediment laden discharge water must be discharged to a temporary or permanent sedimentation basin on the site whenever possible. If water cannot be discharged to a sedimentation basin prior to entering the surface water, it must be treated with the appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream landowners.

(m) If determined to be compacted by the District, site soils shall be decompacted to a depth of 18 inches and organic matter shall be incorporated before revegetation. Decompaction shall be

accomplished solely by incorporation of organic matter within the drip line or critical root zone of trees or within 10 feet of underground utilities.

(n) Inlet protection devices and all perimeter control shall be maintained once sediment accumulates to a depth 1/3 of the designed capacity.

10. NOTIFICATION AND INSPECTION.

(a) INSPECTION:

(1) The individual identified as being responsible for implementing the erosion control plan must routinely inspect the construction site once every seven days during active construction and within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.

(2) All inspections and maintenance conducted during construction must be recorded in writing and these records must be retained with the erosion control plan and made available at the District's request within 24 hours. Records of each inspection and maintenance activity shall include:

(i) Date and time of inspections;

(ii) Name of person conduction inspections;

(iii) Findings of inspections, including recommendations for corrective actions;

(iv) Corrective actions taken (including dates, times and party completing maintenance activities); and

(v) Date and amount of all rainfall events greater than 0.5 inches in 24 hours.

(b) NOTIFICATION. The applicant or its authorized agent shall notify the District in writing at the following points (large public projects may request alternative notification through use of on an onsite written log of the following points):

(1) On completing installation of perimeter erosion and sedimentation controls.

(2) On completing land-disturbing activities and putting into place measures for final soil stabilization and revegetation.

(3) Prior to any site dewatering.

(4) When the site has been permanently stabilized and re-vegetated.

(5) When all temporary erosion and sedimentation controls have been removed from the site.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES § 103D.341

Adopted April 24, 2014
Effective June 6, 2014

FLOODPLAIN ALTERATION RULE

1. POLICY. It is the policy of the Board of Managers to:

(a) Preserve existing water storage capacity below the 100-year high water elevation of all waterbodies in the watershed to minimize the frequency and severity of high water;

(b) Minimize development below the 100-year high water elevation that will unduly restrict flood flows or aggravate known high water problems.

2. REGULATION. No person shall alter or fill land below the projected 100-year high water elevation of a waterbody without a permit from the District. A Fast Track permit may be issued for 6 inches or less of organic material to be incorporated into existing soil in preparation for sodding or seeding.
3. CRITERIA.

(a) Fill shall not cause a net decrease in storage capacity below the projected 100-year high water elevation of a waterbody. The allowable fill area shall be calculated by a professional engineer registered in the State of Minnesota. Creation of floodplain storage capacity to offset fill shall occur before any fill is placed in the floodplain, unless the applicant demonstrates that doing so is impractical and that placement of fill and creation of storage capacity can be achieved concurrently. Any placement of fill prior to creation of floodplain storage capacity will only be allowed upon a demonstration by a registered professional engineer that such work will not aggravate high water conditions.

(b) For fill in a watercourse, in addition to the criteria of paragraph 3(a), the fill shall not cause an increase in the 100-year flood elevation.

(c) The criteria of paragraph 3(a) does not apply to fill in a waterbody other than a watercourse if the applicant shows that the proposed fill, together with the filling of all other properties on the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other properties and will not unduly restrict flood flows.

(d) No new impervious surface may be created within the lesser of the 10-year floodplain or 25 feet of the centerline of a watercourse, except impervious area may be created that is:
(1) no larger than 10% of the floodplain area of the parcel(s), or
(2) the surface is an integral component of a linear public roadway or trail.
(e) Ice ridge grading within the floodplain must conform to the original cross-section of the lakebed. Approval for ice ridge grading or removal of ice ridge material from the floodplain requires the applicant to demonstrate that the ice ridge resulted from ice action during the

previous winter. No additional material may be placed within the floodplain except in accordance with this Rule.

(f) All new residential, commercial, industrial and institutional structures shall be constructed such that all door and window openings are at a minimum of two feet above the 100-year high water elevation.

4. REQUIRED EXHIBITS. The following exhibits shall accompany the permit application. One set - full size; one set - reduced to maximum size of 11"x17".

(a) Site plan showing property lines, delineation of the work area, existing elevation contours of the work area, ordinary high water elevation (OHW), and 100-year high water elevation. All elevations must be reduced to NGVD (1929 datum).

(b) Grading plan showing any proposed elevation changes.

(c) Preliminary plat of any proposed land development.

(d) Determination by a professional engineer of the 100-year high water elevation before and after the project and the extent of impervious surface within the 10-year floodplain.

(e) Computation by a professional engineer of cut, fill and change in water storage capacity resulting from proposed grading.

(f) Soil boring results if available.

(g) If not otherwise subject to the District Erosion Control Rule, an erosion control plan conforming to sections 5, Erosion Control Plan, and 9, Maintenance, of the Erosion Control Rule.

(h) Any project resulting in greater than 50 cubic yards of fill is required to provide an as-built survey upon project completion which documents the location and volume of both fill and compensatory storage.

5. EXCEPTION.

If the 100-year high water elevation of a waterbasin is entirely within a municipality, the waterbasin does not outlet during the 100-year event, and the municipality has adopted a floodplain ordinance prescribing an allowable degree of floodplain encroachment, the ordinance governs the allowable degree of encroachment and no permit is required under this rule.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES § 103D.341

Adopted April 24, 2014
Effective June 6, 2014

WETLAND PROTECTION RULE

1. POLICY. It is the policy of the Board of Managers to:

(a) Achieve no net loss in the quantity, quality and biological diversity of Minnesota's existing wetlands;

(b) Increase the quantity, quality and biological diversity of Minnesota's wetlands by restoring or enhancing diminished or drained wetlands;

(c) Avoid direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of wetlands;

(d) Minimize direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of wetlands;

(e) Rectify the impact of any such activity by repairing, rehabilitating, or restoring the affected wetland environment;

(f) Reduce or eliminate the impact of such activity over time by preservation and maintenance operation during the life of the activity;

(g) Compensate for the impact on the wetlands by restoring a wetland;

(h) Compensate for the impact on the wetlands by replacing or providing substitute wetland resources or environments; and

(i) Promote competent administration of the Wetland Conservation Act (WCA) within the watershed.

2. REGULATION UNDER WCA AND WATERSHED LAW.

The District regulates activity impacting wetlands pursuant to the WCA and the Watershed Law. A permit for activities impacting wetlands or requiring wetland buffers is required as follows:

(a) In municipalities where the District is the local government unit under the WCA, a permit is required from the District for any draining or filling of wetlands, or excavation in the permanently and semipermanently flooded areas of type 3, 4, or 5 wetlands, and in all wetland types if the excavation results in filling, draining, or conversion to nonwetland. The WCA, as amended, and its implementing rules as set forth in Minnesota Rules chapter 8420, as amended, specifically including sequencing requirements and all exemptions, are incorporated as a part of this rule. Work affecting a wetland that qualifies as no-loss under the WCA and work affecting an

incidental wetland, as defined in the WCA, do not require a permit under this rule. Wetland replacement, where permitted, shall comply with section 3, Wetland Replacement, of this rule.

(b) A permit is required from the District pursuant to the excavation and buffer provisions in sections 4, Excavation, and 5, Buffer, of this rule, which are adopted under the District's watershed law authority and apply whether or not the District is the WCA local government unit. Pursuant to this authority and section 4, Excavation, the District requires a permit for excavation in any type of wetland, except where specifically exempted by the WCA or when the work meets no-loss criteria under the WCA. No permit under this rule is required for excavation in an incidental wetland, as defined in the WCA.

3. WETLAND REPLACEMENT.

(a) Project-specific replacement wetland must be sited in the following order of priority, which replaces the siting priority in Minnesota Rules section 8420.0522, subpart 7, as it may be amended:

(1) On site;

(2) Within the same subwatershed as the affected wetland (see Appendix 1);

(3) In the Minnehaha Creek watershed;

(4) In the same eight-digit Hydrologic Unit Code watershed.

(b) Pursuant to Minnesota Rules section 8420.0522, subp.7, as it may be amended, when reasonable, practical and environmentally beneficial replacement opportunities are not available in a siting priority area in subsection 3(a), providing replacement priority areas, the applicant may seek opportunities at the next level. When neither replacement opportunities nor privately banked credits are available in any priority area, the applicant may comply with this section through the purchase of banked credits from the District at the cost to the District to establish credits, so long as the District has determined that sufficient credits are available.

4. EXCAVATION. Excavation in wetlands is subject to the following requirements.

(a) Excavation is governed by the substantive and procedural standards, criteria and requirements set forth in the WCA, as amended, and the rules implementing the WCA as set forth in Minnesota Rules chapter 8420, as amended, including all exemptions, with the exception that replacement for excavation not subject to the WCA shall be at the ratio of 2:1. Excavation in incidental wetland is not subject to the requirements of this section. The priority siting requirements of section 3 of this rule, Wetland Replacement, apply to replacement of excavated wetland under this section.

(b) Excavation of a wetland performed for public benefit, including excavation to remove or control invasive species, shall be deemed self-replacing if the applicant demonstrates that the wetland to be excavated is degraded; the proposed activity would increase the wetland's function and value, as determined using the current version of the Minnesota Routine Assessment Method or other method approved by the District; and the enhanced wetland function and value are likely to be preserved. Excavation must not result in a change of wetland type, unless the applicant demonstrates that public benefit is not obtainable absent such impact.

5. BUFFER.

(a) Any activity for which a permit is required under this Wetland Protection Rule, the Stormwater Management Rule or the District Waterbody Crossings and Structures Rule, and New Principal Residential Structure construction that increases the imperviousness of the subject parcel must provide for buffer adjacent to each wetland and public waters wetland. To the extent the buffer requirement applies to a proposed New Principal Residential Structure, it will be applied in accordance with protections afforded a zoning nonconformity under state law so as not to unduly restrict the proposed action. Buffer must be provided on that part of the wetland edge that is downgradient from the activity or construction and around each wetland that will be disturbed.

(b) Buffer width will be determined in accordance with section 6, Buffer Width, of this rule.

(c) Buffers shall be documented by declaration or other recordable instrument approved by the District and recorded in the office of the county recorder or registrar before activity under the MCWD permit commences. A buffer on public land or right-of-way may be documented in a written agreement executed with the District in place of a recorded instrument. The agreement shall state that if the land containing the buffer is conveyed, the public body shall require the buyer to comply with this subsection.

(d) A permanent wetland buffer monument shall be installed at each lot line where it crosses a wetland buffer, and where needed to indicate the contour of the buffer, with a maximum spacing of 100 feet. Language shall indicate the purpose of the buffer, restrictions, and the name and phone number of the Minnehaha Creek Watershed District. On public land, or right-of-way, the monumentation requirement may be satisfied by the use of a marker flush to the ground or breakaway markers of durable material. At the request of the applicant, the District shall provide wetland buffer monuments at production cost.

6. BUFFER WIDTH.

(a) The Base Buffer Width shall be determined by the management class of the wetland as evaluated by the District's Functional Assessment of Wetlands or by the current version of the Minnesota Routine Assessment Method (MnRAM). Stormwater sensitivity parameters must be analyzed and results included in the evaluation, unless all stormwater flow to wetlands is managed in compliance with the bounce, inundation and runout-elevation control criteria in subsection 8(b) of the District's Stormwater Management Rule.

Management Class	**Base Buffer Width**	**Minimum Applied Buffer Width**
Manage 3	20 feet	16 feet
Manage 2	30 feet	24 feet
Manage 1	40 feet	34 feet
Preserve	75 feet	67 feet

(b) The Applied Buffer Width, the actual width of wetland buffer(s) required for a permitted project, shall be the Base Buffer Width as reduced by beneficial slope or soil conditions pursuant to the following formulas:

(1) For every 5 percent decrease in average buffer slope from 20 percent, the Base Buffer Width may be reduced 2 feet.

(2) For every grade of Hydrologic Soil Group above Type D for the predominant buffer soil condition, the Base Buffer Width may be reduced 2 feet.

Reductions for beneficial slope or soil conditions shall not reduce the buffer width to less than the applicable Minimum Applied Buffer Width.

(c) Buffer width may vary based on demonstrated site constraints, provided that a width of at least 50 percent of the Applied Buffer Width is maintained at all points, there is no reduction in total buffer area, and the buffer provides wetland and habitat protection at least equivalent to a buffer of uniform Applied Buffer Width. Buffer width averaging calculation will exclude any part of the buffer exceeding 200 percent of the Applied Buffer Width. The area of any path or trail allowed in the buffer will be added to the total area required by the Applied Buffer Width, except that construction of a trail or path of no more than 4 feet in width to provide riparian access through the buffer will not increase the required buffer area.

(d) The Applied Buffer Width may be further reduced by the District upon a demonstration by the applicant that the proposed buffer conditions clearly provide function and value equal to or greater than would be provided by a buffer of the applicable Applied Buffer Width, but may not be reduced to less than 50 percent of the applicable Applied Buffer Width.

(e) The Applied Buffer Width for Linear Reconstruction Projects shall be limited to the extent of available right-of-way. A buffer is not required for resurfacing of an existing road, sidewalk or trail that does not increase the area of impervious surface.

(f) The Applied Buffer Width for New Principal Residential Structures shall be limited to 25 percent of the distance between the existing structure at the point that it is nearest to the wetland and the wetland, or 25 feet, whichever is greater, provided that such a buffer shall not exceed the Base Buffer Width, and the buffer shall not render a property unbuildable.

7. WETLAND BUFFER VEGETATION.

(a) Buffer vegetation shall not be cultivated, cropped, pastured, mowed, fertilized, subject to the placement of mulch or yard waste, or otherwise disturbed, except for periodic cutting or burning that promotes the health of the buffer, actions to address disease or invasive species, mowing for purposes of public safety, temporary disturbance for placement or repair of buried utilities, or other actions to maintain or improve buffer quality, each as approved by District staff or when implemented pursuant to a written maintenance plan approved by the District. Pesticides and herbicides may be used in accordance with Minnesota Department of Agriculture rules and guidelines. No new structure or hard surface shall be placed within a buffer, except as provided in paragraph 6(c). No fill, debris or other material shall be excavated from or placed within a buffer.

(b) For public land, right-of-way or property held by a homeowner's association, the applicant may comply with paragraphs 5(d), requiring buffer monumentation, 7(a), vegetation management, and section 10, Wetland Buffer Monitoring, of this rule by demonstrating that the buffer will be maintained in accordance with a written maintenance agreement with the District meeting the buffer monumentation, vegetation management and wetland buffer monitoring requirements in this rule, listing required elements of paragraph 9(h), the Wetland Buffer

Maintenance Plan, including terms describing in detail the location of wetland buffer on the subject property and providing detailed protocols for buffer maintenance.

(c) Buffer areas, or portions thereof, that are not vegetated or will be disturbed by grading or other site activities during construction shall be replanted and maintained according to the following standards:

(1) Soils must be decompacted to a depth of 18 inches and organic matter must be incorporated into soils before revegetation. Decompaction shall be accomplished solely by incorporation of organic matter within the drip line or critical root zone of trees or within 10 feet of underground utilities.

(2) Erosion/sediment control practices, including provisions of sections 5, Erosion Control Plan, and 9, Maintenance, of the District Erosion Control Rule, as appropriate, shall be used during buffer vegetation establishment.

(3) Buffers shall be planted with a native seed mix and/or native plantings approved by the District.

(4) Buffer maintenance and monitoring shall be performed in accordance with section 10, Wetland Buffer Monitoring, of this rule.

8. FINANCIAL ASSURANCE. A performance bond, letter of credit or other financial assurance, consistent with the District Financial Assurance Rule, may be required for any project involving wetland replacement or replanting of wetland buffers. The financial assurance shall be maintained until the monitoring period has ended and District has approved the wetland replacement or establishment of the buffer.

9. REQUIRED EXHIBITS. The following exhibits shall accompany the Combined Joint Notification (CJN) form:

(a) Complete delineation report, in accordance with the guidelines provided by the Board of Water and Soil Resources, for any wetland(s) that will be impacted or require a buffer. The report must be approved by the WCA Local Government Unit (LGU). The report must include a copy of the Notice of Decision for all projects occurring in cities where the District is not the LGU.

(b) Site plan, one set - full size and one set - reduced to a maximum size of 11” x 17”, showing:

(1) Property lines and corners and delineation of lands under ownership of the applicant;

(2) Existing and proposed elevation contours; including the existing runout elevation and flow capacity of the wetland outlet;

(3) Boundaries of all wetlands on the property;

(4) Boundaries of all existing or proposed buffers, along with proposed grading and other disturbance in existing or proposed buffers;

(5) Proposed locations of buffer signage; and

(6) Area of the wetland portion to be filled, drained, or excavated.

(c) Identification and area of the total watershed area presently contributing stormwater runoff to the wetland.

(d) A replacement plan, if required, meeting all the requirements of Minnesota Rules chapter 8420, as amended. Replacement plans for wetland impacts not subject to the WCA must meet these same requirements.

(e) For projects involving wetland excavation (including projects deemed self-replacing under paragraph 4(b)), the application shall identify spoils placement on upland and specify how the deposited materials will be stabilized and vegetated.

(f) Information showing whether the subject wetland is protected by either the State or municipality or both.

(g) Wetland Buffer Planting Plan, if required under section 7, Wetland Buffer Vegetation, including:

(1) Proposed seed mixes and other plant materials to be used;

(2) Seed or plant supplier and origin of materials;

(3) Seed/planting bed preparation (i.e. disking, raking, clearing, herbicide control, topsoiling, etc.);

(4) Seeding and/or planting method (i.e. broadcast, drill, etc.);

(5) Application rate in either pounds of seed per acre and/or the number of plants per unit area if using plugs or seedlings. Specify if using pure live seed (PLS). Higher application rates will be required if not using PLS;

(6) Detailed erosion control plan for establishing wetland buffer.

(h) Wetland Buffer Maintenance Plan, if required under section 7, Wetland Buffer Vegetation, including:

(1) Schedule of establishment and maintenance activities for the first five years of establishment (i.e. watering, burning, mowing, herbicide control, etc.);

(2) Identification of probable invasive species and steps that will be taken to control the spread of invasive species;

(3) Inspection methods and schedule for monitoring invasive species and documenting native species germination and establishment.

10. WETLAND BUFFER MONITORING. For buffer areas required to be established or replaced under subsection 7(c), setting standards for buffer establishment and maintenance:

(a) Upon final establishment, wetland buffers shall contain little or no bare soil and shall exhibit a dominance of native vegetation.

(b) The applicant shall submit to the District an annual Wetland Buffer Inspection Report on or before January 1 of each year for five years. Alternatively, applicants may request that the District perform the Wetland Buffer Inspection and produce the report for a fee equal to the District's actual costs to perform the work.

(1) The applicant may submit a written request to cease annual monitoring by year three if the wetland buffer is well established pending District approval.

(2) If the wetland buffer is poorly established at the end of the five year monitoring period, the District may require continued monitoring and maintenance.

(c) The annual Wetland Buffer Inspection Report shall include:

(1) Site plan showing:

i. Location of permitted buffer area;

ii. Areas of bare soil or erosion;

iii. Areas of invasive vegetation; and

iv. Location and type of any encroachments on the buffer (structures, unapproved mowing, trails, etc.)

(2) Color photos of the wetland buffer taken during the growing season. Vantage points for these photos shall be labeled on the site plan.

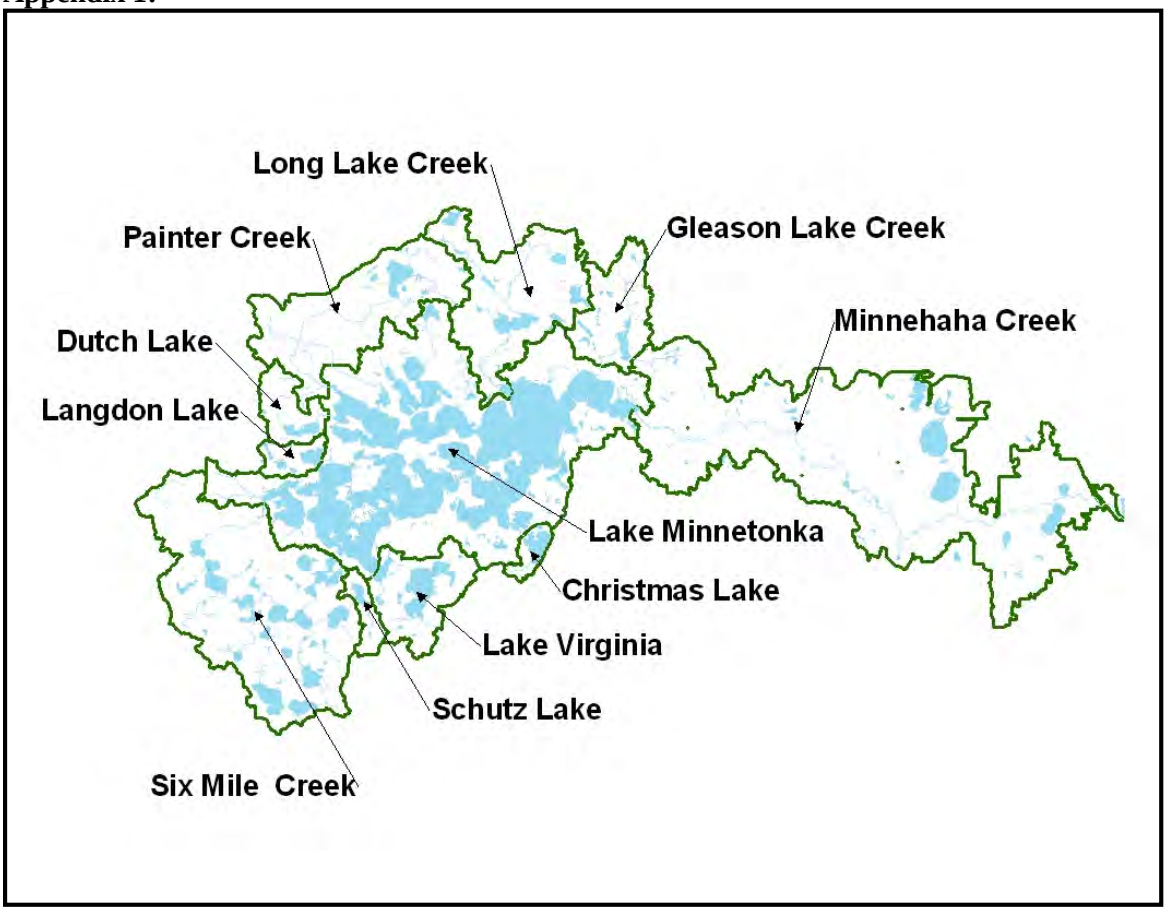
(3) Description of buffer vegetation including:

i. List of dominant plant species and their estimated percent cover.

ii. Comparison of the species present to the approved planting/seeding plan.

(4) A written narrative that identifies the management strategies that will be utilized during the upcoming growing season to manage invasive species, improve percent vegetative cover and species diversity, and mitigate any encroachments on the buffer.

Appendix 1:


Long Lake Creek
Painter Creek
Gleason Lake Creek
Minnehaha Creek
Dutch Lake
Langdon Lake
Lake Minnetonka
Christmas Lake
Lake Virginia
Schutz Lake
Six Mile Creek

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES § 103D.341

Adopted April 24, 2014
Effective June 6, 2014

DREDGING RULE

1. POLICY. It is the policy of the Board of Managers to:

(a) Preserve the natural appearance of shoreline areas; recreational, wildlife and fisheries resources of surface waters; surface water quality and the ecological integrity of the riparian environment;

(b) Protect backwater areas and wetlands adjacent to or hydrologically connected to area lakes, with particular protection of backwater areas and wetlands that have been identified by the District as particularly sensitive to stormwater impacts or as providing valuable vegetative diversity or integrity; wildlife or fish habitat; shoreline protection; or exceptional aesthetic, educational, recreational or cultural features;

(c) Minimize impacts from dredging to the biologically productive and ecologically sensitive littoral zone of water bodies to prevent the deterioration of water quality, the proliferation of invasive species and increased seepage;

(d) Balance the riparian rights of property owners with the public interest in protecting water resources.

2. REGULATIONS. No person shall dredge in the beds, banks or shores of any public water or public waters wetland in the District without first securing a permit from the District, and posting a bond or letter of credit pursuant to the Financial Assurance Rule.

3. GENERAL STANDARDS. All permitted dredging shall comply with the following standards:

(a) A spoil disposal site must be identified and found not to be below the OHW of a public water or public water wetland, wetland subject to the Wetland Conservation Act of 1991, or floodplain and not prone to erosion.

(b) Where there is an identifiable source of sediment under the control of the applicant, the plan shall include remedial action to minimize deposition of sediment into a waterbody or off-site.

(c) Before District review, all dredging proposals that involve navigational access to docking structures shall be submitted to and approved by, in the case of public waters, the Minnesota Department of Natural Resources and, in the case of Lake Minnetonka, the Lake Minnetonka Conservation District. Proposed dredging in Lake Minnetonka is subject to the dredging standards of the DNR, MCWD and LMCD Dredging Joint Policy Statement (April 1993).

(d) The proposed project shall represent the "minimal impact" solution to a specific need with respect to all other reasonable alternatives such as dock extensions, aquatic nuisance plant

removal without dredging, beach sand blankets, excavation above the bed of public water, less extensive dredging in another area of the public water, or management of an alternative water body for the intended purpose. For a project determined by the District to present potential impacts to Preserve wetlands and other ecologically sensitive areas, the applicant must demonstrate that the proposed project is likely to cause minimal ecological impact and that it presents the least ecological impact of all reasonable alternatives.

(e) The dredging shall be limited to the minimum dimensions necessary for achieving the stated purpose.

(f) If the dredging will be accomplished by means of hydraulic dredging the following additional standards will apply:

(1) The spoil disposal site shall have a minimum storage capacity equal to four times the calculated volume of solid material to be removed, and a minimum free board between the top of the projected water surface elevation and the top of the dike of one foot, if no outlet from the spoil disposal site is proposed.

(2) The construction of the spoil containment site shall be with earthen dikes. No such dike shall exceed 5.5 feet in height at any point. Dikes shall have a minimum 4 foot wide top and side slopes of 2:1 (H:V) or flatter. The dikes shall be adequately compacted by traversing with appropriate equipment during construction.

(3) Proposed embankments which differ from the standard in 3(f)(2) shall comply with generally accepted engineering principles and be designed and certified by a professional engineer registered in the State of Minnesota.

(4) Spoil containment sites of limited storage volume which propose a discharge back into a receiving water body through a control structure shall meet applicable State water quality guidelines for the receiving water body. Weekly monitoring of the instantaneous discharge shall be performed and paid for by the applicant. The results shall be promptly forwarded to the District Engineer for comparison to state water quality standards for turbidity and total suspended solids.

(5) A restoration plan prepared by a qualified individual shall show proposed methods of retaining waterborne sediments on site during the period of operation. The plan shall show final grades and how the site will be restored, covered and/or vegetated after construction. Sites with high erosion potential characterized by steep slopes or erodible soils may require a cash deposit or surety to ensure performance and any necessary remedial actions.

4. CRITERIA.

(a) Dredging shall be permitted only:

(1) To maintain, or remove sediment from, an existing public or private channel, not exceeding the original or originally permitted extent of dredging, whichever is less, and subject to such further limitations on method or extent of dredging as this rule may provide;

(2) To implement or maintain an existing legal right of navigational access;

(3) To remove sediment to eliminate a source of nutrients, pollutants, or contaminants;

(4) To improve the public recreational, wildlife, or fisheries resources of surface waters; or

(5) For actions by public entities for public purposes.

(b) In evaluating an application to dredge to maintain or remove sediment from an existing public or private channel, the significance of historic dredging will depend on how recently the original dredging or subsequent maintenance to sustain use took place, the extent of recent use, and the amount and significance of evidence supporting use for the proposed purpose.

(c) In evaluating an application to dredge to create or maintain navigational access, the District will determine whether the navigation sought is reasonable under the circumstances, considering:

(1) The ecological sensitivity or preserve status of any potentially affected water body or wetland;

(2) The size, draft, speed, motorized status and other characteristics of watercraft historically used or proposed to be used in the area proposed to be dredged;

(3) The size, draft, speed, motorized status and other characteristics of watercraft typically moored and used within 200 yards of the area proposed to be dredged;

(4) The size and restrictiveness of existing channels and bridge openings that may affect navigation; and

(5) The availability of alternative means of gaining access, such as extending docks; purchasing, renting or leasing shore moorings; or anchoring watercraft away from shore moorings.

(d) No dredging shall be permitted:

(1) Above the ordinary high water level or into the upland adjacent to the lake or watercourse;

(2) That would enlarge a natural watercourse landward or that would create a channel to connect adjacent backwater areas for navigational purposes;

(3) Where the dredging will alter the natural shoreline of a lake;

(4) Where the dredging might cause increased seepage or result in subsurface drainage;

(5) Where any portion of the dredged area contains any slope steeper than 3:1 (H:V) in a marina or channel, or steeper than 10:1 (H:V) for an area adjoining residential lakeshore; or

(6) Where adverse ecological impact to a preserve wetland or other ecologically sensitive area cannot be minimized.

(7) No dredging in a public water shall occur between April 1st and June 30th. No dredging in any other waterbody shall occur between April 1st and June 30th unless the applicant demonstrates that fish spawning does not occur in the waterbody.

(e) Dredging presenting the conditions identified in 4(d)(1-3) above may be permitted where the project complies with applicable DNR rules.

5. REQUIRED EXHIBITS. The following exhibits shall accompany the permit application. One set - full size; one set - reduced to maximum size of 11"x17".

(a) Site plan showing property lines, delineation of the work area, existing elevation contours of the adjacent upland area, ordinary high water elevation, and 100-year high water elevation (if available). All elevations must be reduced to NGVD (1929 datum).

(b) Profile, cross sections and/or topographic contours showing existing and proposed elevations and proposed side slopes in the work area. (Topographic contours should be at intervals not greater than 1.0 foot.)

(c) In the case of projects using hydraulic means of sediment removal and on-site spoil containment the applicant shall supply:

(1) Cross section of the proposed dike.

(2) Stage/storage volume relationship for the proposed spoil containment area.

(3) Detail of any proposed outlet structure, showing size, description and invert elevation.

(4) Stage/discharge relationship for any proposed outlet structure from the spoil containment area.

(5) Site plan showing the locations of any proposed outlet structure and emergency overflow from the spoil containment area.

(d) Site plan showing the proposed location of floating silt curtains.

(e) Support data:

(1) Description and volume computation of material to be removed.

(2) Description of equipment to be used.

(3) Construction schedule.

(4) Location map of spoil containment area.

(5) Erosion control plan for containment area.
(6) Restoration plan for any proposed permanent on-site spoil containment site showing final grades, removal of control structure, and a description of how and when the site will be restored, covered or revegetated after construction.

(7) Detail of any proposed floating silt curtain including specifications for the silt curtain.

(f) In the case of projects where dredging:

(1) Might cause increased seepage or result in subsurface drainage, or

(2) Will remove sediment to eliminate a source of nutrients, pollutants, or contaminants, a minimum of two soil bearing logs extending at least two feet below the proposed work elevation shall be required.

6. FAST-TRACK PERMIT. A Fast Track permit may be issued by District staff for the removal of accumulated sediment caused by a stormwater outlet. The application otherwise must comply with all provisions of this rule. In addition to the requirements of sections 3, General Standards and 5, Required Exhibits of this rule, the following criteria shall be met:

(a) Authorization shall apply only to removal of sediment identified as non-native material accumulated due to stormwater runoff or erosion.

(b) Dredging shall not materially change the elevation or contour of the bed of the affected basin.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES §103D.341

Adopted April 24, 2014
Effective June 6, 2014

SHORELINE & STREAMBANK STABILIZATION RULE

1. POLICY. It is the policy of the Board of Managers to:

(a) Preserve the natural appearance of shoreline and streambank areas;

(b) Encourage and foster bioengineering, landscaping and preservation of natural vegetation as preferred means of stabilizing shorelines and streambanks;

(c) Assure that improvement of shoreline and streambank areas to prevent erosion complies with accepted engineering principles in conformity with Minnesota Department of Natural Resources construction guidelines; and

(d) Preserve water quality and the ecological integrity of the riparian environment, including wildlife, fisheries, and recreational water resources.

2. REGULATION.

(a) No person shall install an improvement or alteration of the shoreline of a water basin or the bank of a watercourse, including but not limited to a bioengineered installation, riprap, a retaining wall, a sand blanket or a boat ramp, without first securing a permit under this rule and providing a financial assurance pursuant to the District Financial Assurance Rule. Planting of vegetation not intended to provide deep soil structure stability does not require a permit under this rule.

(b) All permit applications submitted under this rule, except applications for maintenance of an existing improvement that has not degraded to a natural state, shall be required to include a detailed erosion intensity calculation of the shoreline or streambank in accordance with section 3, Shoreline Erosion Intensity Calculation (for shorelines), or section 4, Streambank Erosion Intensity Calculation (for streambanks), of this rule.

(c) A permit under this rule is required for maintenance of an existing riprap or otherwise hard-armored shoreline or streambank that involves the addition of new material or structural change to the improvement. No permit under this rule is required for maintenance of an existing shoreline or streambank improvement that involves in-kind replacement or restoration of the improvement in compliance with the criteria in this rule.

(d) A Fast Track permit may be issued for shoreline stabilization projects that conform to the requirements in section 6, Criteria for Stabilization Techniques, of this rule.

(e) Shoreline or streambank stabilization projects that do not utilize a stabilization practice consistent with the erosion intensity calculation shall be required to document compliance with the design flexibility/minimal impact standard in section 5, Design Flexibility. Such projects shall be subject to the public notice requirements of the District Procedural Requirements Rule.

(f) A Fast Track permit may be issued for routine sand blanket projects that conform to the requirements set forth in sections 8, Criteria for Laying Sand blankets, and 9, Sand blankets Required Exhibits, of this rule.

3. SHORELINE EROSION INTENSITY CALCULATION.

(a) Applications for shoreline stabilization shall be required to complete the Erosion Intensity Scoresheet to document the shoreline erosion intensity (low, medium, high). The Erosion Intensity Scoresheet will be maintained and periodically updated to account for changing conditions and improved understanding of shoreline erosion factors and approved by the Board of Managers by resolution. (The current Erosion Intensity Scoresheet may be obtained from the District office or the permitting section of the District website: www.minnehahacreek.org.)

(b) The proposed shoreline stabilization practice shall be consistent with the shoreline erosion intensity calculated (low, medium, high).

(1) Low erosion intensity shorelines shall utilize biological stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.

(2) Medium erosion intensity shorelines shall utilize biological or bioengineering stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.

(3) High erosion intensity shorelines shall utilize biological, bioengineering or structural stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.

4. STREAMBANK EROSION INTENSITY CALCULATION

(a) Applications for streambank stabilization shall be required to complete and report the calculations detailed below to document bank-ful stream velocity and shear stress:

(1) Bankful stream velocity

i. Manning's equation:

$$v = \frac{Q}{A} = \left(\frac{1.49}{n}\right) R^{2/3} S^{1/2}$$

v = Average velocity of flow (feet/sec)
Q = Bankful flow (cubic feet/sec)
A = Area of flow (square feet)
n = Manning's number
R = Hydraulic radius (feet)
S = Slope of channel bottom (rise/run)

(2) Shear stress on the streambank

i. $\tau = d \times \mu \times S$

τ = Shear stress (pounds / square feet)
d = Bankful flow depth (feet)
μ = Unit weight of water (62.4 pounds / cubic feet)
S = Slope of channel bottom (rise/run)

(b) The proposed streambank stabilization practice shall be consistent with the shear stress calculated (low, medium, high).

(1) Low erosion intensity streambanks are those where the shear stress calculated is less than or equal to 2.5 lb per square foot and shall utilize biological stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.

(2) Medium erosion intensity streambanks are those where the shear stress calculated is between 2.5 and 5 lb per square foot and shall utilize biological or bioengineering stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.

(3) High erosion intensity streambanks are those where the shear stress calculated is greater than 5 lb per square foot and shall utilize biological, bioengineering or structural stabilization practices in accordance with section 6, Criteria for Stabilization Techniques, of this rule.

5. DESIGN FLEXIBILITY. Where an applicant believes that, as a result of site specific conditions, the shoreline erosion intensity as calculated in section 3, Shoreline Erosion Intensity Calculation, or the streambank erosion intensity as calculated in section 4, Streambank Erosion Intensity Calculation, may inaccurately predict the degree of erosion, the District may approve alternative stabilization techniques if the applicant provides sufficient evidence to demonstrate that the proposed stabilization practice represents the minimal impact solution with respect to all other reasonable alternatives.

6. CRITERIA FOR STABILIZATION TECHNIQUES.

(a) General criteria:

(1) The District will permit the installation of structural stabilization practices only where there is a demonstrated need to prevent erosion or to restore eroded shoreline/streambank;

(2) Removal of native vegetation within the shoreline/streambank stabilization zone shall be limited in accordance with the following provisions:

i. Clear cutting shall be prohibited except within the access corridor;

ii. Native vegetation shall be preserved outside of the access corridor as much as practicable and, where removed, shall be replaced with other vegetation that is equally effective in retarding runoff and preventing erosion.

(3) Stabilization practices shall be installed at a 3:1 slope or flatter where practical and feasible. Practices proposed at slopes steeper than 2:1 shall be evaluated as retaining walls in accordance with section 10, Criteria for Retaining Walls, of this rule;

(4) Horizontal encroachment from a shoreline shall be the minimum amount needed and shall not interfere unduly with water flow. Under normal conditions, hard armoring inert material, such as riprap, or other fill shall be placed no more than 5 feet waterward of a shoreline, measured from the OHW. The maximum encroachment waterward of the OHW is 10 feet. Encroachment from streambanks shall be minimized to the greatest extent practical to limit hydraulic impacts;

(5) Streambank stabilization shall not reduce the cross sectional area of the channel nor result in a net increase in the flood stage upstream or at the site of the streambank stabilization practice unless it can be demonstrated to not exacerbate existing high-water conditions;

(6) Shoreline/streambank stabilization practices shall conform to the natural alignment of the bank (e.g., maintain an undulating or meandering shoreline/streambank);

(7) The design shall reflect the engineering properties of the underlying soils and any soil corrections or reinforcements. For a shoreline, the design shall conform to engineering principles for dispersion of wave energy and resistance to deformation from ice pressures and movement. For a streambank, design shall conform to engineering principles for the hydraulic behavior of open channel flow;

(8) For sites involving aquatic plantings or aquatic plant removal, a separate Aquatic Plant Management permit shall be obtained from the Department of Natural Resources, when applicable;

(9) Any work below the ordinary high water level shall be encircled by a flotation sediment curtain. The curtain shall be constructed and maintained as illustrated in "Protecting Water Quality in Urban areas – Best Management Practices for Minnesota" (MPCA 2000). The barrier shall be removed upon completion of the work after disturbed sediment has settled;

(10) All shoreline/streambank stabilization applications shall submit the required exhibits as set forth in section 7, Required Exhibits for Shoreline/Streambank Stabilization, of this rule.

(b) Criteria for biological and bioengineering techniques:

(1) Live plantings incorporated into the shoreline or bank shall be native aquatic and/or native upland vegetation known to occur in the North Central Hardwood Forest eco-region of Minnesota (refer to the Minnesota Department of Natural Resources "Lakescaping for Wildlife and Water Quality" and the Minnesota Pollution Control Agency "Plants for Stormwater Design");

(2) Vegetative treatments shall be installed in accordance with the Natural Resource Conservation Service "Engineering Field Handbook Chapter 16";

(3) If wave barriers are utilized, they shall be located within the 3 foot water depth or less and may not create an obstruction to navigation. Wave barriers shall be removed within 2 years of the installation.

(4) Bioengineered stabilization also must comply with the criteria in (c)(1) – (3) and (5).

(c) Criteria for structural stabilization:

(1) Hard armoring inert material, such as riprap, shall be considered wetland fill only if proposed to be placed within an area identified as a wetland;

(2) Riprap shall extend no higher than the top of the bank, or two feet above the 100-year high water elevation, whichever is lower;

(3) Riprap materials shall be durable stone meeting the size and gradation requirements of MnDOT Class III or IV riprap. Toe boulders shall be at least 50 percent buried and may be as large as 30 inches in diameter;

(4) A transitional granular filter meeting requirements of MnDOT 3601.B, at least 6 inches in depth, shall be placed between the native shoreline and the riprap to prevent erosion of fine grained soils. A geotextile filter fabric meeting the requirements of MnDOT 3733 shall be placed beneath the granular filler where appropriate;

(5) Structural stabilization practices, including riprap, are recommended to include plantings between individual boulders or native upland plantings to retard runoff and prevent erosion wherever feasible and practical.

7. REQUIRED EXHIBITS FOR SHORELINE/STREAMBANK STABILIZATION.

(a) Erosion intensity calculations from section 3, Shoreline Erosion Intensity Calculation, or 4, Streambank Erosion Intensity Calculation, of this rule, whichever is applicable, or materials necessary to make the demonstration required in section 5, Design Flexibility.

(b) Photographs of the project site, showing existing conditions.

(c) Site plan showing:

(1) Survey locating the existing ordinary high water (OHW) elevation, existing shoreline or streambank, 100-year high water elevation, and location of property lines;

(2) Elevation contours of the upland within 15 feet of the OHW and referenced to accepted datum;

(3) Location of the shoreline/streambank stabilization zone and access corridor;

(4) Location of existing trees and shrubs within the shoreline/streambank stabilization zone and an indication of whether they are to be removed or retained;

(5) Plan view of locations and lineal footage of the proposed shoreline/bank stabilization treatment; and

(6) The location of an upland baseline parallel to the shoreline/bank with stationing. The baseline shall be staked in the field and maintained in place until project completion. Baseline origin and terminus each shall be referenced to three fixed features, with measurements shown and described on the plan. Perpendicular offsets from the baseline to the OHW shall be measured and distances shown on the plan at 20 foot stations.

(d) Cross section, drawn to scale, with the horizontal and vertical scales noted on the drawing, detailing:

(1) The existing bank, OHW, and 100-year high water elevation;

(2) The proposed stabilization technique, finished slope, and distance lakeward of the OHW;

(3) Material specifications;

(4) Description of the underlying soil materials.

(e) Specification of erosion control and site stabilization practices.

(f) For biological and bioengineering stabilization practices, a Vegetation Establishment Plan, including:

(1) A plant list with common and scientific names, seed mix specifications, quantities and origin of all material; and

(2) Specification of the methods, schedule and party responsible for ensuring establishment and maintenance of the vegetation for the three years following installation or construction. The plan shall include the control of invasive species and replacement of vegetation as necessary.

(g) For bioengineering:

(1) Detail the location of all hard armoring inert material, such as riprap, to be utilized;

(2) Provide a written narrative explaining how the use of hard armoring inert material such as riprap has been minimized to the extent practical and feasible.

(h) For streambank stabilization:

(1) Cross sectional view of stream channel in existing and proposed conditions;

(2) Longitudinal view of stream channel in existing and proposed conditions;

(3) Plan view of stream channel in existing and proposed conditions;

(4) Identification of bankful indicators;

(5) Documentation of existing soils, wetlands, vegetation, slopes, bank and channel material;

(6) Identification of in-stream features such as woody debris, riffles and pools, etc.

(i) For sites involving aquatic plantings or aquatic plant removal, a copy of the Department of Natural Resources Aquatic Plant Management permit application, if required.

8. CRITERIA FOR LAYING SAND BLANKETS. All permitted sand blanketing shall comply with the following standards:

(a) The sand or gravel used must be clean prior to being spread. The sand must contain no toxins or heavy metal, as defined by the Minnesota Department of Natural Resources, and must contain no weed infestations such as, but not limited to, water hyacinth, alligator weed, and Eurasian watermilfoil, or animal life infestations such as, but not limited to, zebra mussels or their larva. Violators will be prosecuted to the full extent of the law.

(b) The sand layer must not exceed six inches in thickness, 50 feet in width along the shoreline, or one-half the width of the lot, whichever is less, and may not extend more than 10 feet waterward of the ordinary high water mark.

(c) Only one installation of sand or gravel to the same location may be made during a four-year period. After the four years have passed since the last blanketing, the location may receive another sand blanket. No more than two applications may be made at an individual project site.

(d) Exception. Beaches which are operated by governmental entities and available to the public shall be maintained in a manner that represents the minimal impact to the environment, relative to other reasonable alternatives, and but otherwise are exempt from the criteria in paragraphs (b) and (c) of this section.

9. SAND BLANKET REQUIRED EXHIBITS. The following exhibits shall accompany the sand blanket permit application:

(a) Site plan showing property lines, delineation of the work area, existing elevation contours of the adjacent upland area, ordinary high water elevation, and 100-year high water elevation (if available). All elevations must be reduced to NGVD (1929 datum).

(b) Profile, cross sections and/or topographic contours showing existing and proposed elevations in the work area. (Topographic contours should be at intervals not greater than 1.0 foot).

(c) A completed Sand blanket Permit Application form, available from the District.

10. CRITERIA FOR RETAINING WALLS.

(a) A new retaining wall, or repair/reconstruction of an existing retaining wall that increases floodplain encroachment beyond that required by technically sound and accepted repair/reconstruction methods, is permitted only pursuant to a variance or an exception under the District Variance Rule. The applicant must demonstrate that there is no adequate stabilization alternative.

(b) Wooden seawalls and/or steel sheetpiling retaining walls shall comply with accepted engineering principles.

(c) The applicant shall submit a structural analysis prepared by a professional engineer registered in the State of Minnesota, in the practice of civil engineering, showing that the wall will withstand expected ice and wave action and earth pressures.

(d) The applicant shall submit a survey prepared by a registered land surveyor locating the finished wall and shall file a certificate of survey with the District.

11. CRITERIA FOR OTHER SHORELINE IMPROVEMENTS. Other shoreline improvements, such as boat ramps, shall comply with accepted engineering principles as follows:

(a) Boat ramps and other similar improvements shall not be allowed in riparian shoreline areas unless the applicant demonstrates that no feasible alternative riparian access is available, that aquatic habitat and water quality impacts are minimized;

(b) Installation of boat ramps shall involve placement of no more than 50 cubic yards of inert and clean material, and the maximum width of shoreline disturbance shall be 15 feet unless the facility is a commercial marina or public launch facility that requires a greater width; and

(c) Materials utilized for construction of boat ramps or other similar improvements shall be safe and cause no adverse environmental impacts; the improvement shall be of sound design and construction so that the improvement is reasonably expected to be safe and effective.

MINNEHAHA CREEK WATERSHED DISTRICT
BOARD OF MANAGERS

REVISIONS
PURSUANT TO MINNESOTA STATUTES § 103D.341

Adopted April 24, 2014
Effective June 6, 2014

STORMWATER MANAGEMENT RULE

1. POLICY. It is the policy of the Board of Managers to:

(a) Promote abstraction of precipitation and stormwater runoff where feasible for the purposes of improving water quality, increasing groundwater recharge, reducing flooding, and promoting the health of native and designed plant communities and landscapes;

(b) Preserve, maintain and improve the aesthetic, physical, chemical and biological composition of surface waters and groundwater within the District;

(c) Limit or reduce stormwater runoff from drainage within the watershed to decrease the negative effects of land-disturbing activities on surface water quality and flooding;

(d) Protect and maintain existing groundwater flow, promote groundwater recharge and improve groundwater quality and aquifer protection;

(e) Promote the preservation and use of native vegetation for the purpose of stormwater runoff abstraction and pollutant load reduction;

(f) Promote nondegradation of water quality from new development and improvement in water quality from redevelopment; and

(g) Promote the management of stormwater on site for the purposes of providing local groundwater recharge and maintaining natural hydrology.

2. REGULATION. No one may create new or replace existing impervious surface or change the contours of a parcel of land in a way that affects the direction, peak rate, volume, or water quality of runoff flows from the parcel or subdivide a parcel of one acre or more in size into three or more lots without first submitting a stormwater management plan to the District and securing a permit from the District approving the plan. New development is subject to sections 3 and 7-11 below (see Table 2). Redevelopment is subject to sections 3-5 and 7-11 below (see Tables 3 and 4). Subdivision of land is subject to section 3-5 and 7-11, as applicable. Linear Transportation Projects are subject to sections 3 and 6-11 below (see Table 5).

Activity subject to this rule on adjacent sites under common or related ownership shall be considered in the aggregate, and the requirements applicable to the activity under this rule will be

determined with respect to all development that has occurred on a site, or on adjacent sites under common or related ownership, since the date this rule took effect (January 2005).

The following activities are exempt from this rule:

(a) SINGLE FAMILY HOMES: Construction or reconstruction of a single- family home.

(b) NEW DEVELOPMENT: New development for a residential, commercial, industrial or institutional use (see Table 2):

(1) that will result in less than 20 percent impervious surface over the site; or

(2) on a site of less than one acre.

(c) REDEVELOPMENT: Redevelopment for a residential, commercial, industrial or institutional use (see Table 3):

(1) on a site that is less than five acres in size that will result in at least a ten percent reduction in impervious surface; or

(2) on a site of five acres or greater where the proposed activity disturbs less than 40 percent of the site and results in at least a ten percent reduction in impervious surface.

(d) LINEAR TRANSPORTATION PROJECTS: Construction of a new or reconstruction of an existing road, trail, sidewalk, utility, or other linear transportation project (see Table 5):

(1) that will create less than 10,000 square feet of new impervious surface; or

(2) for the construction of sidewalks and trails that will not exceed 12 feet in width and will be bordered on the downgradient side(s) by a pervious buffer averaging at least one-half the width of the sidewalk or trail.

3. STORMWATER MANAGEMENT PLAN GENERAL REQUIREMENTS. A stormwater management plan submitted to the District must meet the following requirements, subject to the provisions in sections 4-8:

(a) PHOSPHORUS CONTROL.

(1) NEW DEVELOPMENT/LINEAR TRANSPORTATION PROJECTS: Activity subject to this rule for new development or linear transportation projects shall result in no net increase in phosphorus loading from existing conditions, except that:

i. For a parcel in existing use for row crop agriculture or feedlot, new development shall result in no net increase in phosphorus loading from the site as modeled in meadow condition.

(2) REDEVELOPMENT: Phosphorus control must be provided in accordance with subsection 3(c)(2), where applicable.

(b) RATE CONTROL.

(1) Activity subject to this rule shall result in no net increase in the peak runoff rate for the 1-, 10- and 100-year design storms where stormwater discharges across the downgradient site boundary, compared to the rate for the site in its existing condition, except that:

i. For a parcel in use for row crop agriculture or feedlot, new development shall result in no net increase in the peak runoff rate from the site as modeled in meadow condition.

(2) Peak runoff rates for the 1-, 10- and 100-year design storms may not increase within a specific drainage area of the site so as to create or exacerbate drainage or erosion problems.

(c) VOLUME CONTROL.

(1) The stormwater management plan must provide for the abstraction of the first one inch of rainfall from the site's impervious surface. Credit toward compliance with the one inch volume control standard will be calculated by the applicant using industry accepted hydrologic models and Appendix A: Volume Abstraction Credit Schedule, following guidance provided in the Minnesota Pollution Control Agency's *Minnesota Stormwater Manual*.

(2) Where an applicant demonstrates that it is infeasible to meet the one inch abstraction requirement through use of volume control credits pursuant to subsection 3(c)(1), the stormwater management plan must provide for abstraction of runoff to the greatest extent feasible, and at least 0.5 inches, and phosphorus control in an amount equivalent to that which would be achieved through abstraction of one inch of rainfall from the site's impervious surfaces. To demonstrate infeasibility of providing abstraction pursuant to 3(c)(1), the applicant must submit a completed Abstraction Analysis containing at a minimum the following information:

i. A narrative that lists and explains the variables that limit the feasibility of providing one inch of volume control for runoff from the site's impervious surface. These variables may include but are not limited to unified soil classification, soil contamination, proximity to bedrock,

proximity to groundwater, proximity to existing utilities, spatial constraints, zoning requirements, and financial considerations.

ii. A narrative and conceptual plan(s) that describes and discusses how reasonable modifications to the size, scope, configuration or density of the project would influence the feasibility of providing one inch of volume control for runoff from the sites impervious surface.

iii. An explanation of efforts undertaken by the applicant to accommodate or remove the constraints that influence the feasibility of providing one inch of volume control for runoff from the site's impervious surface.

(3) The volume of runoff draining to a landlocked receiving area may not increase due to a project unless the applicant can demonstrate that any additional runoff volume from the project will be effectively abstracted. In addition, the applicant shall either own or have proper rights over the landlocked property receiving runoff from the project area. Back-to-back 100-year runoff events will be used to analyze holding capacity and high-water elevation for landlocked areas.

(d) BEST MANAGEMENT PRACTICES (BMPs).

(1) BMPs addressing the potential water resource impacts associated with the proposed activity must be incorporated to limit creation of impervious surface, maintain or enhance on-site infiltration and peak flow control and limit pollutant generation on and discharge from the site. BMPs may include site design, structural and non-structural practices.

(2) BMPs must be designed and installed in accordance with generally accepted design practices and guidance contained in the Minnesota Pollution Control Agency's *Minnesota Stormwater Manual* and its subsequent revisions.

(e) HIGH WATER ELEVATION.

(1) All applications shall provide at least two vertical feet of separation between low openings of structures and the 100-year high water elevations of stormwater BMPs and waterbodies.

4. REDEVELOPMENT REQUIREMENTS – DECREASE OR NO CHANGE IN IMPERVIOUS SURFACE. A stormwater management plan submitted to the District that proposes through redevelopment to decrease or result in no net increase in impervious surface must meet the following requirements (see Table 3):

(a) For sites that are one acre or less, Best Management Practices are required in accordance with subsection 3(d);

(b) For sites that are between one acre and five acres and the proposed activity disturbs less than 40 percent of the site, Best Management Practices are required in accordance with subsection 3(d);

(c) For sites that are between one acre and five acres and the proposed activity disturbs 40 percent or more of the site, the stormwater management plan must meet the volume control requirement in subsection 3(c) and the phosphorus control requirement in subsection 3(a)(2), where applicable;

(d) For sites that are greater than five acres and the proposed activity disturbs less than 40 percent of the site, Best Management Practices are required in accordance with subsection 3(d);

(e) For sites that are greater than five acres and the proposed activity disturbs 40 percent or more of the site, the stormwater management plan must meet the volume control requirement in subsection 3(c) and the phosphorus control requirement in subsection 3(a)(2), where applicable.

5. REDEVELOPMENT REQUIREMENTS – INCREASED IMPERVIOUS SURFACE. A stormwater management plan submitted to the District that proposes to increase impervious surface through redevelopment must meet the following requirements (see Table 4):

(a) For sites that are one acre or less, Best Management Practices are required in accordance with subsection 3(d);

(b) For sites that are greater than one acre and the proposed activity disturbs less than 40 percent of the site and results in an increase in impervious surface of less than 50 percent, the phosphorus control requirements of subsection 3 (a), rate control requirements of subsection 3(b) and volume control requirements of subsection 3(c) apply to the area of increased impervious surface;

(c) For sites that are greater than one acre and the proposed activity disturbs 40 percent or more of the site, or results in an increase in impervious surface of 50 percent or more, the phosphorus control requirements of subsection 3(a), rate control requirements of subsection 3(b), and volume control requirements of subsection 3(c) apply to the entire site.

6. LINEAR TRANSPORTATION PROJECT REQUIREMENTS (see Table 5).

(a) The construction of a new road, trail, sidewalk, utility, or other linear transportation project that will create 10,000 square feet or more of impervious surface must meet the phosphorus control requirements in accordance with subsection 3(a), rate control requirements in accordance with subsection 3(b) and volume control requirements in accordance with subsection 3(c);

(b) Linear Reconstruction Projects that will increase the impervious area within the project limits by between 10,000 square feet and one acre from existing conditions must meet the phosphorus control requirements in accordance with subsection 3(a) and rate control requirements in accordance with subsection 3(b) for the area of increased impervious surface;

(c) Linear Reconstruction Projects that will increase the impervious area within the project limits by one acre or more from existing conditions must meet the phosphorus control requirements in accordance with subsection 3(a), rate control requirements in accordance with subsection 3(b), and volume control requirements in accordance with subsection 3(c) for the area of increased impervious surface.

7. REGIONAL STORMWATER MANAGEMENT.

(a) An applicant may comply with this rule by providing equal or greater phosphorus control, rate control, or volume control through a regional or subwatershed plan approved by the District; such a plan must provide for an annual accounting to the District of treatment capacity created and utilized by projects or land-disturbing activities within the drainage and treatment area of the plan.

(b) District approval of a regional or subwatershed plan will be based on a determination that:

(1) the use of a regional facility in place of onsite stormwater management will not result in adverse impacts to local groundwater or natural resources located upstream of the regional facility, including, but not limited to, reduced water quality, altered wetland hydrology, changes to stream velocities or baseflow, erosion, or reduced groundwater recharge; and

(2) the plan incorporates onsite BMPs as necessary to mitigate impacts and provide local benefits not provided by the regional facility.

(c) Individual project sites utilizing a regional facility to meet phosphorus, rate, or volume control requirements must incorporate BMPs on the project site in accordance with subsection 3(d).

(d) The applicant, before commencing any land-altering activity, must demonstrate that it holds the legal rights necessary to discharge to the stormwater facility or facilities in the plan, and that the facility or facilities are subject to a maintenance document satisfying the requirements of section 11.

8. IMPACT ON DOWNSTREAM WATERBODIES.

(a) No new point source may discharge to a waterbody without pretreatment for sediment and nutrient removal. Pretreatment may be provided by non-structural means. An activity changing flow that discharges from an existing point source is not a new point source.

(b) No activity subject to this rule may alter a site in a manner that results in a(n):

(1) Increase in the bounce in water level for any downstream lake or wetland beyond the limits specified in Table 1 below based on management classification, during a rainfall event of critical duration with a return frequency of 1, 10, or 100 years.

(2) Increase in the duration of inundation for any downstream lake or wetland beyond the limits specified in Table 1 below based on management classification, during a precipitation event of critical duration with a return frequency of 1, 10, or 100 years.

(3) Change in the elevation of the runout control of any lake or wetland beyond the limits specified in Table 1 below based on management classification.

Table 1: Impacts on downstream waterbodies

Wetland Management Class/ Waterbody	**Permitted Bounce for 1-, 10-, and 100-Year Event**	**Inundation Period for 1-Year Event**	**Inundation Period for 10- and 100-Year Event**	**Runout Control Elevation**
Preserve	Existing	Existing	Existing	No change
Manage 1	Existing plus 0.5 feet	Existing plus 1 day	Existing plus 2 days	No change
Manage 2	Existing plus 1.0 feet	Existing plus 2 days	Existing plus 14 days	0 to 1.0 ft above existing runout
Manage 3	No limit	Existing plus 7 days	Existing plus 21 days	0 to 4.0 ft above existing runout
Lakes	Existing	N/A	N/A	No change

9. FINANCIAL ASSURANCE.

(a) A performance bond, letter of credit or other financial assurance, consistent with the District Financial Assurance Rule, may be required for any project that requires the installation of stormwater best management practices. The financial assurance shall be maintained until the stormwater best management practice has been constructed and stabilized in accordance with District rules and as shown on a set of as built drawings submitted to the District.

10. REQUIRED EXHIBITS.

(a) Plans certified by a professional engineer registered in the State of Minnesota and reflecting the following items shall accompany the permit application (one set of plans must be full size; one set must be reduced to a maximum size of 11" x 17"; provide electronic ArcGIS or CADD files when available):

(1) Property lines and delineation of lands under ownership of the applicant.

(2) Delineation of the subwatershed contributing runoff from off-site and proposed and existing subwatersheds on-site.

(3) Proposed and existing locations, alignments, and elevations of stormwater facilities.

(4) Delineation of existing on-site wetland, shoreland, and/or floodplain areas.

(5) Existing and proposed normal, and 100 year high water elevations on-site.

(6) Existing and proposed site contour elevations at two foot intervals, related to National Geodetic Vertical Datum (NGVD), 1929 datum.

(7) Construction plans and specifications for all proposed stormwater management facilities.

(8) Stormwater runoff volume and rate analyses for the 1-, 10- and 100- year design storms for existing and proposed conditions.

(9) All hydrologic, water quality, and hydraulic computations completed to design the proposed stormwater management facilities including runoff volume abstractions.

(10) Delineation of any flowage easements or other property interests dedicated to stormwater management purposes, including, but not limited to, county or judicial ditches.

(b) For applications proposing infiltration, a soil sampling plan and the resulting identification, description, permeability, and approximate delineation of site soils. Investigation methods shall include soil pits or hand augers. Borings at the location of the infiltration facility must extend at least five feet deeper than the proposed bottom elevation of the infiltration facility.

(c) For applications proposing tree preservation or planting, a site map showing existing trees larger than six inches in diameter, including species, diameter, and associated drip lines (canopy area). Tree map must designate trees to be removed and trees to be added.

(d) For applications proposing soil amendments, a soil amendment plan following guidance from the Minnesota Pollution Control Agency's *Minnesota Stormwater Manual*.

(e) For applications proposing capture and reuse, an operating plan and calculations that quantify the benefits of the proposed stormwater reuse system.

(f) Documentation indicating conformance with an existing municipal stormwater management plan. When a municipal plan does not exist, documentation that the municipality has reviewed the project.

(g) Documentation that the applicant has applied for a National Pollutant Discharge Elimination System (NPDES) Permit if required by the Minnesota Pollution Control Agency (MPCA).

(h) Abstraction analysis (if applicable) in accordance with subsection 3(c)(2).

(i) A declaration and maintenance agreement in conformance with section 11.

11. MAINTENANCE.

(a) All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. Permit applicants must provide a maintenance plan that identifies and protects the design, capacity and functionality of onsite and offsite stormwater management facilities; specifies the methods, schedule and responsible parties for maintenance; provides for the maintenance in perpetuity of the facility; and contains at a minimum the requirements in the District's standard maintenance declaration. The plan will be recorded on the deed in a form acceptable to the District. A public entity assuming the maintenance obligation may do so by filing with the District a document signed by an official with authority.

Table 2: Stormwater management requirements for new development

Site Size	Impervious Surface	Requirements
< 1 acre	N/A	None
≥ 1 acre	< 20% of site	None
	≥ 20% of site	Phosphorus Control, Rate Control, and Volume Control

Table 3: Stormwater management requirements for redevelopment resulting in a decrease or no change in impervious surface

Site Size	Site Disturbance	Impervious Surface Reduction	Requirements
≤ 1 acre	N/A	10% reduction in impervious surface	None
		0 - 9% reduction in impervious surface	Incorporate BMPs
> 1 acre - ≤ 5 acres	< 40% site disturbance	10% reduction in impervious surface	None
		0 - 9% reduction in impervious surface	Incorporate BMPs
	≥ 40% site disturbance	10% reduction in impervious surface	None
		0 - 9% reduction in impervious surface	Volume control required for site's impervious surface
> 5 acres	< 40% site disturbance	10% reduction in impervious surface	None
		0 - 9% reduction in impervious surface	Incorporate BMPs
	≥ 40% site disturbance	N/A	Volume control required for site's impervious surface

Table 4: Stormwater management requirements for redevelopment resulting in an increase in impervious surface

Site Size	Site Disturbance	Impervious Surface Increase	Requirements	Treatment Scope
≤ 1 acre	N/A	N/A	Incorporate BMPs	N/A
> 1 acre	< 40% site disturbance	< 50% increase in impervious surface	Phosphorus Control, Rate Control, and Volume Control	Additional impervious surface
		≥ 50% increase in impervious surface		Entire site's impervious surface
	≥ 40% site disturbance	N/A	Phosphorus Control, Rate Control, and Volume Control	Entire site's impervious surface

Table 5: Stormwater management requirements for linear transportation projects

Project Type	Impervious Surface Increase	Requirements	Treatment Scope
New Linear Transportation Project	< 10,000 square feet	None	N/A
	≥ 10,000 square feet	Phosphorus Control, Rate Control, and Volume Control	New impervious surface
Linear Reconstruction Project	< 10,000 square feet	None	N/A
	≥ 10,000 square feet and < 1 acre	Phosphorus Control and Rate Control	Additional impervious surface
	≥ 1 acre	Phosphorus Control, Rate Control, and Volume Control	Additional impervious surface

APPENDIX A:
MCWD Volume Abstraction Credit Schedule

Practice	Design Guidance	Credit	Calculation Methods
Surface Infiltration Basin	*Minnesota Stormwater Manual*	Volume provided	AV[1] = Volume below overflow elevation [2]
Underground Infiltration Trench	*Minnesota Stormwater Manual*	Void volume provided	AV = Volume below overflow elevation [2]
Preservation of tree(s)	Not Applicable	Percent interception by species	AV = % Interception [3] * tree canopy area [4] * 1 inch rainfall
Planting of New Tree(s)	Not Applicable	One-half percent interception by species [5]	AV = 0.5 * % Interception [3] * tree canopy area [4] * 1 inch rainfall
Soil Amendment(s)	*Minnesota Stormwater Manual*	0.5-inch credit over the area of soil amendment area [6]	AV = 0.5/12 * area of soil amendment
Capture and Reuse of Stormwater	Submit pump design plans and hydrologic calculations	Volume capacity to capture and reuse runoff from a 1-inch rainfall event	Submit operating plan and calculations for reuse system to document annual volume reuse during dry, wet, and average years
Enhancement of Pervious Area [7] (wetland buffers, forest or prairie conservation or restoration)	Submit vegetation planting and maintenance plan	0.5-inch credit over the area of enhancement [8]	AV = 0.5/12 * area of enhancement
Filtration	*Minnesota Stormwater Manual*	50% volume abstraction credit [9]	AV = 0.5 * Volume below overflow elevation (filtered volume is not considered)

(1) AV = Abstraction Volume
(2) Volume infiltrated during a rainfall event shall not be credited towards the abstraction volume requirement. This is a simple approach for designers and for reviewers to verify conformance to the standard; a stormwater model is not needed for calculations. This is a conservative assumption because infiltration of stormwater in Minnesota is an evolving practice. MCWD will continue to research current trends, collect and analyze monitoring data, and utilize modeling and engineering methods to assess the effectiveness of the standards to achieve the water quality goals of the District.
(3) Percent rainfall interception shall be determined using results from the *City of Minneapolis, Minnesota Municipal Tree Resource Analysis*. Percentages for the species studied are listed below. If desired tree species is not listed, the applicant shall use the median value provided below or provide documentation by a certified arborist to support a different percent interception.

Average Percent Rainfall Interception by Tree Species

Species	Average Percent Rainfall Interception
Green Ash	13
Sugar Maple	8
Norway Maple	8
Littleleaf Linden	12
American Elm	18
Honeylocust	6
American Basswood	10
Northern Hackberry	6
Ginkgo	4
Silver Maple	16
Elm	21
White Ash	10
Basswood	14
Red Maple	7
Median	10

(4) Tree canopy area must be documented as part of the permit application submittal.
(5) Granting ½ credit for new trees is intended to encourage preservation of trees over tree removal and replacement.
(6) For SCS TR-55 cover type "open space (lawns)," compacted soil (HSG C, curve number 74) begins to generate runoff with a 0.9-inch rainfall. A HSG B soil (curve number 61) begins to generate runoff with a 1.5-inch rainfall. Therefore, preserving the infiltration capacity of HSG B soil through the use of soil amendments yields an approximate 0.5-inch volume reduction credit.
(7) Area shall not be subject to motorized vehicle, bicycle, or likely human foot traffic (i.e., parking lot islands, conventional landscaping).
(8) For SCS TR-55 cover type "herbaceous mixture," additional rainfall of approximately 0.5 inches generates no runoff if the hydrologic condition is improved from "fair" to "good." Credit will not be granted for "tree preservation" and "enhancement of pervious area." The applicant must designate the desired abstraction practice.
(9) The *Minnesota Stormwater Manual* reports that nutrient removal (total phosphorus) is approximately half as effective for filtration as infiltration.

Pioneer-Sarah Creek
Watershed Management Commission

Rules and Standards

Adopted: March 4, 2015

Effective: June 1, 2015

PIONEER-SARAH CREEK
WATERSHED MANAGEMENT COMMISSION
RULES AND STANDARDS

POLICY STATEMENT

The Pioneer-Sarah Creek Watershed Management Commission is a Joint Powers Association of the State under the Minnesota Watershed Act, and a watershed management organization as defined in the Metropolitan Surface Water Management Act. These acts provide the Commission with power to accomplish its statutory purpose: the conservation, protection, and management of water resources in the boundaries of the watershed through sound scientific principles. The Commission has adopted a water resources management plan pursuant to the Acts. These Rules implement the plan's principles and objectives.

Land alteration and utilization can affect the rate and volume and degrade the quality of surface water runoff. Sedimentation from ongoing erosion and construction activities can reduce hydraulic capacity of waterbodies and degrade water quality. Water quality problems already exist in many waterbodies in the watershed. Most of these waterbodies have been designated by the State of Minnesota as Impaired Waters, and do not meet state water quality standards.

Activities that increase the rate or volume of stormwater runoff will aggravate existing flooding problems and contribute to new ones. Activities that degrade runoff quality will cause quality problems in receiving water. Activities that fill floodplain or wetland areas will reduce flood storage and hydraulic capacity of waterbodies, and will degrade water quality by eliminating the filtering capacity of such areas.

These Rules and Standards protect the public health, welfare, and natural resources of the watershed by regulating the alteration of land and waters in the watershed to 1) reduce the severity and frequency of high water, 2) preserve floodplain and wetland storage capacity, 3) improve the chemical and physical quality of surface waters, 4) reduce sedimentation, 5) preserve the hydraulic and navigational capacities of waterbodies, 6) promote and preserve natural infiltration areas, and 7) preserve natural shoreline features. In addition to protecting natural resources, these Rules and Standards are intended to minimize future public expenditures on problems caused by land and water alterations.

RELATIONSHIP WITH MUNICIPALITIES AND COUNTY

The Commission recognizes that the control and determination of appropriate land use is the responsibility of the municipalities. The Commission will review projects involving land-disturbing activities in accordance with these Rules and Standards. The Commission intends to be active in the regulatory process to ensure that water resources are managed in accordance with its goals and policies.

The Commission desires to provide technical advice to the municipalities in the preparation of local stormwater management plans and the review of projects that may affect water resources prior to investment of significant public or private funds.

RULE A. DEFINITIONS

For the purposes of these Rules, unless the context otherwise requires, the following words and terms shall have the meanings set forth below. References in these Rules to specific sections of the Minnesota Statutes or Rules include amendments, revisions or recodifications of such sections. The words "shall" and "must" are mandatory; the word "may" is permissive.

100 Year Event. The rainfall depth with a 1 percent chance of occurring in a given year.

Abstraction. Removal of stormwater from runoff, by such methods as infiltration, evaporation, transpiration by vegetation, and capture and reuse, such as capturing runoff for use as irrigation water.

Agricultural Activity. The use of land for the production of agronomic, horticultural or silvicultural crops, including dairy animals, food animals, nursery stock, sod, fruits, vegetables, flowers, cover crops, grains, Christmas trees, and for grazing.

Alteration or Alter. When used in connection with public waters or wetlands, any activity that will change or diminish the course, current, or cross-section of public waters or wetlands.

Applicant. Any person or political subdivision that submits an application to the Commission for a project review under these Rules.

Best Management Practices (BMPs). Techniques proven to be effective in controlling runoff, erosion and sedimentation including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR 1988), Protecting Water Quality in Urban Areas (MPCA 2000), and the Minnesota Stormwater Manual (MPCA 2005) as revised.

Biofiltration. Using living material to capture and/or biologically degrade or process pollutants prior to discharging stormwater, such as directing runoff through a vegetated buffer or to a rain garden or vegetated basin with an underdrain.

Bioretention. A terrestrial-based (upland, as opposed to wetland) water quality and water quantity control process. Bioretention employs a simplistic, site-integrated design that provides opportunity for runoff infiltration, filtration, storage and water uptake by vegetation.

Buffer Strip. An area of natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse or wetland.

BWSR. The Minnesota Board of Water and Soil Resources.

Commission. The Pioneer-Sarah Creek Watershed Management Commission.

Commissioners. The Board of Commissioners of the Pioneer-Sarah Creek Watershed Management Commission.

Compensatory Storage. Excavated volume of material below the floodplain elevation required to offset floodplain fill.

County. Hennepin County, Minnesota.

Dead Storage. The permanent pool volume of a water basin or the volume below the runout elevation of a water basin.

Detention Basin. Any natural or manmade depression for the temporary storage of runoff.

Development. Any proposal to subdivide land, any land-disturbing activity or creation of impervious surface.

Directly Connected Impervious Surface. Any hard surface (rooftop, driveway, sidewalk, roadway, etc.) from which runoff is not subject to loss beyond initial abstraction before being routed to the downstream collection and conveyance system.

Disturbance. See Land Disturbing Activity.

Drain or Drainage. Any method for removing or diverting water from waterbodies, including excavation of an open ditch, installation of subsurface drainage tile, filling, diking, or pumping.

Erosion. The wearing away of the ground surface as a result of wind, flowing water, ice movement, or land disturbing activities.

Erosion and Sediment Control Plan. A plan of BMPs or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities in accordance with the standards set forth in these Rules.

Excavation. The artificial removal of soil or other earth material.

Fill. The deposit of soil or other material by artificial means.

Filtration. A process by which stormwater runoff is captured, temporarily stored, and routed through a filter bed to improve water quality and slow down stormwater runoff.

Floodplain. The area adjacent to a waterbody that is inundated during a 1% chance (100-year) flood, as defined by the FEMA Flood Insurance Study for the member City.

Impaired Water. A waterbody that does not meet state water quality standards and that has been included on the MPCA Section 303(d) list of Impaired Waters of the state.

Impervious Surface. A surface compacted or covered with material so as to be highly resistant to infiltration by runoff. Impervious surface shall include roads, driveways and parking areas, whether or not paved, sidewalks greater than 3 feet wide, patios, tennis and basketball courts, swimming pools, covered decks and other structures. Open decks with joints at least ¼ inch wide, areas beneath overhangs less than 2 feet wide, and sidewalks 3 feet or less wide shall not constitute impervious surfaces under these Rules.

Infiltration. The passage of water into the ground through the soil.

Infiltration Area. Natural or constructed depression located in permeable soils that capture, store and infiltrate the volume of stormwater runoff associated with a particular design event.

Interested Party. A person or political subdivision with an interest in the pending subject matter.

Land Disturbing Activity. Any change of the land surface to include removing vegetative cover, excavation, fill, grading, and the construction of any structure that may cause or contribute to erosion or the movement of sediment into waterbodies. The use of land for agricultural activities, or improvements such as mill an overlay or concrete rehabilitation projects that do not disturb the underlying soil, shall not constitute a land disturbing activity under these Rules.

Landlocked Basin. A basin that is 1 acre or more in size and does not have a natural outlet at or below the 1% chance (100-year) flood elevation as determined by the 1% chance (100-year), 10-day runoff event.

Low Floor. The finished surface of the lowest floor of a structure.

Member City. Any city wholly or partly within the Commission's boundary that has executed the Joint Powers Agreement.

MnDOT. The Minnesota Department of Transportation.

MPCA. The Minnesota Pollution Control Agency.

Municipality. Any city wholly or partly within the Commission's boundary.

NPDES. National Pollutant Discharge Elimination System.

NURP. The Nationwide Urban Runoff Program developed by the Environmental Protection Agency to study stormwater runoff from urban development.

Ordinary High Water Level (OHW). The elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape,

commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the OHW level is the elevation of the top of the bank of the channel. If an OHW has been established for a waterbody by the Minnesota Department of Natural Resources, that will constitute the OHW under this definition.

Owner. The owner of a parcel of land or the purchaser under a contract for deed.
Parcel. A parcel of land designated by plat, metes, and bounds, registered land survey, auditor's subdivision, or other accepted means and separated from other parcels or portions by its designation.

Person. Any individual, trustee, partnership, unincorporated association, limited liability company or corporation.

Political Subdivision. A municipality, county or other political division, agency or subdivision of the state.

Project. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Public Health and General Welfare. Defined in Minnesota Statutes, Section 103D.011, Subdivisions 23 and 24.

Public Waters. Any waters as defined in Minnesota Statutes, Section 103G.005, Subdivision 15.

Public Waters Wetland. Any wetland as defined in Minnesota Statutes, Section 103G.005, Subdivision 15a.

Redevelopment. Any proposal to re-subdivide land, or any land-disturbing activity or addition of impervious surface to a developed site.

Runoff. Rainfall, snowmelt or irrigation water flowing over the ground surface.

Sediment. Soil or other surficial material transported by surface water as a product of erosion.

Sedimentation. The process or action of depositing sediment.

Shoreland Protection Zone. Land located within a floodplain or within 1,000 feet of the OHW of a public water or public waters wetland or 300 feet of a public waters watercourse.

Site. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Standard. A required level of quantity, quality, or value.

Stormwater Management Plan. A plan for the permanent management and control of runoff prepared and implemented in accordance with the standards set forth in these Rules.

Structure. Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, walks, roads, water and storage systems, drainage facilities and parking lots.

Subdivision or Subdivide. The separation of a parcel of land into two or more parcels.

TMDL. A Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. "TMDL" can also refer to a study that calculates that load, or to the allocation of that allowable load to its various sources. An Implementation Plan may be part of the TMDL study or it may be a separate document that sets forth the steps that will be taken to achieve the TMDL.

Volume Management. The retention and abstraction of a certain volume of stormwater runoff onsite through techniques such as infiltration, evapotranspiration, and capture and reuse.

Water Basin. An enclosed natural depression with definable banks capable of containing water that may be partly filled with public waters.

Waterbody. All water basins, watercourses and wetlands as defined in these Rules.

Watercourse. Any natural or improved stream, river, creek, ditch, channel, culvert, drain, gully, swale, or wash in which waters flow continuously or intermittently in a definite direction.

Water Resources Management Plan. The watershed management plan for the Commission adopted and implemented in accordance with Minnesota Statutes, Section 103B.231.

Watershed. Region draining to a specific watercourse or water basin.

Wetland. Land transitional between terrestrial and aquatic systems as defined in Minnesota Statutes, Section 103G.005, Subdivision 19.

Wetland Conservation Act (WCA). Minnesota Wetland Conservation Act of 1991 as amended.

RULE B. PROCEDURAL REQUIREMENTS

1. **APPLICATION REQUIRED**. Any person or political subdivision undertaking an activity for which a project review is required by these Rules shall first submit to the Commission a project review application, design data, plans, specifications, fees, and such other information and exhibits as may be required by these Rules. Applications shall be signed by the owner, or the owner's authorized agent, except for activities of a political subdivision which may be signed by either the owner or the general contractor. All project review applications must be authorized by the municipality where the proposed project is located.

2. **FORMS**. Project review applications shall be submitted on forms provided by the Commission. Forms are available at the Commission office or Web site.

3. **ACTION BY COMMISSION**. The Commission shall act within 60 days after receipt of a complete application, including all required information, exhibits and fees. If a state or federal law or court order requires a process to occur before the Commission acts on an application, or if an application requires prior approval of a state or federal agency, the deadline for the Commission to act is extended to 60 days after completion of the required process or the required prior approval is granted. The Commission may extend the initial 60-day period by providing written notice of the extension to the applicant. The extension may not exceed 60 days unless approved by the applicant.

4. **SUBMITTAL**. A complete project review application with all required information and exhibits shall be filed with the Commission at least 14 calendar days prior to the scheduled meeting date of the Commission. Late or incomplete submittals will be scheduled to a subsequent meeting date.

5. **CONDITIONS**. A project review may be approved subject to reasonable conditions to assure compliance with these Rules. The conditions may include a requirement that the applicant and owner enter into an agreement with the member city in a form acceptable to the Commission to a) specify responsibility for the construction and future maintenance of approved structures or facilities, b) document other continuing obligations of the applicant or owner, c) grant reasonable access to the proper authorities for inspection, monitoring and enforcement purposes, d) affirm that the Commission or other political subdivisions can require or perform necessary repairs or reconstruction of such structures or facilities, e) require indemnification of the Commission for claims arising from issuance of the approved project review or construction and use of the approved structures or facilities, and f) reimburse the reasonable costs incurred to enforce the agreement. Project reviews and agreements may be filed for record to provide notice of the conditions and continuing obligations.

6. **ISSUANCE OF PROJECT REVIEWS**. The Commission will issue a project review approval only after the applicant has satisfied all requirements of these Rules and paid all required fees.

7. **VALIDITY**. Issuance of a project review approval based on plans, specifications, or other data shall not prevent the Commission from thereafter requiring the correction of errors in the approved plans, specifications and data, or from preventing any activity being carried on thereunder in violation of these Rules.

8. **MODIFICATIONS**. The applicant shall not modify the approved activity or plans and specifications on file with the Commission without the prior approval of the Commission.

9. **INSPECTION AND MONITORING**. With permission of the property owner and under the authority of the member city, the Commission may perform such field inspections and monitoring of the approved activity as the Commission deems necessary to determine compliance with the conditions of the project review and these Rules. Any portion of the activity not in compliance shall be promptly corrected. In applying for a project review, the applicant consents to entry upon the land for field inspections and monitoring, or for performing any work necessary to bring the activity into compliance.

10. **SUSPENSION OR REVOCATION**. The Commission may suspend or revoke a project review approved under these Rules whenever the project review approval is issued in error or on the basis of incorrect information supplied, or in violation of any provision of these Rules, or if the preliminary and final project approvals received from the municipality or county are not consistent with the conditions of the approved project review.

11. **EXPIRATION OF COMMISSION APPROVALS.** An approved project review shall expire and become null and void if the approved activity is not commenced within one year from date of approval, or if the approved activity is suspended or abandoned for a period of one year from the date the activity originally commenced. With the approval of the affected member city, applicants may apply for an extension of that period if the city review process is extended beyond the usual review period. Before an activity delayed for one year or more can recommence, the project approval must be renewed. Any applicant may apply for an extension of time to commence the approved activity under an unexpired project review approval.

    An application for renewal or extension must be in writing, and state the reasons for the renewal or extension. Any plan changes and required fees must be included with the application. There must be no unpaid fees or other outstanding violations of the approval being renewed or extended. An application for extension must be received by the Commission at least 30 days prior to the approval's expiration. The Commission shall consider the application for renewal or extension on the basis of the Rules in effect on the date the application is being considered. The Commission may extend the time for commencing the approved activity for a period not exceeding one year upon finding that

circumstances beyond the control of the applicant have prevented action from being taken.

12. **SEVERABILITY**. If any provision of these Rules is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of these Rules shall not be affected thereby.

RULE C. GENERAL STANDARDS

1. **POLICY**. It is the policy of the Commission to protect the water resources of the watershed by requiring that all activities within the watershed comply with minimum standards for the protection of water quality and the environment.

2. **REGULATION.**

a) All land disturbing activities, whether requiring a project review under these Rules or otherwise, shall be undertaken in conformance with BMPs.

b) Project reviews are required of any land disturbing activity meeting the review thresholds set forth in Rule D Section 2.

c) In areas that drain to Impaired Waters, TMDL Implementation Plans may include site-specific requirements for any land-disturbing activities that are in addition to these rules and standards.

d) No person shall conduct land-disturbing activities without protecting adjacent property and waterbodies from erosion, sedimentation, flooding, or other damage.

e) Development shall be planned and conducted to minimize the extent of disturbed area, runoff velocities, and erosion potential, and to reduce and delay runoff volumes. Disturbed areas shall be stabilized and protected as soon as possible and facilities or methods used to retain sediment on-site.

f) Existing natural watercourses and vegetated soil surfaces shall be used to convey, store, filter, and retain runoff before discharge into public waters or a stormwater conveyance system.

g) Runoff from roof gutter systems shall discharge onto lawns or other pervious surfaces to promote infiltration where possible.

h) Use of fertilizers and pesticides in the shoreland protection zone shall be so done as to minimize runoff into public waters by the use of earth material, vegetation, or both. No phosphorus fertilizer shall be used unless a soil nutrient analysis shows a need for phosphorus or in the establishment of new turf.

i) When development density, topographic features, and soil and vegetation conditions are not sufficient to adequately handle runoff using natural features and vegetation, various types of constructed facilities such as diversions, settling basins, skimming

devices, dikes, waterways, and ponds may be used. The Commission encourages designs using surface drainage, vegetation and infiltration rather than buried pipes and man-made materials and facilities.

j) Whenever the Commission determines that any land disturbing activity has become a hazard to any person or endangers the property of another, adversely affects water quality or any waterbody, increases flooding, or otherwise violates these Rules, the Commission shall notify the member city where the problem occurs and the member city shall require the owner of the land upon which the land disturbing activity is located, or other person or agent in control of such land, to repair or eliminate such condition within the time period specified therein. The owner of the land upon which a land disturbing activity is located shall be responsible for the cleanup and any damages from sediment that has eroded from such land. The Commission may require the owner to submit a project review application under these Rules before undertaking any repairs or restoration.

RULE D. STORMWATER MANAGEMENT

1. POLICY. It is the policy of the Commission to control excessive rates and volumes of runoff by:

a) Requiring that peak runoff rates not exceed existing conditions or the capacity of downstream conveyance facilities or contribute to flooding or streambank erosion.

b) Managing subwatershed discharge rates and flood storage volumes to be consistent with the goals of the Commission's water resources management plan and the local water resources management plans.

c) Controlling runoff rates by the use of on-site or if feasible regional detention or infiltration facilities.

d) Reviewing stormwater management structures based on the 1% (100-year) critical storm event for the drainage area.

e) Routing runoff to water treatment ponds or other acceptable facilities before discharging into waterbodies.

f) Promoting the use of natural resources for storing runoff and improving water quality and other amenities where appropriate.

g) Promoting natural infiltration of runoff.

2. REGULATION. No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for the following types of projects without first submitting to and obtaining approval of a project review from the Commission or the city in which the project is located that incorporates a stormwater management plan for the activity, development or redevelopment:

a) Plans of any land development or site development that disturbs more than 1 acre of land.

b) Linear projects that create one acre or more of new impervious surface must meet all Commission requirements for the net new impervious surface.

c) Plans of any land development or individual site development adjacent to or containing a lake, wetland, or a natural or altered watercourse as listed in the Hennepin County wetland inventory or the final inventory of Protected Waters and Wetlands for Hennepin County, as prepared by the DNR.

d) Any culvert installation or replacement, bridge construction, stream cross-section alteration, or activity requiring a DNR Waters Permit.

e) Plans for any land development or site development within the 1% chance (100-year) floodplain as defined by the Flood Insurance Study for the member city or the Commission's flood study.

f) Plans of any land development or site development regardless of size, if such review is requested by a member city.

g) Land disturbing activity that drains to more than one watershed, for that portion of the site draining into the Pioneer-Sarah Creek Watershed.

3. CRITERIA. Stormwater management plans shall comply with the following criteria regarding runoff rate restrictions, volume control requirements, and water quality requirements.

a) A hydrograph method based on sound hydrologic theory will be used to analyze runoff for the design or analysis of flows, volumes, water quality, and water levels.

b) *Runoff rates* for the proposed activity shall not exceed existing runoff rates for the 2-year, 10-year, and 100-year critical storm events and rainfall distribution for the project location as set forth in NOAA Atlas 14 Volume 8, published June 2013, or its successor, using the online NOAA Precipitation Frequency Data Server or a similar data source. Applicant must document the location and event depths used. If an approved local water management plan requires more restrictive rate control, then the more restrictive rate shall govern. Runoff rates may be restricted to less than the existing rates when necessary for the public health and general welfare of the watershed.

i) If detention basins are used to control rate of runoff they shall be designed to provide:

(1) An outlet structure to control the 2-year, 10-year, and 100-year critical storm events to predevelopment runoff rates. Said outlet structure will be required to control critical storm events to less than predevelopment runoff rates if downstream facilities have insufficient capacity to handle the increased flow.

(2) Alternative to (1), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required rate control. This means that no rate control may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

(3) An identified overflow spillway sufficiently stabilized to convey a 1% (100-year) critical storm event.

(4) A normal water elevation above the OHW of adjacent waterbodies.

(5) Access for future maintenance.

(6) An outlet skimmer to prevent migration of floatables and oils for at least the two year storm event.

(7) The low floor elevation shall be at minimum two feet above the critical event 100-year elevation and at minimum one foot above the emergency overflow elevation of nearby waterbodies and stormwater ponds.

ii) Regional detention basins may be used to manage peak flow rates and meet water quality objectives when feasible.

iii) Analysis of flood levels, storage volumes and flow rates for waterbodies and detention basins shall be based on the range of rainfall and snow melt duration producing the critical flood levels and discharges, whichever is most critical.

iv) Landlocked water basins may be provided with outlets that:

(1) Retain a hydrologic regime complying with floodplain and wetland alterations.

(2) Provide sufficient storage below the outlet run-out elevation to retain back-to-back 100-year, 24-hour rainfalls and runoff above the highest anticipated groundwater elevation and prevent damage to property adjacent to the basin.

(3) Do not create adverse downstream flooding or water quality conditions.

c) Stormwater runoff volume must be *infiltrated/abstracted* onsite in the amount equivalent to one point one inch (1.1") of runoff generated from new impervious surface.

i) Applicant must minimize the creation of new impervious surface, reduce existing impervious surfaces where possible, and minimize the amount of directly connected impervious surface.

ii) When using infiltration for volume reduction, runoff must be infiltrated within 48 hours. Infiltration volumes and facility sizes shall be calculated based on the measured infiltration rate determined by a double-ring infiltrometer test(s) conducted to the requirements of ASTM Standard D3385 at the proposed bottom elevation of the infiltration area. Other testing methods may be used with the approval of the Commission's Engineer. The measured infiltration rate shall be divided by the appropriate correction factor selected from the Minnesota

Stormwater Manual. This site investigation must be conducted by a licensed soil scientist or engineer.

iii) A post-construction percolation test must be performed on each infiltration practice and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate prior to project acceptance by the city.

iv) Infiltration areas will be limited to the horizontal areas subject to prolonged wetting.

v) Areas of permanent pools tend to lose infiltration capacity over time and will not be accepted as an infiltration practice.

vi) Stormwater runoff must be pretreated to remove solids before discharging to infiltration areas to maintain the long term viability of the infiltration areas.

vii) Design and placement of infiltration BMPs shall be done in accordance with the Minnesota Department of Health guidance "Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas," as amended.

viii) Constructed bioretention and infiltration practices such as rain gardens, infiltration trenches, and infiltration benches shall not be used in:

(1) Fueling and vehicle maintenance areas;

(2) Areas with less than 3 feet separation from the bottom of the infiltration system to the elevation of seasonal high groundwater;

(3) Areas with runoff from industrial, commercial and institutional parking lots and roads and residential arterial roads with less than 5 feet separation distance from the bottom of the infiltration system to the elevation of seasonal high groundwater;

(4) Areas within 400 feet of a community water well, within 100 feet of a private well, or within a delineated 1-year time of travel zone in a wellhead protection area;

(5) Sites documented to contain contaminated soils or groundwater.

ix) Credit towards compliance with the abstraction requirement in (c) may be achieved by:

(1) Meeting post construction soil quality and amendment depth requirements. Areas that will be subjected to clearing, grading, or compaction that will not be covered by impervious surface, incorporated into a drainage facility, or engineered as structural fill or slope may be included in the credit calculation if they meet post construction soil quality and amendment depth requirements. Soil amendment areas become part of the site's storm drainage system, and must be protected by a utility and drainage easement and be included in the site's utility maintenance agreement. The applicant may compute a credit of 0.5 inches over the soil amendment area and apply that toward the abstraction volume requirement.

(a) A minimum 8-inch depth of compost amended soil or imported topsoil shall be placed in all areas of the project site being considered for the abstraction credit. Before the soil is placed, the subsoil must be scarified (loosened) at least 4 inches deep, with some incorporation of the amended soil into the existing subsoil to avoid stratified layers.

(b) Soil amendment may be achieved by either mixing 2 inches of approved compost into the 8 inches of soil depth, or by mixing a custom-calculated amount of compost to achieve 8 inches of uncompacted soil depth with a minimum organic content of five percent.

(c) The amended areas must pass a 12-inch probe test during the site final inspection, in accordance with the Commission's testing procedure. Once amended, soil areas must be protected from recompaction.

(2) Preserving undisturbed forest or grassland conservation areas. Conservation areas must remain undisturbed during construction and must be protected by a permanent conservation easement prescribing allowable uses and activities on the parcel and preventing future development. A long-term vegetation management plan describing methods of maintaining the conservation area in a natural vegetative condition must be submitted with the stormwater management plan. The applicant may compute a credit of 0.5 inches over the conservation area and apply that toward the abstraction volume requirement.

(3) Providing wetland buffers in excess of minimum requirements. Areas eligible for credit must meet all wetland buffer requirements, must be monumented and shown on the construction plans. The applicant may compute a credit of 0.5 inches over the excess buffer area and apply that toward the abstraction volume requirement.

(4) Disconnecting impervious surface by redirecting runoff across a pervious surface or into an engineered bioinfiltration facility. Impervious disconnection must be designed to prevent any reconnection of runoff with the storm drain system. The applicant may subtract the disconnected impervious surface area from the total impervious surface area used to compute the required abstraction volume.

x) Alternative to (c), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required volume management. This means that no volume management may be required for an individual development provided there is a regional facility designed and constructed to accommodate the volume from this property.

d) Where infiltration is not advisable or infeasible due to site conditions, *biofiltration* must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron fillings, or other material to reduce soluble phosphorus must be provided.

e) There shall be *no net increase in total phosphorus (TP) or total suspended solids (TSS)* from pre-development land cover to post-development land cove. Pre-development land cover is defined as the predominant land cover over the previous 10 years. The TP and TSS export coefficients to be used to calculate predevelopment and post-development land use loadings are set forth in Commission project review guidance.

i) Full infiltration of one point one (1.1) inches of runoff from all impervious surface will satisfy (e).

ii) If it is not feasible to achieve the full 1.1 inch infiltration requirement, a combination of BMPs may be used to achieve the no-net-increase requirement.

iii) If permanent sedimentation and water quality ponds are used they shall be designed to the Wet Pond Design Standards set forth on Appendix A to these Rules and provide:

(1) Water quality features consistent with NURP criteria and best management practices.

(2) A permanent wet pool with dead storage of at least the runoff from a 2.5-inch storm event.

iv) Alternative to (e), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required treatment. This means that no treatment may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

4. WAIVERS.

a) The Commission may waive the on-site runoff rate, volume and water quality control design criteria as noted above, if a municipality has an off-site stormwater facility that provides equivalent control and treatment of runoff that conforms to Commission standards.

b) The design criteria for infiltration may be waived for sites with total impervious surface of less than one acre if infiltration BMPs have been incorporated to the maximum extent possible.

5. EXHIBITS. The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). All plans must be signed by a licensed professional engineer registered in Minnesota.

a) Property lines and delineation of lands under ownership of the applicant.

b) Delineation of the subwatershed contributing runoff from off-site, proposed and existing subwatersheds on-site, emergency overflows and watercourses.

c) Proposed and existing stormwater facilities location, alignment and elevation.

d) Delineation of existing on-site wetland, marsh, shoreland and floodplain areas.

e) Where infiltration or filtration is used as a stormwater management practice, identification, description, results of double-ring infiltrometer tests, and permeability and approximate delineation of site soils and seasonal high groundwater elevation in both existing and proposed as-developed condition.

f) Existing and proposed ordinary high and 1% chance (100-year) water elevations on-site.

g) Existing and proposed site contour elevations at 2-foot intervals, referenced to NAVD (1988 datum). If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.

h) Construction plans and specifications of all proposed stormwater management facilities, including design details for outlet controls.

i) Runoff volume and rate analysis for the 2-year, 10-year, and 100-year critical storm events, existing and proposed.

j) Pre-construction and post-construction annual runoff volume (ac-ft), annual total phosphorus (lbs/yr), and annual total suspended solids (lb/yr).

k) All hydrologic, water quality and hydraulic computations made in designing the proposed stormwater management facilities.

l) A narrative describing the pre-and post-construction drainage conditions and the post-construction BMPs incorporated in the plans.

m) Applications requesting a soil management credit must include a Soil Management Plan (SMP) that shall include an 11" x 17" or larger site map indicating areas where soils will be amended, and calculations for soil volumes to be stockpiled and amounts and specifications of amendment or topsoil to be imported to achieve specified minimum organic matter content.

n) Delineation of any ponding, flowage or drainage easements, or other property interests, to be dedicated for stormwater management purposes.

6. **MAINTENANCE**. All stormwater management structures and facilities shall be maintained in perpetuity to assure that the structures and facilities function as originally designed. The owner of any water quality treatment device if not a governmental unit shall provide to the member city, in a form acceptable to the Commission, a recordable agreement detailing an operations and maintenance plan that assures that the structure(s) will be operated and maintained as designed.

7. **EASEMENTS**. The member city shall obtain from the applicant, in form acceptable to the Commission, recordable temporary and perpetual easements for ponding, flowage and drainage purposes over hydrologic features such as waterbodies, wetlands, buffers, floodplain and stormwater basins and other permanent BMPs. The easements shall include the right of reasonable access for inspection, monitoring, maintenance and enforcement purposes.

8. **COVENANTS**. The Commission may require as a condition of project review approval that the member city shall require that the land be subjected to restrictive covenants or a conservation easement, in form acceptable to the Commission, to prevent the future expansion of impervious surface and the loss of infiltration capacity.

RULE E. EROSION AND SEDIMENT CONTROL

1. **POLICY**. It is the policy of the Commission to control runoff and erosion and to retain or control sediment on land during land disturbing activities by requiring the preparation and implementation of erosion and sediment control plans.

2. **REGULATION**. No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D without first submitting to and obtaining approval of a project review from the Commission that incorporates an erosion and sediment control plan for the activity, development or redevelopment.

3. **CRITERIA**. Erosion and sediment control plans shall comply with the following criteria:

   a) Erosion and sediment control measures shall be consistent with best management practices as demonstrated in the most current version of the MPCA manual "Protecting Water Quality in Urban Areas," and shall be sufficient to retain sediment on-site.

   b) Erosion and sediment controls shall meet the standards for the General Permit Authorization to Discharge Storm Water Associated with Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit Program Permit MN R100001 (NPDES General Construction Permit) issued by the Minnesota Pollution Control Agency, except where more specific requirements are required.

   c) All erosion and sediment controls shall be installed before commencing the land disturbing activity, and shall not be removed until completion.

   d) The activity shall be phased when possible to minimize disturbed areas subject to erosion at any one time.

4. **EXHIBITS**. The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). Erosion and sediment control plans must be prepared by a qualified professional.

   a) An existing and proposed topographic map showing contours on and adjacent to the land, property lines, all hydrologic features, the proposed land disturbing activities, and the locations of all runoff, erosion and sediment controls and soil stabilization measures.

b) Plans and specifications for all proposed runoff, erosion and sediment controls, and temporary and permanent soil stabilization measures.

c) Detailed schedules for implementation of the land disturbing activity, the erosion and sediment controls, and soil stabilization measures.

d) Detailed description of the methods to be employed for monitoring, maintaining and removing the erosion and sediment controls, and soil stabilization measures.

e) Soil borings if requested by the Commission.

5. MAINTENANCE. The project review applicant shall be responsible for proper operation and maintenance of all erosion and sediment controls and soil stabilization measures, in conformance with best management practices and the NPDES permit. The project review applicant shall, at a minimum, inspect and maintain all erosion and sediment controls and soil stabilization measures daily during construction, weekly thereafter, and after every rainfall event exceeding 0.5 inches, until vegetative cover is established.

RULE F. FLOODPLAIN ALTERATION

1. POLICY. It is the policy of the Commission to prevent and control flooding damage by:

a) Preserving existing water storage capacity below the 100-year critical flood elevation on all waterbodies in the watershed to minimize the frequency and severity of high water.

b) Minimizing development in the floodplain that will unduly restrict flood flows or aggravate known high water problems.

c) Requiring compensatory storage for floodplain fill.

2. REGULATION. No person or political subdivision shall alter or fill land below the 100-year critical flood elevation of any public waters watercourse, public waters wetland, or other wetland without first obtaining an approved project review from the Commission.

3. CRITERIA.

a) Floodplain alteration or filling shall not cause a net decrease in flood storage capacity below the projected 1% (100-year) critical flood elevation or alter the timing of flooding unless it is shown that the proposed alteration or filling, together with the alteration or filling of all other land on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other land and will not unduly restrict flood flows.

b) All new structures shall be constructed with the low floor at the elevation required in the municipality's ordinance, however, in no case shall the low floor be less than two feet above the regulatory elevation.

4. **EXHIBITS**. The following exhibits shall accompany the project review` application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):

   a) Site plan showing boundary lines, delineation and existing elevation contours of the work area, ordinary high water level, and 1% (100-year) critical flood elevation. All elevations shall be referenced to the NAVD 1988 datum. If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.

   b) Grading plan showing any proposed elevation changes.

   c) Preliminary plat of any proposed subdivision.

   d) Determination by a registered professional engineer of the 100-year critical flood elevation before and after the proposed activity.

   e) Computation of the change in flood storage capacity as a result of the proposed alteration or fill.

   f) Erosion and sediment control plan which complies with these Rules.

   g) Soil boring logs and report if available.

5. **EXCEPTIONS**. If a municipality has adopted a floodplain ordinance that prescribes an allowable degree of floodplain encroachment, the applicable ordinance shall govern the allowable degree of encroachment and no project review will be required under this Floodplain Alteration Rule.

RULE G. WETLAND ALTERATION

1. **POLICY**. It is the policy of the Commission to preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes by:

   a) Achieving no net loss in the quantity, quality and biological diversity of wetlands in the watershed.

   b) Increasing the quantity, quality and biological diversity of wetlands in the watershed by restoring or enhancing diminished or drained wetlands.

   c) Enforcing mitigation of direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of watershed wetlands.

   d) Replacing affected wetlands where sequencing demonstrates that avoidance is not feasible.

2. **REGULATION**. No person or political subdivision shall drain, fill, excavate or otherwise alter a wetland without first obtaining the approval of a wetland replacement plan from the local government unit with jurisdiction over the activity. Mitigation of wetland impacts will be considered in the following sequence: 1) mitigated by enhancing the

impacted wetland; 2) mitigated within the subcatchment of the impacted wetland; 3) mitigated in the drainage area of the impacted wetland; 4) mitigated in the watershed of the impacted wetland; 5) mitigated through purchase of wetland bank credits.

3. CRITERIA.

a) Any drainage, filling, excavation or other alteration of a wetland shall be conducted in compliance with Minnesota Statutes, section 103G.245, the Wetland Conservation Act, and regulations adopted thereunder.

b) A wetland may be used for stormwater storage and treatment only if pre-treatment is provided and the use will not adversely affect the function and public value of the wetland as determined by the local government unit.

c) Other activities which would change the character of a wetland shall not diminish the quantity, quality or biological diversity of the wetland.

4. LOCAL GOVERNMENT UNIT. The Commission will serve as the local government unit (LGU) for administration of the Wetland Conservation Act (WCA) for those cities that have designated the Commission to serve in that capacity. If a member city has not designated the Commission as the LGU for the administration of the WCA, they shall be responsible for administering the WCA. MnDOT serves as the LGU on its right of way.

RULE H. BRIDGE AND CULVERT CROSSINGS

1. POLICY. It is the policy of the Commission to maintain channel profile stability and conveyance capacity by regulating crossings of watercourses for driveways, roads and utilities.

2. REGULATION. No person or political subdivision shall construct or improve a road, driveway or utility crossing across any public waters watercourse or county ditch without first submitting to the Commission and receiving approval of a project review.

3. CRITERIA. Crossings shall:

a) Retain adequate hydraulic capacity to pass the 100-year flow and maintain the 100-year flow profile, if available.

b) Mimic the existing base flow (1-year, 2-year) conditions.

c) Not adversely affect water quality.

d) Represent the "minimal impact" solution to a specific need with respect to all reasonable alternatives.

e) Allow for future erosion, scour, and sedimentation maintenance considerations.

f) If the project proposes changing the FEMA FIS profile,, a FEMA map revision must be obtained.

g) If the project requires a DNR Work in Public Waters permit, the conditions of that permit must be satisfied.

4. EXHIBITS. The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):

a) Construction plans and specifications.

b) Analysis prepared by a registered professional engineer showing the effect of the project on hydraulic capacity and water quality.

c) An erosion and sediment control plan that complies with these Rules.

5. MAINTENANCE.

a) The maintenance, reconstruction and stabilization of any public crossing shall be the responsibility of the political subdivision with jurisdiction over the crossing.

b) The maintenance, reconstruction and stabilization of any private crossing shall be the responsibility of the owner of the crossing.

c) If a crossing over any public waters watercourse is determined by the Commission to be causing significant erosion, the Commission may notify the member city where said crossing is located and the member city may order the owner of the crossing to make necessary repairs or modifications to the crossing and outlet channel.

RULE I. BUFFER STRIPS

1. POLICY. It is the policy of the Commission to maintain the water quality and ecological functions provided by watercourses and wetlands by requiring the development of vegetated buffers around watercourses, lakes and wetlands where development and redevelopment occurs, and to encourage the installation of vegetated buffers around all watercourses and wetlands. Vegetative buffers reduce the impact of surrounding development and land use on watercourse, lake and wetland functions by stabilizing soil to prevent erosion, filtering sediment from runoff, and moderating water level fluctuations during storms. Buffers provide essential habitat for wildlife. Requiring buffers recognizes that watercourse, lake and wetland quality and function are related to the surrounding upland.

2. REGULATION. No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D on land that contains or is adjacent to a watercourse, lake or wetland

without first submitting to and obtaining approval of a project review from the Commission that incorporates a vegetated buffer strip between the development or redevelopment and the watercourse or wetland.

3. GENERAL PROVISIONS.

a) This Rule shall apply to all lands containing or abutting watercourses, lakes or wetlands that are subject to a project review under these Rules. Watercourses, lakes and wetlands shall be subject to the requirements established herein, and other applicable federal, state and local ordinances and regulations. If a municipality has a buffer strip requirement that has been reviewed and approved by the Commission, the municipal regulation shall have precedence over the Commission's Rules.

b) An applicant shall determine whether any watercourse, lake or wetland exists, and shall delineate the boundary for any wetland on the land. An applicant shall not be required to delineate wetlands on adjacent property, but must review available information to estimate the wetland boundary.

c) Documentation identifying the presence of any watercourse, lake or wetland on the applicant's land, including wetland delineation and buffer strip vegetation evaluation, must be provided to the Commission with a project review application.

d) Wetland and buffer strip identifications and delineations shall be prepared in accordance with state and federal regulations.

4. CRITERIA. The following standards apply to all lands that contain or abut a watercourse, lake or wetland:

a) BMPs shall be followed to avoid erosion and sedimentation during land disturbing activities.

b) When a buffer strip is required the applicant shall, as a condition to issuance of an approved project review:

i) Submit to the member city, in a form acceptable to the Commission, a recordable conservation easement for protection of approved buffer strips. The easement shall describe the boundaries of the watercourse or wetland and buffer strips, identify the monuments and monument locations, and prohibit any of the alterations set forth in Paragraph 5(e) below and the removal of the buffer strip monuments within the buffer strip or the watercourse or wetland.

ii) Submit to the member city, in a form acceptable to the Commission, an executed buffer maintenance plan and agreement for the first two growing seasons following establishment, and providing an escrow or an alternate surety to assure successful vegetation establishment.

iii) Install the wetland monumentation required by Paragraph 7 below.

c) All open areas within the buffer strip shall be seeded or planted in accordance with Paragraph 8 below. All seeding or planting shall be completed prior to removal of any erosion and sediment control measures. If construction is completed after the end of the growing season, erosion and sediment control measures shall be left in place and all disturbed areas shall be mulched for protection over the winter season.

5. BUFFER STRIPS.

a) A buffer strip shall be maintained around the perimeter of all watercourses, lakes or wetlands. The buffer strip provisions of this Rule shall not apply to any parcel of record as of the date of this Rule until such parcel is developed or redeveloped or unless required by a previous project review. The Commission does, however, strongly encourage the installation of buffer strips on all parcels in the watershed.

b) Buffer strips on watercourses, lakes, and wetlands shall be an average 25 feet wide and a minimum of 10 feet wide. It is recommended that all structures have a minimum 15 foot setback from the buffer strip.

c) Buffer strips shall apply whether or not the watercourse or wetland is on the same parcel as a proposed development.

d) Buffer areas disturbed by grading operations must be finish graded to a slope of 6:1 or less or an increase in width of five (5) feet for each one (1) foot decrease in horizontal width (i.e., a 25 required foot buffer width at a 5:1 slope must be 30 feet wide, 4:1 must be 35 feet wide, and 3:1 must be 40 feet wide.)

e) Buffer strip vegetation shall be established and maintained in accordance with Paragraph 8 below. Buffer strips shall be identified within each parcel by permanent monumentation in accordance with Paragraph 7 below.

f) Subject to Paragraph 5(g) below, alterations including building, storage, paving, mowing, plowing, introduction of noxious vegetation, cutting, dredging, filling, mining, dumping, grazing livestock, agricultural production, yard waste disposal or fertilizer application, are prohibited within any buffer strip. Noxious vegetation shall be removed to meet state standards. Alterations would not include plantings that enhance the natural vegetation or selective clearing or pruning of trees or vegetation that are dead, diseased or pose similar hazards.

g) The following activities shall be permitted within any buffer strip, and shall not constitute prohibited alterations under Paragraph 5(f) above:

   i) Use and maintenance of an unimproved access strip through the buffer, not more than 20 feet in width, for recreational access to the watercourse, lake or wetland and the exercise of riparian rights.

   ii) Placement, maintenance, repair or replacement of utility and drainage systems that exist on creation of the buffer strip or are required to comply with any subdivision approval or building permit obtained from the municipality or county,

so long as any adverse impacts of utility or drainage systems on the function of the buffer strip have been avoided or minimized to the extent possible.

iii) Construction, maintenance, repair, reconstruction, or replacement of existing and future public roads crossing the buffer strip, so long as any adverse impacts of the road on the function of the buffer strip have been avoided or minimized to the extent possible.

6. ALTERNATE WETLAND PROTECTION METHODS.

a) Should application of the buffer standards in Paragraph 5 above render a parcel of record as of the date of this Rule unbuildable based on current city ordinances, the Watershed engineer may allow alternative methods to protect the wetland. Such methods must include a buffer strip no less than ten feet wide, supplemented by redirection of drainage to a wider area of buffer, or to a Best Management Practice such as a rain garden or vegetated swale.

b) The use of alternative wetland protection methods will be evaluated as part of the review of a stormwater management plan under these Rules. Alternative wetland protection methods must be in keeping with the spirit and intent of this Rule.

7. MONUMENTATION. A monument shall be required at each parcel line where it crosses a buffer strip and shall have a maximum spacing of 200 feet along the edge of the buffer strip. Additional monuments shall be placed as necessary to accurately define the edge of the buffer strip. A monument shall consist of a post and a buffer strip sign meeting Commission standards. The signs shall include warnings about mowing, disturbing or developing the buffer strip.

8. VEGETATION.

a) Where acceptable natural vegetation exists in buffer strip areas, the retention of such vegetation in an undisturbed state is required unless an applicant receives approval to replace such vegetation. A buffer strip has acceptable natural vegetation if it:

i) Has a continuous, dense layer of native vegetation that has been uncultivated or unbroken for at least 5 consecutive years; or

ii) Has an overstory of native trees and/or shrubs that has been uncultivated or unbroken for at least 5 consecutive years; or

iii) Contains a mixture of the plant communities described in Subparagraphs 8(a)(i) and (ii) above that has been uncultivated or unbroken for at least 5 years.

b) Notwithstanding the performance standards set forth in Paragraph 8(a), the Commission may determine existing buffer strip vegetation to be unacceptable if:

i) It contains undesirable plant species including but not limited to common buckthorn, reed canary grass, or species on the Minnesota State Noxious Weeds List; or

ii) It has topography that tends to channelize the flow of runoff; or

iii) For some other reason it is unlikely to retain nutrients and sediment.

iv) Where buffer strips are not vegetated or have been cultivated or otherwise disturbed within 5 years of the project review application, such areas shall be replanted and maintained with native vegetation. The buffer strip plantings must be identified on the project review application. Acceptable buffer strip design and planting methods are detailed in the reference document "Restoring and Managing Native Wetland and Upland Vegetation" (Jacobson 2006, prepared for BWSR and MnDOT).

c) Buffer strip vegetation shall be established and maintained in accordance with the requirements found in this Paragraph. During the first two full growing seasons, the owner must replant any buffer strip vegetation that does not survive. The owner shall be responsible for reseeding and/or replanting if the buffer strip changes at any time through human intervention or activities. At a minimum the buffer strip must be maintained as a "no mow" area.

9. ENCROACHMENT.

a) Buffer strips must be kept free of all materials, equipment and structures, including fences and play equipment. Buffer strips must not be grazed, cropped, logged or mown except as approved by the Commission. The topography of the buffer strips shall not be altered by any means, including paving, plowing, cutting, dredging, filling, mining, or dumping.

b) Variances.

i) Only variances meeting the standards and criteria set forth in Rule K shall be granted.

ii) Variances shall not be granted that would circumvent the intent and purposes of this Rule.

RULE J. FEES

1. POLICY. The Commission finds that it is in the public interest to require applicants to pay the cost of administering and reviewing project review applications, and inspecting approved activities to assure compliance with these Rules, rather than using the Commission's annual administrative levy for such purposes. The Commission shall by resolution establish a schedule of fees that may be amended from time to time to reflect the cost of providing each service.

2. APPLICATION. Each application for the issuance, transfer or renewal of a project review recommendation under these Rules shall be accompanied by an application fee to defray the cost of processing the application.

3. **REVIEW**. A project review applicant under these Rules shall pay a fee for the cost of the review and analysis of the proposed activity, including services of engineering, legal, and other consultants. The review fee shall be payable upon the submission of the project review application.

4. **WETLAND MITIGATION PLAN**. A project review applicant under these rules shall pay a fee for the cost of the review and analysis of a proposed activity involving a wetland mitigation plan in a municipality where the Commission is the LGU. The fee is to cover the costs of engineering, legal, and other consultants and shall be payable upon the submission of the project review application. Should the cost of said wetland mitigation plan review exceed the review fee, the application shall deposit such additional sums as are needed to pay such costs. Failure to pay such costs is grounds to deny the application or suspend review.

5. **WETLAND MITIGATION PLAN MONITORING**. A project review applicant under these rules in a municipality where the Commission is the LGU shall deposit an escrow to cover the cost of Commission monitoring and annual monitoring plan review for the five-year period. If the escrow amount is insufficient to cover the costs the Commission may require additional funds from the applicant.

6. **WETLAND MITIGATION SECURITY DEPOSIT**. A project review applicant under these rules in a municipality where the Commission is the LGU shall provide a security to assure that the replacement plan is followed. The amount of the security shall be calculated on a case-by-case basis based on the estimated cost of construction, follow up and contingency. The security may also include an amount determined by the Commission to be sufficient to protect the public in the event the replacement plan does not succeed.

7. **DEPOSITS**. The Commission will maintain an accounting for all deposits made under this Rule. No interest will be paid to applicants for funds held in deposit.

RULE K. VARIANCES

1. **WHEN AUTHORIZED**. The Commission may grant variances from the literal provisions of these Rules. A variance shall only be granted when in harmony with the general purpose and intent of the Rules in cases where strict enforcement of the Rules will cause practical difficulties or particular hardship, and when the terms of the variance are consistent with the Commission's water resources management plan and Minnesota Statutes, chapter 103D.

2. **HARDSHIP**. "Hardship" as used in connection with the granting of a variance means the land in question cannot be put to a reasonable use if used under the conditions allowed by these Rules; the plight of the applicant is due to circumstances unique to the land and

not created by the applicant; and the variance, if granted, will not adversely affect the essential character of the locality and other adjacent land. Economic considerations alone shall not constitute a hardship if a reasonable use for the land exists under the terms of these Rules. Conditions may be imposed in the granting of a variance to insure compliance and to protect adjacent land and the public health and general welfare of the Commission.

3. **PROCEDURE**. An application for a variance shall describe the practical difficulty or particular hardship claimed as the basis for the variance. The application shall be accompanied with such surveys, plans, data and other information as may be required by the Commission to consider the application.

4. **VIOLATION**. A violation of any condition imposed in the granting of a variance shall be a violation of these Rules and shall automatically terminate the variance.

RULE L. ENFORCEMENT

1. **ADMINISTRATION**. These Rules shall be administered by the Commission. The Commission shall consider applications required under these Rules and determine whether such applications should be approved, approved with conditions, or denied. Such determination shall be communicated to the member city in which the project lies and to the applicant.

2. **IMPLEMENTATION BY MEMBER CITIES**. It shall be the duty of each city to enforce and implement such determinations by the Commission under the various permitting processes and regulations of the city. Each city shall make such amendments to its official controls, regulations, and permitting processes as are necessary to provide it with the authority to enforce and implement the determinations of the Commission.

3. **FAILURE BY CITY TO IMPLEMENT**. Upon a determination by the Commission that a city has not enforced or implemented a decision of the Commission in the administration of these Rules, the Commission shall notify the city of such determination and direct that appropriate action be taken by the city. If the city does not take such action, the Commission may take such legal steps as are available to it to effect such enforcement or implementation.

RULE M. AMENDMENT OF THESE RULES

1. **AMENDMENT.** These rules may be amended from time to time by the Commission. Proposed amendments shall be reviewed by the member cities prior to adoption unless the Commission determines that said amendment is of a minor or technical nature. Minor or technical amendments include recodifying or streamlining the rules, clarifying

policies, or other actions that do not adversely affect a member city or impact the Commission's or member cities' ability to meet their water management plan goals.

2. **PROCEDURE.** Proposed major amendments to these rules shall be first considered by the Commission and then forwarded to the member cities for a 45-day comment period. Following that comment period, the Commission shall consider the proposed amendment and the comments received for approval. All amendments shall be made by resolution.

PIONEER-SARAH CREEK WATERSHED MANAGEMENT COMMISSION
RULES APPENDIX A
WET POND DESIGN STANDARDS

Permanent Pool Depth	Average 4', maximum 10'
Permanent Pond Surface Area	Greater of 2% of watershed's impervious area and 1% of the watershed
Permanent Pool Length to Width Ratio	3:1 or greater with an irregularly shaped shoreline
Side Slopes	10:1 for 10-foot bench centered on the normal water elevation and between 3:1 and 20:1 elsewhere
Side Slope Stabilization	Native seed with mix 33-261 (MnDOT 310), 34-271 (BWSR W2) or equivalent between NWL and HWL, provide 10' buffer where possible with mix 35-221 (MnDOT 330 (dry)) or mix 35-241 (MnDOT 350 (mesic))
Floatable Removal	Skimming device discharging at no greater than 0.5 fps during the 2-year event or a submerged outlet with a minimum 0.5 feet from the normal water level to the crown of the outlet pipe
Sediment Accumulation Area	Provide maintenance pads to remove sediment deltas at inlets
Permanent Pool Volume	A 4-foot mean depth and equal to 2.5-inch rain over the watershed
Source	Protecting Water Quality in Urban Areas (MPCA 2000)

SUMMARY

Pioneer-Sarah Creek Watershed Management Commission
Management Rules and Standards*

	Standard	Purpose	Applicability
Project Reviews Required	A Stormwater Management Plan consistent with all applicable management rules and standards* must be reviewed and approved prior to commencement of land disturbing activities.	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes; improve water quality; protect water resources; and promote natural infiltration of runoff.	All development or redevelopment projects of the following types: • Projects disturbing more than one acre of land • Projects within the 100-year floodplain • Projects adjacent to or within a lake, wetland, or watercourse • Any land disturbing activity requested by a member city to be reviewed regardless of project size • Linear projects creating more than one acre of new impervious surface
Rate Control	Peak runoff rates may not exceed existing rates for the 2-year, 10-year, and 100-year critical storm event; or the capacity of downstream conveyance facilities; or contribute to flooding	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Volume Manage-ment	1.1 inch of impervious surface runoff must be abstracted on site within 48 hours	To control excessive rates and volumes of runoff; manage discharge rates and flood storage volumes; protect stream channels from erosion; and promote natural infiltration of runoff.	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Erosion and Sediment Control	Erosion control plan using Best Management Practices (BMPs) and consistent with the NPDES General Construction Permit is required	To control erosion and sediment so as to protect conveyance systems and water quality	All projects requiring a project review
Floodplain Alteration	Compensating storage is required to mitigate floodplain fill	To prevent and control flooding damage	All development or redevelopment projects within the 100-year floodplain regardless of project size
Water Quality	No net increase in total phosphorus and total suspended sediment annual load	To protect water quality	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Buffer Strips	Vegetated buffer strips average 25 foot, minimum 10 foot wide adjacent to lakes, wetlands and other watercourses	To protect water quality; reduce erosion and sedimentation; reduce pollutants from runoff and debris; and provide habitat	All projects requiring a project review that contain or abut a wetland or watercourse
Wetland	Wetlands may not be drained, filled, excavated, or otherwise altered without an approved wetland replacement plan from the local government unit (LGU) with jurisdiction	To preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes	All land disturbing activity impacting a wetland as defined by the Wetland Conservation Act (WCA)

*Important Note: Approved TMDL Implementation Plans may have additional site-specific requirements.

Appendix E

MCWD Coordination Plan

MINNEHAHA CREEK WATERSHED COORDINATION PLAN

The following Communication Plan outlines a relationship between the City of Maple Plain (the City) and the Minnehaha Creek Watershed District (the MCWD). The purpose of this Communication Plan is to maintain awareness of the needs and opportunities for successful surface water management within the City, and to promote successful partnership towards implementation of projects to meet the surface water management needs. It is anticipated that the City Engineer will be the primary contact between the City and the MCWD for the Communication Plan. The following agreements comprise the coordination plan:

- Annual meeting: The City and the MCWD agree to meet annually to review progress in the *Local Surface Water Management Plan* implementation. The annual meeting will be scheduled by the City Engineer. The meeting will include review of the annual National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer Systems (MS4) report and activity from the previous year.

  The annual meeting will include discussion about yearly updates to the City's Capital Improvement Program (CIP). The discussion will be a time for the MCWD to coordinate projects, discuss potential funding opportunities, including funding opportunities internal to the MCWD and through external sources, and provide comments.

- Planning Coordination: The City agrees to notify and consult with the MCWD regarding updates to road & infrastructure and parks & recreation planning efforts. Updates are to be sent by the City Engineer to the MCWD for review and comment at a minimum of once per year.

- Land Use: The City agrees to notify the MCWD with requests for land use approvals for review and comment. This includes, but is not limited to, requests for prospective development/redevelopment and receipt of preliminary plats. The MCWD agrees to notify the City upon receipt of preliminary plats. Additionally, the City and the MCWD agree to provide mutual notice of significant events related to prospective development/redevelopment.

- Small Area Plans: The City agrees to notify the MCWD with updates to the institution and completion of small area plans and other focused development/redevelopment actions. Updates are to be sent by the City Engineer to the MCWD at a minimum of once per year.

- MS4 System: In addition to a review of the MS4 system at the annual meeting, the City agrees to notify the MCWD of any significant alterations to the MS4 system throughout the year, for the purpose of keeping the MCWD's hydrologic and hydraulic model up to date.

- Watershed District Updates: Throughout the year, the MCWD agrees to notify the City of any amendments to the current *Watershed Management Plan*, as well as any updates to the MCWD CIP. Additionally, the MCWD agrees to notify the City with significant events related to prospective (re)development.

- Public Communications and Education: The City agrees to promote the Educational Workshops and Events put on by the MCWD. The City and the MCWD agree to coordinate when possible to avoid replicating educational programs.

- Funding: In order to assist the City in implementing projects related to surface water management, the MCWD agrees to continue to provide information regarding upcoming grants and other funding opportunities, both internal and external to the MCWD.

- Wetland Conservation Act: The City names the MCWD as the LGU authority for the Wetland Conservation Act.

- Regulatory Coordination: The City and the MCWD agree to coordinate activities regarding regulation of surface water management, including ensuring applicants are aware of permitting authority of both parties, holding pre-application meetings, sharing complaint information, coordinating compliance inspections, and coordinating regulatory enforcement. Coordination will be carried out between the City Engineer and MCWD staff over phone and email, and through in-person meetings if necessary.