
SURFACE WATER MANAGEMENT PLAN

CITY OF SOUTH ST. PAUL, MN

DRAFT: May 2018

WSB Project No. 011403-000



I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

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Reg. No. 49170

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HYDROLOGY	The science concerned with waters of the earth, their occurrence, distribution, and circulation; their physical and chemical properties; and their reaction to the environment.
MEAN	Average. The sum of the magnitudes of all items of a set, divided by the items.
NWL	Normal Water Level. The lowest controlling elevation of the pond.
100-YEAR FLOOD PLAIN	That flood plain associated with a storm that has a 1 percent chance of being equaled or exceeded during any year (100-year recurrence interval). Usually calculated assuming a rainfall event of 24 hours in duration.
ORDINARY HIGH WATER MARK (OHWM)	The boundary of protected waters as defined in Minnesota Statutes.
OUTWASH	Stratified sand and gravel produced by glaciers and carried, sorted, and deposited by glacial melt water.
OUTWASH PLAIN	A land form of mainly sandy or coarse textured material of glaciofluvial origin. An outwash plain is commonly smooth; where pitted, it is generally low in relief.
P8	"Program for Predicting Polluting Particle Passage through Pits, Puddles, and Ponds." This computer program is used for water quality monitoring within subwatersheds.
PARENT MATERIAL	The unconsolidated organic and mineral material in which soil forms.
PERMEABILITY	A characteristic of soil that enables water to move downward through the profile. Measured in inches per hour.
MAJOR STORMWATER STORAGE FACILITY	A facility which has the ability to provide flood protection for the critical 1% chance storm event.
NVGD	National Vertical Geodetic Datum. The nationwide reference surface for elevations.
PROTECTED WATERS AND WETLANDS	Those waters of the state identified as Public Waters or Wetlands under Minnesota Statutes. Generally, all lakes and Type 3, 4, and 5 wetlands as identified in the Department of Interior Circular 39, Wetlands of the United States, 1971. Public wetlands are generally those 10 or more acres in size in unincorporated areas, or 2.5 or more acres in size in incorporated areas.
SOIL ASSOCIATION	A group of soils geographically associated in a characteristic repeating pattern defined and delineated as a single map unit.
SUBWATERSHED	A minor drainage unit and a hydrologic component of a watershed.

SURFICIAL MATERIAL	Unconsolidated deposits of variable content and texture that overlie the bedrock surface. Major textural categories include alluvium, terraced sands and gravels, loess, till and outwash.
TILL	Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.
TILL PLAIN	An extensive flat to undulating area underlain by glacial till.
TROPHIC STATE INDEX	A numeric index for lakes that rates the water quality of the lakes from a scale of 0 to 100 based on algal biomass. The index number can be calculated from any of several parameters, including secchi disc transparency, chlorophyll, and total phosphorus.
WATER APPROPRIATIONS	Waters of the state that are appropriated in excess of 10,000 gallons per day and/or 1 million gallons/year. A permit from the DNR is required for this type of activity.
WATER RESOURCE LIBRARY	A compilation of information from various agencies used in the preparation of the Surface Water Management Plan. This library is available at the Engineering Department.
WATERSHED	All lands which are enclosed by a continuous hydrologic drainage divide and lie upslope from a specified outlet point.
XPSWMM	Expert System Stormwater Management Model. This computer program models normal and high-water elevations.

AUID – Assessment Unit Identifier
 BOD – Biological Oxygen Demand
 BMP – Best Management Practice
 CIP – Capital Improvement Projects
 City – City of South St. Paul
 COD – Chemical Oxygen Demand
 DNR – Department of Natural Resources
 DWSMA – Drinking Water Supply Management Area
 FEMA – Federal Emergency Management Agency
 FIRM – Flood Insurance Rate Map
 FIS – Flood Insurance Study
 HC – Hydrocarbons
 HWL – High Water Level
 LGU – Local Government Units
 LID – Low Impact Development
 LMRWMO – Lower Mississippi River Watershed Management Organization
 MCES – Metropolitan Council Environmental Services
 MnDOT – Minnesota Department of Transportation
 MnRAM – Minnesota Routine Assessment Method for Evaluating Wetland Functions
 MLCCS – Minnesota Land Cover Classification System
 MNRRA – Mississippi National River Recreation Area
 MPCA – Minnesota Pollution Control Agency
 MRCCA – Mississippi River Critical Corridor Area
 MS4s – Municipal Separate Storm Sewer Systems
 NPDES – National Pollutant Discharge Elimination System
 NURP – National Urban Runoff Program
 NWI – National Wetland Inventory
 NWL – Normal Water Level
 PAHs – Polycyclic Aromatic Hydrocarbons
 the Plan – South St. Paul’s Comprehensive Stormwater Management Plan
 SSTS – Subsurface Sewer Treatment Systems
 SWPPP – Stormwater Pollution Prevention Program
 TKN – Total Kjeldahl Nitrogen
 TMDL – Total Maximum Daily Load
 TP – Total Phosphorus
 TSS – Total Suspended Solids
 WCA – Wetland Conservation Act

1. EXECUTIVE SUMMARY

This Comprehensive Stormwater Management Plan (the Plan) for the City of South St. Paul (the City) has been developed to meet local watershed management planning requirements of the Metropolitan Surface Water Management Act and Board of Water and Soil Resources Rules Chapter 8410. It has also been developed to be in conformance with the requirements of the Lower Mississippi River Watershed Management Organization (LMRWMO), Metropolitan Council requirements, and applicable State and Federal laws. This document and its referenced literature is intended to provide a comprehensive inventory of pertinent water resources related information that affects the City and management of those resources.

Section 2 – Land and Water Resource Inventory provides an inventory of land and water resources within the City. This section of the plan includes a general description and summary of data related to precipitation, geology, topography, flood problem areas, existing flood insurance studies, water quality, shoreline ordinances, surface and ground water appropriations, ground water, soils, land use, public utilities services, public areas for water-based recreation and access, fish and wildlife habitat, unique features, scenic areas, and pollutant source locations within the City.

Section 3 – Cooperation with Other Agencies provides a summary of the agencies and organizations whose rules the City is in compliance with and will cooperate with to implement this Plan. This section also lists the personnel contacts involved in the assistance and implementation of this plan.

Section 4 – Problems and Corrective Actions provides an assessment of the existing and potential water resource related concerns within the City and possible corrective actions.

Section 5 – Establishment of Goals and Policies outlines water resource management related goals and policies of the City, which address the needs of the City and County, as well as regional, state, and federal agencies.

Section 6 – Implementation Priorities/Implementation Program develops an implementation program and discusses the responsibilities, priorities, and financial considerations associated with the implementation program. This section also discusses the financial considerations of implementing the proposed regulatory controls, programs, and improvements as well as the amendment procedure for the Plan if needed.

Section 7 – References/Supplemental Documents provides a list of additional documents which are referenced throughout the Plan and are available at the Water Resource Library located at South St. Paul Engineering Department.

This Stormwater Management Plan will be in effect until significant changes are deemed necessary or the City is required to update the Plan per a Watershed Management Organization Plan update.

This plan contains a number of appendices that provide background resource information for the City.

1.1. Water Resource Related Agreements

The City has entered into water resource-related agreements that govern in part how the City must manage its water resources. These agreements include the joint powers agreement between the City and LMRWMO, agreements between the City and adjoining communities, or agreements it may have with other governmental units or private parties. Listed below is a description of the water resource related agreements into which the City has entered. A copy of these agreements or appropriate portions thereof, are included in **Appendix B**.

- Cities of Inver Grove Heights, Lilydale, Mendota Heights, St. Paul, South St. Paul, Sunfish Lake, and West Saint Paul

Revised and Restated Joint Powers Agreement establishing a Watershed Management Organization for the Lower Mississippi River Watershed, 2001.

2. LAND AND WATER RESOURCE INVENTORY

As required in Minnesota Rules Section 8410.0060, this section of the plan provides a general description and summary of the land and water resources within the City. This section also identifies where detailed information can be obtained for different areas of concern.

2.1. Climate and Precipitation

2.1.1. Climate

The climate within the Minneapolis/St. Paul metropolitan area is described as a humid continental climate with moderate precipitation, wide daily temperature variations, warm humid summers, and cold winters. The total average annual precipitation is approximately 31 inches, of which approximately one-third occurs in the months of June, July, and August. The annual snowfall average is about 56 inches and is equivalent to approximately 5.6 inches of water. Average monthly temperature, precipitation, and snowfall are shown in **Table 2-1**.

2.1.2. Precipitation

A rainfall event having a 99% chance of occurrence in any given year (1-year storm event) within a 24-hour period is approximately 2.5 inches. A rainfall event having a 1% chance of occurrence (100-year storm event) in a 24-hour period is approximately 7.4 inches. The 1%, 10-day runoff (snowmelt) is 7.2 inches. These values are based on the Atlas 14 precipitation frequency estimates. Additional climatological information for the area can be obtained from the [National Weather Service Website](#) or from the [State Climatologist Website](#).

2.2. Geology and Topographic Information

2.2.1. Geology

The City of South St. Paul is located in northeast Dakota County (**Figure 1, Appendix A**). The City of St. Paul lies to the north, West St. Paul to the west, and Inver Grove Heights to the south. The eastern boundary of the City is the Mississippi River. Total area within the corporate limits is approximately 6.2 square miles. The City lies completely within the LMRWMO (**Figure 2, Appendix A**).

The geomorphology of the City is comprised of nonglacial deposits, deposits indirectly related to glaciation, and Superior Lobe deposits. The composition of the Superior Lobe deposits, located in the western portion of the City, includes various forms of till from reddish-brown sandy loam, to cobbles and boulders, and to stringers and masses of poorly sorted sand and gravel. Glacial deposits include Lower, Middle, and Upper Terrace deposits, composed of clean sand and gravel varying between 5 to 170 feet above the floodplain. The composition of the nonglacial deposits, along the Mississippi River, consists of clayey floodplain alluvium.

The bedrock formations include Platteville and Glenwood Formations, St. Peter Sandstone, Prairie Du Chien Group, and Jordan Sandstone. Depth to the bedrock varies from less than 50 feet to 200 feet below the surface.

Six aquifers are located within the City boundaries: the Prairie Du Chien-Jordan Aquifer, the Platteville Aquifer, the St. Peter Aquifer, the St. Lawrence-Franconia Aquifer, the Ironton-Galesville Aquifer, and the Mt. Simon-Hinckley Aquifer which is the deepest high-yield aquifer available to Dakota County. The Prairie Du-Chien-Jordan Aquifer is of special importance, since it provides the water supply for a majority of Dakota County.

Additional geologic information for areas within the City can be found in the Geologic Atlas of Dakota County, which is available in the Water Resource Library at the City.

TABLE 2-1 AVERAGE MONTHLY TEMPERATURE AND PRECIPITATION DATA

Month	Average Temp (°F)	Precipitation (inches)
January	15.6	0.90
February	20.8	0.77
March	32.8	1.89
April	47.5	2.66
May	59.1	3.36
June	68.8	4.25
July	73.8	4.04
August	71.2	4.30
September	62.0	3.08
October	48.9	2.43
November	33.7	1.77
December	19.7	1.16
Average or Total	46.2	30.61

Source: National Centers for Environmental Information, MSP Airport

2.2.2. Topography:

The topography of the City can be described as gently rolling, with steeper areas near the Mississippi River. Stormwater runoff from the City of South St. Paul is generally directed from the west to the east into the Mississippi River.

The east side of South St. Paul is a narrow, flat stretch of land with an approximate elevation of 700 feet above sea level. This area is part of the Mississippi River floodplain. The low area is separated from the rest of the City by a steep bluff rising 100 feet above the floodplain. The areas west of the bluff are level in the south and central part of the City and hilly in the north part. The highest points of the City are in the west, with areas reaching heights of 950 feet above sea level.

The specific drainage patterns, which depict topography for areas within the City, are shown on the subwatershed delineation map on **Figure 3, Appendix A**. As can be observed from the subwatershed delineation map, the City of South St. Paul is divided into many small watersheds. The subwatershed delineations were developed using LiDAR information for the City, storm sewer as-builts, aerial photos, and field investigations.

Additional information regarding watershed delineation studies within the City can be found in the following studies :

1. Drainage Plan: Highway 110-494 Watershed
2. Phase IIA Evaluation: Kaposia Dam
3. Simons Ravine Feasibility Study

These studies and the results are available in the Water Resources Library at the City.

2.3. Surface Water Resource Data

Available surface water resource data within the City is summarized in this section. Detailed information has been included either in the appendices to this report or has been identified by reference and is available in the Water Resource Library at the City.

The hydrologic system of the City consists of wetlands, streams, and major water bodies as outlined below.

2.3.1. *Wetlands*

Figure 4, Appendix A shows the most updated Public Waters and Wetlands information provided by the DNR. **Figure 5, Appendix A** shows the National Wetland Inventory (NWI) identified wetlands for the area. These wetland inventories will be utilized to assist in determining if a wetland is present on a given parcel within the City for design and regulatory purposes.

To comply with state and federal regulations, any wetland that may be impacted by a project within the City must be field delineated in accordance with the currently accepted wetland delineation method. When wetland modification is proposed, a more detailed functional assessment must be performed using an accepted wetland assessment methodology such as the Minnesota Routine Assessment Method for Evaluating Wetland Functions (MnRAM).

The Wetland Conservation Act of 1991 (WCA) states that Local Government Units (LGUs) are responsible for administering the rules of the WCA. The overarching goal of the WCA is to promote no net loss of wetlands. The Dakota County Soil and Water Conservation District is the LGU responsible for administering the WCA for the City.

Commented [KF1]: True?

The Wetland Health Evaluation Program (WHEP) engages volunteers throughout Dakota and Hennepin counties to help monitor wetlands in their communities. The City will continue to participate and support the WHEP to help keep residents involved and invested in the health of community wetlands.

2.3.2. *Major Bodies of Water*

There are a few major water bodies that convey and store water within and through the City. These water bodies are listed below with their associated DNR Assessment Unit Identifier (AUID), if applicable.

- Mississippi River and associated wetlands (AUID 07010206-504)
- Kaposia Creek (AUID 07010206-912)
- Seidl's Lake, which straddles the corporate boundary with Inver Grove Heights (AUID 19-0095-00)
- Anderson's Pond
- LeVander's Pond
- Bohrer Pond, which straddles the corporate boundary with Inver Grove Heights (AUID 19-0034-00)

More information about these water bodies is included in various portions of this section.

2.3.3. *Hydrologic Modeling (Water Quantity)*

Commented [KF2]: Ask City for any updates to the model...Atlas 14, land use changes, etc

The City's hydrologic/hydraulic system consists of the Mississippi River, Seidl's Lake, as well as other ponds, wetlands, and storm sewer pipe drainage systems. The City is divided into subwatershed areas, which are shown on **Figure 3, Appendix A**. A TR-20 based hydrologic/hydraulic computer model has been developed for the City.

The hydrologic/hydraulic modeling effort quantifies the 10% (10-year), and 1% (100-year) chance rainfall events, peak discharge rates, storage requirements, other pertinent hydrologic/hydraulic information for stormwater retention areas, and trunk stormwater conveyance systems within the City. The hydrologic/hydraulic modeling results are included as **Appendix C**.

Additional information regarding water quantity within the City can be found in the following studies:

1. Drainage Plan: Highway 110-494 Watershed
2. Phase I Review of Kaposia Dam
3. Phase IIA Evaluation: Kaposia Dam
4. Simons Ravine Feasibility Study

These studies and the results are available in the Water Resources Library at the City.

2.4. Flood Insurance Studies

A Federal Emergency Management Agency (FEMA) Flood Insurance Study (FIS) was completed for areas within the City in 1979 and updated in 2011. The FIS consisted of a study report, a flood boundary and floodway map, and Flood Insurance Rate Map (FIRM). The FIRM and the FIS are available from the Water Resource Library at the Engineering Department at City Hall. The 100-year and 500-year floodplain boundaries for the City of South St. Paul are shown in **Figure 6, Appendix A**.

E. Water Resource Problem Areas

A number of water resource problem areas were identified within the City. **Figure 7, Appendix A** shows the locations of these water resource problem areas. These areas were identified through information obtained from City staff and from the public input process. The problem areas identified include:

1. Erosion along the Mississippi River
2. Seidl's Lake water levels
3. Simon's Ravine erosion (ongoing)
4. Possible sedimentation at Levander Pond
5. Levee Pump Station deficiencies
6. Dawn Way storm sewer

More detailed information about these areas is available in **Section 4** of this Plan.

2.5. Water Quality Data

2.5.1. Overview

Water quality data for the City has been obtained from the Minnesota Pollution Control Agency (MPCA) for the larger bodies of water within the City. **Figure 8, Appendix A** shows the location of MPCA monitoring sites within the City. The Mississippi River is the only water body within the City that is listed as impaired by the MPCA. Impairments listed for the Mississippi River between the Metro Wastewater Treatment Plant and the Rock Island Railroad Bridge (AUID 07010206-504) can be found in **Table 2-2** with the associated Total Maximum Daily Load (TMDL) and a summary for the water quality in Seidl's Lake in **Table 2-3**.

TABLE 2-2 IMPAIRMENTS LISTED BY THE MPCA FOR THE MISSISSIPPI RIVER NEAR SOUTH ST. PAUL

Year Added to List	Affected Use	Pollutant/Stressor	TMDL Status	TMDL Name (if applicable)
1998	Aquatic Consumption	Mercury in Fish	Completed	Minnesota Mercury-Southwest Region
1998	Aquatic Consumption	Mercury in Water Column	Completed	Minnesota Mercury-Southwest Region
1998	Aquatic Consumption	PCB in Fish Tissue	Underway	
2014	Aquatic Life	TSS	Completed	South Mississippi Metro TMDL

TABLE 2-3 WATER QUALITY FOR SEIDL'S LAKE

	Mean Total Phosphorus (ppb)	Mean Chlorophyll A (ppb)	Secchi Disk (meters)	Carlson Trophic Status
Seidl's Lake	75	48	1	Hypereutrophic

Additional information regarding water quantity within the City can be found in the following studies:

1. 2001 Study of Water Quality of 132 Metropolitan Lakes
2. 1991 Seidl's Lake Water Quality Study

These studies and the results are available in the Water Resources Library at the Engineering Department at the City.

2.5.2. Water Quality Modeling Data

To provide additional information on existing and future water quality within the City, an urban water quality model was developed. A P8 Urban Catchment Model was developed to predict the movement of stormwater runoff pollutants within the City.

The results of the P8 water quality modeling effort are available in **Appendix D**. It should be noted that the actual stage-storage data for treatment basins utilized in this analysis are consistent with the volume between the normal water level (NWL) and the high water level (HWL) from the TR-20 Hydrologic Modeling effort for the 1% chance rainfall event.

The P8 water quality modeling results include:

- a. Estimations of water quality parameters
- b. Average treatment efficiency of stormwater detention basins within the City
- c. Water quality parameters including:
 - i. Total suspended solids (TSS)
 - ii. Total phosphorous (TP)
 - iii. Total Kjeldahl nitrogen (TKN)
 - iv. Copper
 - v. Lead
 - vi. Zinc
 - vii. Hydrocarbons (HC)
 - viii. Chemical oxygen demand (COD)
 - ix. Biological oxygen demand (BOD)

The concentrations of individual water quality parameters estimated by the P8 water quality model may vary significantly with values obtained from field testing. This inconsistency is due to the extreme variation in water quality parameter concentrations from individual subwatersheds. However, the estimated removal efficiencies of treatment basins would be comparable to the removal efficiencies determined from field investigations. Modeling results and additional information on the P8 water quality modeling effort is available in **Appendix D**.

2.6. Floodplain Management and Shoreland Regulations

The City of South St. Paul has developed Floodplain, Mississippi River Corridor, and Shoreland Zoning Regulations. A copy of these regulations can be found in **Appendix G**. These regulations generally prohibit uses or activities within the floodplain that include structures or fill or that obstructs flood flows or causes increased flood elevations.

2.7. Groundwater Appropriations

Within the City, groundwater wells serve the City and private water needs. 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 found on the [DNR website](#). **Figure 9, Appendix A** shows the locations of the DNR permitted groundwater appropriation sites within the City.

2.8. Groundwater Resource Data

The primary aquifers within the City are the St. Peter Aquifer, the Prairie Du-Chien-Jordan Aquifer, the Franconia-Ironton-Galesville Aquifer, and the Mt. Simon-Hinckley Aquifer. The Prairie Du-Chien-Jordan Aquifer is the most widely pumped aquifer in Dakota County and is used for water supply by the City. The City understands that surface waters and groundwater are interconnected so maintaining clean surface water is key to keeping the City's drinking water supply clean and healthy. The City will continue to work with LMRWMO and Dakota County to maintain clean, drinkable groundwater aquifers.

Groundwater resource data for areas within the City are available by reviewing the following reports. A brief description of the content in these documents is provided below. These documents are available at the Water Resource Library, South St. Paul Engineering Department.

1. *The Dakota County Geologic Atlas* completed in 1990 contains information on aquifers, general depth to ground water table, and areas sensitive to groundwater pollution.
2. *Dakota County Comprehensive Natural Resources Management Plan* completed in October 2000 contains information about groundwater within the County.
3. *Dakota County Comprehensive Plan* updated in 2009, serves as the County's groundwater protection plan and contains basic information about Dakota County's groundwater resources, a description of the groundwater planning process, local groundwater management information, county geology and hydrology information, groundwater issues, wellhead protection information, and the County's groundwater protection goal, policy, and implementation strategy.

2.9. Wellhead Protection

In 2003, the City completed its Wellhead Protection Plan which addresses the municipal water supply used by the City and the associated source water aquifers. **Figure 10, Appendix A** shows the boundaries of the City's drinking water supply management area (DWSMA) and the wellhead protection area. A copy of the Wellhead Protection Plan can be found at the Water Resources

Library, South St. Paul Engineering Department.

2.10. Soils Information

The soils in most areas of the City are sandy, gravelly material deposited by glaciers or outwash from the river. The hydrologic soil classification map is shown in **Figure 11, Appendix A**. The four soil classifications are defined as follows:

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

Group D – 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.

The soils in most of the City are classified as part of the Kingsley-Mahtomedi series. This series consists of gently sloping to very steep, well drained and excessively drained soils formed in loamy and sandy glacial till and sandy glacial outwash on uplands and pitted outwash plains. These soils contain a mixture of Group A and B soils.

The eastern areas along the bluff leading down to the Mississippi River contain mainly soils of the Waukegan-Wadena Hawick series. This series consists of level to very steep, well drained and excessively drained soils formed in silty and loamy sediments over sandy outwash on outwash plains and terraces. These soils contain a mixture of Group A and B soils.

Along the Mississippi River, the soils are mainly classified as the Colo-Algansee-Minneiska series. This series consists of nearly level, poorly drained to moderately well drained soils formed in loamy, silty, or sandy alluvium on flood plains of major rivers. These soils contain primarily Group B soils.

Additional information on the geology and soil for the City is included in the Soil Survey of Dakota County available at the Water Resource Library at the Engineering Department.

2.11. Land Use and Public Utilities Services

The City of South St. Paul land use practices include residential, commercial, industrial, public and private overlay districts, a riverfront development district, and a rail transportation district. **Figure 12, Appendix A** shows the zoning within the City. **Figures 13 and 14, Appendix A** show the existing and future land uses for the City, respectively.

The Minnesota Land Cover Classification System (MLCCS) has been completed within the City. The results of the land cover classification are shown in **Figure 15, Appendix A**.

The City of South St. Paul provides all City water and sewer services. The City has completed a

sewer separation project to separate the combined sanitary and storm sewers for the majority of the City. There are still two locations within the City where sanitary and storm sewer are combined, at Warner Avenue and leaving the Concord Fresh Meats building.

The City contains approximately 20 Subsurface Sewer Treatment Systems (SSTS). Sixteen are located in or near the airport (holding tanks). The others are located in areas too low to access the City's system. Redevelopment of these areas could require the construction of a lift station.

2.12. Public Areas for Water Based Recreation and Access

Water bodies in the city provide both opportunities for both active recreation such as boating and fishing and passive recreation such as walking. These recreational resources are outlined below:

Mississippi River: The Mississippi River provides boating, fishing, and hiking opportunities within the City. The South St. Paul Boat Launch is located directly south of the Highway 494 Bridge off Verderosa Avenue. It is a DNR Level 1 boat launch facility. The Mississippi River is also a State Canoe Route.

Seidl's Park: Seidl's Lake straddles the corporate boundary with Inver Grove Heights and is used for both passive recreation and recreational fishing. Seidl's Lake is surrounded by parkland, which is heavily wooded with steep topography. There is an observation platform, but no public access or beach.

Additional information regarding recreational opportunities within the City is available in the *City of South St. Paul 2018 Comprehensive Plan* available in the Water Resource Library and on the [City's website](#).

2.13. Fish and Wildlife Habitat

South St. Paul provides habitat for a variety of small mammals, reptiles, birds, amphibians, and insects. Maintenance of habitat for wildlife species is important in maintaining ecological stability in South St. Paul natural areas. The City contains one lake, Seidl's Lake, which is capable of supporting a fish population.

Appendix F contains information obtained from the DNR Natural Heritage database. This data indicates there is a variety of unique fish and wildlife habitat within the City, much of which is located along the Mississippi River, which is within the area designated as the Mississippi River Critical Area Corridor.

2.14. Unique Features and Scenic Areas

Unique features and scenic areas include State designated Scientific and Natural Areas, designated scenic areas, areas containing rare and endangered species, and historic areas.

The City of South St. Paul has natural areas within two of its 12 parks and open space areas, Kaposia Park and Seidl's Lake Park. Kaposia Park contains rare and endangered species and special habitats. **Appendix F** contains information from the DNR Natural Heritage Database outlining the rare and endangered species and special habitats within and near the City.

The City has no wild and scenic rivers as defined by the State.

The City does have a number of historical and architectural resources as identified by the Minnesota State Historical Preservation Office. These resources include the following areas:

Table 2-4. Historic Properties/Sites within the City of South St. Paul

Site	Approximate Location
Armour Meat Packing Plant	Section 22, T28N, R22W
Armour Meat Packing Plant	Section 26, T28N, R22W
Armour Meat Packing Plant	Section 27, T28N, R22W
Clark House	Section 22, T28N, R22W
Clark Memorial United Church of Christ	Section 21, T28N, R22W
Croatian Hall	Section 27, T28N, R22W
Harold E. Stassen House	Section 27, T28N, R22W
Houses	Sections 16&21, T28N, R22W
House (razed?)	Section 16, T28N, R22W
IOOF Hall	Section 16, T28N, R22W
Kochendorfer House	Section 16, T28N, R22W
Serbian Home*	Section 27, T28N, R22W
South St. Paul Post Office	Section 22, T28N, R22W
St. Stefans Romanian Orthodox Church*	Section 16, T28N, R22W
Swift and Company	Section 22, T28N, R22W
Stockyards Exchange Building*	Section 22, T28N, R22W
Veterans Memorial Library	Section 22, T28N, R22

Source: Minnesota State Historic Preservation Office

* Listed on the National Register of Historic Places.

2.15. Pollutant Source Locations

Figure 16, Appendix A shows the approximate locations of a variety of sites that are listed with MPCA as a possible pollutant source. There are a number of active sites in the process of being cleaned up within the City. Specific details of each site can be obtained from the MPCA.

Other potential pollutant sources include industrial, commercial, residential, and other highly impervious land uses. Stormwater runoff from these land uses could carry pollutants into the stormwater system as nonpoint source pollution, especially if there are direct inlets into the storm sewer system that do not drain first into a stormwater pond. Facilities within these land use types may be covered by a National Pollutant Discharge Elimination System (NPDES) General Industrial Stormwater Permit, which requires preparation of stormwater pollution prevention plans to prevent nonpoint source pollution.

2.16. NPDES Phase II

The MPCA implemented the NPDES Phase II Stormwater Program in March 2003. Phase II requires Municipal Separate Storm Sewer Systems (MS4s) to obtain an Stormwater Pollution Prevention Program (SWPPP) permit. MS4s designated by rule are urban areas with populations over 10,000 or urban areas with populations greater than 5,000 with the potential to discharge to valuable or polluted waters. Permits for construction sites greater than one acre will also be required as part of Phase II.

As an MS4, the City will be required to implement the following 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 Management
6. Pollution Prevention/Good Housekeeping for Municipal Operations

The City's updated SWPPP can be found in **Appendix E**. For more information on the MS4 Permit requirements refer to the [MPCA website](#).

3. COOPERATION WITH OTHER AGENCIES

There are a number of other local, state, and federal agencies that have rules and regulations related to stormwater management. Through this strategy, the City recognizes these other agencies' role in this endeavor and will cooperate and coordinate with these agencies as necessary.

This Plan is in conformance with but does not restate all other agency rules that are applicable to the water quality and natural resource protection. The other agency rules and policies are associated with the following organizations:

- [Minnesota Department of Health](#)
- [Minnesota Pollution Control Agency](#)
- [Board of Water and Soil Resources](#) and the [Wetland Conservation Act](#)
- [Minnesota Department of Natural Resources](#)
- [US Army Corps of Engineers](#)
- [Minnesota Department of Agriculture](#)
- [US Fish and Wildlife Service](#)
- [Ramsey County](#)
- [Ramsey County Soil and Water Conservation District](#)
- [Rice Creek Watershed District](#)
- [Minnesota Environmental Quality Board](#)
- [Metropolitan Council](#)

While these agency rules, policies, and guidelines are not restated in this Plan, they are applicable to projects, programs, and planning within the City. The [MPCA Minnesota Stormwater Manual](#), which is a document intended to be frequently updated, is also incorporated by reference into this Plan.

3.1. Personnel Contacts

To implement this plan, a coordinated water resource management approach must be used. This approach utilizes the services of staff personnel within the City and surrounding communities, as well as staff personnel associated with the LMRWMO. The City is entirely within the LMRWMO as shown on **Figure 2, Appendix B**.

The primary implementation responsibility will lie with the appropriate staff members at the City. Assistance from the surrounding municipalities and the LMRWMO will also be expected. Outlined below are the organizations, names, addresses, and telephone numbers for personnel having responsibilities for overseeing or implementing various aspects of the Stormwater Management Plan.

City of South St. Paul
City Engineer
Chris Hartzell, P.E.
125 3rd Avenue North
South St. Paul, MN 55075-2093
(651) 554-3210

Lower Mississippi River Watershed Management Organization
Contact: Joe Barten, Administrator
4100 220th St. West, Suite 102
Farmington, MN 55024
(651) 480-7784

4. ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS

This section outlines an assessment of existing and potential water resource related problems that are known at this time. These problems have been identified based on an analysis of the land and water resource data collected as part of this local plan preparation and through information collected at the public input meetings.

4.1. Lake and Stream Water Quality

1. Past and future development in the Seidl's Lake watershed—which includes the cities of Inver Grove Heights, West St. Paul, and South St. Paul—has impacted the water quality in the lake.

Corrective Action

- a. Work with the LMRWMO to review water quality impacts on stormwater that transcends municipal boundaries.
 - b. Consider both structural and non-structural best management practices (BMPs) within the watershed to improve the water quality of runoff to Seidl's Lake. Currently, two of the outlets from the City that discharge to Seidl's Lake have BMPs in place. A third BMP is planned near the Alice Court water tower at 18th Avenue and 4th Street.
 - c. Work with volunteers to monitor the water quality of Seidl's Lake.
2. General water quality concerns of the Mississippi River.

Corrective Action

- a. Work with the LMRWMO and others to reduce the pollutants entering the Mississippi River.
3. Water quality concerns at LeVander Pond.

Corrective Action

- a. Complete a feasibility study to investigate possible contamination, water quality degradation, and sedimentation. Depending on the findings of the study, improvements may need to be constructed. Bathymetric surveys will be completed as part of the study.
 - b. Sedimentation removal within LeVander Pond should be considered at least every ten years, depending on need.
4. TMDL Requirements

Corrective Action

- a. Work with the LMRWMO and other member cities to address the South Metro Mississippi TMDL study and implementation plan and other TMDLs as they are completed.
- b. The City will evaluate areas near stormwater outfalls to the Mississippi River to determine if there is space available to add water quality BMPs along the river to reduce sediment and phosphorus loading to the Mississippi River.
- c. In response to the South Metro Mississippi TMDL, the City will determine if there are open spaces throughout the City where water quality BMPs can be constructed to reduce sediment and phosphorus loading to the Mississippi River.

4.2. Flooding and Stormwater Rate Control Concerns within the City

1. On-going levee and pump station operations and maintenance to reduce risk from Mississippi River flooding.

Corrective Action

- a. Continue with routine maintenance of levee and pump station including vegetation removal, annual inspections, and other general maintenance needs.
2. Flooding and drainage issues at the intersection of 7th Avenue and South Street.

Corrective Action

- a. Evaluate inlet capacity at the intersection of 7th Avenue and South Street to determine if additional inlets are needed to reduce the risk of flooding.
3. Street and property flooding concerns near the property of 1320 Poplar Avenue.

Corrective Action

- a. Drainage from Inver Grove Heights is routed between 1320 and 1326 Poplar Avenue into the City. Evaluate if the storm sewer is undersized or if additional storage is available to reduce the risk of flooding.
4. Flooding and drainage issues near the Cenex building located on Concord Street.

Corrective Action

- a. Reconstruction of Concord Street between Annapolis Street and I-494 is planned for 2021. The reconstruction will include replacing the storm sewer trunk line along Concord Street to reduce the flooding risk. The City will look to incorporate water quality treatment into the design of the reconstruction project.
5. Flooding and drainage issues at Villaume Avenue.

Corrective Action

- a. Drainage on Villaume Avenue is routed through storm sewer to MnDOT owned stormwater ponds and eventually discharges to the Mississippi River. The City will evaluate if inlet capacity or undersized storm sewer are the reason for flooding issues along Villaume Avenue and will implement the proper solution.
6. Flooding and drainage issues on Hardman Avenue near the S&S Tree and Horticultural Specialists property.

Corrective Action

- a. Flooding occurs near the S&S Tree and Horticultural Specialists property during large storm events when the levee walls are up. The City will look into possible solutions including additional storage near the property.
7. The four 72-inch pipes running under the railroad tracks near Malden Street consistently get plugged with sediment. These 72-inch pipes connect to a 120-inch pipe which discharges to the Mississippi River.
- a. The City will evaluate where the majority of the sediment is originating. There is a gravel road running parallel to the railroad tracks upstream of the four 72-inch pipes which may need to be stabilized to reduce the amount of sediment delivered to the pipes.

- b. The City will evaluate if tailwater effects from the Mississippi River are backing up into the storm sewer outlet. The City will determine if a flap gate is required to minimize the risk of tailwater effects from the Mississippi River during larger storm events.

4.3. Flooding or Stormwater Rate Control Concerns between the City and Adjoining Entities

1. Past and future development within the cities of Inver Grove Heights, West St. Paul, and South St. Paul and climatic events have the potential to increase water elevations in landlocked Seidl's Lake. Increased water elevations may result in loss of vegetation around the lake, flood trails, and flood the observation platforms.

Corrective Action

- a. Work with the LMRWMO and the City of Inver Grove Heights to minimize the impact of development on high water elevations in Seidl's Lake.
 - b. Construct a lift station and force main from Seidl's Lake to reduce the impact of high water elevations on the lake. Cost share has been determined by LMRWMO and will be split between the cities of Inver Grove Heights, West St. Paul and South St. Paul. See Problem 4.1.1 for more information.
2. Existing storm sewer at Dawn Way and 59th Street East in Inver Grove Heights receives water from South St. Paul airport, which may contribute to manhole covers being blown off manhole structures.

Corrective Action

- a. A feasibility study of the Dawn Way and 59th Street Storm Sewer system was completed. The Cities of Inver Grove Heights and South St. Paul will construct the Dawn Way Storm Sewer Improvement Project to alleviate drainage concerns. Refer to the allowable flow cost apportionment dated October 22, 2008 found on Dakota County Soil and Water Conservation District's [website](#) for the previously calculated cost splits for Inver Grove Heights and South St. Paul.
3. MnDOT is planning to construct an auxiliary lane at I-494 and Concord Street interchange in 2021 and will reconstruct the storm sewer from the interchange.

Corrective Action

- a. Work with MnDOT to determine if downstream outlet through existing stormwater ponds will be sufficient for the reconstructed storm sewer system.

4.4. Impacts of Stormwater Quality on Fish and Wildlife Resources

1. Water quality in the Mississippi River have impacted fish and wildlife resources.

Corrective Action

- a. Work with the LMRWMO and other Federal, State, and local agencies to improve the water quality of the Mississippi River.

4.5. Impacts of Soil Erosion on Water Quality and Water Quantity

1. During significant rainfall events, soil erosion has carried sediment to water bodies within the City. Sediment deposits reduce the depth of water and degrade the quality of water within a basin.

Corrective Action

- a. Implement the goals, policies, capital improvements program, and studies outlined within this Comprehensive Stormwater Management Plan.
 - b. Implement the City's NPDES Phase II Program.
 - c. Implement the City's SWPPP (**Appendix E**) to remove sediment deltas at storm sewer inlets and outlets.
2. Addressing erosion and sedimentation along streambanks and lakeshores has been identified as a priority by the LMRWMO.

Corrective Action

- a. The City will identify and prioritize shoreland areas for restoration.
 - b. The City will construct prioritized shoreland restoration projects as necessary and as funding mechanisms allow.
 - c. The City will work with the LMRWMO and the US Army Corps of Engineers to identify the location and extent of erosion problems along the Mississippi River within the City of South St. Paul. A shoreland restoration project along the bank of the Mississippi River south of the levee is planned for 2020-2021.
3. On-going erosion issues associated with Simon's Ravine

Corrective Action

- a. Perform regular maintenance activities to stabilize erosion prone areas and reduce downstream sedimentation. Maintenance activities include dredging ravine on a four to five year cycle and removing overgrown vegetation.
4. Erosion issues along the banks of the ravine located south of Bryant Avenue.

Corrective Action

- a. The City will stabilize and perform maintenance along the ravine to reduce the erosion. The City will need to determine the best maintenance access location and be cognizant of the utilities running below the ravine when performing maintenance.
- b. Currently, multiple piped outlets discharge directly into the ravine with no energy dissipation. The City will evaluate adding energy dissipation to the end of the piped outlets to reduce the risk of erosion while avoiding any negative impacts for water control.

4.6. General Impact of Land Use Practices and in Particular Land Development and Land Alteration on Water Quality and Water Quantity

1. The City of South St. Paul is a fully developed urban city with very limited water resources. The City is directly tributary to the Mississippi River and discharges stormwater directly to the River. In many cases this water is not controlled or treated prior to discharge.

Corrective Action

- a. The City will implement stormwater rate control and treatment of runoff directed to the Mississippi River when redevelopment opportunities allow for these improvements.

4.7. Adequacy of Existing Regulatory Controls to Manage or Mitigate Adverse Impacts on Public Waters and Wetlands

1. The City has adequate floodplain, river corridor, shoreland zoning, and illicit discharge ordinances. A copy of these ordinances is located in **Appendix G**.
2. The City is required to be in conformance with the NPDES Phase II Program.

Corrective action

- a. The City will implement the NPDES Phase II Program and enforce the City ordinances.
- b. The City inspects and maintains outfalls, sediment basins, ponds, and other BMPs consistent with its MS4 permit.

4.8. Adequacy of Programs to Limit Soil Erosion and Corresponding Water Quality Degradation

1. The City's stormwater management ordinance contains erosion control provisions.
2. The City has developed a SWPPP. A copy of the SWPPP can be found in **Appendix E**.

Corrective Action

- a. The City will implement and annually update/review the SWPPP.
- b. Implement the goals, policies, capital improvements program, and studies outlined within this Plan.

4.9. Adequacy of Capital Improvement Projects to Correct Problems Relating to Water Quantity, Water Quality Management, Fish and Wildlife Habitat, Public Waters and Wetland Management, and Recreational Opportunities

1. The capital improvement projects outlined within this plan and the general operating procedures of the City are sufficient to address water resource related concerns. However, the Stormwater Utility Fund may not be an adequate funding source by itself to allow for the aggressive implementation of the capital improvement projects.

Corrective action

- a. The City will review the needs for stormwater capital improvements on a regular basis and adjust its fees accordingly.
- b. The City will actively seek outside grant funding and assistance to help in the implementation of these projects.

4.10. Identification of Potential Problems which are Anticipated to Occur within the Next Twenty Years Based on Growth Projections and Planned Urbanization

1. The City anticipates that there will be an increased demand to improve the quality of water within the City and the appearance of stormwater retention areas. Additional funding sources will need to be sought to address this demand.

Corrective Action

- a. The implementation of this Stormwater Management Plan will address water quantity, quality, and maintenance issues associated with stormwater retention areas. Maintenance of these stormwater retention areas will be undertaken as outlined in the City's SWPPP outlined in **Appendix E**.
 - b. The City will budget maintenance activities as well as actively seek outside grant funding and assistance, when available and practical, to improve the quality and appearance of stormwater retention areas.
2. Increase in accumulation of debris and material on City streets.

Corrective Action

- a. The City will continue to follow the street sweeping schedule laid out in the SWPPP (**Appendix E**), which indicates sweeping the streets once in the fall after the leaf drop and once in the spring. Street sweeping helps to keep particles out of nearby waterbodies, addressing the South Metro Mississippi TMDL.
3. Increasing prevalence of polycyclic aromatic hydrocarbons (PAHs) and other contaminants in stormwater ponds from runoff of roadways and other surfaces.

Corrective Action

- a. As maintenance projects are needed, the City will determine if PAHs or other contaminants are present and follow the MPCA's guidelines for disposal of dredged material.
4. Increasing prevalence of chloride in stormwater ponds in the metropolitan area from road salt runoff from roadways and other impervious surfaces.

Corrective Action

- a. The City will work to implement preventative measures to reduce the chloride runoff before it reaches the stormwater ponds as noted in the Twin Cities Metropolitan Area Chloride Management Plan. The City trains employees in road salt management and application rates. The City will continue to sweep its streets in the spring to remove salt debris from the prior winter.
5. Aging storm sewer throughout the City.

Corrective Action

- a. The City will look for opportunities to construct new storm sewer when street reconstruction projects are scheduled.

4.11. Adequacy of Existing Technical and Background Information on Systems in the City that Are Used to Manage Water Resources

1. The City acknowledges that additional technical and background information is required to efficiently and effectively manage water resources.

Corrective Action

- a. Implement a long-range water quantity and quality-monitoring plan for the City where appropriate.
- b. Continue to keep up to date with technological advances and pursue innovative technologies to manage water resources.

- c. Improve the transfer of surface water resource information to the public through the City's education program.

4.12. Impact of Utility Practices on Water Resource Issues

1. The majority of the City is served by a sanitary sewer collection system that conveys sanitary sewerage to a treatment plan. However, there are still approximately twenty subsurface sewer treatment systems (SSTs) within the City. Approximately 16 are located at the airport and serve as holding tanks.

Corrective Action

- a. The SSTs which are not located at the airport lie within areas that are too low to access on the current City sanitary sewer collection system. The City will continue to ensure all SSTs remain in compliance and will look for opportunities to connect these areas to the City's sanitary sewer system when redevelopment projects in these areas occur. Lift stations would most likely be required in order to connect these low lying areas to the City's sanitary sewer system.
2. The majority of the City has separated sanitary and storm sewer, however there are still two areas within the City with combined sanitary and storm sewer, at Warner Avenue and leaving the Concord Fresh Meats building.

Corrective Action

- a. A project to separate the sanitary and storm sewer along Warner Avenue is planned for 2019.
- b. The City will work with Concord Fresh Meats to determine the best way to separate the sanitary and storm sewer in the area. The City will look into possible land use changes as an option moving forward.

5. ESTABLISHMENT OF GOALS AND POLICIES

The City of South St. Paul has developed a number of goals and policies that conform to the overall purpose that is specified in Minnesota Statutes Section 103B.201. These goals and policies have been developed to complement county, regional or state goals and policies, and to be in conformance with the policies required by the Watershed Management Plan for the LMRWMO, dated August 2011 and amended in 2015. Policies which have been taken from the LMRWMO Watershed Management Plan have been indicated with *(LMRWMO)* following the policy below. The City of South St. Paul will work with the LMRWMO on intercommunity issues.

These goals and policies have also been developed to preserve and use natural water storage and retention systems to:

- A. Limit public capital expenditures that are necessary to control excessive volumes and rates of runoff.
- B. Improve water quality.
- C. Prevent erosion of soil into surface water systems.
- D. Promote ground water recharge.
- E. Protect and enhance fish and wildlife habitat and water recreational facilities.
- F. Secure the other benefits associated with the proper management of surface water.

The goals and policies that the City has developed address issues related to water quantity, water quality, recreation, fish and wildlife, enhancement of public participation, information and education, public ditch system management, ground water management, wetland management and soil erosion management. Outlined below are the goals and policies that have been developed for each of the areas of concern.

5.1. Water Quantity

Goal:

Limit the public capital expenditures necessary to control excessive runoff volumes, rates, and downstream impacts from development.

Policies:

1. The level of flood protection to be provided along trunk conveyance systems streams, channels, wetlands, ponds, detention basins, and lakes shall be based on the critical-duration 100-year flood.
2. Trunk stormwater systems shall be designed at a minimum to carry the 100-year storm event pond discharge in addition to the 10-year design flow for directly tributary areas. For open channel conveyance systems, the design criteria shall be for the critical 100-year event. Variances to this standard may apply in areas where in-place storm sewers are designed for a 5-year frequency event.
3. Volume control shall be required for projects that propose new impervious areas greater than one acre or redevelopment of impervious greater than one acre.
 - a. Volume control may be waived by the City for sites with impermeable soil, where the seasonally high groundwater table is less than three feet from the bottom of the infiltration basin, bedrock depth is less than three feet from the bottom of the infiltration basin, in a stormwater hot spot, or is in an area

- where groundwater has a high vulnerability for contamination.
 - b. New and redevelopment projects shall capture and retain on-site 1.1 inches of runoff from the impervious surfaces in post-construction conditions.
 - c. For projects that create or redevelop less than one acre of impervious surfaces, the City encourages applicants to incorporate volume control or the water quality provisions to the extent feasible.
 - d. Linear projects shall retain the larger of 1.1 inches from all new impervious or 0.55 inches from all new and fully reconstructed impervious.
- 4. The critical 1% chance event will be defined as the event that requires the greatest stormwater storage volume in a storage facility. These facilities include lakes, ponds, and their outlets.
- 5. Emergency overflow structures (e.g., swales and spillways) are to be incorporated, where feasible, into pond outlet structure designs to prevent undesired flooding resulting from storms larger than the 100-year (1%) event or plugged outlet conditions (*LMRWMO*).
- 6. All minor drainage systems (non-trunk) and local stormwater collection systems analyses and design will be based on a 10-year event unless otherwise specified.
- 7. Future discharge rates from new development and redevelopment will at a minimum not exceed the existing discharge rates, or rates which would interfere with sensitive downstream uses.
- 8. The City prefers to provide rate control using regional stormwater detention/retention systems versus site-by-site retention systems. If regional systems are not available, on-site systems may be required (*LMRWMO*).
- 9. Drainage calculations for the 1-, 2-, 10-, and 100-year critical events must be submitted and approved as part of any development or redevelopment applications of one acre in size or greater prior to the issuance of any building or grading permit.
- 10. The design storm events shall be Midwest/Southeast States (MSE) 3 distributions based on the Atlas 14 rainfall frequencies with the following precipitation amounts:

Event Frequency	Event Duration	Probability of Occurrence in Any Given Year	Precipitation Amount (inches)
1 – Year	24 – Hour	99%	2.5
2 – Year	24 – Hour	50%	2.8
5 – Year	24 – Hour	20%	3.5
10 – Year	24 – Hour	10%	4.2
100 – Year	24 – Hour	1%	7.4
100 – Year	10 – Day Runoff (snowmelt)	1%	7.2 (inches of runoff)

- 11. Detention facility design will include access for maintenance of the outlet structure and to the facility in general.
- 12. Easements over floodplains, detention areas, wetlands, ditches, and all other parts of the stormwater system as areas develop or redevelop are required (*LMRWMO*).
- 13. Outlets for landlocked basins will be provided based on the following conditions:
 - a. Only the existing tributary area may discharge to a landlocked basin, unless provision has been made for an outlet from the basin.
 - b. The form of outlet may range from temporary pumps to gravity storm sewers. The outlet is to be in place before increased water levels are likely to affect vegetation, slope stability, and property values (*LMRWMO*).
 - c. The City will encourage the reduction of impervious area coverage and increase infiltration opportunities in watersheds tributary to landlocked basins (*LMRWMO*).
 - d. In establishing high water elevations and whether outlets are needed for landlocked basins, the long duration events such as multiple-year wet cycles and high runoff volume events (e.g., snowmelt events that last for many weeks) will be considered (*LMRWMO*).

Commented [KF1]: Added from Engineering Guidelines

- e. Emergency overflows or outlets to drainage systems will be provided to any landlocked area if the available stormwater storage capacity is inadequate to prevent flooding of residences and if the available downstream conveyance system capacity is adequate to accept additional flow.
14. The City's natural ponding areas, such as wetlands and lakes, currently provide and will continue to provide for the impoundment and treatment of surface water runoff as appropriate and according to local, state, and federal regulations.
15. The City intends to use both designated and non-designated areas to store stormwater runoff. Non-designated areas include general depressions, areas lacking easements, low points, and streets where structures and/or property is not damaged and any inundation that occurs will only be temporary in nature.
16. The City will encourage the development of enhanced infiltration practices wherever practical. The City will not maintain private infiltration areas.
17. Infiltration is not allowed as a stormwater BMP in areas where there are known contaminants or in drinking water supply management areas/wellhead protection areas. In addition, infiltration will not be encouraged where the soils are not suitable for infiltration or in areas where there is less than three feet of separation between the bottom of the infiltration system and the groundwater or bedrock. *In situ* field tests shall be required to verify the infiltration rates of on-site soils prior to the construction of infiltration BMPs (LMRWMO).
18. Pretreatment of stormwater shall be provided prior to discharge to any new infiltration or filtration system to protect the functionality of the system. Pretreatment shall collect sediment, skim floatables, and be easily accessed for inspection and maintenance (LMRWMO).
19. The City will require a maintenance plan that includes procedures for maintenance and funding be submitted prior to approval of private stormwater facilities.
20. Low Impact Development (LID) techniques are to be used to the greatest extent reasonable to reduce the amount of impervious surface for new development and redevelopment projects, taking into consideration land use, zoning, topography, previous site uses, and site constraints. LID techniques may include, but are not limited to, those presented on the [MPCA-Low Impact Development website](#) (LMRWMO).
21. Should flooding occur the City intends to assist in addressing problems associated with structural inundation caused by overland flow in the 1% chance or lesser probability rainfall event in 24-hours by working with property owners to identify and implement economic solutions to minimize damage risks to existing structures in flood prone areas. The City's assistance can be through public improvements or technical advice for private flood proofing improvements.
22. Uses or activities within the 100-year floodplain that include structures, fill, obstruction of flood flows, or cause increased flood elevations are prohibited.
23. The City will consider the effects of events larger than the 100-year flood when setting a minimum building elevation. Higher minimum building elevations will be considered for structures adjacent to ponding areas with large tributary watersheds and for structures adjacent to landlocked basins.
24. The City will ensure that proposed development, redevelopment, and/or infrastructure projects will not overtax the existing downstream stormwater drainage system (LMRWMO).
25. The basement floor elevation of any new building shall be placed at least two feet above the elevation of any known historic high groundwater elevations for the area and at least two feet above the 100-year high surface water elevation in the area.
26. Any new development or redevelopment within the City will maintain a minimum building opening of three feet above the anticipated 100-year high water elevation as a standard practice. However, if this three-foot freeboard requirement is considered a hardship, the standard could be lowered to two feet if the following can be demonstrated:
 - a. That, within the two-foot freeboard area, stormwater storage is available which is equal to or exceeds 50% of the stormwater storage currently available in the basin

- below the 100-year elevation; and
 - b. That a 25% obstruction of the basin outlet for a 100-year critical-duration rainfall event would not result in a high-water elevation greater than one foot above the 100-year high water elevation; and
 - c. An adequate overflow route from the basin will assure that water levels, even for extreme rainfall events, will be greater than one foot below the low building opening elevation.
27. Multi-stage outlets are to be incorporated into pond designs to control flows from smaller, less frequent storms and help maintain base flows in downstream open channels where practicable (*LMRWMO*).

5.2. Water Quality

Goal:

Maintain or improve the quality of water in lakes, streams, or rivers within or immediately downstream of the City.

Policies:

1. The City prefers to provide water quality improvement using regional stormwater treatment systems versus site-by-site systems. If regional systems are not available, on-site treatment may be required (*LMRWMO*).
2. The City will consider water quality requirements satisfied if the volume control standard has been satisfied.
3. In the event that it is infeasible to meet the volume control standard due to site constraints, the applicant will need to meet one of the Minimal Impact Design Standards (MIDS) Flexible Treatment Options in decreasing order of preference from one to three. MIDS Flexible Treatment Options can be found in the City's Stormwater Management Design Standards (**Appendix H**) or on the MN Stormwater Manual [website](#).
4. For areas that discharge directly to the Mississippi River or to an impaired water body for which a TMDL has been completed, the findings of the TMDL will replace Water Quality Policy 3 (where more stringent). The required reduction of total phosphorus may be accomplished using regional or on-site stormwater BMPs such as ponds, NURP (National Urban Runoff Program) basins, infiltration basins, biofiltration, vegetated swales, mechanical devices, porous pavements, or any other techniques effective at phosphorus reduction (*LMRWMO*).
5. Linear construction projects should meet water quality requirements where possible and feasible. Linear projects will be required to meet NPDES Construction Permit requirements (*LMRWMO*).
6. The City may develop and implement a water quality monitoring program.
7. The City will require implementation of best management practices during development and redevelopment to achieve the goal of reducing nonpoint source pollution, with emphasis placed on the watersheds that drain (or will drain) to the Mississippi River (*LMRWMO*).
8. The City will encourage the reduction of impervious surface upon development or redevelopment (*LMRWMO*).
9. The City will consider both the water quality and flooding impacts of proposed outlets from landlocked basins on downstream water resources (*LMRWMO*).
10. For replacement discharge points/outfalls or existing stormwater discharge points/outfalls, there should be pretreatment of stormwater prior to its discharge to wetlands and other water resources.
11. For new stormwater discharge points/outfalls, the City will provide pretreatment (at least grit removal) of stormwater prior to its discharge to wetlands and other water resources (*LMRWMO*).

Commented [KF2]: Does the City want to implement MIDS as indicated in the Engineering Guidelines?

12. The City has developed a SWPPP in conformance with the MPCA's NPDES Phase II Rule. The SWPPP can be found in **Appendix E**.
13. The City will follow the maintenance plan outlined in the SWPPP, which includes maintenance of storm manholes, trap manholes, catch basins, storm sewer pipe, pond inlets, and pond outlets.
14. The City will sweep all the City streets twice annually and more frequently in sensitive areas as outlined in the SWPPP (**Appendix E**).
15. The City will require skimmers in the construction of new pond outlets and will add skimmers to the existing system whenever feasible and practical.
16. The City will continue to implement the City's Public Education Program. The City will utilize information developed by the LMRWMO (when available) to supplement its education efforts.
17. The City will continue to work cooperatively with Dakota County to implement the household hazardous waste disposal program and educate residents on the proper disposal of household hazardous waste.
18. Buffers will be encouraged around storm ponds, lakes, wetlands, and streams upon new or redevelopment. These buffers will be promoted and encouraged for all existing properties adjacent to lakes, streams, and wetlands.
19. The City will attempt to eliminate known illegal connections to the City's stormwater conveyance system.
20. The City will work with neighboring municipalities to require rate control and treatment prior to the discharge of stormwater across municipal boundaries.
21. A response plan to minimize the impact of hazardous spills on protected waters will be developed by the City.
22. The City will continue to follow the MPCA NPDES Phase II guidelines and has completed a MS4 SWPPP as part of the MPCA requirements.
23. The City will share water quality data and trends with the Lower Mississippi River Water Management Organization and surrounding cities (*LMRWMO*).

Commented [KF3]: Has this been done?

5.3. Recreation, Fish and Wildlife

Goal:

Protect and enhance recreational facilities and fish and wildlife habitat.

Policies:

1. The City will cooperate with the Minnesota DNR, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, and other appropriate agencies in promoting public enjoyment and protecting fish, wildlife, and recreational resources in the City.
2. The City will preserve wetlands that provide habitat for wildlife and spawning of fish.
3. The City will encourage land owners to maintain wetlands and open space areas for the benefit of wildlife.
4. The City will encourage buffers to be implemented around storm ponds, lakes, wetlands, and streams upon new development or redevelopment. These buffers will be promoted and encouraged for all existing properties adjacent to lakes, streams, and wetlands.
5. Activities related to recreation, parks, open space, and trails systems shall be consistent with the City of South St. Paul 2040 Comprehensive Plan.
6. The City may incorporate into proposed projects alternative landscape designs that:
 - Increase beneficial habitat, wildlife, and recreational uses;
 - Promote infiltration and vegetative water use; and
 - decrease detrimental wildlife uses (such as beaver dams, goose overabundance) that damage water control facilities, shoreline vegetation, water quality, or recreational facilities (*LMRWMO*).

5.4. Enhancement of Public Participation, Information, and Education

Goal:

Educate and inform the public on pertinent water resource management issues and increase public participation in water management activities.

Policies:

1. The City will coordinate its education efforts with the Dakota County Environmental Education Program (*LMRWMO*).
2. The City will disseminate information to the public regarding its water resources, stormwater management, and other topics (*LMRWMO*).
3. The City will continue to implement an education program which may use the following: city newsletters, community access cable TV, individual mailings, and the [City website](#).
4. The City will implement public education as part of the NPDES Phase II program.
5. The City will make information available to active community groups such as Rotary, Lions, Kiwanis, All Around the Neighborhood, and Chamber of Commerce to educate and increase awareness of water resource issues throughout the City. Distributed information may include water resource material developed by the LMRWMO or other organizations (*LMRWMO*).

5.5. Groundwater

Goal:

To coordinate activities and/or manage surface water runoff to the degree necessary to meet requirements for ground water protection or management as required by Dakota County, MPCA, the Minnesota Department of Health, and the Department of Natural Resources.

Policies:

1. The City will encourage groundwater recharge and protect recharge areas from potential sources of contamination (*LMRWMO*).
2. The City will use grassed waterways to maximize infiltration where feasible and not detrimental to groundwater supplies (*LMRWMO*).
3. The City will maintain updated records of all known on-site septic systems and prohibit the installation of new individual septic systems or alterations, repairs, or extensions of existing systems when connection can be made to the City's sanitary system.
4. The City will support the policies in the Dakota County Groundwater Plan (*LMRWMO*).
5. The City will continue to implement its 2003 Wellhead Protection Plan.
6. Cooperate with state and regional agencies on ground water monitoring, inventorying, or permitting programs.
7. The City will encourage the development of alternative stormwater management methods including vegetated swales and infiltration practices provided these methods do not contaminate ground water.
8. The City will cooperate with the Department of Health to ensure that all unsealed or improperly abandoned wells within the City are properly sealed. Technical requirements for the abandonment of these wells will be in conformance with the local and state regulations.
9. The City will sweep the streets twice annually.
10. The City will cooperate with the Dakota County Environmental Management Department

Commented [EF4]: Has this been updated?

to assure proper sealing of unsealed and unused wells in the City. Technical requirements for sealing these wells will be in conformance with Dakota County Ordinance No. 114 (Well and Water Supply Management), which incorporates Minnesota Rules Chapter 4725 Wells and Borings. Dakota County has been granted the authority, under Minnesota Statutes 1031, and subsequent amendments, to regulate Wells and Water Supplies.

5.6. Wetlands

Goal:

The City will protect wetlands in conformance with the requirements of the Wetland Conservation Act of 1991, as amended.

Policies:

1. The Dakota County Soil and Water Conservation District is the LGU responsible for administering the WCA for the City.
2. The City will inventory, classify, and determine the functions and values of wetlands on an as-needed basis (*LMRWMO*).
3. The City will use a wetland classification system that ranks wetlands and sets wetland management standards based on the rank and desired level of protection (e.g., highest to lowest protection). The wetland management standards should include buffer strip width, structural setback distance from buffer strip, amount of pretreatment required for phosphorus removal, restrictions on water bound from various design storms, and susceptibility of the wetlands to degradation by stormwater inputs (*LMRWMO*).
4. The City will require buffers adjacent to wetlands for projects requiring a stormwater management permit. Buffer widths will be based on the wetland classification with adjustments allowed where applicable. Additional information for required buffer widths can be found in the City's Stormwater Management Design Standards (**Appendix H**).
5. An average 15-foot buffer of natural vegetation above the 100-year HWL (if established) or wetted boundary is required by the City around lakes, streams, and wetlands, for new or redevelopment projects that exceed one acre in land disturbance (for this policy, mill and overlay and pavement rehabilitation projects are not considered land disturbance) (*LMRWMO*).
6. The City will encourage public and private landowners to maintain wetlands and open space areas for the benefit of wildlife (*LMRWMO*).
7. Prior to issuance of any city grading or building permits, all development and redevelopment activities must comply with the WCA.
8. Wetland banking opportunities will be pursued by the City in accordance with the WCA.

Commented [KF5]: Is this true?

Commented [KF6]: Policy 4 was added from the Engineering Guidelines. Policy 5 is from the LMRWMO Plan. If the City wants to keep the wetland buffer rules mentioned in the Engineering Guidelines, I will remove Policy 5 as it is not as restrictive.

5.7. Erosion

Goal:

To prevent soil erosion and sedimentation.

Policies:

1. The City will require erosion control plans for land development and construction work that will disturb one or more acres of land in conformance with NPDES Phase II Construction requirements.
2. The City requires the submission and approval of erosion control and grading plans prior to the issuance of any grading or building permits.

3. The City will continue to manage and enforce ordinances addressing erosion and sediment control, including the permitting and inspection of such controls (*LMRWMO*).
4. Point discharges of stormwater to open channels or detention basins shall be constructed in a manner that minimizes added erosion (*LMRWMO*).
5. Effective energy dissipation devices should be provided at all conveyance system discharges to prevent bank, channel, or shoreline erosion (*LMRWMO*).
6. Design of stream bank stabilization and streambed control measures should consider unique or special site conditions, energy dissipation potential, adverse effects, preservation of natural processes and habitat, and aesthetics in addition to standard engineering and economic criteria (*LMRWMO*).
7. The City will require any development or redevelopment to comply with the erosion control and steep slope standards found in the City's Stormwater Management Ordinance, a copy of which is included in **Appendix G**.
8. The City will update its erosion and sediment control standards when necessary to be in conformance with the watershed management organization and Dakota County's requirements.
9. Open channels shall be designed to handle the expected velocity from a 10-year design storm without erosion. Riprap may need to be provided.
10. It shall be the responsibility of the developer or contractor to keep streets and property adjacent to construction areas free from sediment carried by construction traffic at site entrances and access points, and free from site runoff and blowing dust.
11. The City will require developers and other project proposers to prepare and implement a Runoff Control Plan and an Erosion and Sediment Control Plan for activities affecting equal to or greater than one acre of land (*LMRWMO*).
12. Acceptable erosion in drainageways is limited to that which causes no net degradation of the watercourse or destruction of properties adjacent to the watercourse (*LMRWMO*).
13. Select City staff will attend joint certification training program on designing and inspecting erosion control plans and inspecting erosion control measures when facilitated by the LMRWMO.
14. Select City staff will attend non-certification training to address items in the MS4 permit when conducted/coordinated by the LMRWMO.

5.8. Mississippi River

Goal:

To continue to protect and preserve the Mississippi River corridor, Mississippi River, and associated wetlands.

Policies:

1. Work cooperatively with Federal, State, and County agencies in the development of resource management and implementation plans affecting the Mississippi River.
2. Address disturbed shoreland area issues.
3. Areas of the City within the Mississippi River Critical Corridor Area/Mississippi National River Recreation Area (MRCCA/MNRRRA) are to conform to the current rules for the MRCCA/MNRRRA. Refer to the [DNR's website](#) for more information (*LMRWMO*).

5.9. Administration

Goal:

Meet the requirements of the LMRWMO and regulatory agencies while managing the City's water resources in an effective and efficient manner.

Policies:

1. Report annual progress of the City implementation plan to the LMRWMO.
2. Work with the LMRWMO to apply for grant funding available to watersheds in effort to help fund projects throughout the City (*LMRWMO*).

6. IMPLEMENTATION PRIORITIES/IMPLEMENTATION PROGRAM

Based on the information developed in **Sections 2** through **5**, the City has developed a Comprehensive Stormwater Management Plan that reflects the needs and concerns of the City Council, City staff, citizens, and the funding capabilities of the City. **Table 6.1** shows a prioritized listing of the studies, programs, and capital improvements that have been identified as necessary to respond to the water resource needs within the City. The City anticipates implementing—at least to some extent—the regulatory programs, studies, or improvements identified within this plan within the next ten years.

Table 6.1 contains Capital Improvement Projects (CIP), operations and maintenance costs, and stormwater management studies. The costs associated with these items reflect year 2018 costs and do not take into account inflation. These tables are for planning and budgeting purposes and are considered rough estimates. It is anticipated that these cost estimates will be reviewed annually and updated as needed.

6.1. FINANCIAL CONSIDERATIONS

Implementation of the proposed regulatory controls, programs, and improvements that are identified in this plan will have a financial impact on the City. To establish how significant this impact will be, a review of the means and ability of the City to fund these controls, programs, and improvements is necessary. Outlined below is a listing of various sources of revenue that the City will endeavor to implement the water resource management efforts outlined in this plan.

For 2018-2027, the capital improvement projects are estimated to cost approximately \$7,088,000. The stormwater management program costs are estimated at about \$2,378,500. The official controls are estimated to cost about \$148,500. The stormwater studies are estimated to cost about \$232,000. Over the ten-year period, these projects, programs, and studies are estimated to cost about \$9.75 million.

DESCRIPTION OF FUNDING SOURCE	REVENUE GENERATED
1. Revenue generated by City's Stormwater Utility	\$400,000 per year
2. Special assessments for local improvements made under the authority granted by Minnesota Statutes Chapter 429 and 444.	Variable depending on activities undertaken
3. Revenue generated by Watershed Management Special Tax Districts provided for under Minnesota Statutes Chapter 473.882	Variable depending on activities undertaken
4. Capital improvement projects being completed by or in cooperation with the LMRWMO are required to be in conformance with the Revised and restated LMRWMO Joint Powers Agreement.	Variable depending on activities undertaken
5. Grant monies that may be secured from various local, regional, County, State, or Federal agencies. This would include Minnesota Department of Transportation (MnDOT), MPCA, Metropolitan Council, the Department of Natural Resources, and others	Variable depending on activities undertaken

Commented [KF1]: Get updated revenue from City

CITY OF SOUTH ST. PAUL COMPREHENSIVE STORMWATER MANAGEMENT PLAN

DESCRIPTION OF FUNDING SOURCE	REVENUE GENERATED
6. Other Sources: These may be other sources of funding for stormwater activities such as tax increment financing, state aid, etc. The City will continue to explore additional revenue sources as they become available.	Variable depending on activities undertaken
7. Tax abatement	Variable

6.2. AMENDMENT PROCEDURES

It is the intention of the City to have this Stormwater Management Plan reviewed and approved by the Lower Mississippi River Watershed Management Organization. Once approved, no significant changes to this plan can be facilitated without the approval of the proposed revisions by the LMRWMO. Significant changes to the local plan shall be made known to the following parties:

1. City Administrator and City Engineer
2. City Council
3. Lower Mississippi River Watershed Management Organization
4. Metropolitan Council
5. Public within the City through a public hearing process
6. Dakota County

Following notification of the above parties, they shall have 60 days to comment on the proposed revisions. Failure to respond within 60 days constitutes approval. Upon receipt of approvals from the LMRWMO, any proposed amendments will be considered approved.

Minor changes to the Plan shall be defined as changes that do not modify the goals, policies, or commitments expressly defined in this plan by the City. Adjustment to subwatershed boundaries will be considered minor changes provided that the change will have no significant impact on the rate or quality in which stormwater runoff is discharged from the City boundaries. Minor changes to this plan can be made by the staff at the City without outside review. It is the intention of the City that this Plan be updated when significant changes to the plan are deemed necessary or an update is required by a watershed management organization plan update.

TABLE 6.1

No.	Project Description	10 Year Total Cost Estimate ^{1,3}	Possible Funding Sources ^{2,4}	Proposed Cost By Year ¹										Plan References/ Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
10	Correct drainage issues at the intersection of 7th Avenue and South Street. Additional inlet capacity may be needed.	\$100,000	Stormwater Utility Revenue							\$100,000				4.2.2
11	Correct street and property drainage issues near the property of 1320 Poplar Avenue. Storm sewer in the area may be undersized and/or additional storage may be needed.	\$100,000	Stormwater Utility Revenue								\$100,000			4.2.3
12	Correct drainage issues at Villaume Avenue. Additional inlet capacity or upsized storm sewer may be needed.	\$200,000	Stormwater Utility Revenue							\$200,000				4.2.5
13	Construct improvements to address sedimentation in four 72-inch pipes running under the railroad tracks.	\$250,000	Stormwater Utility Revenue				\$250,000							4.2.7
14	Construct BMPs upstream of the Mississippi River. Based on subwatershed assessment.	\$500,000	Stormwater Utility Revenue/ Grant Funding			\$500,000								4.1.4
15	Stabilize ravine south of Bryant Avenue. In addition, evaluate if energy dissipation measures should be added to the open pipe outlets to the ravine.	\$300,000	Stormwater Utility Revenue							\$300,000				4.5.4
16	Correct drainage issues near S&S Trees on Hardman Avenue. Flooding more prominent during large storm events when the levee walls are up.	\$200,000	Stormwater Utility Revenue									\$200,000		4.2.6

TABLE 6.1

No.	Project Description	10 Year Total Cost Estimate ^{1,3}	Possible Funding Sources ^{2,4}	Proposed Cost By Year ¹										Plan References/ Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Operation and Maintenance														
17	Be an active participant in the activities of the Lower Mississippi Watershed Management Organization	\$125,000	Stormwater Utility Revenue	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	
18	Ongoing operations and maintenance of the levee and pump station.	\$500,000	Stormwater Utility Revenue	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	4.2.1
19	Provide review for all new development or redevelopment of sites within the City to assure the goals, policies, and objectives outlined in this plan are implemented. Includes cost for City staff as well as any consultant review time.	\$150,000	Stormwater Utility Revenue	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	
20	Perform Local Government Unit (LGU) Role for Wetland Conservation Act	\$15,000	Stormwater Utility Revenue	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	
21	Sponsor City-wide clean up day	\$170,000	General Fund	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	
22	Complete periodic inspections identifying areas within the City with erosion problems.	\$15,000	Stormwater Utility Revenue	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	5.7
23	Simon's Ravine Maintenance	\$40,000	Stormwater Utility Revenue				\$20,000				\$20,000			4.5.3
24	Engineering staff inspection & enforcement of erosion control measures required for site development activities within the City with the NPDES Erosion Control Program now being administered by the MPCA.	\$75,000	Stormwater Utility or Permit Fees	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	5.7
25	Provide annual training for City staff. Includes park and open space training, fleet and building maintenance training, stormwater systems maintenance training.	\$15,000	Stormwater Utility Revenue	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	
26	Implement water quantity and quality monitoring program	\$40,000	SWU, LMRWMO, CAMP, CSMP	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	5.2
27	Implementation of community education plan to increase the residents awareness concerning proper water resource management. Topics could include LID, rain gardens or the importance of cleaning up after pets. Additional BMPs throughout the City will help treat water before it enters local waterbodies, helping to address the South Metro Mississippi River TMDL.	\$15,000	Stormwater Utility Revenue	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	5.4
28	Wetland Health & Evaluation Program	\$10,000	Stormwater Utility Revenue	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	
29	Sweep streets at least twice per year. Street sweeping helps reduce debris and sediment loading into local waterbodies including the Mississippi River, helping to address the South Metro Mississippi River TMDL.	\$400,000	Stormwater Utility Revenue	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	4.10.2
30	Inspect stormwater outfalls and ponds on a rotating basis	\$125,000	Stormwater Utility Revenue	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	5.2
31	Annually inspect 20% of completed City-owned BMPs.	\$50,000	Stormwater Utility Revenue	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	

TABLE 6.1

No.	Project Description	10 Year Total Cost Estimate ^{1,3}	Possible Funding Sources ^{2,4}	Proposed Cost By Year ¹										Plan References/ Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
32	Annually inspect all pollution control devices.	\$50,000	Stormwater Utility Revenue	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	
33	Annually inspect locations identified as high-priority outfalls and around high-risk establishments. Includes fast food restaurants, dumpsters, car washes, mechanics, etc.	\$20,000	Stormwater Utility Revenue	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	
34	Utilize educational resources developed by the LMRWMO to assist in the City's public education program	\$8,000	Stormwater Utility Revenue	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	\$800	5.4
35	Develop program for inspecting and maintaining outfalls, sediment basins, ponds, and other BMPs	\$15,000	Stormwater Utility Revenue	\$15,000										4.11.1
36	Hire a consultant as needed to televise a section of the storm sewer system, collect grab samples or perform other effective testing procedures to find illicit connections to the system.	\$12,500	Stormwater Utility Revenue		\$2,500		\$2,500		\$2,500		\$2,500		\$2,500	
37	Address the South Metro Mississippi TMDL and other TMDLs as they are completed.	\$25,000	Stormwater Utility Revenue	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	4.1.4
38	Annually inspect and maintain identified City-owned ponds for TSS and TP removal efficiencies.	\$500,000	Stormwater Utility Revenue	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	
39	Report annual progress of the City implementation plan to the Lower Mississippi River WMO.	\$3,000	Stormwater Utility Revenue	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	5.9.1

TABLE 6.1

No.	Project Description	10 Year Total Cost Estimate ^{1,3}	Possible Funding Sources ^{2,4}	Proposed Cost By Year ¹										Plan References/ Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Official Controls														
40	<u>Annually review mowing, road salt application, fertilizing, and herbicide practices within the City and update practices as feasible to protect water quality</u>	\$10,000	Stormwater Utility Revenue	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	
41	<u>Annually review ordinances and illicit discharge written procedures to ensure that it continues to meet the needs of the City and legal requirements.</u>	\$10,000	Stormwater Utility Revenue	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	
42	<u>Annually review and update City SWPPP</u>	\$125,000	Stormwater Utility Revenue	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	\$12,500	
43	<u>Update Request Tracker on City webpage to include a link to report illicit discharges.</u>	\$1,500	Stormwater Utility Revenue	\$1,500										
44	<u>Incorporate to the City Website a stormwater page which allows residents to provide comments to the City Staff for a number of topics.</u>	\$2,000	Stormwater Utility Revenue	\$2,000										

TABLE 6.1

No.	Project Description	10 Year Total Cost Estimate ^{1,3}	Possible Funding Sources ^{2,4}	Proposed Cost By Year ¹										Plan References/ Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Monitor and Study														
45	<u>Levander Pond Improvements Feasibility Study</u>	\$27,000	Stormwater Utility Revenue			\$27,000								4.1.3
46	<u>Complete a subwatershed assessment to find optimal locations for constructing water quality BMPs throughout the City. Priority for BMPs near outfalls to the Mississippi River. Additional BMPs will reduce the sediment and phosphorus loads to the Mississippi River, helping address the South Metro Mississippi River TMDL.</u>	\$30,000	Stormwater Utility Revenue				\$30,000							4.1.4
47	<u>Complete a feasibility study to determine the origin of the sediment consistently plugging the four 72-inch pipes which eventually discharge to the Mississippi River. Reducing sedimentation within the storm sewer will also help reduce sediment loading to the Mississippi River, helping address the South Metro Mississippi River TMDL.</u>	\$15,000	Stormwater Utility Revenue			\$15,000								4.2.7
48	<u>Complete a feasibility study for possible solutions for drainage issues near intersection of 7th Avenue and South Street and Poplar Avenue.</u>	\$15,000	Stormwater Utility Revenue						\$15,000					4.2.2, 4.2.3
49	<u>Complete a feasibility study for possible solutions for drainage issues on Hardman Avenue near the S&S Tree and Horticultural Specialists property. Flooding concerns during large storm events when the levee walls are up.</u>	\$15,000	Stormwater Utility Revenue								\$15,000			4.2.6
50	<u>Evaluate DNR protected water bodies with known or potential problems and pursue shoreland restoration where needed.</u>	\$5,000	Stormwater Utility Revenue			\$5,000								4.5.2
51	<u>Work with ACOE to identify location/extent of erosion problems on Mississippi River.</u>	\$20,000	SWU, ACOE, or Grant funding (WMO to facilitate where necessary and determine cost share)							\$20,000				4.5.2
52	<u>Complete Water Quality Monitoring of Seidl's Lake</u>	\$105,000	Stormwater Utility Revenue	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	4.1.1
	TOTAL	\$9,742,000		\$792,100	\$1,029,100	\$1,502,600	\$2,718,100	\$445,600	\$983,100	\$545,600	\$583,100	\$645,600	\$498,100	

¹ Cost estimates are preliminary and subject to review and revision as engineer's reports are completed and more information becomes available. Table reflects 2018 costs and does not account for inflation. Costs generally include labor, equipment, materials, and all other costs necessary to complete each activity. Some of the costs outlined above may be included in other operational costs budgeted by the City.

² Funding for stormwater program activities projected to come from following sources - Surface Water Management Fund, Developers Agreements, Grant Funds, General Operating Fund, or Special Assessments.

³ Staff time is not included in the cost shown.

⁴ Outside Sources include Private Development, Other Agencies or Potential City Cost Share

7. REFERENCES/SUPPLEMENTAL DOCUMENTS

The following documents have been referenced within the text of the Plan and are available within the Appendices of the Plan, the Water Resource Library at the Engineering Department, or from the Engineering Staff.

Referenced in Section 2.2 Geology and Topographic Information

Barr Engineering. 1989. "Drainage Plan: Highway 110-494 Watershed."

Barr Engineering. 1990. "Phase IIA Evaluation: Kaposia Dam."

Barr Engineering. November 1991. "Simon's Ravine Feasibility Study." Lower Mississippi River Watershed Management Organization. Accessed May 17, 2018.

Referenced in Section 2.3 Surface Water Resource Data

Barr Engineering. 1988. Phase I Evaluation of Kaposia Dam.

Referenced in Section 2.4 Flood Insurance Studies

Federal Emergency Management Agency. March 2016. "Flood Insurance Rate Maps Dakota County, Minnesota and Incorporated Areas." Accessed May 17, 2018.

Federal Emergency Management Agency. March 2016. "Flood Insurance Study Dakota County, Minnesota and Incorporated Areas." Accessed May 17, 2018.

Referenced in Section 2.5 Water Quality Data

Randall J. Anhorn, Metropolitan Council. July 2002. "A 2001 Study of the Water Quality of 132 Metropolitan Area Lakes." Accessed May 17, 2018.

Barr Engineering. 1992. "1991 Seidl's Lake Water Quality Study."

Referenced in Section 2.8 Groundwater Resource Data

Balaban, N.H. and Hobbs, H. C. 1990. "C-06 Geologic Atlas of Dakota County, Minnesota." Minnesota Geological Survey. Accessed May 17, 2018.

Dakota County. May 2017. "Dakota County Natural Resource Management System Plan." Accessed May 17, 2018.

Dakota County. April 2018. "Dakota County, Minnesota Comprehensive Plan DC2040." Accessed May 17, 2018.

Referenced in Section 2.9 Wellhead Protection

2003. "South St. Paul Wellhead Protection Plan."

Referenced in Section 4.3 Flooding and Stormwater Rate Control Concerns between the City and Adjoining Entities

Barr Engineering. December 2004. "Seidls Lake Outlet Feasibility Study." Lower Mississippi River Watershed Management Organization. Accessed May 17, 2018.

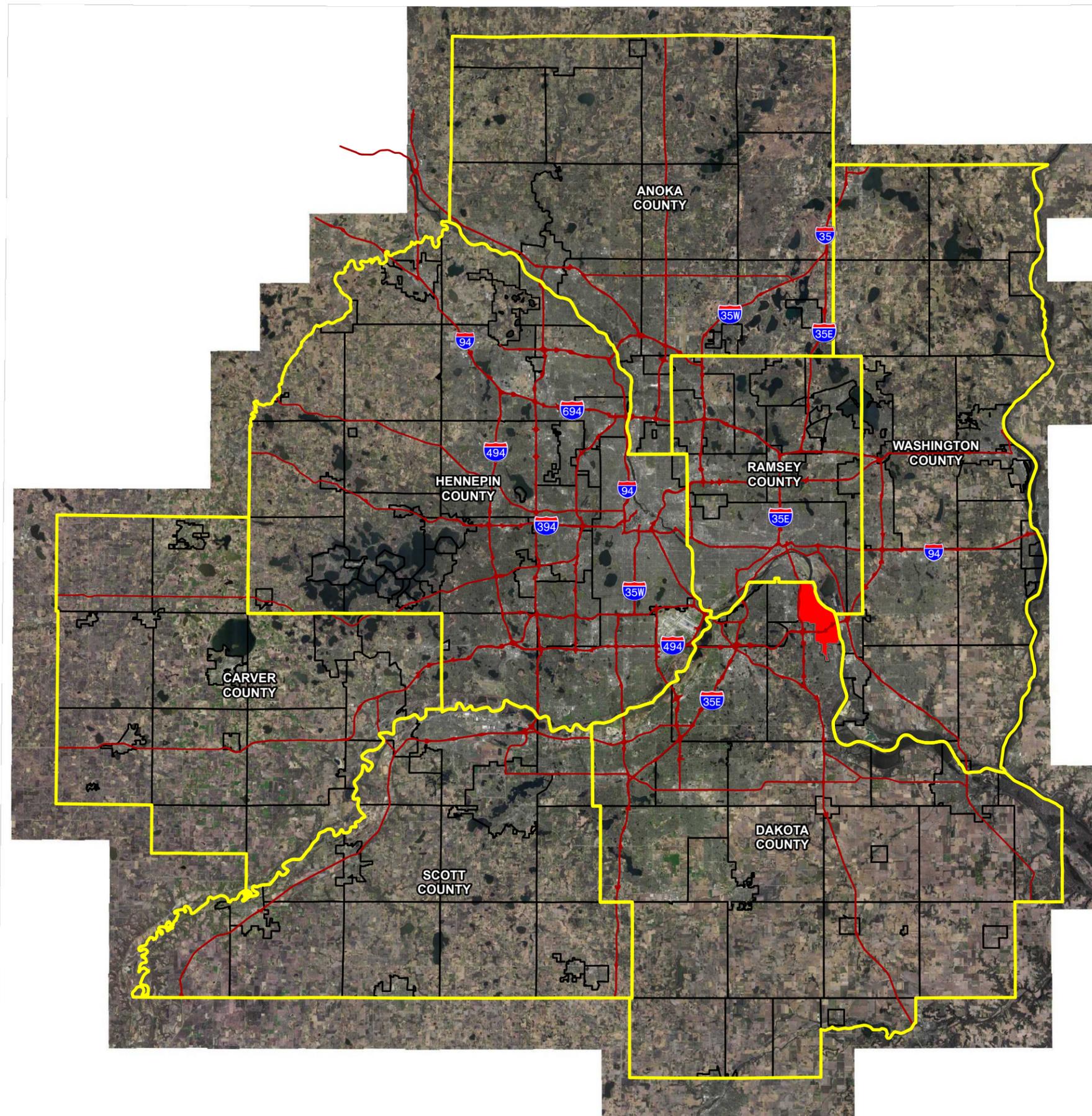
Janna Kieffer, Barr Engineering. October 22, 2018. "Allowable Flow Cost Apportionment for Dawn Way Storm Sewer Improvement Project." Lower Mississippi River Watershed Management Organization. Accessed May 17, 2018.

APPENDIX A – FIGURES

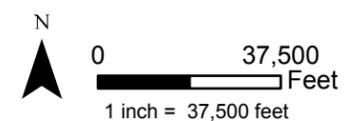


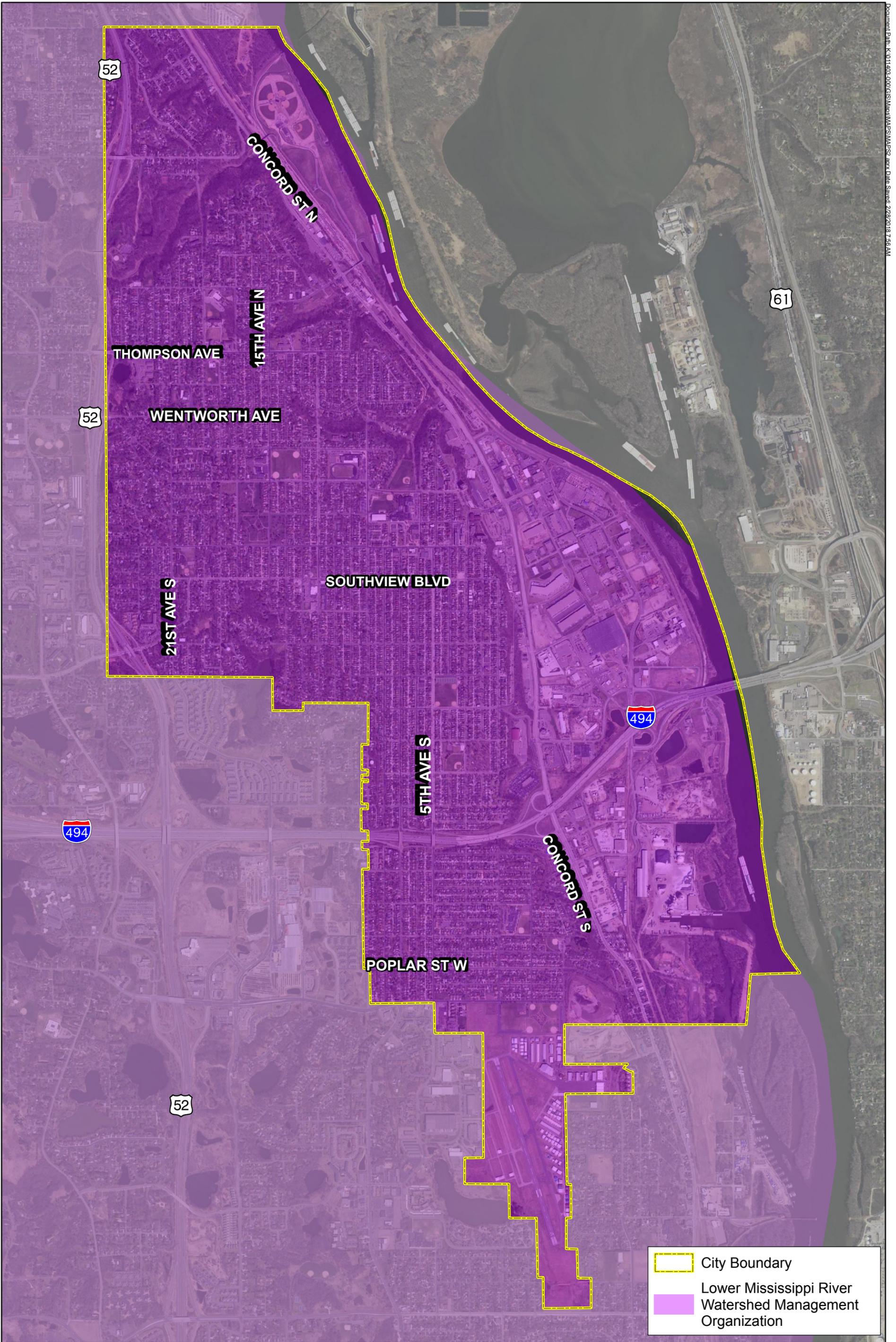
City of South St. Paul
Surface Water Management Plan

**Figure 1 - City
Location**



 City of South St. Paul





Document Path: K:\01408-000\GIS\MapDocs\WAS\WASMAP2.aprx Data Source: 2/28/2018 7:56 AM

Figure 2 - Watershed Management Organization Boundary Map

City of South St. Paul
Surface Water Management Plan



0 1,750
Feet
1 inch = 1,750 feet



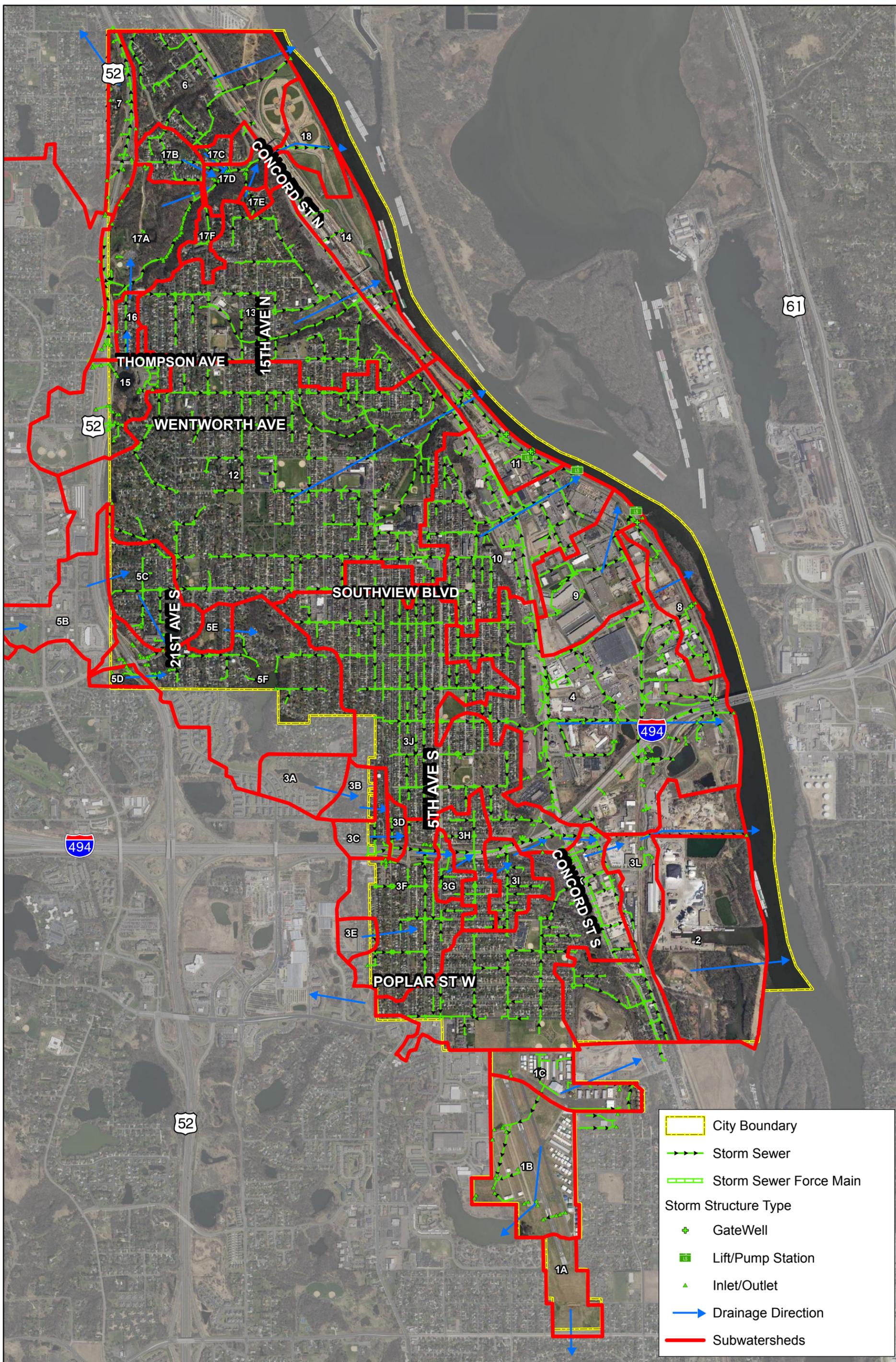


Figure 3 - Subwatershed Delineation Map

City of South St. Paul
Surface Water Management Plan



0 1,750
Feet
1 inch = 1,750 feet



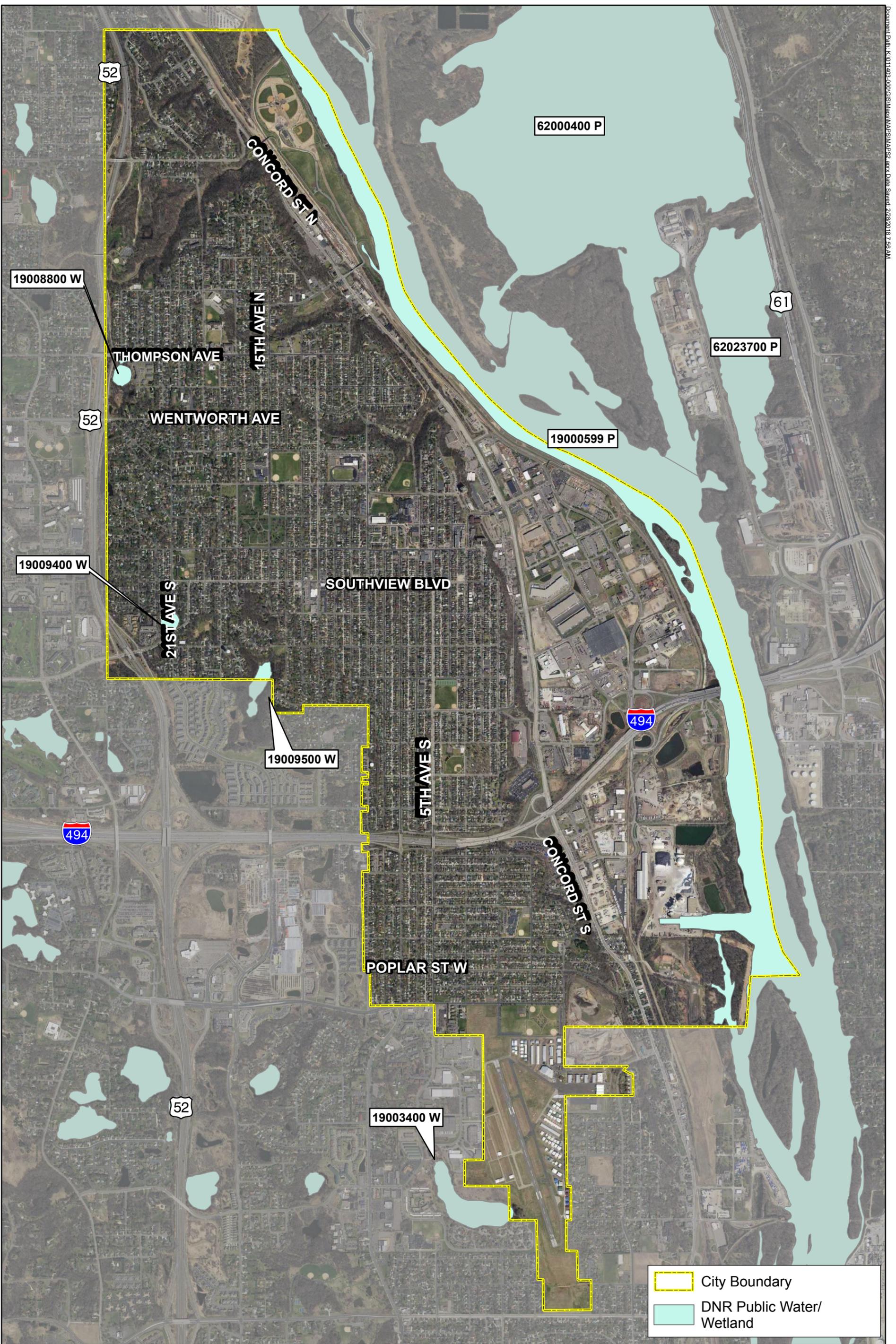


Figure 4 - DNR Public Waters
 City of South St. Paul
 Surface Water Management Plan



0 1,750 Feet
 1 inch = 1,750 feet



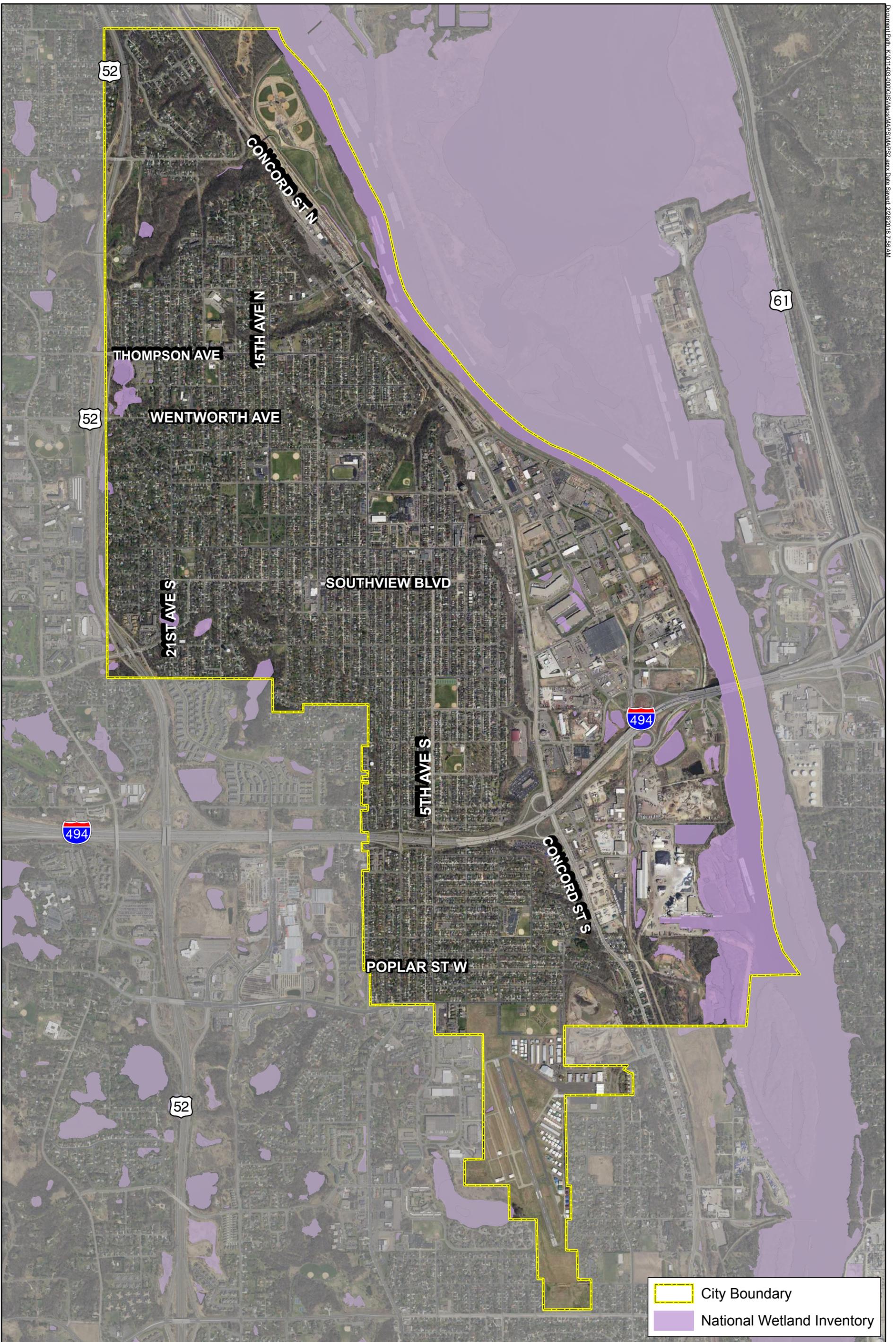


Figure 5 - National Wetland Inventory Map

City of South St. Paul
Surface Water Management Plan



0 1,750
Feet
1 inch = 1,750 feet



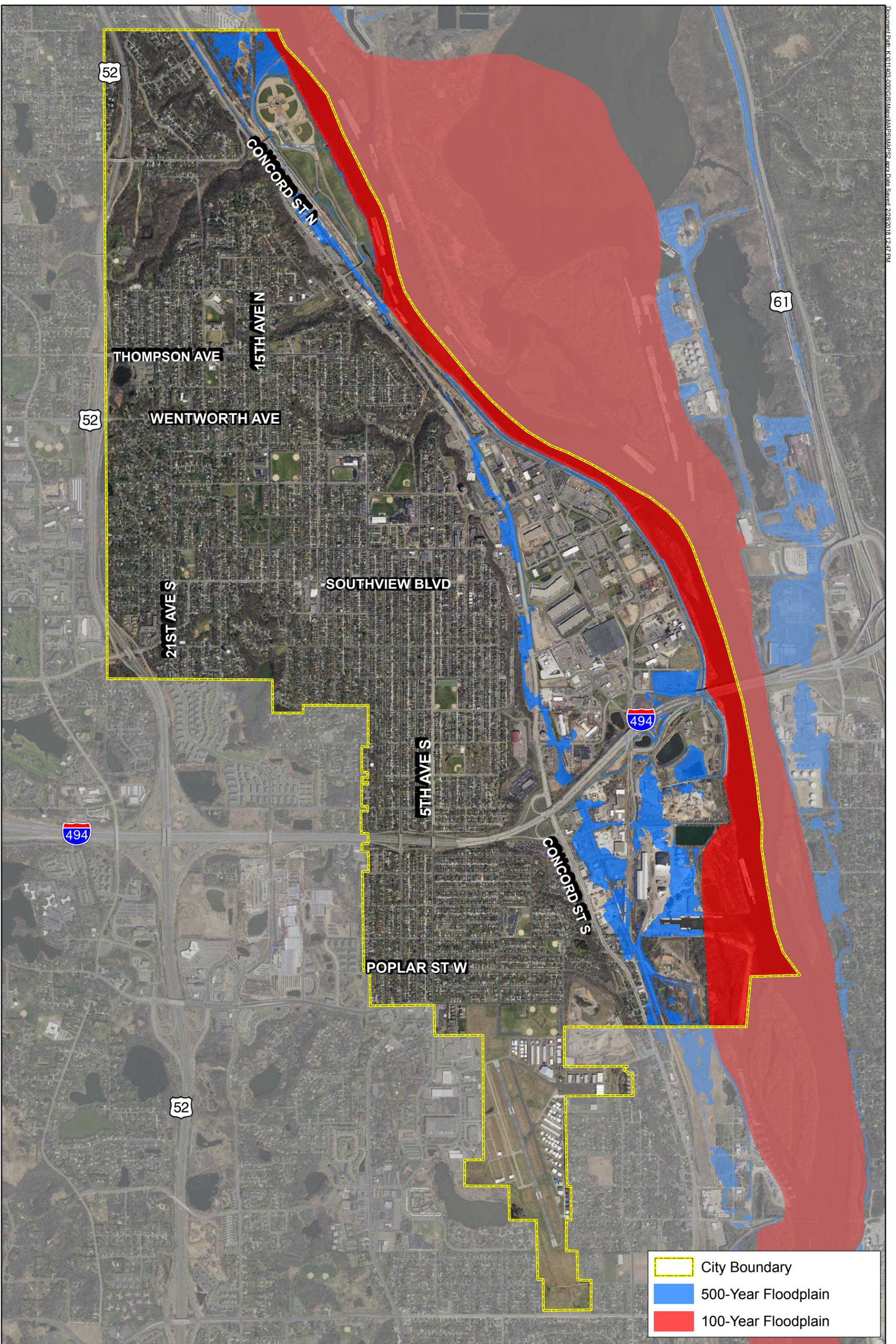


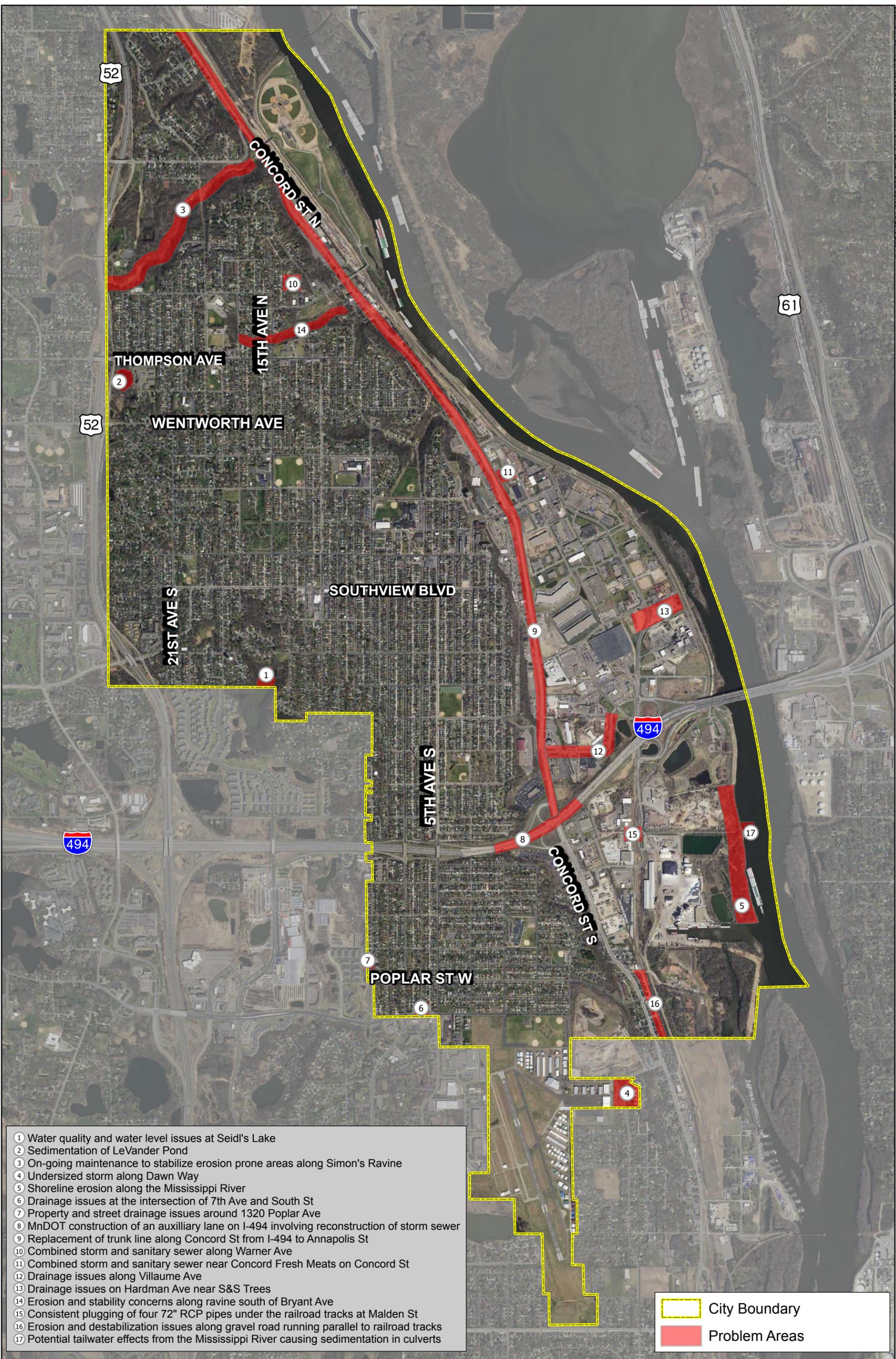
Figure 6 - Floodplain Boundary Referenced From FEMA

City of South St. Paul
Surface Water Management Plan



0 1,750 Feet
1 inch = 1,750 feet





- 1 Water quality and water level issues at Seid's Lake
- 2 Sedimentation of LeVander Pond
- 3 On-going maintenance to stabilize erosion prone areas along Simon's Ravine
- 4 Undersized storm along Dawn Way
- 5 Shoreline erosion along the Mississippi River
- 6 Drainage issues at the intersection of 7th Ave and South St
- 7 Property and street drainage issues around 1320 Poplar Ave
- 8 MnDOT construction of an auxiliary lane on I-494 involving reconstruction of storm sewer
- 9 Replacement of trunk line along Concord St from I-494 to Annapolis St
- 10 Combined storm and sanitary sewer along Warner Ave
- 11 Combined storm and sanitary sewer near Concord Fresh Meats on Concord St
- 12 Drainage issues along Villaume Ave
- 13 Drainage issues on Hardman Ave near S&S Trees
- 14 Erosion and stability concerns along ravine south of Bryant Ave
- 15 Consistent plugging of four 72" RCP pipes under the railroad tracks at Malden St
- 16 Erosion and destabilization issues along gravel road running parallel to railroad tracks
- 17 Potential tailwater effects from the Mississippi River causing sedimentation in culverts

City Boundary
 Problem Areas



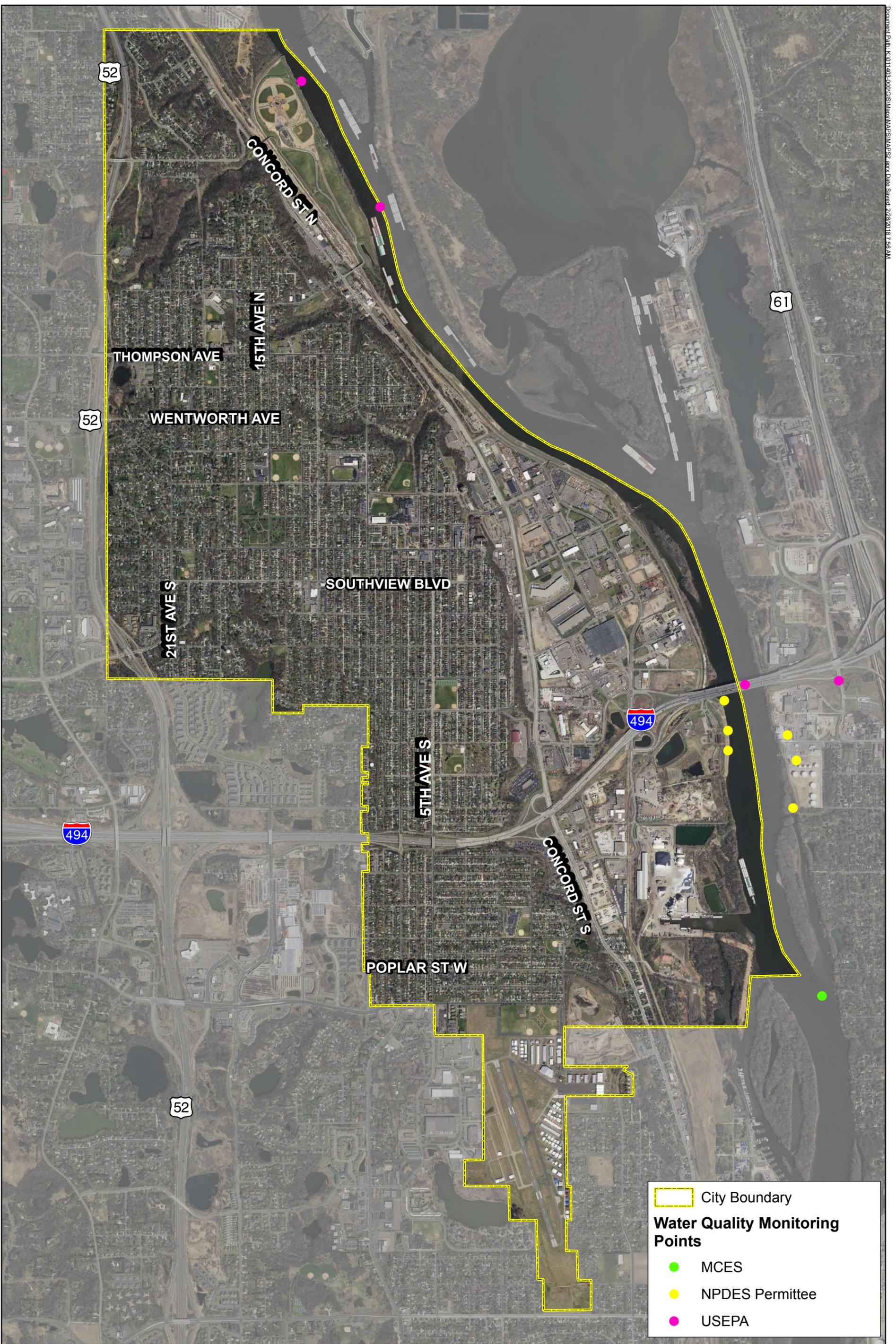
Figure 7 - Water Resource Problem Areas

City of South St. Paul
Surface Water Management Plan



0 1,750 Feet
1 inch = 1,750 feet





City Boundary

Water Quality Monitoring Points

- MCES
- NPDES Permittee
- USEPA

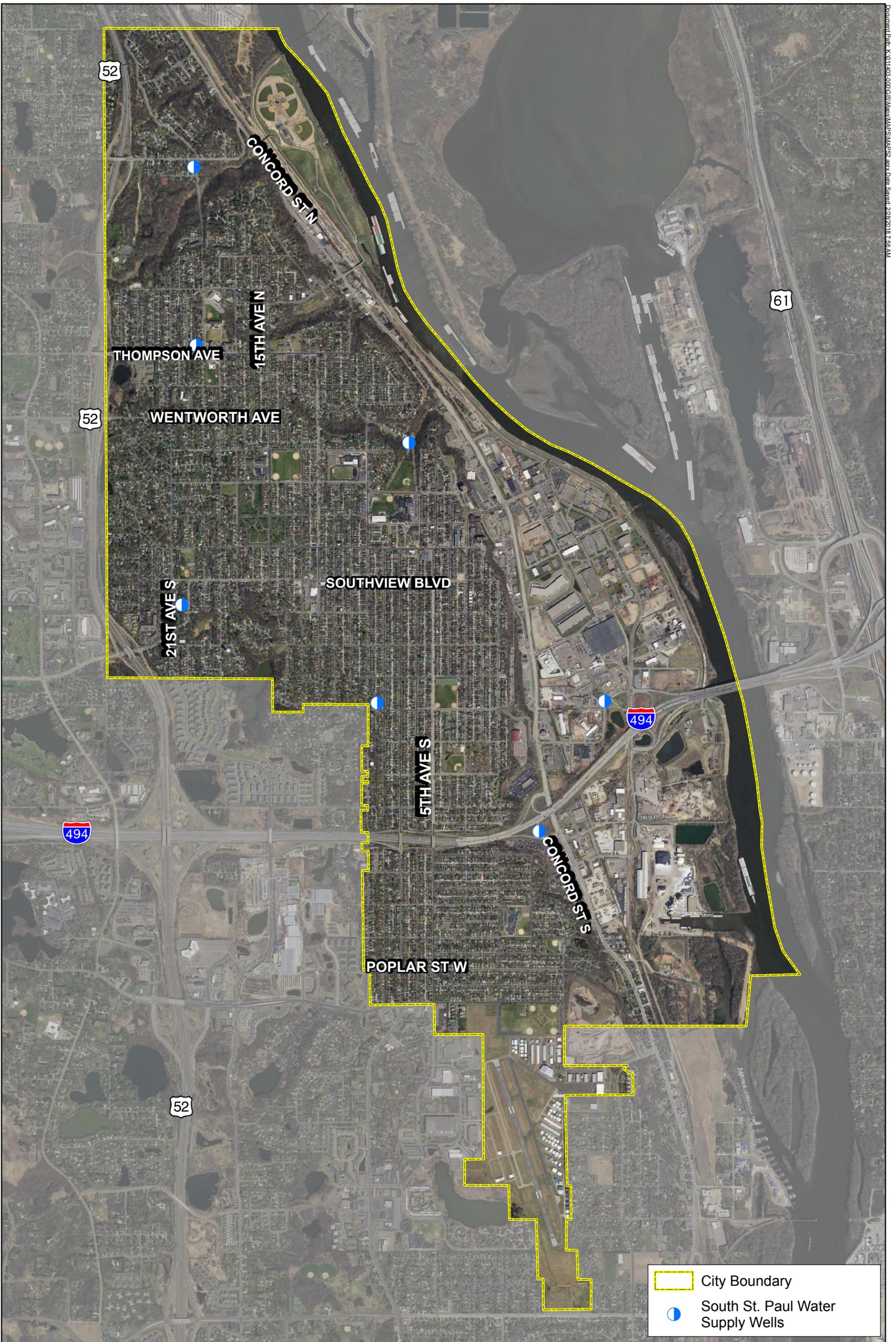


Figure 8 - Water Quality Monitoring Locations
 City of South St. Paul
 Surface Water Management Plan



0 1,750 Feet
 1 inch = 1,750 feet





	City Boundary
	South St. Paul Water Supply Wells

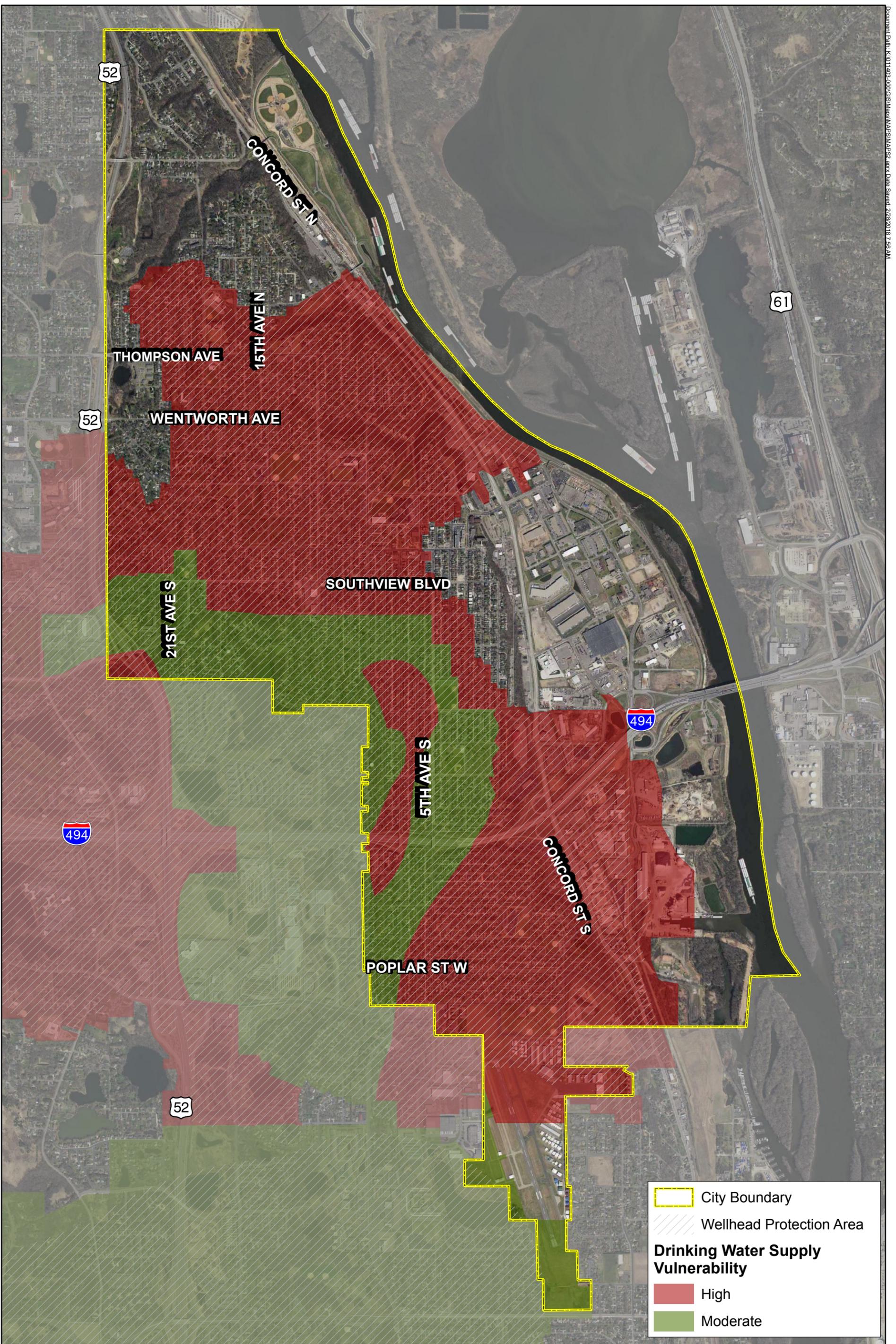
Figure 9 - Groundwater Appropriations Map

City of South St. Paul
Surface Water Management Plan



0 1,750
Feet
1 inch = 1,750 feet





	City Boundary
	Wellhead Protection Area
Drinking Water Supply Vulnerability	
	High
	Moderate



Figure 10 - DWSMA Map
 City of South St. Paul
 Surface Water Management Plan



0 1,750
 Feet
 1 inch = 1,750 feet



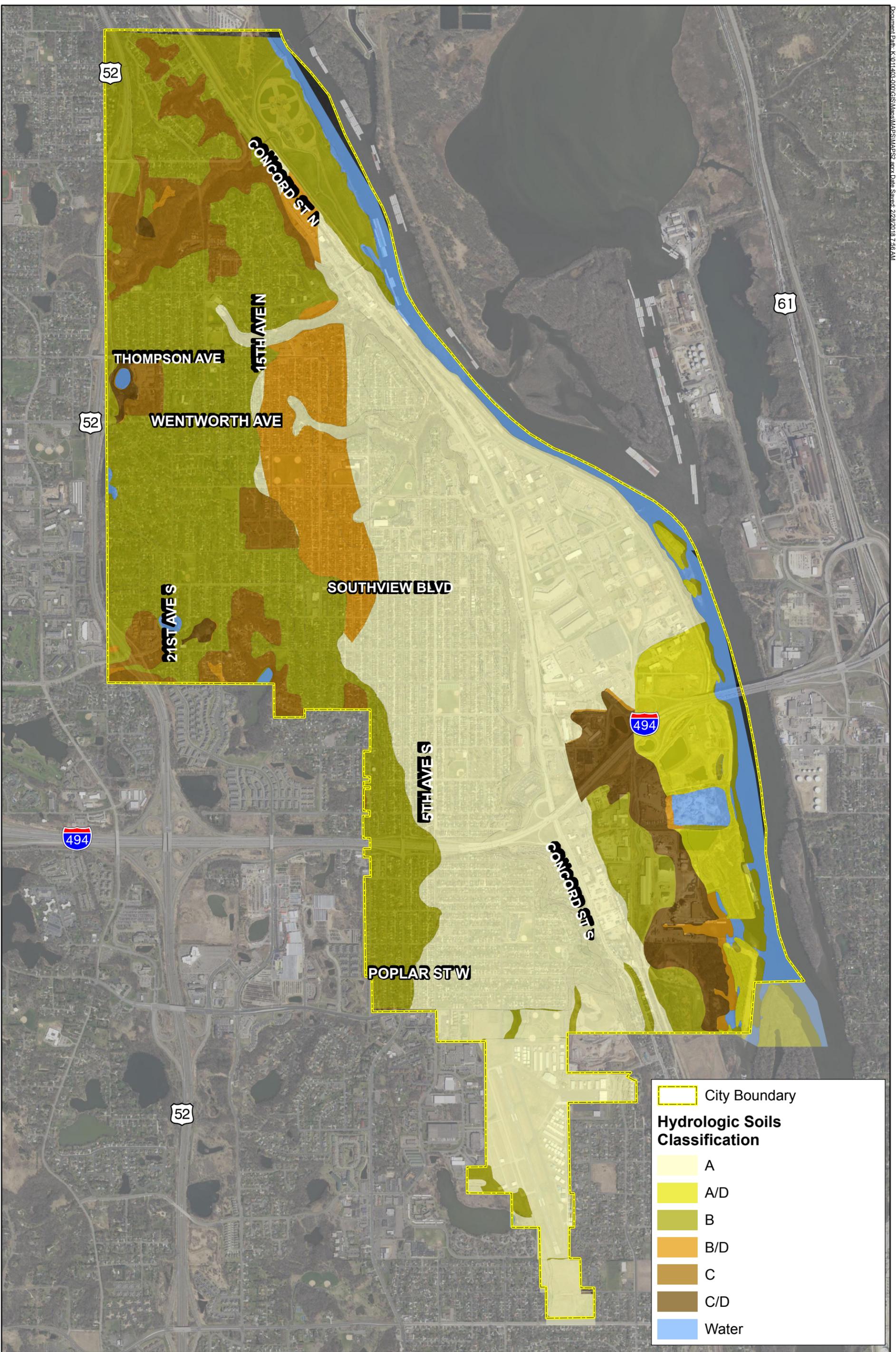
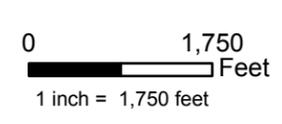


Figure 11 - Hydrologic Soils Classification Map
City of South St. Paul
Surface Water Management Plan



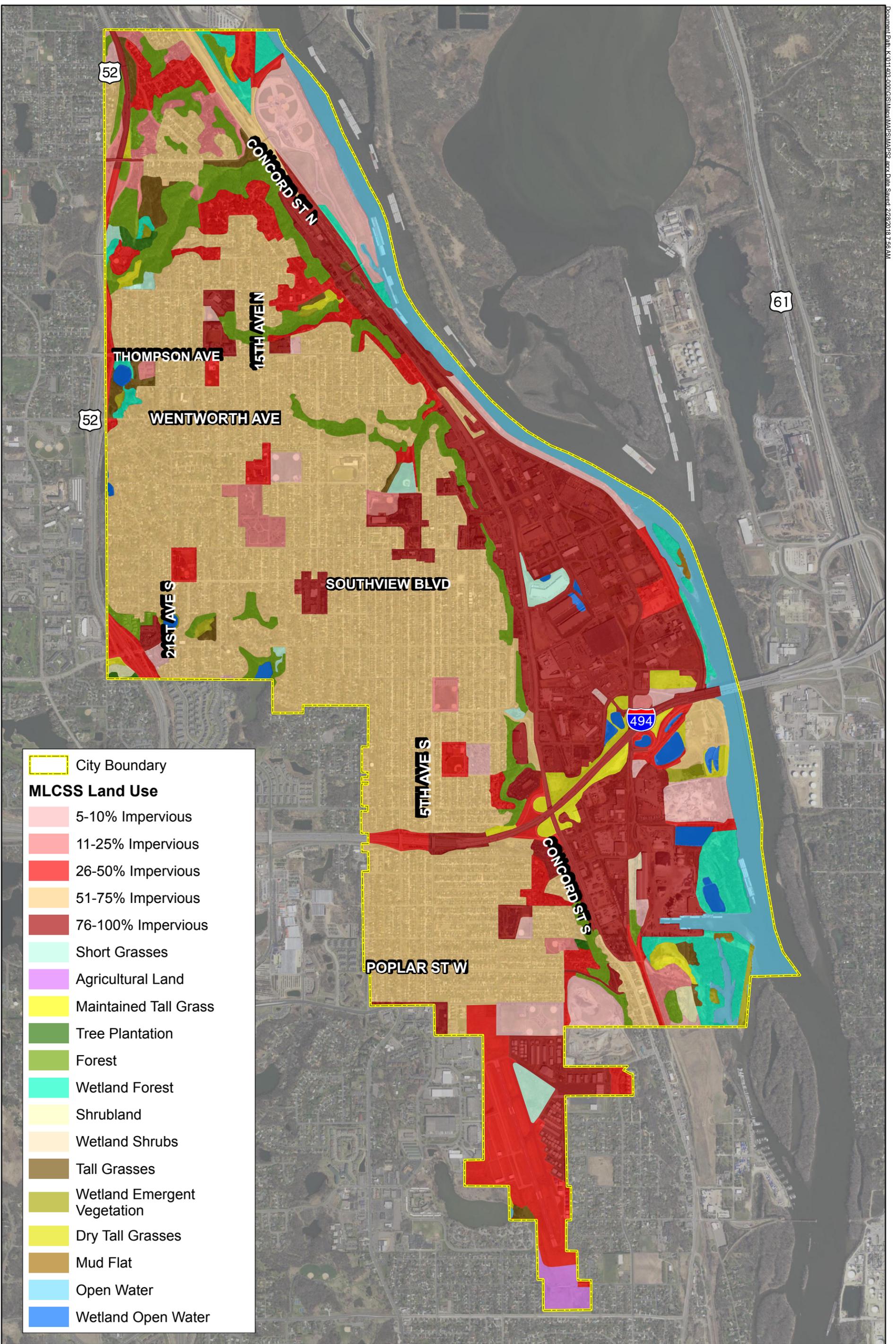


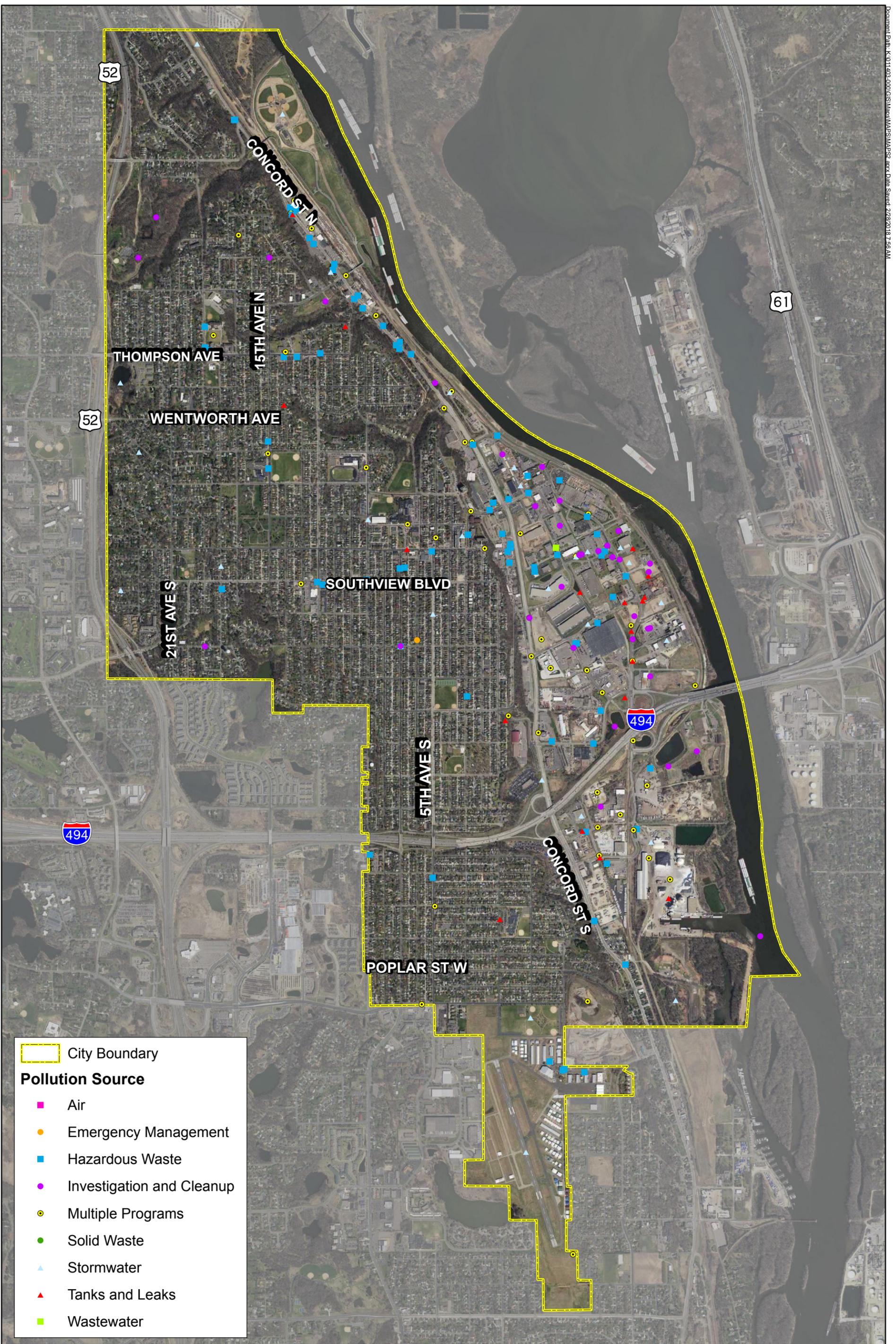
Figure 15 - MLCCS Land Use Map

City of South St. Paul
Surface Water Management Plan



0 1,750 Feet
1 inch = 1,750 feet





City Boundary

Pollution Source

- Air
- Emergency Management
- Hazardous Waste
- Investigation and Cleanup
- Multiple Programs
- Solid Waste
- ▲ Stormwater
- ▲ Tanks and Leaks
- Wastewater

Figure 16 - Pollutant Source Location Map

City of South St. Paul
Surface Water Management Plan



0 1,750 Feet
1 inch = 1,750 feet



APPENDIX B – WATER RESOURCE RELATED AGREEMENTS

REVISED AND RESTATED
JOINT POWERS AGREEMENT
ESTABLISHING A WATERSHED MANAGEMENT ORGANIZATION
FOR THE LOWER MISSISSIPPI RIVER WATERSHED

THE PARTIES TO THIS AGREEMENT ("Agreement") are Members of the Lower Mississippi River Watershed Management Organization and have land that drain surface water into the Mississippi River. This Agreement amends and restates the original Joint Powers Agreement between the Members which became effective in 1985 and includes all prior Amendments to the 1985 Joint Powers Agreement. This Agreement is made pursuant to the authority conferred upon the parties by Minn. Stat. §§ 471.59 and 103B.201 - 103B.252.

SECTION 1. NAME AND LEGAL BOUNDARY. The parties hereby establish the Lower Mississippi River Watershed Management Organization, hereinafter referred to as the "WMO." The "Legal Boundary Map of the Lower Mississippi River Watershed Management Organization" is attached hereto as Exhibit A.

SECTION 2. PURPOSE. The purpose of this Agreement is to provide an organization to regulate the natural water storage and retention of the Lower Mississippi watershed to:

- A. Protect, preserve, and use natural surface and ground water 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 ground water quality;
- D. Establish more uniform local policies and official controls for surface and ground water management;
- E. Prevent erosion of soil into surface water systems;

- F. Promote ground water recharge;
- G. Protect and enhance fish and wildlife habitat and water recreational facilities;
- H. Secure the other benefits associated with the proper management of surface and ground water; and
- I. Carry out all the duties and responsibilities in Minn. Stat. §§ 471.59 and 103B.201 - 103B.252.

SECTION 3. DEFINITIONS.

Subdivision 1. "*Allowable Flow*" means the rate and volume of flow, according to the design criteria set forth in the Watershed Management Plan, at which a Member community may discharge into the drainage system without financial obligation and as the rate and volume of surface water runoff from a tributary area under natural conditions, with a drainage system in place which has been designed and constructed according to the criteria stated herein, excluding diverted waters. Current topographic data that exists on the enactment date of this Agreement shall be used for the determination of the natural conditions and calculation of the allowable flow.

Subdivision 2. "*Board*" means the board of managers of the WMO.

Subdivision 3. "*Council*" means the governing body of a governmental unit which is a Member of this WMO.

Subdivision 4. "*Drainage Facilities*" means any improvement constructed for the conveyance or storage of surface water.

Subdivision 5. "*Drainage System*" means the combination of drainage facilities required to safely control or convey runoff water from a major tributary drainage area(s) to a point of final discharge into a water body.

Subdivision 6. *"Excessive Flow"* means that rate and volume of flow, calculated according to the design criteria in the Watershed Management Plan, from a Member which is in excess of the allowable flow of that Member.

Subdivision 7. *"Governmental Unit"* means any city.

Subdivision 8. *"Lower Mississippi River Watershed"* or *"Watershed"* means the area contained within the "Legal Boundary Map of the Lower Mississippi River Water Management Organization" attached hereto as Exhibit "A".

Subdivision 9. *"Manager"* means the representative appointed to the Board by a Member.

Subdivision 10. *"Member"* means a governmental unit which enters into this Agreement.

Subdivision 11. *"Natural Conditions"* means the characteristics of the land on the date of enactment without regard to any urban development including structures, parking lots, or other artificial improvements.

Subdivision 12. *"Rate of Flow"* means the discharge of surface water runoff as a function of time which has been calculated according to the design criteria identified in the Watershed Management Plan. The rate of flow shall apply to the design and construction of open channels and storm sewer conduits.

Subdivision 13. *"Volume of Flow"* means the total discharge of all surface water runoff which has been calculated according to the design criteria identified in the Watershed Management Plan. The volume of runoff flow shall apply to the design and construction of detention facilities.

Subdivision 14. "Watershed Management Organization" or "WMO" means the organization created by this Agreement the full name of which is "Lower Mississippi River Watershed Management Organization." It shall be a public agency of its Members.

SECTION 4. MEMBERSHIP. The Membership of the WMO shall consist of the following governmental units, each entitled to the following eligible votes:

<u>Member</u>	<u>Votes</u>
City of Inver Grove Heights	3 votes
City of Lilydale	1 vote
City of Mendota Heights	2 votes
City of Saint Paul	2 votes
City of South Saint Paul	2 votes
City of Sunfish Lake	1 vote
City of West Saint Paul	2 votes

No change in governmental boundaries, structure, organizational status, or character shall affect the eligibility of any governmental unit listed above to be represented on the WMO, so long as such governmental unit continues to exist as a separate political subdivision. A majority of all eligible votes shall be sufficient for all matters, unless otherwise provided for in this Agreement. A majority vote of all Members, with each Member having one vote, shall be required for Section 7. A Member may not cast a split vote. Any Member that fails to contribute their share of the WMO annual administration fund or their allocation of a capital improvement cost, shall be declared ineligible for voting on all matters before the Board, until such contribution is made to the WMO.

SECTION 5. ADVISORY COMMITTEES.

Subdivision 1. Technical Advisory Committee. The following governmental subdivisions or agencies shall be requested to appoint a non-voting advisory Member to the WMO: Dakota County, Ramsey County, Dakota County Soil and Water Conservation District. The advisory Members shall not be required to contribute funds for the operation

of the WMO, except as provided in Minn. Stat. § 103B.251, but may provide technical services.

Subdivision 2. Citizen Advisory Committee. The WMO may establish a citizen advisory committee ("CAC") from the public at large to provide input on Watershed Management Plan revisions and other matters as deemed appropriate. The CAC shall be appointed by the WMO considering individuals nominated by each Member. The WMO will notify each Member of its intent to establish a CAC, will specify the purpose and duration of the CAC, and will request each Member to nominate candidates to be considered for appointment by the WMO. At the time of establishment of a CAC, the WMO will appoint a chair of the CAC, a board member liaison to the CAC, establish a time for submittal of any comments, and specify the support the WMO will provide to the CAC.

SECTION 6. BOARD OF MANAGERS.

Subdivision 1. Appointment. The governing body of the WMO shall be its Board. Each Member shall be entitled to appoint one Manager and an alternate on the Board. The alternate shall have the right to vote in the absence of their representative. Vacancies in the office of Manager shall be filled for the remainder of the term by the Member which appointed or had the right to appoint the Manager. All vacancies shall be filled within ninety (90) days after they occur.

Subdivision 2. Eligibility or Qualification. The Council of each Member shall determine the eligibility or qualification of its representative on the WMO.

Subdivision 3. Term. The Managers shall not have a fixed term; but shall serve at the pleasure of the Member appointing such Manager to the Board.

Subdivision 4. Removal. A Manager may not be removed from the Board prior to the expiration of his or her term, unless the Manager consents in writing or unless removed in accordance with the procedures provided under Minnesota Rules 8410.0040.

Subdivision 5. Compensation. Managers shall serve without compensation from the WMO, but this shall not prevent a Member from providing compensation for its Manager.

Subdivision 6. Organizational Meeting. At the first meeting of the Board each year, the Board shall elect from its Managers a chair, a vice chair, a secretary/treasurer, and such other officers as it deems necessary to conduct its meetings and affairs. The Board shall adopt rules of order and procedure governing its meetings and affairs. The rules of order and procedure may be amended from time to time at either a regular or a special meeting of the Board provided that at least ten (10) days' prior notice of the proposed amendment has been furnished to each person to whom notice of the Board meetings is required to be sent. A majority vote of all eligible votes of the Members of the WMO shall be sufficient to adopt any proposed amendment to such rules of order and procedure.

Subdivision 7. Annual Meeting Requirement. The Board shall meet at least annually, at times and places selected by the Board. If the Board changes its regularly established meeting place or time, it shall place a notice of the change on a bulletin board at least three (3) days in advance in the building where it was scheduled to meet.

Subdivision 8. Committees. The Board may establish committees as it deems appropriate.

Subdivision 9. Quorum. The Board shall not take any action without a quorum present. A quorum shall be at least four Members.

SECTION 7. POWERS AND DUTIES OF THE WMO. The WMO, acting by its Board:

Subdivision 1. Shall prepare, adopt and implement a Watershed Management Plan meeting the requirements of Minn. Stat. § 103B.231;

Subdivision 2. Shall review and approve local water management plans as provided in Minn. Stat. § 103B.235;

Subdivision 3. Shall exercise the authority of a watershed district under Minn. Stat. Chapter 103D to regulate the use and development of land in the watershed when one or more of the following conditions exist:

A. The local government unit exercising planning and zoning authority over the land under Minn. Stat. §§ 366.10 to 366.19, 394.21 to 394.37, or 462.351 to 462.364 does not have a local water management plan approved and adopted in accordance with requirements of Minn. Stat. § 103B.235 or has not adopted the implementation program described in the plan.

B. An application to the local government unit for a permit for the use and development of land, requires an amendment to, or variance from, the adopted local water management plan or implementation program of the local unit.

C. The local government unit has authorized the WMO to require permits for the use and development of land.

Subdivision 4. Shall adopt an annual work plan.

Subdivision 5. May employ such persons as it deems necessary to accomplish its duties and powers.

Subdivision 6. May contract for space and for material and supplies to carry on its activities either with a Member or elsewhere.

Subdivision 7. May acquire necessary personal and real property to carry out its powers and its duties.

Subdivision 8. May make necessary surveys or use other reliable surveys and data, and develop projects to accomplish the purposes for which the WMO is organized.

Subdivision 9. 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.

Subdivision 10. May order any governmental unit to carry out the local water management plan which has been approved by the Board. If the local unit of government fails to do so, in addition to other remedies, in its discretion, the Board may implement any required action or improvement in accordance with this Agreement.

Subdivision 11. May acquire, operate, construct, and maintain the capital improvements delineated in the Watershed Management Plan adopted by the Board.

Subdivision 12. May contract for or purchase such insurance as the Board deems necessary for the protection of the WMO and its Board.

Subdivision 13. May establish and maintain devices for acquiring and recording hydrological and water quality data within the watershed area of the WMO.

Subdivision 14. May enter upon lands within or without the watershed to make surveys and investigations to accomplish the purposes of the WMO.

Subdivision 15. May provide any Member with technical data or any other information of which the WMO has knowledge which will assist the Member in preparing land use classifications or local water management plans within the watershed.

Subdivision 16. May provide legal and technical assistance in connection with litigation or other proceedings between one or more of its Members and any other political subdivision, commission, board, corporation, individual, or agency relating to the

planning or construction of facilities to drain or pond storm waters or relating to water quality within the WMO.

Subdivision 17. May accumulate reserve funds for the purposes herein mentioned and may invest funds of the WMO not currently needed for its operations.

Subdivision 18. May collect money, in accordance with the provisions of this Agreement, from its Members and from any other source approved by the Board.

Subdivision 19. May make contracts, incur expenses, and make expenditures necessary and incidental to the effectuation of its purposes and powers.

Subdivision 20. Shall cause to be made an annual audit of the books and accounts of the WMO and shall make and file a report to its Members at least once each year including the following information:

- A. The financial condition of the WMO;
- B. The status of all WMO projects and work within the watershed; and
- C. The business transacted by the WMO and other matters which affect the interests of the WMO. Copies of the report shall be transmitted to the clerk of each Member by March 31 of each year.

Subdivision 21. Shall make the WMO's books, reports, and records available for and open to inspection by its Members or the public at all reasonable times.

Subdivision 22. May recommend changes in this Agreement to its Members. Any amendments shall require ratification by all the parties to this Agreement.

Subdivision 23. May exercise all other powers necessary and incidental to the implementation of the purposes and powers set forth herein and as authorized by Minn. Stat. §§ 103B.201 through 103B.252.

Subdivision 24. Must solicit proposals for all legal, engineering, auditing, and other technical services in accordance with Minnesota Statutes § 103B.227, subd. 5.

Subdivision 25. Shall coordinate its planning activities with contiguous watershed management organizations and counties conducting water planning and implementation under Minn. Stat. Chapter 103B.

Subdivision 26. Shall designate one or more legal newspapers of general circulation which are published in the county(ies) in which the watershed is located.

SECTION 8. POWERS AND DUTIES OF THE OFFICERS OF THE BOARD.

Subdivision 1. It shall be the duty of the Chair of the Board to:

- A. Attend and preside at all meetings of the Board;
- B. Assist in the preparation of meeting agendas and the annual work plan;
- C. See that orders and resolutions of the Board are carried into effect;
- D. Sign and execute documents as may be required for the Board's exercise of its powers, except as otherwise required by law; and
- E. Perform such other duties applicable to the office as are necessary to fulfill the powers and duties of the Board as set forth in this Agreement, and as provided by law.

Subdivision 2. It shall be the duty of the Vice Chair of the Board to:

- A. Perform the duties of the Chair in the Chair's absence; and
- B. Perform other duties as assigned from time to time by the Board.

Subdivision 3. It shall be the duty of the Secretary/Treasurer of the Board to:

- A. Keep and post a true and accurate record of the proceedings of all meetings of the Board;
- B. Keep a record of all amendments, alterations and additions to this Agreement;
- C. Prepare and process all correspondence;
- D. Prepare and file all reports and statements as required by law and this Agreement;

E. Keep all financial accounts of the WMO, and prepare and present to the Board full and detailed financial statements of the WMO prior to its annual meeting; and

F. Perform other duties as assigned from time to time by the Board.

SECTION 9. CONSTRUCTION OF IMPROVEMENTS.

Subdivision 1. All construction, reconstruction, extension or maintenance of WMO improvements, including outlets, lift stations, dams, reservoirs, or appurtenances of a surface water or storm sewer system ordered by the WMO which involve potential construction by or assessment against any Member or against privately or publicly owned land within the watershed shall adhere to the following procedures set forth in this section. The Board shall secure from its engineers or some other competent person a preliminary report advising it whether the proposed improvement is feasible, whether there are feasible alternatives, whether the proposed improvement shall best be made as proposed or in conjunction with some other improvement, a determination of the quantity and/or quality of storm and surface water contributed to the improvement by each Member, the estimated cost of the improvement(s), including maintenance, the estimated cost to each Member, and evaluating the consistency of the improvement with the Watershed Management Plan capital improvement section. The Board shall then hold a public hearing on the proposed improvement. Notice of the hearing shall be mailed to the clerk of each affected Member and shall also be published in the Board's official newspaper(s). The notice shall be mailed not less than forty-five (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.

To order the improvement, a resolution setting forth the order shall require a favorable majority vote of all eligible votes of the Members of the WMO. The order shall

describe the improvement, shall allocate in percentages the cost allocation among the Members, shall determine the method of financing, shall designate the engineers to prepare plans and specifications, and shall designate the entity that will contract for the improvement. The Board shall not order and no engineer shall prepare plans and specification before the Board has adopted a resolution ordering the improvement. After the Board has ordered an improvement, it shall forward the preliminary report to all affected Members with an estimated time schedule for the construction of the improvement.

The Board shall allow not less than 90 days, nor more than 270 days, for each Member to conduct hearings as provided by law or applicable charter requirements, to approve the construction and the method of financing of the improvement which the Member will use to pay its proportionate share of the costs of the improvement.

If the WMO proposes to use Dakota County's and/or Ramsey County's bonding authority, or if the WMO proposes to certify all or any part of an improvement to Dakota and/or Ramsey County for payment, then and in that event all proceedings shall be carried out in accordance with Minn. Stat. § 103B.251.

The Board may order advertising for bids upon receipt of notice from each Member which will be assessed that it has completed its hearing or determined its method of payment, or upon expiration of 270 days after the mailing of the preliminary report to the Members, whichever occurs first.

Subdivision 2. Any Member aggrieved by the determination of the Board as to the financing of an improvement or allocation of the costs of an improvement shall have thirty (30) days after the WMO resolution ordering the improvement to appeal the determination to arbitration. The appeal shall be in writing requesting the arbitration and

shall be addressed to the Board in c/o City of South St. Paul, 125 3rd Ave. N., South St. Paul, MN 55075. The determination of the Member's appeal shall be referred to a Board of Arbitration. The Board of Arbitration shall consist of three (3) persons: one to be appointed by the Board, one to be appointed by the appealing Member, and the third to be appointed by the two so selected. In the event the two persons so selected do not appoint the third person within fifteen (15) days after their appointment, then the chief judge of the District Court of Dakota County 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 and if appointed by the chief judge, shall be a person knowledgeable in the subject matter of the dispute. The arbitrators' expenses and fees, together with the other expenses, not including counsel fees, incurred in the conduct of the arbitration shall be divided equally between the WMO and the appealing Member. Arbitration shall be conducted in accordance with the Uniform Arbitration Act, Minn. Stat. Chapter 572. Arbitration must be completed within the 270 day period provided for in Subdivision 1 of this Section.

Subdivision 3. Contracts for Improvements. The bidding and contracting of the work may be let by any Member or by the WMO as determined by the Board, in compliance with state statutes. Contracts and bidding procedures shall comply with all legal requirements.

Subdivision 4. Supervision. All improvement contracts shall be supervised by the entity awarding the contract. A WMO representative shall also be authorized to observe and review the work in progress and the Members agree to cooperate with the WMO representative in accomplishing the WMO's 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 WMO representative shall report to the Board on the progress of the work.

Subdivision 5. Land Acquisition. The WMO shall not have the power of eminent domain. All easements or interest in land which are necessary for an improvement will be negotiated or condemned in accordance with Minn. Stat. Chapter 117 by the Member where the land is located, and each Member agrees to acquire the necessary easement or right-of-way or partial or complete interest in land upon order of the Board to accomplish the purposes of this Agreement. All reasonable costs of the acquisition, including attorney's and appraiser's fees, shall be a cost of the improvement, and shall be allocated according to the formula for allocating Capital Improvement cost in Section 10, Subdivision 7. If a Member determines it is in its best interests to acquire additional rights in lands for some other purposes, in conjunction with the taking of lands for the improvement, the costs of the acquisition of additional rights in lands will not be included in the improvement costs. The Board, in determining the amount of the improvement costs to be assessed to each Member, may take into consideration the land use for which the additional lands are being acquired and may credit the acquiring Member for the land acquisition to the extent that it benefits the other Members. Any credits may be applied to the cost allocation of the improvement, or the Board, if feasible and necessary, may defer the credits to a future improvement.

Members may not condemn or negotiate for land acquisition to pond or drain storm and surface waters within the corporate boundaries of another Member within the WMO.

SECTION 10. FINANCES.

Subdivision 1. Disbursements. The WMO funds may be expended by the Board in accordance with this Agreement in a manner determined by the Board. The Board shall designate one or more national or state bank or trust companies authorized to receive deposits of public monies to act as depositories for the WMO funds. In no event shall there be a disbursement of WMO funds without approval by the Board and the signature of at least two (2) Board Members, one of whom shall be an officer. The Board may require the secretary/treasurer to file with the Board a bond in the sum of at least \$10,000 or such higher amount as shall be determined by the Board. The WMO shall pay the premium on said bond.

Subdivision 2. Budget. On or before July 1 of each year, the Board shall adopt a general fund budget ("Budget") by a majority vote of all Members (with each Member having one vote) for the ensuing year and decide upon the total amount necessary for the general fund. The secretary/treasurer of the Board shall certify the Budget to the clerk of each Member, together with a statement of the proportion of the Budget to be provided by each Member, computed in accordance with Section 10, Subdivision 5. The council of each Member shall review the Budget, and the Board shall upon notice from any Member received prior to August 1, hear objections to the Budget, and may, upon notice to all Members of the time, date, place of and right to participate in the hearing and after a hearing, modify or amend the Budget, and then give notice to the Members of any and all modifications or amendments. Each Member agrees to provide the funds required by the Budget by February 15th of each year.

If a Member fails to provide its share of the funds required by the Budget by February 15 of each year, the unpaid balance of the funds shall accrue interest at a rate of

eight percent (8%) per annum commencing the day following February 15th of the year in which the funds were due. The WMO may take whatever action, at law or in equity it deems appropriate, to collect any amounts due from a Member under this Agreement. The Member agrees to pay the cost of collection, including reasonable attorneys' fees.

Subdivision 3. Maintenance. The Board shall have the option of funding maintenance work through the Budget, or funding as a capital improvement in accordance with Subdivision 6 of this Section. Maintenance costs that are associated with an improvement in the approved Capital Improvement Program, shall be allocated according to the same formula as is applicable for allocating capital improvement costs as identified in Section 10, Subdivision 7. The Members affected by the improvement shall decide on the level of maintenance to be applied to the improvement. If the Members cannot agree, the Board shall make the determination.

Subdivision 4. Tax Levy. If authorized by law, the WMO may levy a tax. The proceeds of any tax levied under this subdivision shall be expended only for the purposes authorized by law. The WMO may accumulate the proceeds of levies as an alternative to issuing bonds to finance improvements.

Subdivision 5. General Fund. Each Member agrees to contribute each year to a general fund to be used for general administration purposes including, but not limited to: improvement projects, salaries, rent, supplies, development of 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 any other purpose authorized by this Agreement. The annual contribution by each Member shall be based fifty percent (50%) on taxable market value (for the preceding year) and fifty percent (50%) on area in accordance with the following formula:

Annual Watershed Levy = L

Taxable Market Value of a
Member's Property in the Watershed = MV

Taxable Market Value of All Property in the Watershed = TV

Acres of Property a Member Has in the Watershed = A

Total Acres in Watershed = TA

Member Required Contribution = C

$$\frac{1}{2} L \times \frac{MV}{TV} + \frac{1}{2} L \times \frac{A}{TA} = C$$

Subdivision 6. Capital Improvement.

A. All capital improvements ordered by the Board must be included in the WMO's adopted capital improvement program. An improvement fund shall be established for each improvement ordered by the WMO. If ordered by the Board, each Member agrees to contribute to the funds its proportionate share of the engineering, legal, and administrative costs as determined by the amount to be assessed against each Member as a cost of the improvement. The Board shall submit in writing a statement to each Member, setting forth in detail the expenses incurred by the WMO for each improvement.

Each Member further agrees to pay its proportionate share of the cost of the improvement in accordance with the determination of the Board, under Section 10, Subdivision 7. The Board or the Member awarding the contract shall submit in writing copies of the engineer's certificate authorizing payment during construction and the Member being billed agrees to pay its share of the costs within thirty (30) days after receipt of the statement. The Board may also require payment from Members before awarding a contract based upon an engineer's estimate of cost. Billings will then be adjusted when actual costs are known. The Board or the Member awarding the contract shall advise other contributing Members of the tentative time schedule of the work and the estimated times when the contributions shall be necessary.

B. Notwithstanding the provisions of paragraph (A) of this Subdivision, the WMO may also fund all or any 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 WMO and Dakota County and/or Ramsey 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 Dakota and/or Ramsey County pursuant to Minn. Stat. § 103B.251. The levy and collection of an ad valorem tax levy for maintenance shall be by Dakota and/or Ramsey County based upon a tax levy resolution adopted by the WMO and remitted to the

county(ies) on or before October 1 of each year. If it is determined to levy for maintenance, the WMO shall be required to follow the hearing process established by Minn. Stat. §103D.921. Mailed notice shall also be sent to the clerk of each Member at least thirty (30) days prior to the hearing.

C. The WMO may also fund all or any part of the cost of a capital improvement contained in the capital improvement program of the plan in accordance with Minn. Stat. § 103B.241.

Subdivision 7. Capital Cost Allocation of Improvements in the Board's

Watershed Management Plan. All capital improvement costs of improvements designated in the WMO's adopted Watershed Management Plan for construction by the WMO pursuant to Section 10, Subdivision 6A of this Agreement shall be apportioned by the following methods or a combination of these methods:

A. For improvements related to water quality:

1. For water quality monitoring, water quality trend analyses, water quality modeling, and water quality studies, the cost sharing will be proportional to the tributary watershed area.

2. For water quality projects and maintenance, the cost sharing will be based on Allowable Flow, tributary area, and/or relative phosphorus loading.

3. The cost sharing for WMO operation of a future Watershed Outlet Monitoring Program station, or other program that monitors the quality of the stormwater runoff that discharges into the Mississippi River from the WMO, will be proportional to the tributary watershed area.

4. Or other cost sharing method approved by the Board.

5. Pursuant to Minn. Stat. § 103B.251.

B. For improvements related to water quantity:

1. A Member shall be responsible for the costs of construction of that portion of a drainage system that is located within its borders and that is necessary to accommodate its Allowable Flow and the Allowable Flow of all other tributary Members.

2. A Member shall also be responsible for its share of construction costs of a drainage system, whether or not that system is located within its borders, that is necessary to convey Excessive Flows originating within the Member's borders.

3. Increased costs of construction incurred for acquisition of lands, easements and rights of way within natural watercourses shall be the obligation of the Member in which the land lies and shall not be apportioned to other Members to the extent that such costs exceed costs which would have been incurred if there had been no improvement on such lands, easements, or rights of way.

4. Costs of construction shall include all costs associated with a WMO approved improvement (whether trunk sewer or natural conveyance) and whether or not actually constructed, including, but not limited to, costs for design, administration, construction supervision, legal fees, acquisition of lands and improvements and actual construction and maintenance costs.

5. The WMO shall consider any grant money received or to be received by a Member for sanitary sewer/storm sewer separation or for the construction, reconstruction or replacement of storm sewer facilities before making cost allocations among Members and may consider the application of any grant proceeds toward the cost of the improvement before allocating costs between or among the Members involved, provided that such allocation would not violate the terms and conditions of the grant.

6. The attached Exhibit B is incorporated by reference and serves as a compilation of general examples of cost allocation under this Agreement for the hypothetical circumstances stated in the examples.

Subdivision 8. Capital Cost Allocation of Improvements Delineated in Local Watershed Management Plans. All capital improvement costs incurred by the WMO for improvements delineated in local watershed management plans that benefit only that Member, which the WMO undertakes because the Member fails to do so, shall be apportioned entirely to that Member.

SECTION 11. SPECIAL ASSESSMENTS. The WMO shall not have the power to levy special assessments. All such assessments shall be levied by the Member within which the land is located.

SECTION 12. DURATION.

Subdivision 1. Each Member agrees to be bound by the terms of this Agreement until January 1, 2012. It may be continued thereafter upon the agreement of all the parties.

Subdivision 2. This Agreement may be terminated prior to January 1, 2012, by the written agreement of a majority of the Members.

Subdivision 3. In addition to the manner provided in Subdivision 2 for termination, any Member may petition the Board to dissolve the WMO. Upon thirty (30) days' notice in writing to the clerk of each Member, the Board shall hold a hearing and upon a favorable majority vote of all eligible votes of the Members, the Board may by resolution recommend that the WMO be dissolved. The resolution shall be submitted to each Member and if ratified by a majority of the governing bodies of all Members within sixty (60) days, the Board shall then give ninety (90) days written notice of its intent to dissolve the WMO to Dakota County, Ramsey County and the Board of Water and Soil Resources. After the expiration of this 90-day notice period, the Board shall dissolve the WMO, allowing a reasonable time to complete work in progress and to dispose of personal property owned by the WMO.

SECTION 13. DISSOLUTION. Upon dissolution of the WMO or termination of this Agreement, all property of the WMO shall be sold and the proceeds thereof, together with monies on hand, shall be distributed to the Members. Such distribution of WMO assets shall be made in proportion to the total contribution to the WMO required by the last annual Budget.

SECTION 14. EFFECTIVE DATE. This Agreement shall be in full force and effect when all seven (7) Members file a certified copy of a resolution approving this Agreement and have executed this Agreement and filed the executed Agreement with the Board. All Members need not sign the same copy.

IN WITNESS WHEREOF, the undersigned governmental units, by action of their governing bodies, have caused this Agreement to be executed in accordance with the authority of Minn. Stat. § 471.59.

Approved by the City Council
September 26, 2001.

CITY OF INVER GROVE HEIGHTS

BY: [Signature]

Attest: [Signature]

Approved by the City Council
April 28, 2003.

CITY OF LILYDALE

BY: [Signature]

Attest: [Signature]

Approved by the City Council
_____, 20____.

CITY OF MENDOTA HEIGHTS

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF ST. PAUL

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF SOUTH ST. PAUL

BY: _____

Attest: _____

IN WITNESS WHEREOF, the undersigned governmental units, by action of their governing bodies, have caused this Agreement to be executed in accordance with the authority of Minn. Stat. § 471.59.

Approved by the City Council
_____, 20____.

CITY OF INVER GROVE HEIGHTS

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF LILYDALE

BY: _____

Attest: _____

Approved by the City Council
November 20, 2001.

CITY OF MENDOTA HEIGHTS

BY: Charles E. Masters III

Attest: Rinda K. Shipton

Approved by the City Council
_____, 20____.

CITY OF ST. PAUL

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF SOUTH ST. PAUL

BY: _____

Attest: _____

IN WITNESS WHEREOF, the undersigned governmental units, by action of their governing bodies, have caused this Agreement to be executed in accordance with the authority of Minn. Stat. § 471.59.

Approved by the City Council
_____, 20____.

CITY OF INVER GROVE HEIGHTS

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF LILYDALE

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

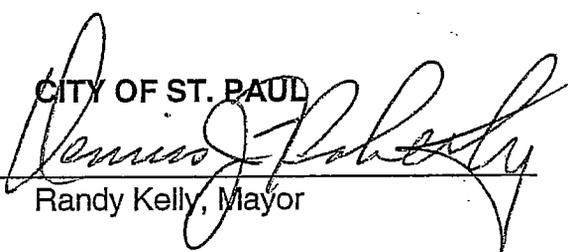
CITY OF MENDOTA HEIGHTS

BY: _____

Attest: _____

Approved by the City Council
JANUARY 16, 2002.
COUNCIL FILE #02-52

CITY OF ST. PAUL

BY: 
Randy Kelly, Mayor

Approved as to Form:

BY: Lisa A. Veith
Assistant City Attorney

Approved by the City Council
_____, 20____.

CITY OF SOUTH ST. PAUL

BY: _____

Attest: _____

IN WITNESS WHEREOF, the undersigned governmental units, by action of their governing bodies, have caused this Agreement to be executed in accordance with the authority of Minn. Stat. § 471.59.

Approved by the City Council
_____, 20____.

CITY OF INVER GROVE HEIGHTS

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF LILYDALE

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF MENDOTA HEIGHTS

BY: _____

Attest: _____

Approved by the City Council
_____, 20____.

CITY OF ST. PAUL

BY: _____

Attest: _____

Approved by the City Council
November 5, 2001.

CITY OF SOUTH ST. PAUL

BY: Kathleen A. Gayles

Attest: Christy M. Wilson

Approved by the City Council
1-21-9, 2001.

CITY OF SUNFISH LAKE

BY: [Signature]

Attest: [Signature] Clerk

Approved by the City Council
_____, 20____.

CITY OF WEST ST. PAUL

BY: _____
Its Mayor

BY: _____
Its City Manager

Approved by the City Council
_____, 20____.

CITY OF SUNFISH LAKE

BY: _____

Attest: _____

Approved by the City Council
Nov. 26, 2001.

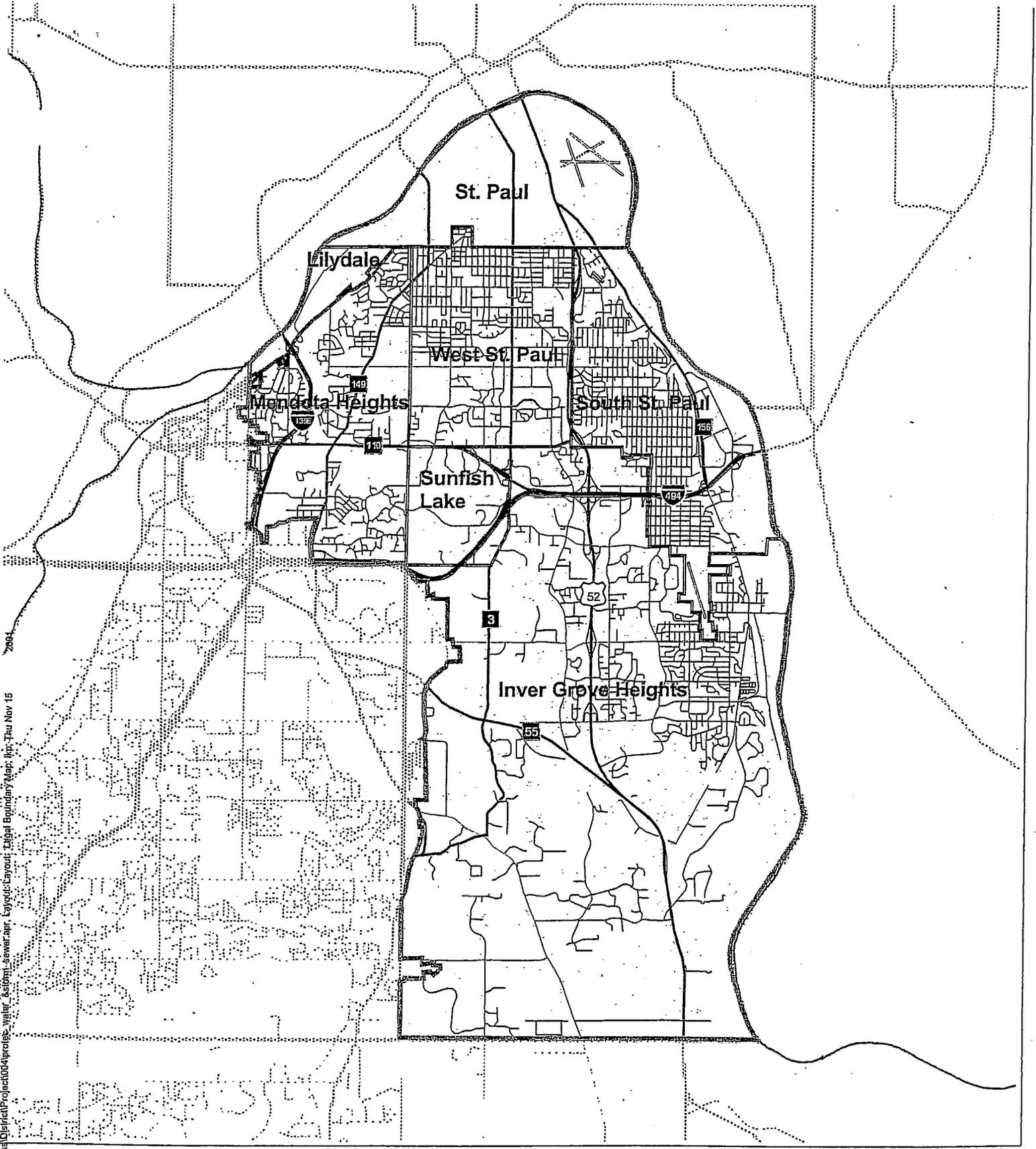
CITY OF WEST ST. PAUL

BY: David King

Its Mayor

BY: Robert Johnson

Its City Manager



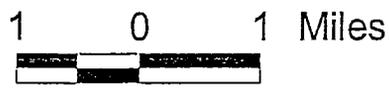
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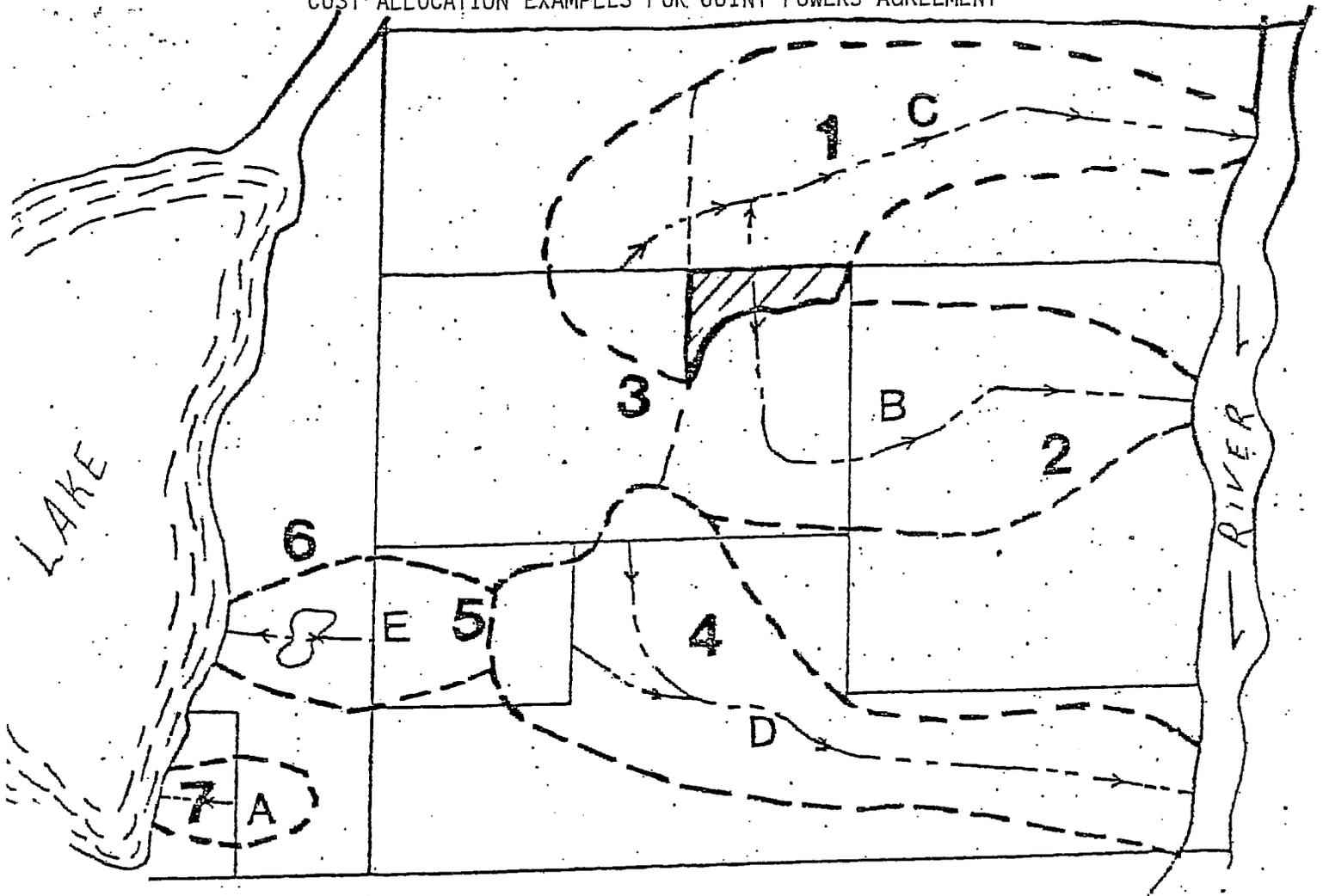
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Legal Boundary Map of the
Lower Mississippi River
Watershed Management Organization

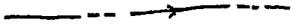
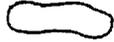
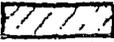
Exhibit A



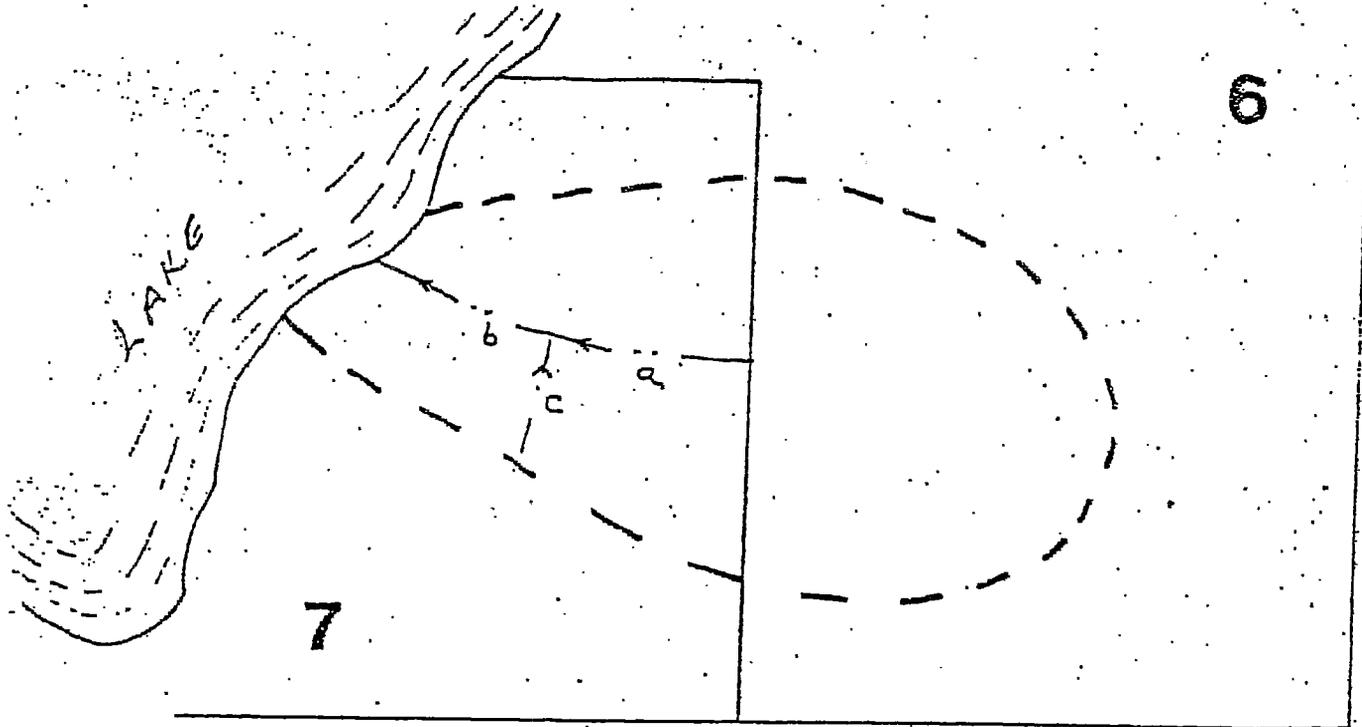
COST ALLOCATION EXAMPLES FOR JOINT POWERS AGREEMENT



<u>EXAMPLE</u>	<u>DESCRIPTION</u>
A.	Two Cities
B.	Two Cities With Diversion In
C.	Two Cities With Diversion Out
D.	Three Cities
E.	Added Ponding

<u>LEGEND</u>	
	Watershed Boundary
	Drainage Facility
	City Boundary
	Detention Pond
	Diverted Area

JOINT POWERS AGREEMENT



EXAMPLE "A" - TWO CITIES

Project: Construct project (Segments "a" and "b") in City #7 to provide drainage for Cities #6 and #7 under fully developed conditions.

Cost Allocation:

City #6: Cost share = $\frac{Q_{E6}}{Q_T} \times \text{Total project cost for "a"}$.

City #7: Cost share = $\text{Total project cost} - \left(\frac{Q_{E6}}{Q_T} \times \text{Total project cost} \right)$

Where: $Q_{E6} = Q_{T6} - Q_{A6}$;

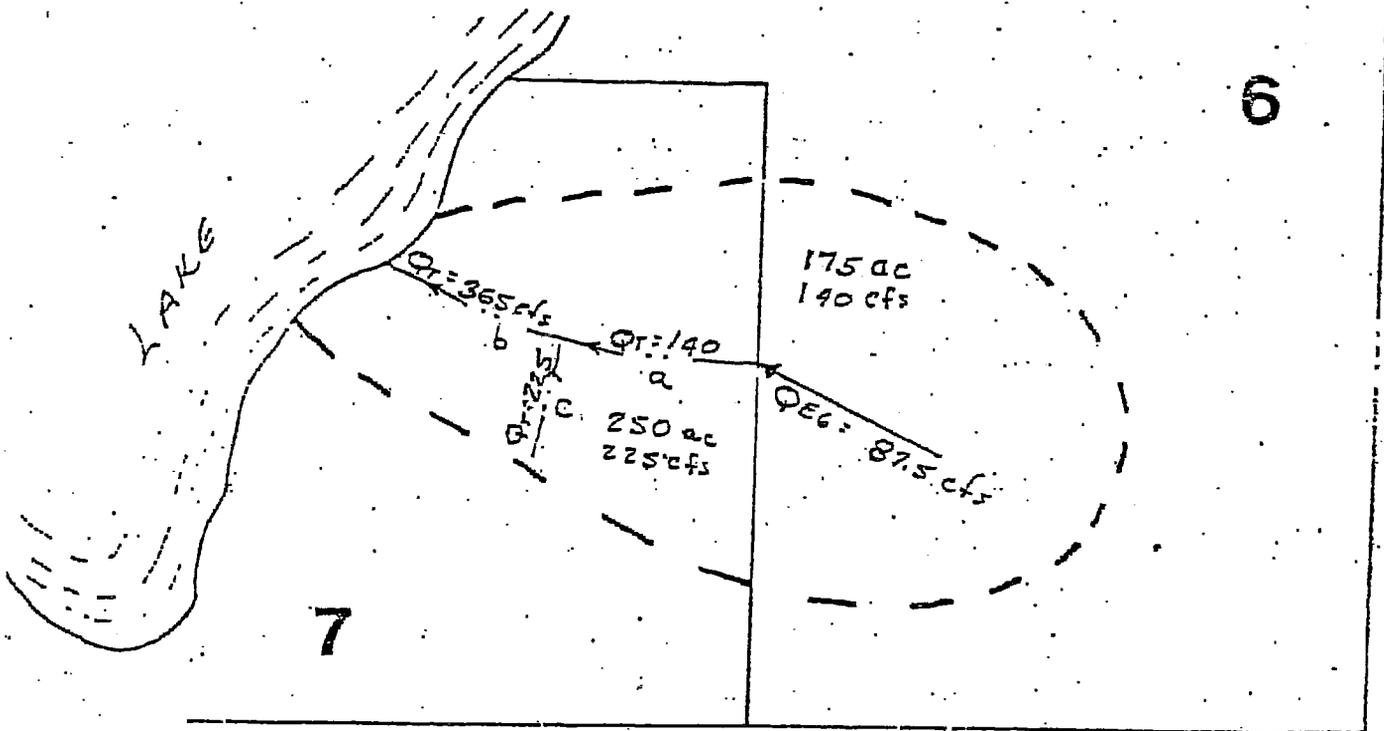
Q_{E6} is the design flow rate from City #6 which is in excess of the allowable flow rate from City #6;

Q_{A6} is the allowable flow rate from City #6;

Q_{T6} is the total design flow rate from City #6;

Q_T is the total flow rate for which the project is designed in each Segment.

City #6: Cost share for Segment "c" = Zero dollar (no tributary flow).



EXAMPLE "A" - TWO CITIES

Sample Calculations

Assume:

City #6 - Area of Watershed within City #6 = 175 acres

Full development runoff (Q_{T6}) = CIA = $0.40 \times 2.0"/h \times 175 = 140$ cfs

Predevelopment runoff (Q_{A6}) = CIA = $0.15 \times 2.0"/h \times 175 = 52.5$ cfs

Then:

Excess runoff (Q_{E6}) (from formulae: $Q_E = Q_T - Q_A$) = 87.5 cfs

1. City #6 cost share for Segment "a" = $\frac{87.5}{140} \times$ project cost for "a" = .63 x Project cost for "a".

(From formulae: share = $\frac{Q_E}{Q_T} \times$ Project cost)

Note: Segment "a" ends at first point of entry into the system from City #7.

Assume:

City #7 - Area of Watershed within City #7 = 250 acres and all flows from City #7 enter system by way of Segment "c".

Full development runoff (Q_{T7}) = CIA = $.50 \times 1.8 \times 250 = 225$ cfs

Design flow for Segment "b" = $Q_{T(SEG. "a")} + Q_{T7} = 140 + 225 = 365$ cfs

2. City #6 has no cost share obligation in Segment "c" when there is no tributary flow from City #6.

(continued)

JOINT POWERS AGREEMENT

then:

$$3. \text{ City \#6 cost share for Segment "b"} = \frac{87.5}{365} \times \text{Project cost for "b"} = 0.24 \text{ Project cost of "b"}$$

$$\text{(From formulae: Share} = \frac{Q_{E6}}{Q_T} \times \text{Project cost)}$$

Note:

City #6 can reduce the excess flow (Q_{E6}) by detention ponding even to the amount that the rate of flow from City #6 (Q_{T6}) is no greater than the allowable flow rate (Q_{A6}). Any reduction in the total rate from City #6 would be applied to the excess rate and thereby reduce the obligation of City #6 to share in the cost of constructing any conveyance system in City #7.

SUMMARY OF COSTS

Segment "a":

$$\text{City \#6: Cost share} = \frac{87.5}{140} \times \text{Project cost for "a"}$$

$$\text{City \#7: Cost share} = \frac{52.5}{140} \times \text{Project cost for "a"}$$

Segment "b":

$$\text{City \#6: Cost share} = \frac{87.5}{365} \times \text{Project cost for "b"}$$

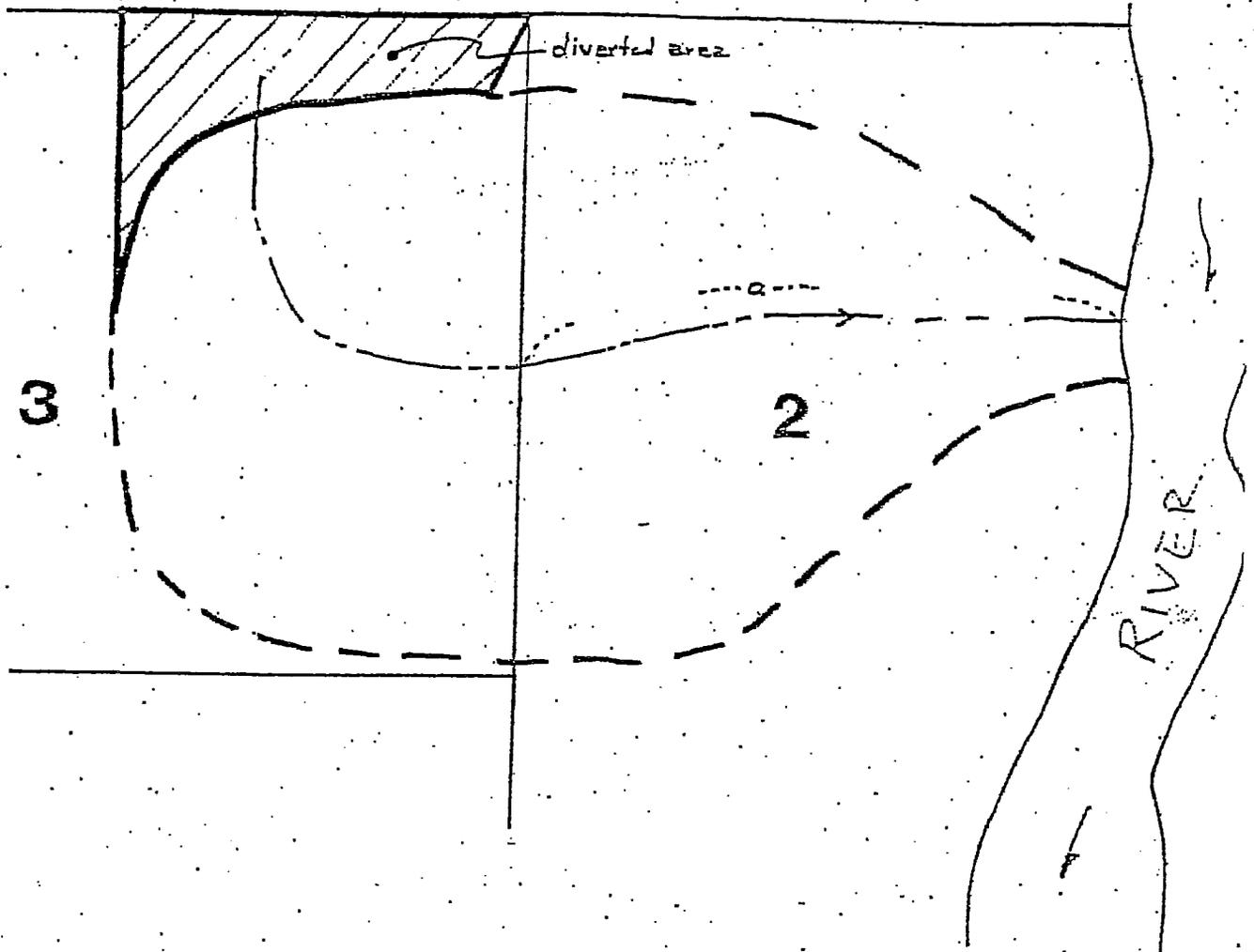
$$\text{City \#7: Cost share} = \frac{277.5}{365} \times \text{Project cost for "b"}$$

Segment "c":

$$\text{City \#6: Cost share} = \text{Zero dollar (no tributary flow)}$$

$$\text{City \#7: Cost share} = \text{All of Project cost for "c"}$$

JOINT POWERS AGREEMENT



EXAMPLE "B" - TWO CITIES WITH DIVERSION IN

Project: Construct Trunk facility "a" in City #2 only for Cities #2 and #3 under fully developed conditions.

Cost Allocation:

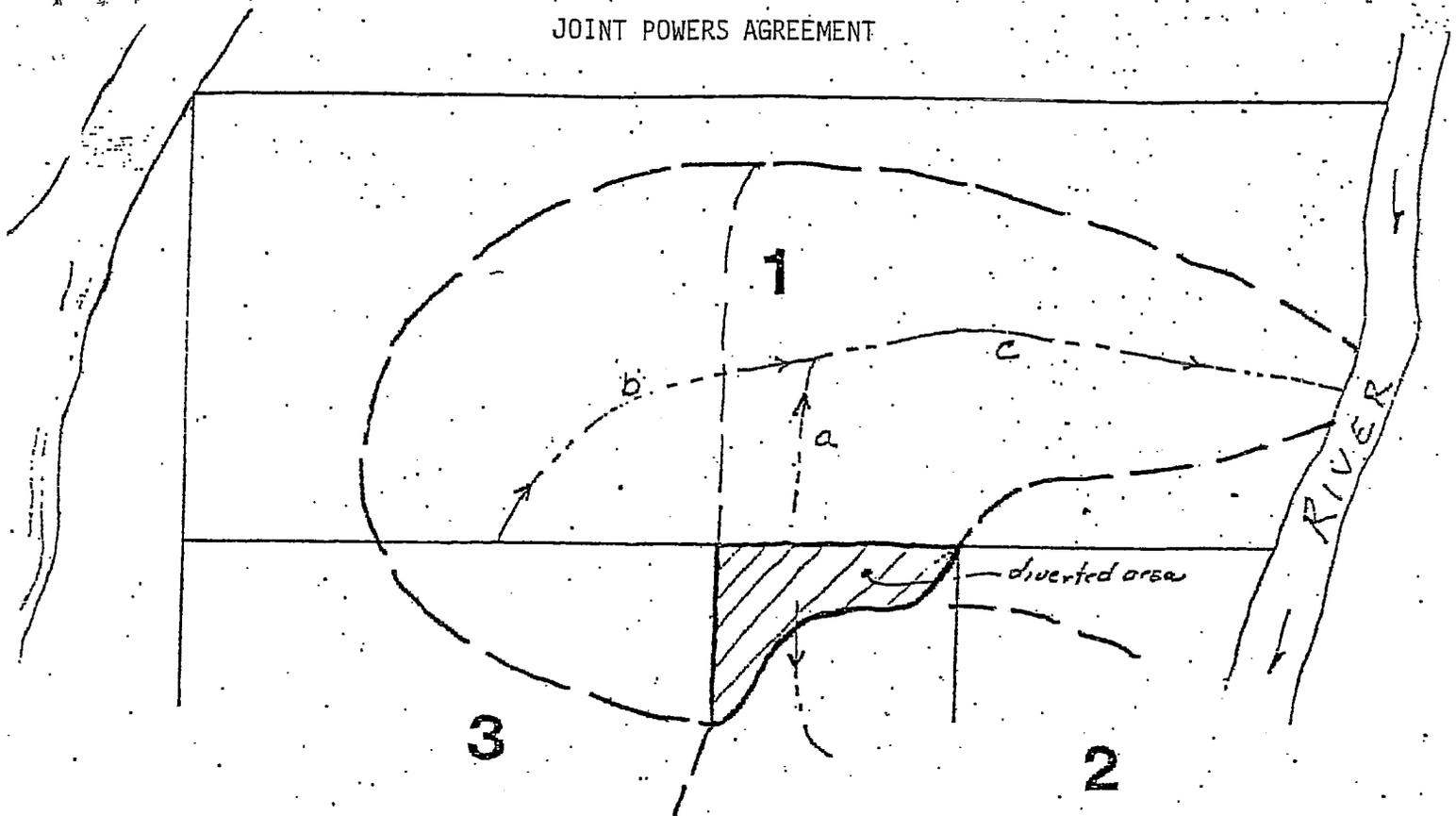
City #3: Cost share = $\frac{Q_{E3}}{Q_T}$ x Total project cost.

Where: $Q_{E3} = Q_{T3} - Q_{A3}$
 And Q_{E3} is the design flow from City #3 as described in Example "A" plus all flows coming from the area diverted. All facilities within City #3 are constructed by City #3. Detention in City #3 can reduce Q_{E3} ;

Q_T and Q_A are as defined in Example "A".

Note: This case applies only where waters are diverted from one City to another City or from one major drainage district to another.

JOINT POWERS AGREEMENT



EXAMPLE "C" - TWO CITIES WITH DIVERSION OUT

Project: Construct Trunk Segments "a", "b", "c" in City #1 under fully developed conditions.

Cost Allocation:

City #3: Cost share for Segment "a" = Zero dollars
(all flows have been diverted away)

Cost share for Segment "b" = $\frac{Q_{E3}}{Q_T}$ x Total project cost for "b".

Where: Q_{E3} is the excess flow from City #3 that is tributary to Segment "b" only.

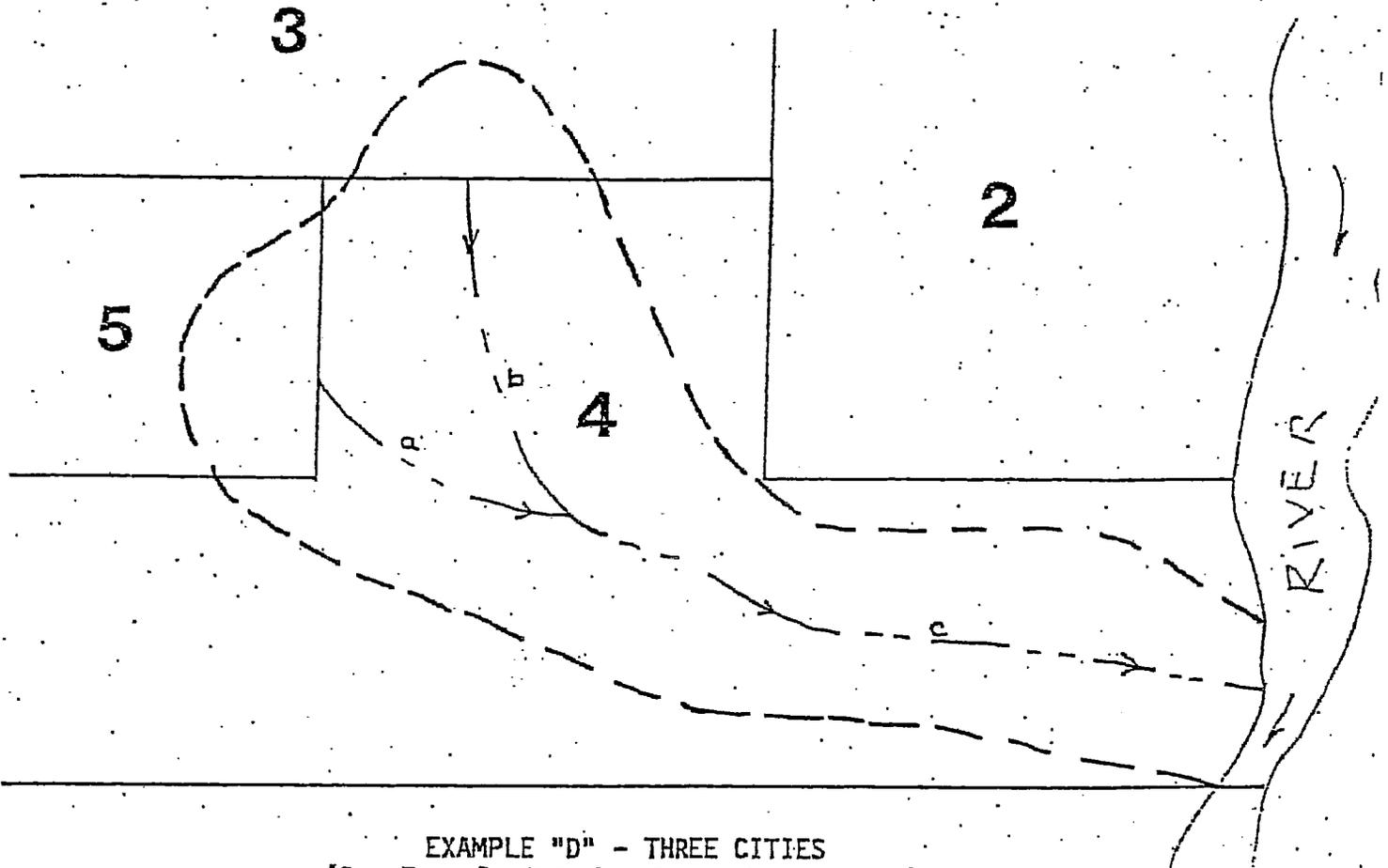
City #3: Cost share for Segment "c" = $\frac{Q_{E3}}{Q_T}$ x Total project cost for "c".

Where: Q_{E3} is the excess flow from City #3 that is tributary to Segment "c" calculated as Q_{E3} tributary to "b" minus Q_{A3} that would have been tributary to "a" had there been no diversion out of the drainage district.

Q_T and Q_A are as defined in Example "A".

Note: This case applies only where waters are diverted from one City to another City, or from one major drainage district to another.

JOINT POWERS AGREEMENT



EXAMPLE "D" - THREE CITIES
 (See Example "A" for Q_T , Q_A and Q_E)

Project: Construct Project (Segments "a", "b" and "c") in City #4 to provide drainage for Cities #3, #4, and #5 under fully developed conditions.

Cost Allocations:

City #3: Cost share Segment "b" = $\frac{Q_{E3}}{Q_T}$ x Project cost for "b".

Cost share Segment "a" = Zero dollars (no tributary flow).

Cost share Segment "c" = $\frac{Q_{E3}}{Q_T}$ x Project cost for "c".

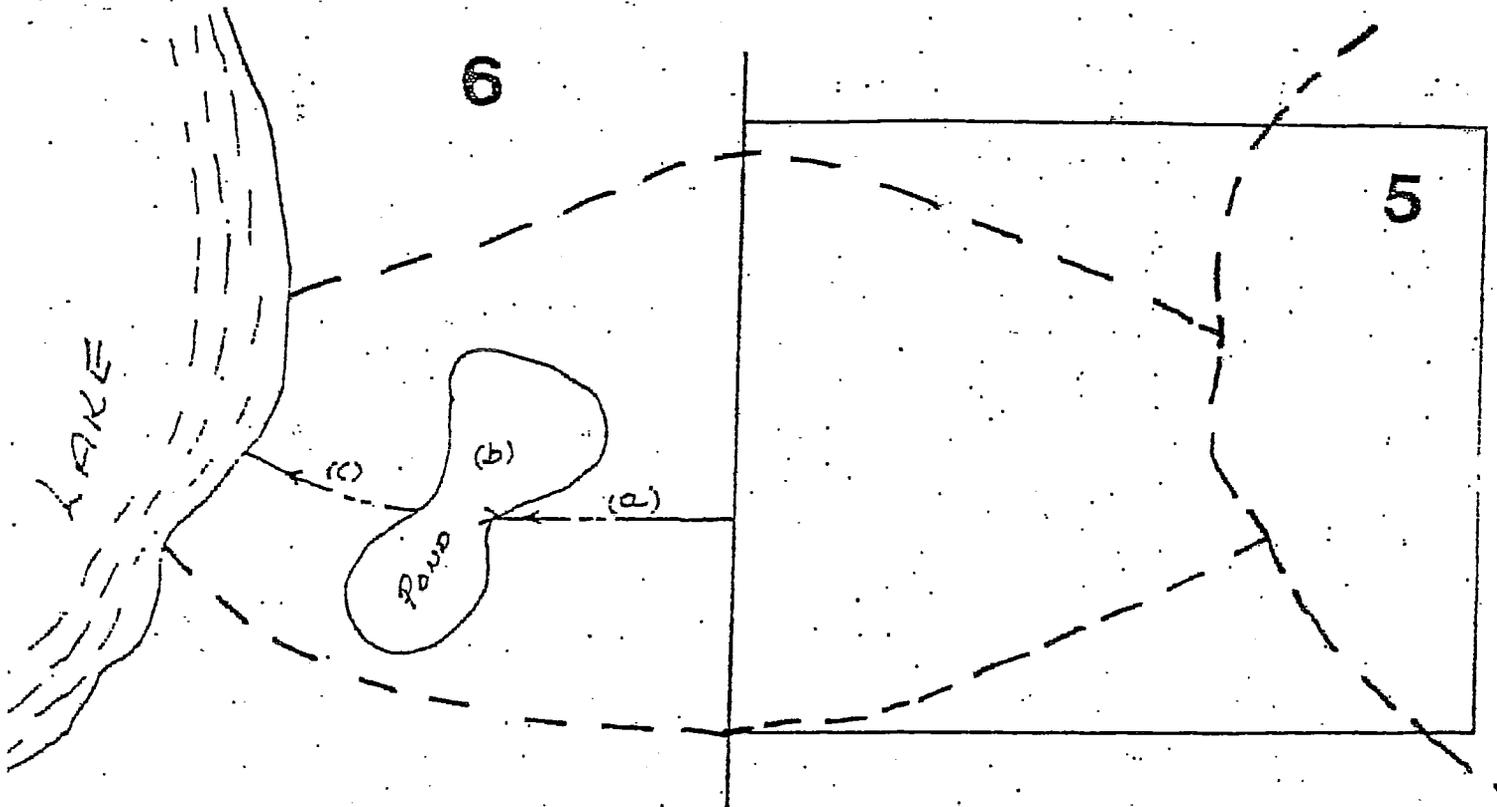
City #5 Cost share Segment "a" = $\frac{Q_{E5}}{Q_T}$ x Project cost for "a".

Cost share Segment "b" = Zero Dollars (no tributary flow).

Cost share Segment "c" = $\frac{Q_{E5}}{Q_T}$ x Project cost for "c".

Where: Q_T is the total flow rate for which each respective Segment is designed.

JOINT POWERS AGREEMENT



EXAMPLE "E" - ADDED PONDING
 (See Example "A" for definition of Q_T , Q_A and Q_E)

Project: Construct Trunk "a", Detention Pond "b" and Outlet "c" for cities #5 and #6 under fully developed conditions.

Cost Allocation:

City #5 (Trunk "a"): Cost share = $\frac{Q_{E5}}{Q_T}$ x Project cost of Trunk "a".

Where: Q is the total flow rate in Trunk "a".

City #5 (Pond "b"): Cost share = $\frac{V_{E5}}{V_T}$ x Project cost of Pond "b".

Where: V_{E5} is the design Volume of runoff from City #5 which is in excess of the allowable Volume from City #5;

V_T is the total Volume used in the design of the detention pond.

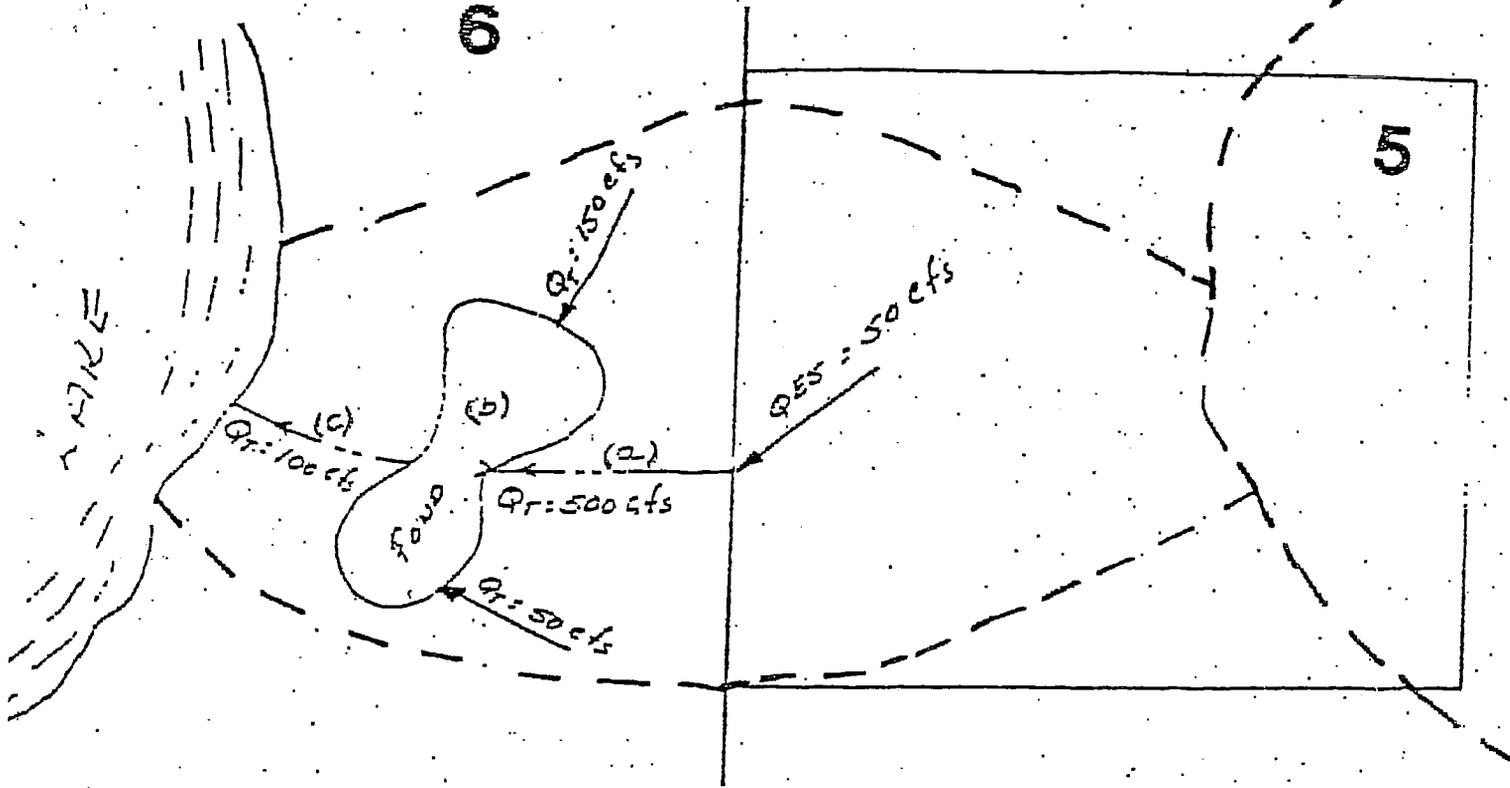
City #5 (Outlet "c"): Cost share = $\frac{Q_{E5}}{Q_T}$ x Project cost of Outlet "c".

Where: Q_{E5} is reduced from Trunk "a" Inlet Q_{E5} by the ratio of $\frac{\text{Outlet } Q_T}{\text{Inlet } Q_T}$;

Inlet Q_T is the summation of all flows into the pond;

Outlet Q_T is the total flow rate out of the pond under design conditions.

Note: See Page 9 for sample calculations



EXAMPLE "E" - ADDED PONDING

Sample calculation for City #5 cost share for Outlet "c":

Assume:

- $Q_{E5} = 50 \text{ cfs}$
- $Q_T \text{ Pond inflow in Segment "a"} = 500 \text{ cfs}$
- $Q_T \text{ Pond inflow from other areas} = 200 \text{ cfs}$
- $\leq Q_T \text{ Pond inflow} = 700 \text{ cfs}$
- $Q_T \text{ Pond Outlet "c"} = 100 \text{ cfs}$

And:

$$Q_{E5} (\text{OUTLET}) = Q_{E5} (\text{INLET}) \times \frac{Q_T (\text{OUTLET})}{\leq Q_T (\text{INLET})}$$

$$\text{City \#5 cost share} = \frac{Q_{E5} (\text{OUTLET})}{Q_T (\text{OUTLET})} \times \text{Project cost of Outlet "c"}$$

Then:

$$Q_{E5} (\text{for Segment "c"}) = \frac{100}{700} \times 50 = 7.14 \text{ cfs}$$

$$\text{City \#5 cost share} = \frac{7.14}{100} \times \text{Project cost of Outlet "c"}$$

**APPENDIX C – STORM WATER SYSTEM MODELING
INFORMATION**

**City of South St. Paul
Stormwater Modeling Results**

Subwatershed	Area (acres)	SCS CN	Direct Peak Discharge Rate (CFS)		Cumulative Peak Discharge Rate (CFS)		HWL		Storage Volume (AF)		NWL	Drainage Destination
			10-Year	100-Year	10-Year	100-Year	10-Year	100-Year	10-Year	100-Year		
1A**	37.5	67	28	67	28	67	NA	NA	NA	NA	NA	Inver Grove Heights
1B**	110.9	61	25	60	25	60	NA	NA	NA	NA	NA	Bohrer Pond
1C**	48.1	85	23	55	23	55	NA	NA	NA	NA	NA	Inver Grove Heights
2**	185.9	78	156	278	156	278	NA	NA	NA	NA	NA	Mississippi River
* 3A (H1)	39	NA	5	5	***	***	819.3	821.2	3.0	6.1	816.6	Mississippi River
* 3B (H2)	19.5	NA	5	7	***	***	844.7	846	1.5	3.0	842.4	Mississippi River
* 3C (H3)	22.9	NA	52	96	***	***	NA	NA	NA	NA	NA	Mississippi River
* 3D (H4)	8.7	NA	66	128	***	***	NA	NA	NA	NA	NA	Mississippi River
* 3E (H5)	13	NA	4	6	***	***	832.4	833.7	1.9	2.8	830.4	Mississippi River
* 3F (H6)	121.5	NA	290	454	***	***	NA	NA	NA	NA	NA	Mississippi River
* 3G (H7)	13.3	NA	261	494	***	***	NA	NA	NA	NA	NA	Mississippi River
* 3H (H8)	40.1	NA	313	596	***	***	NA	NA	NA	NA	NA	Mississippi River
* 3I (H9)	32	NA	366	697	***	***	NA	NA	NA	NA	NA	Mississippi River
* 3J (H10)	310.3	NA	618	1180	***	***	NA	NA	NA	NA	NA	Mississippi River
* 3K (H11)	238.7	NA	829	1573	***	***	NA	NA	NA	NA	NA	Mississippi River
3L**	158	79	31	80	***	***	NA	NA	NA	NA	NA	Mississippi River
4**	440	79	484	870	130	200	690.7	693.7	35.0	64.0	684.6	MnDOT Pond
* 5A (P1)	26.3	NA	0	4	***	***	978.4	979.2	2.1	3.6	976.2	Anderson Pond
* 5B (P2)	75.2	NA	20	20	***	***	NA	NA	6.0	11.7	933.5	Anderson Pond
* 5C (P3)	66.7	NA	15	20	***	***	903	903.9	13.7	19.3	900.8	Anderson Pond
* 5D (P4)	8.8	NA	2	2	***	***	939.6	940.5	0.5	1.2	936.5	Seidl's Lake
* 5E (P5)	14.1	NA	1	3	***	***	888.6	889.3	1.0	2.0	888.0	Seidl's Lake
* 5F (P6)	221.2	NA	0	0	***	***	814.1	827.4	65.4	205.3	803.8	Seidl's Lake
6	149.6	70	186	372	186	372	NA	NA	NA	NA	NA	Mississippi River
7 (4)	38.5	81	135	246	135	246	NA	NA	NA	NA	NA	St. Paul
8	45.4	75	67	139	67	139	NA	NA	NA	NA	NA	Mississippi River
9	90.4	77	175	308	175	308	NA	NA	NA	NA	NA	Mississippi River
10	206.8	73	240	455	240	455	NA	NA	NA	NA	NA	Mississippi River

City of South St. Paul Stormwater Modeling Results

Subwatershed	Area (acres)	SCS CN	Direct Peak Discharge Rate (CFS)		Cumulative Peak Discharge Rate (CFS)		HWL		Storage Volume (AF)		NWL	Drainage Destination
			10-Year	100-Year	10-Year	100-Year	10-Year	100-Year	10-Year	100-Year		
11	43.9	71	80	155	80	155	NA	NA	NA	NA	NA	Mississippi River
12 ⁽³⁾	604.1	72	450	868	450	868	NA	NA	NA	NA	NA	Mississippi River
13	276.5	72	305	590	305	590	NA	NA	NA	NA	NA	Mississippi River
14	78.3	72	150	286	150	286	NA	NA	NA	NA	NA	Mississippi River
15 ⁽²⁾	37.9	73	5	6.8	6	15	912.7	914.8	8.3	14.4	909.0	LeVander Pond
16	12.4	75	20	37	23	42	NA	NA	NA	NA	NA	Simon's Ravine
17A ⁽³⁾	91.2	66	154	178	125	190	770.6	772.6	0.0	1.3	769.5	Simon's Ravine
17B	25.7	70	29	59	29	59	NA	NA	NA	NA	NA	Simon's Ravine
17C	6.8	73	14	21	14	21	NA	NA	NA	NA	NA	Simon's Ravine
17D	21.7	64	255	352	236	350	715.7	717.3	0.8	1.2	712.0	Mississippi River
17E	6	74	10	22	10	22	NA	NA	NA	NA	NA	Simon's Ravine
17F	15.8	73	45	85	45	85	NA	NA	NA	NA	NA	Simon's Ravine
18	48.7	62	31	76	31	76	NA	NA	NA	NA	NA	Mississippi River

Notes:

- * These are the "design conditions" modeling results as taken from the June 1989 Barr Engineering report "Drainage Plan for Highway 110-494 Watershed" prepared for the Lower Mississippi River Water Management Organization. The full results are available at the office of the South St. Paul City Engineer. The watershed labels in parenthesis correspond to the watershed labels in the 110-494 study.
- ** The Peak flow rates for the subwatershed used Hydrocad Stormwater Modeling software based on the SCS TR20 methodology.
- *** Analysis completed in June 1989 Barr Engineering report "Drainage Plan for Highway 110-494 Watershed" prepared for the Lower Mississippi River Water Management Organization.
 - (1) Approximately 28 acres of West St. Paul drains into South St. Paul at Subwatershed 12.
 - (2) Approximately 57 acres of West St. Paul drains into South St. Paul at Subwatershed 15.
 - (3) Subwatershed 17A receives additional flows from West St. Paul. These flows and the modeling of the areas upstream of this subwatershed are available in the "Simon's Ravine Feasibility Study" prepared by Barr Engineering in 1991.
 - (4) Approximately 38 acres enters Subwatershed 7 from West St. Paul into Mn/DOT TH52 drainage system.

APPENDIX D – WATER QUALITY MODELING INFORMATION

**City of South St. Paul
Comprehensive Stormwater Management Plan
P8 Results**

Subwatershed Identification	Subwatershed Number	Area (acres)	Impervious Fraction	Pervious CN	Treatment Device Number	Flows to Number	Area of Pond (acres)			Storage at HWL (acre-feet)
							Bottom	NWL	HWL	
SW1	1	196.5	0.26	61	1	out				
SW2	2	185.9	0.46	61	2	out				
SW3	3	640.0	0.5	61	3	out				
SW4	4	681.7	0.48	61	4	out	6.1	6.6	8.4	51
SW5	5	113.9	0.41	61	5	out				
SW6*	6	56.3	0.43	61	6	5	2.3	2.7	3.6	16.9
SW7	7	9.0	0.25	61	7	Landlocked	1.9	3.6		
SW8	8	46.0	0.32	61	8	out				
SW9	9	90.4	0.66	61	9	out				
SW10	10	214.9	0.58	61	10	out				
SW11	11	43.9	0.55	61	11	out				
SW12*	12	633.2	0.44	61	12	out				
SW13	13	274.7	0.3	61	13	out				
SW14	14	78.3	0.44	61	14	out				
SW15*	15	37.9	0.33	61	15	17	0.3	0.5	5.7	47
SW16MH-9*	16	11.8	0.38	61	16	18				
PH1CHAN1**	17	31.8	0.20	61	17	18		Swale		
PH2CHAN1**	18	49.0	0.20	61	18	19		Swale		
PH2CH2&3**	19	11.4	0.20	61	19	20		Swale		
5006POND**	20				20	21		Swale		
BUTLER**	21	24.7	0.25	61	21	out	0.03	0.13	0.37	0.97
SW18	22	26.4	0.30	61	22	out				
SW19	23	46.9	0.12	61	23	out				
SW19	24	149.4	0.25	61	24	out				
SW20	25	75.7	0.57	61	25	out				

* Pollutant Loads entering South St. Paul from other communities are not included in the P8 model.
 ** Included as part of Subwatershed 17 in HydroCAD Model

Note: Storage is the flood pool available to 100 year HWL.

**City of South St. Paul
Comprehensive Stormwater Management Plan
P8 Results**

**PERCENT REMOVAL EFFICIENCY OF TREATMENT DEVICE
FOR EACH PARTICLE CLASS**

Device Number	Device	Subwatershed Number	Subwatershed Name	Particle Class				
				1 P: 0%	2 P: 10%	3 P: 30%	4 P: 50%	5 P: 80%
1	SW1 OUT	1	SW1	0	0	0	0	0
2	SW2 OUT	2	SW2	0	0	0	0	0
3	SW3 OUT	3	SW3	0	0	0	0	0
4	SW4 POND	4	SW4	0	29.2	55.3	77.9	97.6
5	SW5 OUT	5	SW7	0	0	0	0	0
6	SW6 POND	6	SW5	0	66.2	87.4	95.1	99.6
7	SW7 POND	7	SW6*	0	80.1	99.5	100	100
8	SW8 OUT	8	SW8	0	0	0	0	0
9	SW9 OUT	9	SW9	0	0	0	0	0
10	SW10 OUT	10	SW10	0	0	0	0	0
11	SW11 OUT	11	SW11	0	0	0	0	0
12	SW12 OUT	12	SW12*	0	0	0	0	0
13	SW13 OUT	13	SW13	0	0	0	0	0
14	SW14 OUT	14	SW14	0	0	0	0	0
15	SW15 POND	15	SW15*	0	24.7	53.9	75.5	96.9
16	SW16	16	SW16MH-9*	0	0	0	0	0
17	PH1 CHAN	17	PH1CHAN1**	0	2.3	13.4	37.7	86.9
18	PH2CHAN1	18	PH2CHAN1**	0	0.3	2.2	8.7	47.3
19	PH2CHAN2	19	PH2CH2&3**	0	0.3	2.4	9.8	50.1
20	PH2CHAN3	19	PH2CH2&3**	0	0.2	1.5	6.6	39.1
21	5006POND	20	5006POND**	0	2.4	8.4	27.3	81.8
22	BUTLER	21	BUTLER**	0	0	0	0	0
23	SW18 OUT	22	SW18	0	0	0	0	0
24	SW19 OUT	23	SW19	0	0	0	0	0
25	SW20 OUT	24	SW20	0	0	0	0	0
49	OVERALL	--	OVERALL	0	7.7	14.3	20.0	25.1

* Pollutant Loads entering South St. Paul from other communities are not included in the P8 model.

** Included as part of Subwatershed 17 in HydroCAD Model

**City of South St. Paul
Comprehensive Stormwater Management Plan
P8 Results**

PERCENT REMOVAL EFFICIENCY OF TREATMENT DEVICE
FOR EACH WATER QUALITY COMPONENT

Device Number	Device Name	Subwatershed Number	Subwatershed Name	TSS	TIP	TKN	Cu	Pb	Zn	HC	COD	BOD
1	SW1 OUT	1	SW1	0	0	0	0	0	0	0	0	0
2	SW2 OUT	2	SW2	0	0	0	0	0	0	0	0	0
3	SW3 OUT	3	SW3	0	0	0	0	0	0	0	0	0
4	SW4 POND	4	SW4	71.5	39	33.8	33.8	65	33.8	65	53.1	54.3
5	SW5 OUT	5	SW5	0	0	0	0	0	0	0	0	0
6	SW6 POND	6	SW6*	89.6	59.8	51.7	51.7	81.4	51.7	81.4	79.5	80.5
7	SW7 POND	7	SW7	95.9	67.2	58.1	58.1	87.2	58.1	87.2	89.2	90.0
8	SW8 OUT	8	SW8	0	0	0	0	0	0	0	0	0
9	SW9 OUT	9	SW9	0	0	0	0	0	0	0	0	0
10	SW10 OUT	10	SW10	0	0	0	0	0	0	0	0	0
11	SW11 OUT	11	SW11	0	0	0	0	0	0	0	0	0
12	SW12 OUT	12	SW12*	0	0	0	0	0	0	0	0	0
13	SW13 OUT	13	SW13	0	0	0	0	0	0	0	0	0
14	SW14 OUT	14	SW14	0	0	0	0	0	0	0	0	0
15	SW15 POND	15	SW15*	69.6	37	32	32	63.2	32	63.2	50.2	51.6
16	SW16	16	SW16MH-9*	0	0	0	0	0	0	0	0	0
17	PH1 CHAN	17	PH1CHAN1**	26.5	8	6.5	6.5	21.2	6.5	21.2	12.2	12.9
18	PH2CHAN1	18	PH2CHAN1**	13.0	1.8	1.4	1.4	10.7	1.4	10.7	5.4	5.6
19	PH2CHAN2	19	PH2CH2&3**	10.7	1.9	1.6	1.6	8.7	1.6	8.7	4.4	4.5
20	PH2CHAN3	19	PH2CH2&3**	5.3	1.2	1	1	4.2	1	4.2	2.1	2.2
21	5006POND	20	5006POND**	19.5	6.1	5	5	15.8	5	15.8	9.1	9.6
22	BUTLER	21	BUTLER**	0	0	0	0	0	0	0	0	0
23	SW18 OUT	22	SW18	0	0	0	0	0	0	0	0	0
24	SW19 OUT	23	SW19	0	0	0	0	0	0	0	0	0

**City of South St. Paul
Comprehensive Stormwater Management Plan
P8 Results**

CONCENTRATION (PPM) PRESENT IN THE INFLOW OF EACH TREATMENT DEVICE
FOR EACH PARTICLE CLASS

Device Number	Subwatershed Number	Particle Class				
		1 P 0%	2 P 10%	3 P 30%	4 P 50%	5 P 80%
1	1	1.00	22.12	22.12	22.12	44.24
2	2	1.00	22.12	22.12	22.12	44.24
3	3	1.00	22.12	22.12	22.12	44.24
4	4	1.00	22.12	22.12	22.12	44.24
5	5	0.90	16.40	15.52	14.94	29.20
6	6	1.00	22.12	22.12	22.12	44.24
7	7	1.00	22.12	22.12	22.12	44.24
8	8	1.00	22.12	22.12	22.12	44.24
9	9	1.00	22.12	22.12	22.12	44.24
10	10	1.00	22.12	22.12	22.12	44.24
11	11	1.00	22.12	22.12	22.12	44.24
12	12	1.00	22.12	22.12	22.12	44.24
13	13	1.00	22.12	22.12	22.12	44.24
14	14	1.00	22.12	22.12	22.12	44.24
15	15	1.00	22.12	22.12	22.12	44.24
16	16	1.00	22.12	22.12	22.12	44.24
17	17	1.00	16.71	11.97	7.93	7.80
18	18	1.00	17.78	13.32	9.27	11.91
19	19	1.00	17.94	13.41	9.01	7.77
20	19	1.00	17.90	13.10	8.14	3.88
21	20	1.00	18.24	13.76	8.97	6.34
22	21	1.00	22.12	22.12	22.12	44.24
23	22	1.00	22.12	22.12	22.12	44.24
24	23	1.00	22.12	22.12	22.12	44.24
25	24	1.00	22.12	22.12	22.12	44.24
49	--	1.00	22.12	22.12	22.12	44.24

**City of South St. Paul
Comprehensive Stormwater Management Plan
P8 Results**

CONCENTRATION (PPM) PRESENT IN THE INFLOW OF EACH TREATMENT DEVICE
FOR EACH WATER QUALITY COMPONENT

Device Number	Device	Subwatershed Number	TSS	TIP	TKN	Cu	Pb	Zn	HC	GOD	BOD
1	SW1 OUT	1	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
2	SW2 OUT	2	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
3	SW3 OUT	3	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
4	SW4 POND	4	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
5	SW5 OUT	5	76.05	0.43	1.99	0.02	0.06	0.11	1.94	91.29	13.42
6	SW6 POND	6	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
7	SW7 POND	7	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
8	SW8 OUT	8	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
9	SW9 OUT	9	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
10	SW10 OUT	10	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
11	SW11 OUT	11	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
12	SW12 OUT	12	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
13	SW13 OUT	13	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
14	SW14 OUT	14	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
15	SW15POND	15	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
16	SW16	16	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
17	PH1 CHAN	17	44.40	0.39	1.83	0.02	0.04	0.11	1.25	71.35	10.33
18	PH2CHAN1	18	52.28	0.41	1.93	0.02	0.04	0.11	1.43	79.14	11.49
19	PH2CHAN2	19	48.12	0.41	1.93	0.02	0.04	0.11	1.33	77.10	11.18
20	PH2CHAN3	19	43.03	0.40	1.90	0.02	0.04	0.11	1.22	73.85	10.69
21	5006POND	20	47.31	0.41	1.94	0.02	0.04	0.11	1.31	77.50	11.24
22	BUTLER	21	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
23	SW18 OUT	22	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
24	SW19 OUT	23	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91

City of South St. Paul
 Comprehensive Stormwater Management Plan
 P8 Results

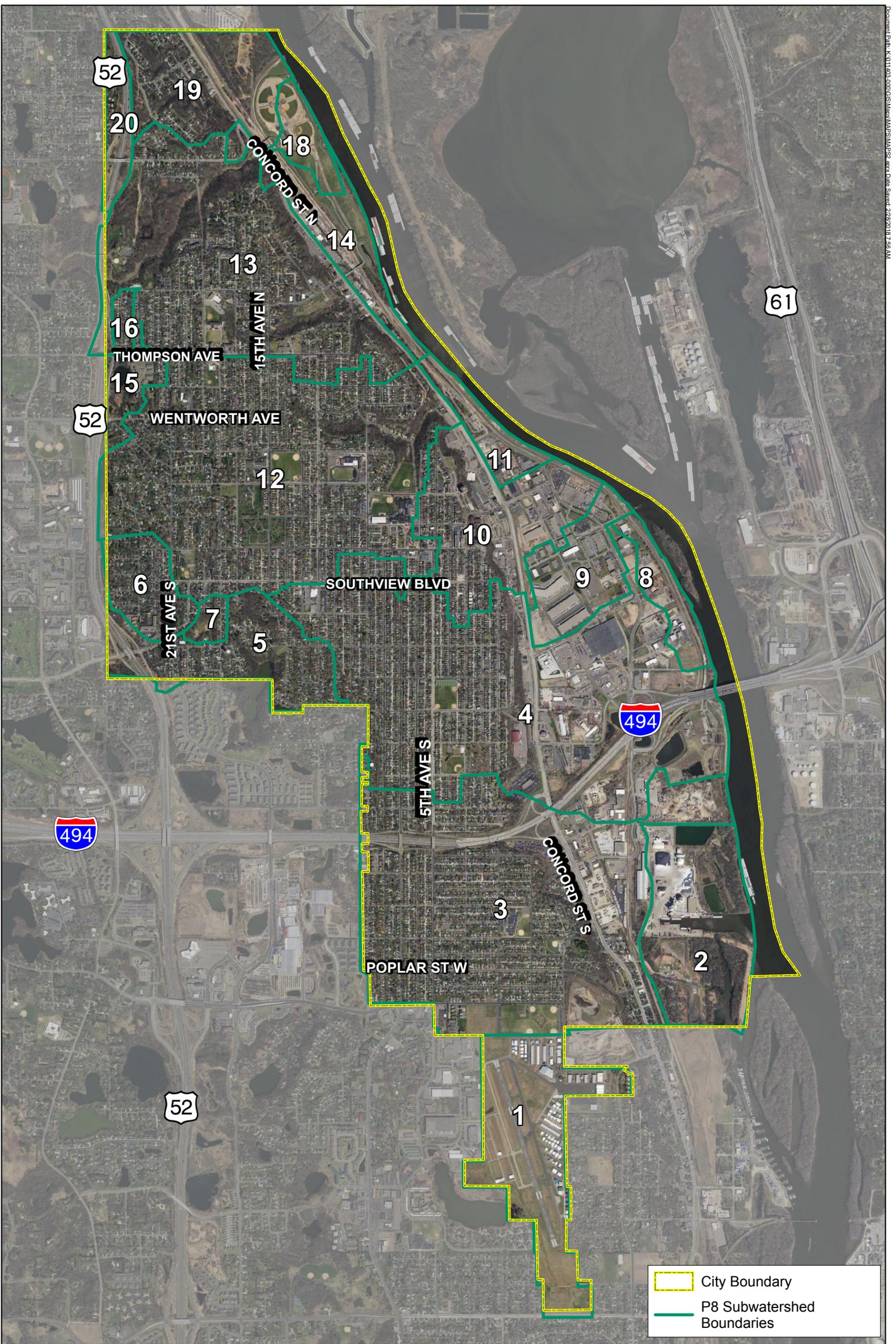
CONCENTRATION (PPM) PRESENT IN THE OUTFLOW OF EACH TREATMENT DEVICE
 FOR EACH PARTICLE CLASS

Device Number	Subwatershed Number	Particle Class				
		P 0%	P 10%	P 30%	P 50%	P 80%
1	1	1.00	22.12	22.12	22.12	44.24
2	2	1.00	22.12	22.12	22.12	44.24
3	3	1.00	22.12	22.12	22.12	44.24
4	4	1.00	14.74	9.88	4.89	1.08
5	5	0.90	16.40	15.52	14.94	29.20
6	6	0.70	5.37	2.78	1.09	0.18
7	7	0.09	0.32	0.04	0.01	0.00
8	8	1.00	22.12	22.12	22.12	44.24
9	9	1.00	22.12	22.12	22.12	44.24
10	10	1.00	22.12	22.12	22.12	44.24
11	11	1.00	22.12	22.12	22.12	44.24
12	12	1.00	22.12	22.12	22.12	44.24
13	13	1.00	22.12	22.12	22.12	44.24
14	14	1.00	22.12	22.12	22.12	44.24
15	15	0.99	15.75	10.18	5.42	1.36
16	16	1.00	22.12	22.12	22.12	44.24
17	17	1.00	16.32	10.35	4.94	1.02
18	18	1.00	17.77	13.06	8.48	6.30
19	19	1.00	17.90	13.10	8.14	3.88
20	20	1.00	17.83	12.88	7.59	2.36
21	21	1.00	17.76	12.60	6.52	1.15
22	22	1.00	22.12	22.12	22.12	44.24
23	23	1.00	22.12	22.12	22.12	44.24
24	24	1.00	22.12	22.12	22.12	44.24

**City of South St. Paul
Comprehensive Stormwater Management Plan
P8 Results**

CONCENTRATION (PPM) PRESENT IN THE OUTFLOW OF EACH TREATMENT DEVICE
FOR EACH WATER QUALITY COMPONENT

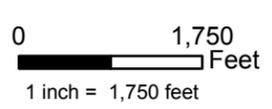
Device Number	Device	Subwatershed Number	TSS	TP	TiKN	CU	Pb	Zn	HG	COD	BOD
1	SW1 OUT	1	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
2	SW2 OUT	2	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
3	SW3 OUT	3	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
4	SW4 POND	4	30.59	0.34	1.66	0.02	0.03	0.10	0.94	57.67	8.30
5	SW5 OUT	5	76.05	0.43	1.99	0.02	0.06	0.11	1.94	91.29	13.43
6	SW6 POND	6	9.42	0.17	0.89	0.01	0.01	0.05	0.39	20.00	2.85
7	SW7 POND	7	0.37	0.02	0.09	0.00	0.00	0.01	0.03	1.07	0.15
8	SW8 OUT	8	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
9	SW9 OUT	9	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
10	SW10 OUT	10	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
11	SW11 OUT	11	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
12	SW12 OUT	12	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
13	SW13 OUT	13	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
14	SW14 OUT	14	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.25	18.91
15	SW15POND	15	32.71	0.35	1.71	0.02	0.03	0.10	0.99	61.30	8.81
16	SW16	16	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
17	PH1 CHAN	17	32.63	0.35	1.71	0.02	0.03	0.10	0.98	62.59	8.99
18	PH2CHAN1	18	45.60	0.40	1.90	0.02	0.04	0.11	1.28	75.04	10.87
19	PH2CHAN2	19	43.03	0.40	1.90	0.02	0.04	0.11	1.22	73.85	10.69
20	PH2CHAN3	19	40.67	0.40	1.88	0.02	0.03	0.11	1.17	72.18	10.43
21	5006POND	20	38.04	0.39	1.84	0.02	0.03	0.11	1.11	70.31	10.15
22	BUTLER	21	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
23	SW18 OUT	22	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
24	SW19 OUT	23	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91
25	SW20 OUT	24	110.60	0.57	2.55	0.03	0.08	0.15	2.74	128.24	18.91



City Boundary
 P8 Subwatershed Boundaries



P8 Subwatershed Boundaries
 City of South St. Paul
 Surface Water Management Plan



APPENDIX E – NPDES SWPPP PERMIT



Minnesota Pollution Control Agency

520 Lafayette Road North
St. Paul, MN 55155-4194

MS4 SWPPP Application for Reauthorization

for the NPDES/SDS General Small Municipal Separate Storm Sewer System (MS4) Permit MNR040000 reissued with an effective date of August 1, 2013 Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

Instructions: This application is for authorization to discharge stormwater associated with Municipal Separate Storm Sewer Systems (MS4s) under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit Program. **No fee** is required with the submittal of this application. Please refer to "Example" for detailed instructions found on the Minnesota Pollution Control Agency (MPCA) MS4 website at <http://www.pca.state.mn.us/ms4>.

Submittal: This MS4 SWPPP Application for Reauthorization form must be submitted electronically via e-mail to the MPCA at ms4permitprogram.pca@state.mn.us from the person that is duly authorized to certify this form. All questions with an asterisk (*) are required fields. All applications will be returned if required fields are not completed.

Questions: Contact Claudia Hochstein at 651-757-2881 or claudia.hochstein@state.mn.us, Dan Miller at 651-757-2246 or daniel.miller@state.mn.us, or call toll-free at 800-657-3864.

General Contact Information (*Required fields)

MS4 Owner (with ownership or operational responsibility, or control of the MS4)

*MS4 permittee name: City of South St. Paul *County: Washington
(city, county, municipality, government agency or other entity)
*Mailing address: 125 3rd Avenue North
*City: South St. Paul *State: MN *Zip code: 55075
*Phone (including area code): 651-554-3210 *E-mail: jsachi@southstpaul.org

MS4 General contact (with Stormwater Pollution Prevention Program [SWPPP] implementation responsibility)

*Last name: Sachi *First name: John
(department head, MS4 coordinator, consultant, etc.)
*Title: City Engineer
*Mailing address: 125 3rd Avenue North
*City: South St. Paul *State: MN *Zip code: 55075
*Phone (including area code): 651-554-3210 *E-mail: jsachi@southstpaul.org

Preparer information (complete if SWPPP application is prepared by a party other than MS4 General contact)

Last name: Peters First name: Jeff
(department head, MS4 coordinator, consultant, etc.)
Title: Consultant
Mailing address: 701 Xenia Ave South, Suite 300
City: Minneapolis State: MN Zip code: 55416
Phone (including area code): 763-287-7150 E-mail: jpeters@wsbeng.com

Verification

1. I seek to continue discharging stormwater associated with a small MS4 after the effective date of this Permit, and shall submit this MS4 SWPPP Application for Reauthorization form, in accordance with the schedule in Appendix A, Table 1, with the SWPPP document completed in accordance with the Permit (Part II.D.). Yes
2. I have read and understand the NPDES/SDS MS4 General Permit and certify that we intend to comply with all requirements of the Permit. Yes

Certification (All fields are required)

- Yes - I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted.

I certify that based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of civil and criminal penalties.

This certification is required by Minn. Stat. §§ 7001.0070 and 7001.0540. The authorized person with overall, MS4 legal responsibility must certify the application (principal executive officer or a ranking elected official).

By typing my name in the following box, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing my application.

Name: John Sachi
(This document has been electronically signed)

Title: City Engineer Date (mm/dd/yyyy): 10/29/2013

Mailing address: 125 3rd Ave North

City: South St. Paul State: MN Zip code: 55075

Phone (including area code): 651-554-3210 E-mail: jsachi@southstpaul.org

Note: *The application will not be processed without certification.*

Stormwater Pollution Prevention Program Document

I. Partnerships: (Part II.D.1)

- A. List the **regulated small MS4(s)** with which you have established a partnership in order to satisfy one or more requirements of this Permit. Indicate which Minimum Control Measure (MCM) requirements or other program components that each partnership helps to accomplish (List all that apply). Check the box below if you currently have no established partnerships with other regulated MS4s. If you have more than five partnerships, hit the tab key after the last line to generate a new row.

No partnerships with regulated small MS4s

Name and description of partnership	MCM/Other permit requirements involved

- B. If you have additional information that you would like to communicate about your partnerships with other regulated small MS4(s), provide it in the space below, or include an attachment to the SWPPP Document, with the following file naming convention: *MS4NameHere_Partnerships*.

South St. Paul has partnerships with non-regulated organizations to help develop some of our educational materials for our MS4 program.

II. Description of Regulatory Mechanisms: (Part II.D.2)

Illicit discharges

- A. Do you have a regulatory mechanism(s) that effectively prohibits non-stormwater discharges into your small MS4, except those non-stormwater discharges authorized under the Permit (Part III.D.3.b.)? Yes No

1. If **yes**:

- a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance Contract language
 Policy/Standards Permits
 Rules
 Other, explain: _____

- b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

Sec. 110: 120-132

Direct link:

http://library.municode.com/index.aspx?clientID=14152&stateID=23&statement=Minnesota

Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_IDDEreg*.

2. If **no**:

Describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

Construction site stormwater runoff control

- A. Do you have a regulatory mechanism(s) that establishes requirements for erosion and sediment controls and waste controls? Yes No

1. If **yes**:

- a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance Contract language
 Policy/Standards Permits
 Rules
 Other, explain: _____

- b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

Sec. 110: 70-81

Direct link:

<http://library.municode.com/index.aspx?clientID=14152&stateID=23&statement=Minnesota>

- Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_CSWreg.*

- B. Is your regulatory mechanism at least as stringent as the MPCA general permit to Discharge Stormwater Associated with Construction Activity (as of the effective date of the MS4 Permit)? Yes No

If you answered **yes** to the above question, proceed to C.

If you answered **no** to either of the above permit requirements listed in A. or B., describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

- C. Answer **yes** or **no** to indicate whether your regulatory mechanism(s) requires owners and operators of construction activity to develop site plans that incorporate the following erosion and sediment controls and waste controls as described in the Permit (Part III.D.4.a.(1)-(8)), and as listed below:

- | | |
|--|---|
| 1. Best Management Practices (BMPs) to minimize erosion. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. BMPs to minimize the discharge of sediment and other pollutants. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 3. BMPs for dewatering activities. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 4. Site inspections and records of rainfall events | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 5. BMP maintenance | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Management of solid and hazardous wastes on each project site. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 7. Final stabilization upon the completion of construction activity, including the use of perennial vegetative cover on all exposed soils or other equivalent means. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 8. Criteria for the use of temporary sediment basins. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

Within 12 months the city will review ordinances to insure they meet the new construction general permit.

Post-construction stormwater management

- A. Do you have a regulatory mechanism(s) to address post-construction stormwater management activities? Yes No

1. If **yes**:

- a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance Contract language
 Policy/Standards Permits
 Rules
 Other, explain: _____

- b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

Sec. 110: 74, 75, 78

Direct link:

<http://library.municode.com/index.aspx?clientId=14152&stateId=23&stateName=Minnesota>

Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere_PostCSWreg*.

- B. Answer **yes** or **no** below to indicate whether you have a regulatory mechanism(s) in place that meets the following requirements as described in the Permit (Part III.D.5.a.):

1. **Site plan review:** Requirements that owners and/or operators of construction activity submit site plans with post-construction stormwater management BMPs to the permittee for review and approval, prior to start of construction activity. Yes No
2. **Conditions for post construction stormwater management:** Requires the use of any combination of BMPs, with highest preference given to Green Infrastructure techniques and practices (e.g., infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs, etc.), necessary to meet the following conditions on the site of a construction activity to the Maximum Extent Practicable (MEP):
 - a. For new development projects – no net increase from pre-project conditions (on an annual average basis) of: Yes No
 - 1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
 - 2) Stormwater discharges of Total Suspended Solids (TSS).
 - 3) Stormwater discharges of Total Phosphorus (TP).
 - b. For redevelopment projects – a net reduction from pre-project conditions (on an annual average basis) of: Yes No
 - 1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
 - 2) Stormwater discharges of TSS.
 - 3) Stormwater discharges of TP.
3. **Stormwater management limitations and exceptions:**
 - a. Limitations
 - 1) Prohibit the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) when the infiltration structural stormwater BMP will receive discharges from, or be constructed in areas: Yes No
 - a) Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit issued by the MPCA.
 - b) Where vehicle fueling and maintenance occur.
 - c) With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
 - d) Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.
 - 2) Restrict the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), without higher engineering review, sufficient to provide a functioning treatment system and prevent adverse impacts to groundwater, when the infiltration device will be constructed in areas: Yes No
 - a) With predominately Hydrologic Soil Group D (clay) soils.
 - b) Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
 - c) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13.
 - d) Where soil infiltration rates are more than 8.3 inches per hour.
 - 3) For linear projects where the lack of right-of-way precludes the installation of volume control practices that meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), the permittee's regulatory mechanism(s) may allow exceptions as described in the Permit (Part III.D.5.a(3)(b)). The permittee's regulatory mechanism(s) shall ensure that a reasonable attempt be made to obtain right-of-way during the project planning process. Yes No

4. **Mitigation provisions:** The permittee's regulatory mechanism(s) shall ensure that any stormwater discharges of TSS and/or TP not addressed on the site of the original construction activity are addressed through mitigation and, at a minimum, shall ensure the following requirements are met:
- a. Mitigation project areas are selected in the following order of preference: Yes No
 - 1) Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
 - 2) Locations within the same Minnesota Department of Natural Resource (DNR) catchment area as the original construction activity.
 - 3) Locations in the next adjacent DNR catchment area up-stream
 - 4) Locations anywhere within the permittee's jurisdiction.
 - b. Mitigation projects must involve the creation of new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP. Yes No
 - c. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet mitigation requirements of this part. Yes No
 - d. Mitigation projects shall be completed within 24 months after the start of the original construction activity. Yes No
 - e. The permittee shall determine, and document, who will be responsible for long-term maintenance on all mitigation projects of this part. Yes No
 - f. If the permittee receives payment from the owner and/or operator of a construction activity for mitigation purposes in lieu of the owner or operator of that construction activity meeting the conditions for post-construction stormwater management in Part III.D.5.a(2), the permittee shall apply any such payment received to a public stormwater project, and all projects must be in compliance with Part III.D.5.a(4)(a)-(e). Yes No
5. **Long-term maintenance of structural stormwater BMPs:** The permittee's regulatory mechanism(s) shall provide for the establishment of legal mechanisms between the permittee and owners or operators responsible for the long-term maintenance of structural stormwater BMPs not owned or operated by the permittee, that have been implemented to meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)). This only includes structural stormwater BMPs constructed after the effective date of this permit and that are directly connected to the permittee's MS4, and that are in the permittee's jurisdiction. The legal mechanism shall include provisions that, at a minimum:
- a. Allow the permittee to conduct inspections of structural stormwater BMPs not owned or operated by the permittee, perform necessary maintenance, and assess costs for those structural stormwater BMPs when the permittee determines that the owner and/or operator of that structural stormwater BMP has not conducted maintenance. Yes No
 - b. Include conditions that are designed to preserve the permittee's right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by the permittee, when those responsibilities are legally transferred to another party. Yes No
 - c. Include conditions that are designed to protect/preserve structural stormwater BMPs and site features that are implemented to comply with the Permit (Part III.D.5.a(2)). If site configurations or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved structural stormwater BMPs must be implemented to ensure the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) continue to be met. Yes No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within twelve (12) months of the date permit coverage is extended, these permit requirements are met:

All ordinance will be evaluated and updated accordingly to meet the requirement of the MS4 permit issued on 8/1/2013.

B.2.a., B.2.b: Amend current post-construction stormwater ordinance, which does not include anything related to volume-control, to incorporate Permit requirements. Our ordinance states that "Stormwater management plans must be consistent with the Lower Mississippi River Watershed Management Organization's adopted watershed management plans and groundwater management plan prepared in accordance with MInn. Stat. 103B.231. We will consider additional changes to our current ordinance to give clear guidance to developers and redevelopers in the community.

B.3.a.1: Our ordinance currently meets all of these requirements, aside from restricting infiltration practices where vehicle fueling and maintenance occurs. We will amend the ordinance on the same schedule as the items in B.2.a and B.2.b.

B.3.a.3: We will amend the ordinance to include the exceptions for linear projects as elaborated in the Permit (Part III.D.5.a(3)(b)). This will occur on the same schedule as the items above.

B.4.c: Currently, our ordinance contains nothing about whether routine maintenance can be used towards mitigation

requirements. On the same schedule as the above items, we will codify the fact that it cannot be used for that purpose.

B.4.e: We will review and update code where appropriate to identify and document who is responsible for long-term maintenance of mitigation requirements.

B.4.f: We will draft and consider language mandating that money received from an owner/operator of construction activity, in lieu of meeting the conditions for post-construction stormwater management, shall be used for a public stormwater project. We will work on this amendment to our current post-construction stormwater ordinance on the same timeline as the items listed above.

B.5.b: The last item that we will include (on the same schedule) in the amendments to our post-construction stormwater ordinance will be language that will ensure maintenance responsibility on structural stormwater BMPs that we do not own or operate. We plan to do this by drafting language that requires maintenance responsibility for structural stormwater BMPs to be tied to property records.

III. Enforcement Response Procedures (ERPs): (Part II.D.3)

A. Do you have existing ERPs that satisfy the requirements of the Permit (Part III.B.)? Yes No

1. If **yes**, attach them to this form as an electronic document, with the following file naming convention: *MS4NameHere_ERPs*.
2. If **no**, describe the tasks and corresponding schedules that will be taken to assure that, with twelve (12) months of the date permit coverage is extended, these permit requirements are met:

South St. Paul will meet with all parties involved in enforcement to insure that Response Procedures meet the requirements of the MS4 permit.

B. Describe your ERPs:

We have some language in our ordinances currently but need to review and update appropriately.

IV. Storm Sewer System Map and Inventory: (Part II.D.4.)

A. Describe how you manage your storm sewer system map and inventory:

WSB has assisted us in mapping our system with GIS.

B. Answer **yes** or **no** to indicate whether your storm sewer system map addresses the following requirements from the Permit (Part III.C.1.a-d), as listed below:

1. The permittee's entire small MS4 as a goal, but at a minimum, all pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes. Yes No
2. Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinate. Yes No
3. Structural stormwater BMPs that are part of the permittee's small MS4. Yes No
4. All receiving waters. Yes No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

C. Answer **yes** or **no** to indicate whether you have completed the requirements of 2009 Minnesota Session Law, Ch. 172, Sec. 28: with the following inventories, according to the specifications of the Permit (Part III.C.2.a.-b.), including:

1. All ponds within the permittee's jurisdiction that are constructed and operated for purposes of water quality treatment, stormwater detention, and flood control, and that are used for the collection of stormwater via constructed conveyances. Yes No
2. All wetlands and lakes, within the permittee's jurisdiction, that collect stormwater via constructed conveyances. Yes No

D. Answer **yes** or **no** to indicate whether you have completed the following information for each feature inventoried.

1. A unique identification (ID) number assigned by the permittee. Yes No
2. A geographic coordinate. Yes No
3. Type of feature (e.g., pond, wetland, or lake). This may be determined by using best professional judgment. Yes No

If you have answered **yes** to all above requirements, and you have already submitted the Pond Inventory Form to the MPCA, then you do not need to resubmit the inventory form below.

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

- E. Answer **yes** or **no** to indicate if you are attaching your pond, wetland and lake inventory to the MPCA Yes No on the form provided on the MPCA website at: <http://www.pca.state.mn.us/ms4>, according to the specifications of Permit (Part III.C.2.b.(1)-(3)). Attach with the following file naming convention: *MS4NameHere_inventory*.

If you answered **no**, the inventory form must be submitted to the MPCA MS4 Permit Program within 12 months of the date permit coverage is extended.

V. Minimum Control Measures (MCMs) (Part II.D.5)

A. MCM1: Public education and outreach

- The Permit requires that, within 12 months of the date permit coverage is extended, existing permittees revise their education and outreach program that focuses on illicit discharge recognition and reporting, as well as other specifically selected stormwater-related issue(s) of high priority to the permittee during this permit term. Describe your **current** educational program, including **any high-priority topics included**:

Our community is a mix of residential, commercial, and Industrial properties. Our primary focus in the past has been on residential issues, though we do not have specific high-priority topics. We partner with Dakota County Soil and Water along with Lower Mississippi River Watershed to provide education to our residents. They provide us with information or topics that we mail out to all households twice a year. These topics remind homeowners of proper practices for such activities as raking grass clippings, cleaning up pet waste, and home car-washing. Updates on our website are used to communicate stormwater-related messages.

- List the categories of BMPs that address your public education and outreach program, including the distribution of educational materials and a program implementation plan. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the U.S. Environmental Protection Agency's (EPA) *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Brochures	Try to have a new topic quarterly. (Quarterly – address seasonal issues)
Newsletters	Try to have a stormwater topic twice per year (Bi-annual – address hot button issue)
BMP categories to be implemented	Measurable goals and timeframes
Social Media	Adopt a social media strategy. City will review its social media strategy and look to adopt. (Within the next permit cycle)

- Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

Administration or consultant

B. MCM2: Public participation and involvement

1. The Permit (Part III.D.2.a.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement a public participation/involvement program to solicit public input on the SWPPP. Describe your current program:

Every year, we present and hear comments on our Stormwater Pollution Prevention Program at a stand alone meeting. We usually do this at the beginning of June. We put a notice in the local paper 30 days ahead of the meeting and public notice in City Hall.

2. List the categories of BMPs that address your public participation/involvement program, including solicitation and documentation of public input on the SWPPP. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Annual Meeting	Annually hold a meeting for comments to be solicited. Have 10 attendees during the permit cycle. City will evaluate if an event is better suited to collect public comments involving stormwater.
Appropriate Public Notice	Make proper notice of when the public meeting will occur.
BMP categories to be implemented	Measurable goals and timeframes
SWPPP Document online	Provide an electronic copy of SWPPP online. Within 12 months of permit coverage being granted.

3. Do you have a process for receiving and documenting citizen input? Yes No

If you answered **no** to the above permit requirement, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

Administration, City staff

C. MCM 3: Illicit discharge detection and elimination

1. The Permit (Part III.D.3.) requires that, within 12 months of the date permit coverage is extended, existing permittees revise their current program as necessary, and continue to implement and enforce a program to detect and eliminate illicit discharges into the small MS4. Describe your current program:

The City has an ordinance that prohibits illicit discharges and connections. City Staff and public works employees are trained to look for any signs of an illicit discharge while on the job. ERPs (attached) guide what actions the City can take after an illicit discharge has been identified.

2. Does your Illicit Discharge Detection and Elimination Program meet the following requirements, as found in the Permit (Part III.D.3.c.-g.)?

- a. Incorporation of illicit discharge detection into all inspection and maintenance activities conducted under the Permit (Part III.D.6.e.-f.)Where feasible, illicit discharge inspections shall be conducted during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation). Yes No
- b. Detecting and tracking the source of illicit discharges using visual inspections. The permittee may also include use of mobile cameras, collecting and analyzing water samples, and/or other detailed procedures that may be effective investigative tools. Yes No

- c. Training of all field staff, in accordance with the requirements of the Permit (Part III.D.6.g.(2)), in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation. Yes No
- d. Identification of priority areas likely to have illicit discharges, including at a minimum, evaluating land use associated with business/industrial activities, areas where illicit discharges have been identified in the past, and areas with storage of large quantities of significant materials that could result in an illicit discharge. Yes No
- e. Procedures for the timely response to known, suspected, and reported illicit discharges. Yes No
- f. Procedures for investigating, locating, and eliminating the source of illicit discharges. Yes No
- g. Procedures for responding to spills, including emergency response procedures to prevent spills from entering the small MS4. The procedures shall also include the immediate notification of the Minnesota Department of Public Safety Duty Officer, if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. § 115.061. Yes No
- h. When the source of the illicit discharge is found, the permittee shall use the ERPs required by the Permit (Part III.B.) to eliminate the illicit discharge and require any needed corrective action(s). Yes No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

C.2.b., The City will review and update written procedures for detecting and tracking source of illicit discharges as described in the permit (Part III.D.3.d). Procedures will be in place within 12 months following the date permit coverage is extended.

C.2.d., The City will review and update written procedures for identification of priority areas likely to have illicit discharges as described in the Permit (Part III.D.3.f). Procedures will be in place within 12 months following the date permit coverage is extended.

C.2.e., The City will review and update written procedures for a timely response to known, suspected, and reported illicit discharges as described in the permit (Part III.D.3.g). Procedures will be in place within 12 months following the date permit coverage is extended.

C.2.f., The City will review and update written procedures for investigating, locating and eliminating the source of illicit discharges as described in the Permit (Part III.D.3.f). Procedures will be in place within 12 months following the date permit coverage is extended

3. List the categories of BMPs that address your illicit discharge, detection and elimination program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
<i>Ordinance</i>	<i>Review Ordinance yearly to ensure that it continues to meet the needs of the City and legal requirements.</i>
<i>Training</i>	<i>Conduct an educational seminar to educate the Public and City Employees about the hazards associated with illicit discharges. Invite one member of City Council, or other regulatory agency to attend.</i>
BMP categories to be implemented	Measurable goals and timeframes
<i>Illicit Discharge Detection and Elimination (IDDE) Program</i>	<i>Review annually the illicit discharge written procedures, detection, and response procedures connection test performed within. Utilize information document about the IDDE program as described in the Permit (Part III.3.h) to make adjustments to written procedures as necessary.</i>
<i>Inspections</i>	<i>Annually inspect locations identified as high-priority outfalls and around high-risk establishments (fast food restaurants, dumpster, car washes, mechanics, oil changes.)</i>
<i>Illicit Discharge Investigation</i>	<i>As needed hire a consultant to televise a section of our sewer</i>

	<i>system, collect grab samples or perform other effective testing procedures to find illicit connection in the system.</i>
<i>Community Reporting Options and Documentation Procedures</i>	<i>IT department will update Request system on City webpage to include a link to report Illicit Discharges. This will allow the city to receive, document, and respond to citizen reports of illicit discharges.</i>
<i>Illicit Discharge Detection and Elimination (IDDE) Program</i>	<i>Review annually the illicit discharge written procedures, detection, and response procedures connection test performed within. Utilize information document about the IDDE program as described in the Permit (Part III.3.h) to make adjustments to written procedures as necessary.</i>

4. Do you have procedures for record-keeping within your Illicit Discharge Detection and Elimination (IDDE) program as specified within the Permit (Part III.D.3.h.)? Yes No
- If you answered **no**, indicate how you will develop procedures for record-keeping of your Illicit Discharge, Detection and Elimination Program, within 12 months of the date permit coverage is extended:
- C.4., The City will review and update written procedures for receiving, documenting and storing citizen input as described in the permit (Part III.D.3.h). Procedures will be in place within 12 months following the date permit coverage is extended*
5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:
- City Engineer- Suggest Delegating to Public Works Superintendent*

D. MCM 4: Construction site stormwater runoff control

1. The Permit (Part III.D.4) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a construction site stormwater runoff control program. Describe your current program:
- The City requires review of construction site erosion and sediment control (ESC) plans before projects begin, and work with contractors to ensure appropriate and correct use of erosion and sediment control BMPs on sites. The building inspection department is who primarily checks for compliancy with construction site ESC plans.*
2. Does your program address the following BMPs for construction stormwater erosion and sediment control as required in the Permit (Part III.D.4.b.):
- a. Have you established written procedures for site plan reviews that you conduct prior to the start of construction activity? Yes No
 - b. Does the site plan review procedure include notification to owners and operators proposing construction activity that they need to apply for and obtain coverage under the MPCA's general permit to *Discharge Stormwater Associated with Construction Activity No. MN R100001*? Yes No
 - c. Does your program include written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public to the permittee? Yes No
 - d. Have you included written procedures for the following aspects of site inspections to determine compliance with your regulatory mechanism(s):
 - 1) Does your program include procedures for identifying priority sites for inspection? Yes No
 - 2) Does your program identify a frequency at which you will conduct construction site inspections? Yes No
 - 3) Does your program identify the names of individual(s) or position titles of those responsible for conducting construction site inspections? Yes No
 - 4) Does your program include a checklist or other written means to document construction site inspections when determining compliance? Yes No
 - e. Does your program document and retain construction project name, location, total acreage to be disturbed, and owner/operator information? Yes No
 - f. Does your program document stormwater-related comments and/or supporting information used to determine project approval or denial? Yes No
 - g. Does your program retain construction site inspection checklists or other written materials used to document site inspections? Yes No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

D.2.a., The city uses the MPCA SWPPP Checklist for site plan reviews but does not have any established written procedures. The City will develop written procedures for site plan reviews as described in the Permit (Part III.D.4.b). Procedures will be in place within 12 months following the date permit coverage is extended.

D.2.b., The City will include a notification to owners and operators proposing construction activity to apply for and obtain

coverage under the MPCA's construction activity permit into the written procedures for (D.2.a) as described in the Permit (Part III.D.4.b). Notification will be included in the procedures within 12 months following the date permit coverage is extended.

D.2.c., The City will develop written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public as described in the Permit (Part III.D.4.c). Procedures will be in place within 12 months following the date permit coverage is extended.

D.2.d., City will develop written procedures for conducting site ESC inspections as described in the Permit (Part III.D.4.d). Procedures will be in place within 12 months following the date permit coverage is extended.

- List the categories of BMPs that address your construction site stormwater runoff control program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Site Plan Review	City Engineering Staff utilizes SWPPP Checklist (wq-strm2-47) for review of NPDES Erosion Control Permits submitted to the department for review. On going
Erosion Protection Maintenance Memo to Builders	An erosion control handout, which explains how to properly install a silt fence and other erosion control BMPs is given to the application when a building permit is picked up. On going
BMP categories to be implemented	Measurable goals and timeframes
Permit Update	Update the City Grading, Building, and ROW permits and Construction Site Stormwater Runoff ordinance to meet MPCA General Permit to Discharge Stormwater Associate with Construction Activity within 12 months following the date permit coverage is extended
Checklist for Site Plan Review	Update procedures for site plan review annually and incorporate changes into the review process. Within 12 months following the date permit coverage is granted.
Prioritize Inspections	Ensure at least 10% of inspections conducted annually are performed at deemed high priority inspection sites (e.g., near sensitive receiving waters, projects larger than 5 acres) Inspection procedures will be evaluated for the first year of the permit cycle and changes will be implemented within 24 months of permit coverage being granted.
Permit Application System	Develop written procedures to utilize permit works to track and archive all plan review and inspection documents within 12 months following the date permit coverage is extended.

- Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

Director of Public Works - Engineering staff or other department employee.

E. MCM 5: Post-construction stormwater management

- The Permit (Part III.D.5.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a post-construction stormwater management program. Describe your current program:

The City has a post-construction stormwater management ordinance to encourage the utilization of BMPs for stormwater runoff from new and redevelopment projects, as well as to ensure the maintenance and operation of the stormwater BMPs

2. Have you established written procedures for site plan reviews that you will conduct prior to the start of construction activity? Yes No
3. Answer **yes** or **no** to indicate whether you have the following listed procedures for documentation of post-construction stormwater management according to the specifications of Permit (Part III.D.5.c.):
- a. Any supporting documentation that you use to determine compliance with the Permit (Part III.D.5.a), including the project name, location, owner and operator of the construction activity, any checklists used for conducting site plan reviews, and any calculations used to determine compliance? Yes No
- b. All supporting documentation associated with mitigation projects that you authorize? Yes No
- c. Payments received and used in accordance with Permit (Part III.D.5.a.(4)(f))? Yes No
- d. All legal mechanisms drafted in accordance with the Permit (Part III.D.5.a.(5)), including date(s) of the agreement(s) and names of all responsible parties involved? Yes No

If you answered **no** to any of the above permit requirements, describe the steps that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

E.2., The City uses the MPCA SWPPP Checklist for site plan reviews but does not have any established written procedures. The City will develop written procedures for site plan reviews as described in the Permit (Part III.D.5.b.). Procedures will be in place within 12 months following the date permit coverage is extended.

E.3., The City will review or create written procedures for documentation of post-construction stormwater management as described in the Permit (Part III.D.5.c.). Procedures will be in place within 12 months following the date permit coverage is extended.

4. List the categories of BMPs that address your post-construction stormwater management program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
<i>Site Plan Review</i>	<i>Completed plan review process and documentation procedures for sites qualifying as a land disturbance in accordance with definition set in the City Ordinance. On going</i>
<i>Encourage the use of structural and non-structural BMPs during review of new and redevelopment projects</i>	<i>Implement Stormwater retention/detention ponds as a BMP immediately in areas where it is appropriate Developers encouraged to install rain gardens Possible implantation of sand and organic filters into plan review process. On going</i>
<i>Stormwater Retention/Detention</i>	<i>Implement Stormwater retention/detention ponds as a BMP immediately in areas where it is appropriate. On going</i>
<i>Stabilization Seeding</i>	<i>Document Violations of seeding provisions and types of enforcement actions. On Going.</i>
<i>Outlet Structure stabilization</i>	<i>Number of structures stabilized. On Going.</i>
<i>Land Development Ordinance</i>	<i>Complete Ordinance including illicit discharges, erosion and sediment control at construction sites, and post construction runoff from new development and redevelopment. Completed.</i>
<i>Inspections to verify proper maintenance of stormwater BMPs</i>	<i>Annual inspections of 20% of completed City-Owned BMPs. On Going.</i>
BMP categories to be implemented	Measurable goals and timeframes
<i>Update ordinance to meet new permit requirements</i>	<i>Within 12 months of extension of permit coverage, revise ordinance to meet permit requirements</i>
<i>Develop Written Procedures for Site Plan Review</i>	<i>Within 12 months of extension of permit coverage, develop site plan review procedures that must be completed prior to the start of construction activity</i>
<i>Document Pertinent Project Information</i>	<i>Maintain all related documents pertaining to each new or redeployment project in more user-friendly filing system for better records management. Implement within 12 months.</i>

<i>BMP Construction Guidance</i>	<i>Develop BMP Construction Guidance document for developers and contractors within 12 months of permit coverage extension.</i>
<i>Stormwater Management Plan</i>	<i>Complete review and updates to SWMP for South St. Paul</i>

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

Director of public Works or engineering staff.

F. MCM 6: Pollution prevention/good housekeeping for municipal operations

1. The Permit (Part III.D.6.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement an operations and maintenance program that prevents or reduces the discharge of pollutants from the permittee owned/operated facilities and operations to the small MS4. Describe your current program:

The City currently inspects its structural pollution control devices on an annual basis and inspects all of its outfalls, sediment basins and ponds every 5 years. The City inspects stockpiles, storage and material handling areas at the maintenance yard for potential discharges and maintenance of BMPs. The City is evaluating the use of road salt for winter road maintenance activities to reduce chlorides entering our water resources. The City sweeps streets once in the fall after leaf drop and once in the spring. Maintenance staff is trained annually on various topics related to pollution prevention during maintenance activities.

2. Do you have a facilities inventory as outlined in the Permit (Part III.D.6.a.)? Yes No

3. If you answered **no** to the above permit requirement in question 2, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

Facilities inventory will be created in the next 12 months and added as an appendix to the cities SWPPP document.

4. List the categories of BMPs that address your pollution prevention/good housekeeping for municipal operations program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. For an explanation of measurable goals, refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
<i>Park and Open Space Training Program</i>	<i>Training focused on fertilizer application, pesticide/herbicide application, and mowing discharge. Annually</i>
<i>Fleet and Building Maintenance Training Program</i>	<i>Training focused on automotive maintenance program (automotive inspections and washing), spill cleanup training, hazardous materials training, building leak prevention and inspection training. Annually</i>
<i>Stormwater Systems Maintenance Training Program</i>	<i>Training focused on parking lot and street cleaning, storm drain systems cleaning, road salt materials management. Annually.</i>
<i>Parking Lots & Street Cleaning</i>	<i>Train Employees and document number of times each street is swept annually. Goal is sweep 2 times per year. Training to occur Annually.</i>
<i>Storm Drain Cleaning System</i>	<i>Document Number of Sumps cleaned per year.</i>
<i>Road Salt Materials Management Program</i>	<i>Document amount of salt applied each year and train employees in road salt management and application rates. Goal is 3 employees training annually.</i>
<i>Strom Sewer Inspection Program</i>	<i>Annual inspection of 20% of completed City-Owned BMPs Annual inspection of 100% of pollution control devices</i>
<i>Evaluate Inspection Frequency</i>	<i>Evaluate inspection records and determine if inspection frequency needs to increase or decrease.</i>
BMP categories to be implemented	Measurable goals and timeframes
<i>Develop Sill Prevention & Control Plans for Municipal</i>	<i>Develop plans describing spill prevention and control.</i>

<i>Facilities</i>	<i>procedures by the end of Year 1. Conduct annual spill prevention and response training sessions to all municipal employees. Distribute education materials, i.e. posters and pamphlets, to each municipal facility by the end of year 2.</i>
<i>Increase Inspection Frequency of Maintenance Yard</i>	<i>Once weekly and after all rain events utilizing a checklist for the inspection that documents findings and allows staff to compare to previous inspections. Frequency of inspection will be evaluated after year 1.</i>
<i>Facility Inventory</i>	<i>Continue to develop facilities inventory to include potential pollutants. Create a map of all identified facilities. Within 12 months of permit coverage being extended.</i>
<i>Pond Assessment Procedures & Schedule</i>	<i>In year 1, develop procedures for determining TSS and TP treatment effectiveness of city owned ponds use for treatment of stormwater. Implement schedule in year 2-5</i>

5. Does discharge from your MS4 affect a Source Water Protection Area (Permit Part III.D.6.c.)? Yes No
- a. If **no**, continue to 6.
- b. If **yes**, the Minnesota Department of Health (MDH) is in the process of mapping the following items. Maps are available at <http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm>. Is a map including the following items available for your MS4:
- 1) Wells and source waters for drinking water supply management areas identified as vulnerable under Minn. R. 4720.5205, 4720.5210, and 4720.5330? Yes No
- 2) Source water protection areas for surface intakes identified in the source water assessments conducted by or for the Minnesota Department of Health under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13? Yes No
- c. Have you developed and implemented BMPs to protect any of the above drinking water sources? Yes No
6. Have you developed procedures and a schedule for the purpose of determining the TSS and TP treatment effectiveness of all permittee owned/operated ponds constructed and used for the collection and treatment of stormwater, according to the Permit (Part III.D.6.d.)? Yes No
7. Do you have inspection procedures that meet the requirements of the Permit (Part III.D.6.e.(1)-(3)) for structural stormwater BMPs, ponds and outfalls, and stockpile, storage and material handling areas? Yes No
8. Have you developed and implemented a stormwater management training program commensurate with each employee's job duties that:
- a. Addresses the importance of protecting water quality? Yes No
- b. Covers the requirements of the permit relevant to the duties of the employee? Yes No
- c. Includes a schedule that establishes initial training for new and/or seasonal employees and recurring training intervals for existing employees to address changes in procedures, practices, techniques, or requirements? Yes No
9. Do you keep documentation of inspections, maintenance, and training as required by the Permit (Part III.D.6.h.(1)-(5))? Yes No

If you answered **no** to any of the above permit requirements listed in **Questions 5 – 9**, then describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

F.6. The City will evaluate and develop a procedure for assessing ponds to determine TSS and TP effectiveness as described in the Permit (Part III.D.6.d) This study will develop procedures for determining TSS and TP treatment effectiveness of city-owned ponds used for treatment of stormwater. A schedule will be implemented in years 2 thru 5.

F.7., The City will evaluate and develop written procedures for inspection of structural stormwater BMPs, ponds and outfalls, and stockpile, storage and material handling areas as described in the Permit (Part III.D.6.f.). Procedures will be in place within 12 months following the date permit coverage is extended.

F.8., The City will evaluate and develop and implement a stormwater management training program commensurate with each employees job duties as described in the Permit (Part III.D.6.g.). Procedures will be in place within 12 months following the date permit coverage is extended.

F.8., The City will evaluate and develop written procedures to document inspections, maintenance, and training as described in the Permit (Part III.D.6.h.). Procedures will be in place within 12 months following the date permit coverage is extended.

10. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

City Engineer - Suggest Delegating to Public Works Director

VI. Compliance Schedule for an Approved Total Maximum Daily Load (TMDL) with an Applicable Waste Load Allocation (WLA) (Part II.D.6.)

- A. Do you have an approved TMDL with a Waste Load Allocation (WLA) prior to the effective date of the Permit? Yes No

1. If **no**, continue to section VII.
2. If **yes**, fill out and attach the MS4 Permit TMDL Attachment Spreadsheet with the following naming convention: *MS4NameHere_TMDL*.

This form is found on the MPCA MS4 website: <http://www.pca.state.mn.us/ms4>.

VII. Alum or Ferric Chloride Phosphorus Treatment Systems (Part II.D.7.)

- A. Do you own and/or operate any Alum or Ferric Chloride Phosphorus Treatment Systems which are regulated by this Permit (Part III.F.)? Yes No

1. If **no**, this section requires no further information.
2. If **yes**, you own and/or operate an Alum or Ferric Chloride Phosphorus Treatment System within your small MS4, then you must submit the Alum or Ferric Chloride Phosphorus Treatment Systems Form supplement to this document, with the following naming convention: *MS4NameHere_TreatmentSystem*.

This form is found on the MPCA MS4 website: <http://www.pca.state.mn.us/ms4>.

VIII. Add any Additional Comments to Describe Your Program

Our program will be evaluated to insure compliance with updates to the MS4 general permit.

**APPENDIX F – DNR NATURAL HERITAGE DATABASE
INFORMATION**

2011 National Heritage Database Information

TWP	RNG	SCT	Scientific Name	Common Name	Type	Category	Mn Status	County
T028N	R22W	26	<i>Quadrula nodulata</i>	Wartyback	Zoological	Invertebrate Animal	ENDANGERED	Dakota, Washington
T028N	R22W	22	<i>Quadrula metanevra</i>	Monkeyface	Zoological	Invertebrate Animal	THREATENED	Dakota, Ramsey, Washington
T028N	R22W	16	Native Plant Community, Undetermined Class	Native Plant Community, Undetermined Class	Ecological	Terrestrial Community - Other Classification		Dakota
T028N	R22W	35	<i>Actinonaias ligamentina</i>	Mucket	Zoological	Invertebrate Animal	THREATENED	Dakota
T028N	R22W	23	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Zoological	Vertebrate Animal	SPECIAL CONCERN	Dakota, Ramsey
T028N	R22W	23	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Zoological	Vertebrate Animal	SPECIAL CONCERN	Dakota, Ramsey
T028N	R22W	22	<i>Pleurobema coccineum</i>	Round Pigtoe	Zoological	Invertebrate Animal	THREATENED	Dakota
T028N	R22W	26	<i>Falco peregrinus</i>	Peregrine Falcon	Zoological	Vertebrate Animal	THREATENED	Dakota, Washington
T028N	R22W	35	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Zoological	Vertebrate Animal	SPECIAL CONCERN	Dakota, Washington
T028N	R22W	26	<i>Haliaeetus leucocephalus</i>	Bald Eagle	Zoological	Vertebrate Animal	SPECIAL CONCERN	Dakota

APPENDIX G – ORDINANCES

ARTICLE III. - WETLANDS PROTECTION

Secs. 110-49—110-69. - Reserved.

ARTICLE IV. - STORMWATER MANAGEMENT⁽¹⁾

Footnotes:

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Editor's note— Ord. No. 1293, § 1, adopted April 6, 2015, amended article IV in its entirety to read as herein set out. Former article IV, §§ 110-70—110-80, pertained to similar material, and derived from the Code of 1992, §§ 520.02—520.09, 520.14, 520.15 and 520.17.

Sec. 110-70. - Findings.

The city hereby finds that uncontrolled and inadequately planned use of wetlands, woodlands, natural habitat areas, areas subject to soil erosion and areas containing restrictive soils adversely affects the public health, safety, and general welfare by impacting water quality and contributing to other environmental problems, creating nuisances, impairing other beneficial uses of environmental resources and hindering the ability of the city to provide adequate water, sewage, flood control, and other community services. In addition, extraordinary public expenditures may be required for the protection of persons and property in such areas and in areas that may be affected by unplanned land usage.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-71. - Purpose.

- (a) The purpose of this article is to control or eliminate stormwater pollution along with soil erosion and sedimentation within the city.
- (b) It establishes standards and specifications for conservation practices and planning activities, which minimize stormwater pollution, soil erosion and sedimentation.
- (c) Except where an exception is granted, any person, firm, sole proprietorship, partnership, corporation, state agency or political subdivision proposing a land disturbance activity within the city shall apply to the city for the approval of the stormwater pollution prevention plan or stormwater pollution control plan.
- (d) No land shall be disturbed until the plan is approved by the city and conforms to the standards set forth herein.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-72. - Definitions.

The following words, terms and phrases, when used in this article, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Applicant means any person or entity that applies for a building permit, subdivision approval, or a permit to allow land disturbing activities. Applicant also means that person's agents, employees, and others acting under that person's direction.

Best management practices (BMPs) means erosion and sediment control and water quality management practices that are the most effective and practicable means of controlling, preventing, and minimizing degradation of surface water, including construction-phasing, minimizing the length of time soil areas are exposed, prohibitions, and other management practices published by state or designated area-wide planning agencies.

Buffer means a protective vegetated zone located adjacent to a natural resource, such as a water of the state that is subject to direct or indirect human alteration. Acceptable buffer vegetation includes preserving existing predevelopment vegetation and/or planting locally distributed native Minnesota trees, shrubs and grassy vegetation. Alteration of those areas is strictly limited.

Common plan of development or sale means a contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times, on different schedules, but under one proposed plan. One plan is broadly defined to include design, permit application, advertisement or physical demarcation indicating that land-disturbing activities may occur.

Construction activity means and includes construction activity as defined in 40 CFR § 122.26(b)(14)(x) and small construction activity as defined in 40 CFR § 122.26(b)(15). This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non-vegetative), or the existing soil topography that may result in accelerated stormwater runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling, and excavating. Construction activity includes the disturbance of less than one acre of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb one acre or more.

Control measure means a practice or combination of practices to control erosion and attendant pollution.

Detention facility means a permanent natural or manmade structure, including wetlands, for the temporary storage of runoff that contains a permanent pool of water.

Engineering design standards means a stormwater design manual set forth by the city for the land disturbance activities that occur within the city boundary. These standards are created within the lines to preserve, protect, and manage its water resources as well as to meet federal, state, and watershed stormwater regulations.

Developer means a person, firm, corporation, sole proprietorship, partnership, state agency or political subdivision thereof engaged in a land disturbance activity.

Dewatering means the removal of surface or ground water to dry and/or solidify a construction site to enable construction activity. Dewatering may require a Minnesota Department of Natural Resources water appropriation permit and, if dewatering water is contaminated, discharge of such water may require an individual MPCA NPDES/SDS permit.

Discharge means the conveyance, channeling, runoff or drainage, of stormwater, including snowmelt, from a construction site.

Erosion means any process that wears away the surface of the land by the action of water, wind, ice or gravity. Erosion can be accelerated by the activities of people and nature.

Erosion control refers to methods employed to prevent erosion. Examples include soil stabilization practices, limited grading, temporary erosion protection or permanent cover and construction phasing.

Erosion and sediment practice specifications or practice means the management procedures, techniques and methods to control soil erosion and sedimentation as officially adopted by either the city, county or local watershed group, whichever is more stringent.

Exposed soil areas means all areas of the construction site where the vegetation (trees, shrubs, brush and the like) has been removed. This includes topsoil stockpile areas, borrow areas and disposal areas within the construction site. It does not include stockpiles or surcharge areas of sand, gravel, concrete or bituminous.

Final stabilization means required actions as defined in the NPDES/SDS general stormwater permit for construction activity taken after the completion of construction activities and prior to submitting the notice of termination that are intended to prevent discharge of pollutants associated with stormwater discharges from the project.

Flood fringe means the portion of the floodplain outside of the floodway.

Floodway means the channel of the watercourse, the bed of water basins, and those portions of the adjoining floodplains that are reasonably required to carry and discharge floodwater and provide water storage during a regional flood.

Hydric soils means soils that are saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part.

Hydrophytic vegetation means macrophytic plant life growing in water, soil, or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Impervious surface means:

- (1) A constructed hard surface that either prevents or retards the entry of water into the soil, and causes water to run off the surface in greater quantities and at an increased rate of flow than existed prior to development.
- (2) Examples include rooftops, sidewalks, patios, driveways, parking lots, storage areas and concrete, asphalt or gravel roads.

Land disturbance activity means:

- (1) Any activity that changes the volume or peak discharge rate of stormwater runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity that bares soil or rock or involves the diversion or piping of any natural or fabricated watercourse.
- (2) Within the context of this rule, land disturbance activity does not mean:
 - a. Minor land disturbance activities such as home gardens and an individual's home landscaping, repairs and maintenance work;
 - b. Construction, installation and maintenance of electric, telephone and cable television, utility lines or individual service connection to these utilities, which result in creating less than 5,000 square feet of exposed soil;
 - c. Tilling, planting or harvesting of agricultural, horticultural or silvicultural crops;
 - d. Installation of fence, sign, telephone and electric poles and other kinds of posts or poles that result in creating less than 5,000 square feet of exposed soil;
 - e. Emergency work to protect life, limb or property and emergency repairs, unless the land disturbing activity would have required an approved erosion and sediment control plan, except for the emergency. If such a plan would have been required, then the disturbed land area shall be shaped and stabilized in accordance with the city's requirements as soon as possible; or
 - f. Any activity that, in the discretion of the city, should be exempt from the provisions of this section. The city may exempt an activity from the provisions of this section if all of the following standards and requirements are met:
 1. Existing draining and ponding patterns are not significantly altered so as to adversely affect adjoining land;
 2. The resultant grade and slopes at the property line are in substantial conformity to the surrounding natural topography and are set so as to minimize erosion and provide for

sufficient drainage so that both natural and stormwater enter and leave the property at the original or natural drainage points;

3. All banks will be left with a slope not greater than one foot vertical to four feet horizontal, except that greater slope shall be permitted if it is in substantial conformity to the immediately surrounding area, and in the judgment of the city, it is not expected to adversely affect future development of the site. All excavated areas shall be finally graded in substantial conformity to the surrounding natural topography; and
4. The property is or will be graded so that stagnant water will not be permitted to collect upon it.

MS4 means municipal separate storm sewer system.

NPDES/SDS general stormwater permit for construction activity means the National Pollutant Discharge Elimination System/State Disposal System General Stormwater Permit for Construction Activity as required by the Minnesota Pollution Control Agency.

New development means all construction activity that is not defined as redevelopment.

Notice of termination or *NOT* means notice to terminate coverage under this permit after construction is complete, the site has undergone final stabilization, and maintenance agreements for all permanent facilities have been established, in accordance with all applicable conditions of this permit.

Owner(s) means a natural person, partnership, firm, association, public or quasi-public corporation, private corporation, or a combination of, with a legal or equitable interest in the parcel of record.

Permanent cover means surface types that will prevent soil failure under erosive conditions. Examples include: gravel, asphalt, concrete, rip rap, roof tops, perennial cover, or other landscaped material that will permanently arrest soil erosion. A uniform perennial vegetative cover (i.e. evenly distributed, without large bare areas) with a density of 70 percent of the native background vegetative cover for the area must be established on all unpaved areas and areas not covered by permanent structures, or equivalent permanent stabilization measures. Permanent cover does not include the practices listed under temporary erosion protection.

Person means any individual, firm, corporation, partnership, franchise, association, or government entity.

Public waters means waters of the state, as defined in Minn. Stat. § 103G.055(15).

Redevelopment means any projects with one acre or greater of impervious and reconstructing greater than 15 percent of the existing impervious surfaces the requirements of MIDS will apply to both the reconstructed and new impervious surface. For projects reconstructing less than 15 percent of the existing impervious only the new impervious will be subject to conformance with the Minimum Impact Design Standards set forth by the MPCA. (MPCA, Tech Support Document for Post-Construction Stormwater Management.)

Regional flood means a flood that is representative of large floods known to have occurred generally in the state and reasonably characteristic of what can be expected in a 100-year flood occurrence.

Retention facility means a permanent natural or manmade structure that provides for the storage of stormwater runoff by means of a permanent pool of water.

Saturated soil means the highest seasonal elevation in the soil that is in a reduced chemical state because of soil voids being filled with water. Saturated soil is evidenced by the presence of redoximorphic features or other information.

Sediment means the product of an erosion process; solid material both mineral and organic, that is in suspension, is being transported, or has been moved by water, air or ice, and has come to rest on the earth's surface either above or below water level.

Sedimentation means the process or action of depositing sediment caused by erosion.

Sediment control means the methods employed to prevent sediment from leaving the development site. Sediment control practices include silt fences, sediment traps, earth dikes, drainage swales, check dams, subsurface drains, pipe slope drains, storm drain inlet protection and temporary or permanent sedimentation basins. A floating silt curtain placed in the water is not a sediment control BMP to satisfy perimeter control requirements, except as provided for in the NPDES/SDS general stormwater permit for construction activity.

Soil means the unconsolidated mineral and organic material on the immediate surface of the earth. For the purposes of this document stockpiles of sand, gravel, aggregate, concrete or bituminous materials are not considered soil stockpiles.

Stabilize, stabilized, stabilization means the exposed ground surface has been covered by appropriate materials such as mulch, staked sod, riprap, erosion control blanket, mats or other material that prevents erosion from occurring. Grass, agricultural crop or other seeding alone is not stabilization. Mulch materials must achieve approximately 90 percent ground coverage (typically two tons/acre).

Steep slope means a slope with an average grade of 33 percent or greater and a slope vertical height of at least 25 feet. Within the Mississippi River Critical Corridor, a slope with an average grade of 12 percent and a slope vertical height of at least 25 feet.

Stormwater means any precipitation runoff, stormwater runoff, snow melt off, and any other surface runoff and drainage as defined by Minn. R. 7090.0080, subpart 12.

Stormwater pollution control plan means a joint stormwater and erosion and sediment control plan that is a document containing the requirements of section 110-74, that when implemented will decrease soil erosion on a parcel of land and off-site nonpoint pollution and sediment damages.

Stormwater pollution prevention plan (SWPPP) means a joint stormwater and erosion and sediment control plan that is a document containing the requirements of section 110-73, that when implemented will decrease soil erosion on a parcel of land and off site nonpoint pollution and sediment damages.

Structure means anything manufactured, constructed, or erected which is normally attached to or positioned on land, including portable structures, earthen structures, roads, parking lots, and paved storage areas.

Subdivision means any tract of land divided into building lots for private, public, commercial, industrial and the like development. Minnesota Rule 6120.2500, subpart 17 defines a subdivision as land that is divided for the purpose of sale, rent or lease, including planned unit development.

Surface water or waters means all streams, lakes, ponds, marshes, wetlands, reservoirs, springs, rivers, drainage systems, waterways, watercourses, and irrigation systems whether natural or artificial, public or private, except that surface waters do not include treatment basins or ponds that were constructed from upland.

Temporary erosion protection means methods employed to prevent erosion during construction activities. Examples of temporary erosion protection include, but are not limited to: Straw, wood fiber blanket, wood chips, vegetation, mulch, and rolled erosion control products.

TP means total phosphorus.

TSS means total suspended solids.

Vegetated or Grassed Swales means a vegetated earthen channel that conveys stormwater, while treating the stormwater by biofiltration. The swales remove pollutants by both filtration and infiltration.

Waters of the state means as defined in Minn. Stat. § 115.01(22), as it may be amended from time to time, the term means all streams, lakes, ponds, marshes, watercourses, waterways, wells, springs, reservoirs, aquifers, irrigation systems, drainage systems and all other bodies or accumulations of water, surface or underground, natural or artificial, public or private, which are contained within, flow through, or border upon the state or any portion thereof.

Wetland or wetlands means:

- (1) As defined in Minn. Rules 7050.0130, subpart F, wetlands are those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.
- (2) Wetlands generally include swamps, marshes, bogs and similar areas.
- (3) Constructed wetlands designed for wastewater treatment are not waters of the state.
- (4) Wetlands must have the following attributes:
 - a. A predominance of hydric soils;
 - b. Inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of hydrophytic vegetation typically adapted for life in a saturated soil condition; and
 - c. Under normal circumstances support a prevalence of the vegetation.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-73. - Application requirements.

Unless otherwise exempted by this article, an application for stormwater management approval shall include the following as a condition for its consideration:

- (1) A stormwater management plan;
- (2) A maintenance agreement.

The stormwater management plan shall be prepared to meet the requirements of section 110-74 of this article; the maintenance agreement shall be prepared to meet the requirements of section 110-76 of this article. In lieu of preparation of a stormwater management plan, major single-family residential projects and minor expansion projects may install a rain garden or similar stormwater treatment practice.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-74. - Stormwater management plan.

Every applicant for a building permit, subdivision approval, or a permit to allow land disturbing activities must submit a stormwater management plan to the city engineer as well as conform to the construction site stormwater runoff control standards set forth in section 110-74(3) of this article, the Lower Mississippi River Watershed Management Organization's adopted watershed management plans and groundwater management plan prepared in accordance with Minn. Stat. § 103B.231, city's engineering design standards, NPDES construction general permit, and the city's MS4 permit. Any construction activity that disturbs one or more acres is required to obtain a separate NPDES construction site permit. A copy of this permit and erosion and sediment control plan shall be submitted to the city engineer. No building permit, subdivision approval, or permit to allow land disturbing activities shall be issued until the city engineer has approved this plan.

- (1) *Minimum requirements of the stormwater management plan.*
 - a. Name and address of the applicant and the location of the activity.
 - b. Project description.
 - c. Phasing of construction: timeframes and schedules for the project.
 - d. A map of the existing site conditions including the following: topography, property information, steep slopes, existing drainage systems/patterns, waterways, wetlands, vegetative cover, floodplain boundaries, buffer strips.

- e. A site construction plan that includes the location of the proposed land disturbing activities, stockpile locations, erosion and sediment control plan, construction schedule, and the plan for the maintenance and inspections of the stormwater pollution control measures.
 - f. Adjacent areas: streams, lakes, residential areas, roads, etc., which might be affected by the land disturbing activity.
 - g. Designate the site areas that have the potential for an erosion problem.
 - h. Erosion and sediment control measures, both during and after construction.
 - i. Permanent stabilization: How the site will be stabilized, timeframe, and schedules.
 - j. For all new homes, commercial, and industrial buildings and development, stormwater calculations must be used for the design of sediment basins, wet detention basins, diversions, waterways, infiltration zones, and other applicable practices, subject to the review and approval of the city engineer.
- (2) *General stormwater pollution control criteria.* The plan shall address the following:
- a. Stabilizing all exposed soils and soil stockpiles and the related timeframe or schedule.
 - b. Establishing permanent vegetation and the related timeframe or schedule.
 - c. Preventing sediment damage to adjacent properties and other designated areas such as streams, wetlands, lakes, and unique vegetation.
 - d. Scheduling for erosion and sediment control practices.
 - e. Location of permanent and temporary sedimentation control practices.
 - f. Engineering for the construction and stabilization of steep slopes.
 - g. Measures that will control the quality and quantity of stormwater leaving a site.
 - h. Stabilizing all waterways and stormwater system outfalls.
 - i. Protecting storm sewers from the entrance of sediment.
 - j. Restabilizing utility construction areas as soon as possible.
 - k. Protecting paved roads and sediment and mud brought in from access routes.
 - l. Disposing of temporary erosion and sediment control measures.
 - m. Maintenance plan for the temporary and permanent erosion and sediment control practices.
- (3) *Minimum stormwater pollution control measures and related inspections.* Projects with land disturbing activities one acre or greater shall meet the current requirements for stormwater management as specified by the city's engineering design standards and MPCA construction general permit. All land disturbing activities within the city that will result in more than 100 cubic yards of cut or fill are only required to follow the construction site stormwater runoff control standards set within the city's engineering design standards. The standards should follow these requirements:
- a. Erosion control;
 - b. Sediment control practices;
 - c. Temporary sediment basins;
 - d. Dewatering and basin draining;
 - e. Inspection and maintenance;
 - f. Pollution management measures/construction site waste control;
 - g. Final stabilization;

- h. Training.
- (4) *Performance criteria for stormwater management.* Unless determined by the city to be exempt or granted a waiver, all site designs shall establish stormwater management practices to control the peak flow rates and pollutants of stormwater discharge associated with specified design storms and runoff volumes, as detailed in the city's engineering design standards.
 - a. *New development.* Rate control, volume control, and water quality standards shall apply to all new development. There shall be no net increase from pre-project conditions (on an average annual basis) of total volume, TSS and TP. New development projects shall retain a runoff volume equal to one inch times the area of the proposed increase of impervious surfaces on-site.
 - b. *Redevelopment.* Rate control, volume control and water quality standards shall apply to all redevelopment. There shall be a net reduction in the amount of TP, TSS and stormwater runoff volume leaving the site as compared with pre-project conditions. For redevelopment projects where the project proposer intends to add more impervious surfaces, the new development treatment requirements must be applied to the net increase of impervious surfaces. Additional treatment must also be included to reduce the volume, TP and TSS loads from the existing impervious surfaces.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-75. - Permanent stormwater pollution controls.

All new development and redevelopment projects that require a permanent stormwater pollution control shall adhere to the requirements set in the city's engineering design standards.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-76. - Stormwater treatment maintenance plan and agreement.

- (a) *Maintenance agreement.* The applicant shall enter into a maintenance agreement with the city that documents all responsibilities for operation and maintenance of all stormwater treatment practices. Such responsibility shall be documented in a maintenance plan and executed through a maintenance agreement. The maintenance agreement shall be executed and recorded against the parcel. The maintenance agreement shall be in a form approved by the city shall describe the inspection and maintenance obligations of this section and shall, at a minimum:
 - (1) Designate the applicant, who shall be permanently responsible for maintenance of the structural or nonstructural measures.
 - (2) Pass responsibility for such maintenance to successors in title.
 - (3) Grant the city and its representatives the right of entry for the purposes of inspecting all stormwater treatment practices.
 - (4) Allow the city the right to repair and maintain the facility, if necessary maintenance is not performed after proper and reasonable notice to the applicant.
 - (5) Include a maintenance plan that contains, but is not limited to the following:
 - a. Identification of all stormwater treatment practices.
 - b. A schedule for regular inspection, monitoring, and maintenance for each practice. Monitoring shall verify whether the practice is functioning as designed and may include, but is not limited to quality, temperature, and quantity of runoff.

- c. Identification of the applicant for conducting the inspection, monitoring, and maintenance for each practice.
- (6) Identify a schedule and format for reporting compliance with the maintenance plan to the city.
- (b) *Inspection of stormwater facility.*
 - (1) Inspection programs shall be established on any reasonable basis, including but not limited to: routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher than typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher than usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the NPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to, reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other stormwater treatment practices.
 - (2) When any new stormwater treatment practice is installed on private property, or when any new connection is made between private property and a public drainage control system, sanitary sewer, or combined sewer; the property owner shall grant to the city the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. This includes the right to enter a property when the city has a reasonable basis to believe that a violation of this article is occurring or has occurred, and to enter when necessary for abatement of a public nuisance or correction of a violation of this article.
 - (3) The director of public works, or designated representative, shall inspect all stormwater management facilities during construction, during the first year of operation, and at least once every five years thereafter. The inspection records will be kept on file at the public works department for a period of six years. It shall be responsibility of the applicant to obtain any necessary easements or other property interests to allow access to the stormwater management facilities for inspection and maintenance purposes.
- (c) *Records of installation and maintenance activities.* The applicant shall make records of the installation and of all maintenance and repairs of the stormwater treatment practices, and shall retain the records for at least three years. These records shall be made available to the city during inspection of the stormwater treatment practice and at other reasonable times upon request.
- (d) *Failure to maintain practices.* If an applicant fails or refuses to meet the requirements of the maintenance agreement, the city, after reasonable notice, may correct a violation of the design standards or maintenance needs by performing all necessary work to place the stormwater treatment practice in proper working condition. In the event that the stormwater treatment practice becomes a danger to public safety or public health, the city shall notify the applicant in writing. Upon receipt of that notice, the applicant shall have 30 days to perform maintenance and repair of the facility in an approved manner. After proper notice, the city may specially assess the owner(s) of the stormwater treatment practice for the cost of repair work and any penalties; and the cost of the work shall be assessed against the property and collected along with ordinary taxes by the county.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-77. - Minimum design standards for stormwater detention treatment practices.

Where on site stormwater treatment practices are required, the applicant(s) will have to comply with the design and sizing requirements determined in the city's engineering design standards.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-78. - Delineation and minimum protection for natural wetlands.

- (a) Any and all wetlands on the subject site must be delineated by a trained, certified wetland delineator. A plan of said delineations must be submitted to the city for review and approval. Said delineation plan shall be the basis for any exemptions or permits needed as per the Wetlands Conservation Act.
- (b) Runoff must not be discharged directly into wetlands without appropriate quality and runoff control, depending on the wetland type.
- (c) At a minimum, a 30-foot setback is required for all protected wetlands.
- (d) Wetlands may not be filled or drained, wholly or partially, unless replaced by restoring or creating wetland areas, as determined by the county soil and water conservation district (SWCD). Said wetland replacement plan is subject to the review and approval of the county SWCD.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-79. - Steep slopes.

- (a) Prior to any land disturbing or development activities on steep slopes, as defined within this Code, within the city, the developer/landowner shall provide to the city a detailed plan that sets forth:
 - (1) The time period during which the proposed development or disturbance is to take place.
 - (2) The soil types which are found on the site of the development.
 - (3) A map showing the topography of the area to be developed.
 - (4) A map showing any alteration in the topography that would result from the proposed development.
 - (5) A description of the soil quality in the area to be developed including permeability of the soil, susceptibility of the soil to erosion, drainage of the soil, distance of the soil from underlying bedrock, and susceptibility of the soil to changes in physical volume when moistened and/or during periods of frost.
 - (6) Information relative to whether the proposed development will cause and/or be affected by any erosion problems.
 - (7) A description of any disturbance to vegetation and other natural features that will result from the development plus the manner in which the applicant proposes to protect vegetation and other natural features that will not be disturbed.
 - (8) A copy of all specifications, blueprints, and other detailed plans for the development.
 - (9) Information relative to the adequacy for the slope conditions and soil type of the foundation and underlying material of any structure, including roads.
 - (10) Information relative to the adequacy of controls and protection existing uphill from the proposed development which are designed to guard structures or roads from being affected by mud, uprooted trees, or other material.
 - (11) Information relative to the adequacy of construction of any retaining walls.
- (b) No work shall be permitted until reviewed and approved by the city engineer. Neither the issuance of a permit nor compliance with the conditions thereof or with the provisions of this article shall relieve any person from any responsibility otherwise imposed by law for damage to persons or property; nor shall the issuance of any permit hereunder serve to impose liability on the city or its officers or employees for injury or damage to persons or property. An approval of an application issued pursuant to this article shall not relieve the applicant of the responsibility of complying with any other requirement established by law, regulation, or Code provision.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-80. - Lawn fertilizer regulations.

No person shall apply fertilizer to or deposit grass clippings, leaves, or other vegetative materials on impervious surfaces or within stormwater drainage systems, natural drainageways, or wetland buffer areas. Fertilizer applications shall not be made within one rod (16.5 feet) of any protected wetland or water resource.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-81. - Other controls.

In the event of any conflict between the provisions of this article and the provisions of an erosion control or shore land protection ordinance adopted by the city, the more restrictive standard prevails.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-82. - Financial securities.

(a) *Generally.*

- (1) The applicant shall provide security for the performance of the work described and delineated on the approved grading plan involving the stormwater management plan and any SWPPP related remedial work in an amount of \$3,000.00 per gross acre or \$1,000.00 for each single- or two-family home, whichever is greater.
- (2) This security must be available prior to commencing the project.
- (3) The form of the securities shall adhere to the following:
 - a. The first \$3,000.00 (in U.S. currency) or 15 percent, whichever is greater, of this financial security must be by cash deposit to the city.
 - b. Deposit with the city, a responsible escrow agent or trust company, at the option of the city, money, an irrevocable letter of credit, negotiable bonds of the kind approved for securing deposits of public money or other instruments of credit from one or more financial institutions, subject to regulation by the state and federal government wherein the financial institution pledges that the funds are on deposit and guaranteed for payment. The type of security must be of a type acceptable by the city.
 - c. The city may request a greater financial security, if the city considers that the development site is especially prone to erosion or the resource to be protected is especially valuable.

(b) *Maintaining the financial security.*

- (1) If at any time during the course of the work this amount falls below 50 percent of the required deposit, the developer shall make another deposit in the amount necessary to restore the deposit to the required amount.
- (2) If the developer does not bring the financial security back up to the required amount within seven days after notification by the city that the amount has fallen below 50 percent of the required amount, the city may:
 - a. Withhold the scheduling of inspections and/or the issuance of a certificate of occupancy; and/or
 - b. Revoke any permit issued by the city to the applicant for the site in question.

- (c) *Proportional reduction of the financial security.* When more than half of the development's exposed soil area achieves final stabilization, the city may reduce the total required amount of the financial security by half, if recommended by the city engineer.
- (d) *Action against the financial security.*
 - (1) The city may act against the financial security if any of the conditions listed below exist.
 - (2) The city shall use funds from this security to finance remedial work undertaken by the city or a private contractor under contract to the city and to reimburse the city for all direct cost incurred in the process of remedial work including, but not limited to, staff time, attorney's fees, consulting fees and any other fees related thereto.
 - a. The developer ceases land disturbing activities and/or filling and abandons the work site prior to completion of the grading plan.
 - b. The developer fails to conform to the grading plan and/or stormwater management plan and/or the SWPPP as approved by the city.
 - c. The techniques utilized under the stormwater management plan or SWPPP fail within one year of installation.
 - d. The developer fails to reimburse the city for corrective action taken under section 110-83.
- (e) *Returning the financial security.* Any unspent amount of the financial security deposited with the city for faithful performance of the stormwater management plan or SWPPP and any stormwater management plan or SWPPP related remedial work must be released six months after the completion of the installation of all stormwater pollution control measures as shown on the grading and/or the SWPPP and establishment of final stabilization.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-83. - Notification of failure of the stormwater management plan or SWPPP.

The city shall notify the developer when the city is going to act on the financial securities part of this chapter.

- (1) *Notification by the city.* The initial contact will be to a party or parties listed on the application. Forty-eight hours after notification by the city or 72 hours after the failure of erosion control measures, whichever is less, the city, at its discretion, may begin corrective work.
- (2) *Erosion off-site.*
 - a. If erosion breaches the perimeter of the site, the applicant shall immediately develop a cleanup and restoration plan, obtain the right-of-entry from the adjoining property owner, and implement the cleanup and restoration plan within 48 hours of obtaining the adjoining property owner's permission.
 - b. In no case, unless written approval is received from the city, shall more than seven calendar days go by without corrective action being taken.
 - c. If in the discretion of the city, the applicant does not repair the damage caused by the erosion, the city may do the remedial work required and charge the cost to the applicant.
- (3) *Erosion into streets, wetlands or water bodies.*
 - a. If eroded soils (including tracked soils from construction activities) enter or appear likely to enter streets, wetlands or other water bodies, prevention strategies, cleanup and repair must be immediate.
 - b. The applicant shall provide all traffic control and flagging required to protect the traveling public during the cleanup operations.

- (4) *Failure to do corrective work.* When an applicant fails to conform to any provision of this policy within the time stipulated, the city may take the following actions:
- a. Withhold the scheduling of inspections and/or the issuance of a certificate of occupancy;
 - b. Revoke any permit issued by the city to the applicant for the site in question;
 - c. Direct the correction of the deficiency by city forces or by a separate contract. The issuance of a permit constitutes a right-of-entry for the city or its contractor to enter upon the construction site for the purpose of correcting deficiencies in erosion control;
 - d. All costs incurred by the city in correcting stormwater pollution control deficiencies must be reimbursed by the applicant. If payment is not made within 30 days after costs are incurred by the city, payment will be made from the applicant's financial securities as described in section 110-82; and
 - e. If there is an insufficient financial amount, in the applicant's financial securities as described in section 110-82, to cover the costs incurred by the city, then the city may assess the remaining amount against the property.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-84. - Inspection.

- (a) *Notification.* The erosion control inspector shall make inspections as hereinafter required and either shall approve that portion of the work completed or shall notify the applicant wherein the work fails to comply with the erosion and sediment control plan as approved.
- (b) *Procedure.* The Applicant is responsible for regular inspections and record keeping needed to document compliance with the permit requirements. The Applicant must inspect the construction project once per week and within 24 hours after a rain event greater than one-half inches. The city may conduct inspections as needed to ensure that both erosion and sediment control and stormwater measures are properly installed and maintained prior to construction, during construction, and at the completion of the project. The applicant shall notify the city a minimum of 72 hours prior to the following required city inspections:
 - (1) *Initial inspection.* When all erosion and sediment control BMPs are installed. This inspection must be completed before a building permit can be issued.
 - (2) *Project complete inspection.* When the project is complete including, but not limited to, final grading, installation of all stormwater management facilities, and final stabilization measures are complete. One-year warranty begins after inspector approves project.
 - (3) *Warranty inspection.* Completed one year later to confirm that permanent site stabilization methods have been successful and vegetation, has been established.
- (c) *Reporting.* The applicant shall submit reports to the city engineer under the following circumstances and shall submit recommendations for corrective measures, if appropriate, with such reports:
 - (1) There are delays of more than seven days in obtaining materials, machinery, services or manpower necessary to the implementation of the stormwater management plan as scheduled.
 - (2) There are delays of seven days in land disturbing or filling activities or soil storage.
 - (3) The work is not being done in conformance with the approved plans and permit. Any changes to the approved plan must be submitted to the city engineer for review and approval before work can commence.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-85. - Right of entry.

The issuance of a permit constitutes a right-of-entry for the city or its contractor to enter the construction site. The applicant shall allow the city and its authorized representatives, to:

- (1) Enter the permitted site for the purpose of obtaining information, examining records, conducting investigations or surveys;
- (2) Bring such equipment on the site as is necessary to conduct such surveys and investigations;
- (3) Examine and copy any books, papers, or digital files pertaining to activities or records required to be kept under the terms and conditions of the permitted site;
- (4) Inspect the stormwater pollution control measures;
- (5) Sample and monitor any items or activities pertaining to stormwater pollution control measures;
- (6) Correct deficiencies in stormwater and erosion and sediment control measures consistent with the city's ordinances.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-86. - Search warrants.

If city employees have been refused access to any part of the premises from which stormwater is discharged, and he/she is able to demonstrate probable cause to believe that there may be a violation of this article, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the city may seek issuance of a search warrant from any court of competent jurisdiction.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-87. - Penalty.

Any person, firm or corporation violating any provision of this article shall be sent a notice of violation and if there is no compliance the city may take actions pursuant to this section.

- (1) *Notice of violation.* When the city determines that an activity is not being carried out in accordance with the requirements of this article, it shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:
 - a. The name and address of the owner;
 - b. The address when available or a description of the land upon which the violation is occurring;
 - c. A statement specifying the nature of the violation;
 - d. A description of the remedial measures necessary to bring the development activity into compliance with this article and a time schedule for the completion of such remedial action;
 - e. A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed; and
 - f. A statement that the determination of violation may be appealed to the city by filing a written notice of appeal within 15 days of services notice of violation.
- (2) *Stop work orders.* Persons receiving a notice of violation will be required to halt all construction activities. This stop work order will be in effect until the city confirms that the land disturbance activity is in compliance and the violation has been satisfactorily addressed. Failure to address

a notice of violation in a timely manner may result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in this article.

- (3) *Civil and criminal penalties.* In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of this article shall be guilty of a misdemeanor and subject to prosecution. Such person shall be guilty of a separate offense for each day during which the violation occurs or continues. In the alternative, an administrative citation may be issued pursuant to chapter 38.
- (4) *Restoration of lands.* Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the city may take necessary corrective action, the cost of which may, after notice and opportunity for hearing, be specially assessed against the property and collected along with the ordinary taxes by the county.

(Ord. No. 1293, § 1, 4-6-2015)

Sec. 110-88. - Appeals.

Any person aggrieved by the action of any official charged with the enforcement of the ordinance from which this article is derived, as the result of the disapproval of a properly filed application for approval, issuance of a written notice of violation, or an alleged failure to properly enforce the ordinance from which this article is derived in regard to a specific application, shall have the right to appeal the action to the city by following the appeal process in chapter 38.

(Ord. No. 1293, § 1, 4-6-2015)

Secs. 110-89—110-103. - Reserved.

ARTICLE VI. - STORMWATER ILLICIT DISCHARGE AND ILLICIT CONNECTION^[2]

Footnotes:

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Editor's note— Ord. No. 1292, § 1, adopted April 6, 2015, amended article VI in its entirety to read as herein set out. Former article VI, §§ 110-120—110-132, pertained to similar material, and derived from the Ord. No. 1210, adopted August 4, 2008.

Sec. 110-120. - Findings.

The city council hereby finds that nonstormwater discharges to the city's municipal separated storm sewer system are subject to higher levels of pollutants that enter into receiving water bodies adversely affecting the public health, safety and general welfare by impacting water quality, creating nuisances, impairing other beneficial uses of environmental resources and hindering the ability of the city to provide adequate water, sewage, flood control and other community services.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-121. - Purpose.

The purpose of the article is to promote, preserve and enhance the natural resources within the city and protect them from adverse effects occasioned by nonstormwater discharges by regulating discharges that would have an adverse and potentially irreversible impact on water quality and environmentally sensitive land. In addition to requirements relative to the city's sanitary sewer system, this article establishes methods for controlling the introduction of pollutants into the city's municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process and for controlling the introduction. The objectives of this article are:

- (1) To regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) by stormwater discharges by any user.
- (2) To prohibit illicit connections and discharges to the municipal separate storm sewer system.
- (3) To establish legal authority to carry out all inspection, surveillance, enforcement, and monitoring procedures necessary to ensure compliance with this article.
- (4) This article is adopted pursuant to the authorization and policies contained in Minn. Stats. chs. 103B and 462; Minnesota Rules, parts 6120.2500-6120.3900, Minnesota Rules chs. 8410, 8420 and 70510.0210.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-122. - Definitions.

The following words, terms and phrases, when used in this article shall have the meanings ascribed to them in this section, except when the context clearly indicates a different meaning:

Best management practice or *BMP* means as defined under section 110-72.

Discharge means adding, introducing, releasing, leaking, spilling, casting, throwing, or emitting any pollutant, or placing any pollutant in a location where it is likely to pollute public waters.

Erosion means the process by which ground surface is worn away by action of wind, water, ice, or gravity.

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

Illicit connection means either of the following:

- (1) Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system (including any nonstormwater discharge) including sewage, process wastewater, and wash water and any connections to the storm drain system from indoor drains and sinks, regardless of whether the drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency; or
- (2) Any drain or conveyance connected from a residential, commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.

Illicit discharge means any direct or indirect nonstormwater discharge to the storm sewer system, except as exempted in subsection 110-126(b) of this article.

Industrial activity means an activity subject to NPDES general stormwater permit for industrial activity as defined in Title 40 of the Code of Federal Regulations, Section 122.26 (b)(14).

MPCA means the Minnesota Pollution Control Agency.

Municipal separate storm sewer system or *MS4* means the system of conveyances (including sidewalks, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches,

manmade channels, or storm drains) owned and operated by the city and designed or used for collecting or conveying stormwater, and which is not used for collecting or conveying sewage.

NPDES means the National Pollutant Discharge Elimination System, which is the program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits under the Clean Water Act (Section 301, 318, 402, and 405) and United States Code of Federal Regulations Title 33, Section 1317, 1328, 1342, and 1345 authorizing the discharge of pollutants to water of the United States.

NPDES stormwater discharge permit means a permit issued by the MPCA that authorizes the discharge of pollutants to public waters, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-stormwater discharge means any discharge to the storm drain system that is not composed entirely of stormwater.

Person means as defined under section 110-72.

Pollutant means any substance which, when discharged has potential to or does any of the following:

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

Pollutant includes but is not limited to dredged soil, solid waste, incinerator residue, garbage, wastewater sludge, chemical waste, biological materials, radioactive materials, rock, sand, dust, industrial waste, sediment, nutrients, toxic substance, pesticide, herbicide, trace metal, automotive fluid, petroleum-based substance, and oxygen-demanding material.

Pollute means to discharge pollutants into public waters.

Pollution means the direct or indirect distribution of pollutants into public waters.

Public waters means as defined under section 110-72.

State designated water uses means uses specified in state water quality standards.

Storm sewer system means a conveyance or system of conveyances that is owned and operated by the city or other entity and designed or used for collecting or conveying stormwater.

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

Surface waters means all public waters other than ground waters, which include ponds, lakes, rivers, streams, tidal and nontidal wetlands, public ditches, tax ditches, and public drainage systems except those designed and used to collect, convey, or dispose of sanitary sewage.

Wastewater means any water or other liquid, other than uncontaminated stormwater, discharged from a premise.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-123. - Administration.

The city and its authorized representatives are authorized to administer, implement, and enforce the provisions of this article.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-124. - Compatibility with other regulations.

The ordinance from which this article is derived is not intended to modify or repeal any other ordinance, rule, regulation, or other provision of law. The requirements of the ordinance from which this article is derived are in addition to the requirements of any other ordinance, rule, regulation, or other provision of law, and where any provision of the ordinance from which this article is derived imposes restrictions different from those imposed by any other ordinance, rule, regulation, or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-125. - Illegal disposal and dumping.

- (a) No person shall throw, deposit, place, leave, maintain, or keep any substance upon any street, alley, sidewalk, storm drain, inlet, catchbasin conduit or drainage structure, business, or upon any public or private land, so that the same might be or become a pollutant, unless the substance is in containers, recycling bags, or any other lawfully established waste disposal device.
- (b) No person shall intentionally dispose of grass, leaves, dirt, or landscape material into a water resource, buffer, street, road, alley, catchbasin, culvert, curb, gutter, inlet, ditch, natural watercourse, flood control channel, canal, storm drain or any fabricated natural conveyance.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-126. - Illicit discharges.

- (a) *Provisions.* No person shall cause any illicit discharge to enter the storm sewer system or any surface water.
- (b) *Exemptions.* The following discharges are exempt from this section:
 - (1) Nonstormwater that is authorized by an NPDES point source permit obtain from the MPCA;
 - (2) Firefighting activities or other activities necessary to protect public health and safety;
 - (3) Dye testing for which the city has provided a verbal notification prior to the time of the test;
 - (4) Water line flushing or other potable water sources;
 - (5) Landscape irrigation or lawn watering;
 - (6) Diverted stream flows;
 - (7) Rising ground water;
 - (8) Ground water infiltration to storm drains;
 - (9) Uncontaminated pumped ground water;
 - (10) Foundation or footing drains (not including active groundwater dewatering systems);
 - (11) Crawl space pumps;
 - (12) Air conditioning condensation;

- (13) Springs;
- (14) Noncommercial washing of vehicles;
- (15) Natural riparian habitat or wetland flows;
- (16) Dechlorinated swimming pools (for pools to be considered "dechlorinated," water must be allowed to sit seven days without the addition of chlorine to allow for chlorine to evaporate before discharging in an area where drainage to streets or storm sewer systems may occur); or
- (17) Any other water source not containing a pollutant.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-127. - Illicit connections.

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

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-128. - General provisions.

All owners or occupants of property shall comply with the following general requirements:

- (1) *Septic systems.* No person shall leave, deposit, discharge, dump, or otherwise expose any chemical or septic waste in an area where discharge to streets or storm sewer system may occur. This section shall apply to both actual and potential discharges.
 - a. Individual septic systems must be maintained to prevent failure, which has the potential to pollute surface water.
 - b. No part of any individual septic system requiring on-land or in-ground disposal of waste shall be located closer than 150 feet from the ordinary high water level in the case of DNR protected waters, or the wetland boundary in the case of all other water bodies, unless it is proven by the applicant that no effluent will immediately or gradually reach the water bodies because of existing physical characteristics of the site or the system.
 - c. Recreational vehicle sewage shall be disposed to a proper sanitary waste facility. Waste shall not be discharged in an area where drainage to streets or storm sewer systems may occur.
- (2) *Water runoff.* Runoff of water from residential property shall be minimized to the maximum extent practicable. Runoff of water from the washing down of paved areas in commercial or industrial property is prohibited unless necessary for health or safety purposes and not in violation of any other provisions of the City Code.
- (3) *Mobile washing businesses.* Businesses that use significant amounts of water at various locations in the city, such as, but not limited to mobile vehicle washing and carpet cleaning, shall dispose of wastewater into the sanitary sewer at a location permitted by the city. Wastewater must not be discharged where drainage to streets or storm sewer system may occur.
- (4) *Motor vehicle repair and maintenance.* Storage of materials, machinery and equipment for motor vehicle repair and maintenance must comply with the following requirements:

- a. Motor vehicle parts containing grease, oil or other hazardous substances and unsealed receptacles containing hazardous materials shall not be stored in areas susceptible to runoff.
 - b. Any machinery or equipment that is to be repaired or maintained in areas susceptible to runoff shall be placed in a confined area to contain leaks, spills, or discharges.
- (5) *Parking lots and private streets.* Debris from parking lots and private streets should be swept at least once a year in the spring to remove debris. Such debris shall be collected and properly disposed.
- (6) *Watercourse protection.* Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.
- (7) *Other.* Fuel and chemical residue or other types of potentially harmful material, such as animal waste, garbage or batteries shall be removed as soon as possible and disposed of properly. Household hazardous waste may be disposed of through the county collection program or at any other appropriate disposal site and shall not be placed in a trash container.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-129. - Industrial activity discharges.

Any person subject to an industrial activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with the permit may be required in a form acceptable to the city prior to the allowing of discharges to the storm sewer system. Any person responsible for a facility that has stormwater discharges associated with industrial activity, who is or may be the source of an illicit discharge, may be required to implement, at the person's expense, additional structural and nonstructural BMPs to prevent the further discharge of pollutants to the storm sewer system. These BMPs shall be part of a stormwater pollution prevention plan as necessary for compliance with requirements of the NPDES permit.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-130. - Notification of spills.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into the storm sewer system, or public water the person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials, the person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of nonhazardous materials, the person shall notify the city no later than the next business day.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-131. - Access to building for inspection, monitoring, and/or dye testing.

- (a) The city shall be permitted to enter and inspect all buildings under this article as often as may be necessary to determine compliance with this article provided the city gives 24-hours advanced notice. However, in cases of emergency, the city shall be given immediate access.
- (b) Facility operators shall allow the city ready access to all part of the premises for the purposes of inspection, sampling, dye testing, examination and copying of records that relate to the discharge of storm water. Any temporary or permanent obstruction to safe and easy access to the area to be inspected or sampled shall be promptly removed by the discharger at the request of the public works department and shall not be replaced.
- (c) The city shall have the right to establish, at any building, such devices as are necessary to conduct monitoring, sampling and/or dye testing of the facility's storm water discharge.
- (d) The city has the right to require the discharger to install monitoring equipment as necessary. The monitoring equipment must be maintained by the discharger in a safe and proper operating condition at all times. All devices used to measure stormwater flow and quality must be calibrated in order to ensure their accuracy.
- (e) Unreasonable delays in allowing the city access to a facility is a violation of this article.
- (f) If the city has been refused access to any part of the premises from which stormwater is discharged, and is able to demonstrate probable cause to believe that there may be a violation of this section or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the city may seek an administrative search warrant from any court of competent jurisdiction.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-132. - Suspension of storm sewer system access.

- (a) *Suspension due to illicit discharges in emergency situation.* The city may, without prior notice, suspend storm sewer system discharge access to a person when such suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the storm sewer or public waters. If the violator fails to comply with a suspension order issued in an emergency, the city may take such steps as deemed necessary to prevent or minimize damage to the storm sewer system or public waters, or to minimize danger to persons.
- (b) *Suspension due to the detection of illicit discharge.* All persons discharging to the storm sewer system in violation of this article may have their storm sewer system access terminated if such termination serves to abate or reduce an illicit discharge. It is a violation of this section to reinstate storm sewer system access to premises that have been terminated pursuant to this section without the prior approval of the city.

(Ord. No. 1292, § 1, 4-6-2015)

Sec. 110-133. - Notice of violation.

A violation of this article is a public nuisance. When the city finds that a person has violated a prohibition or failed to meet a requirement of this section, the person is deemed to have created a public nuisance subject to abatement and assessment, as provided in sections 34-19 through 34-26. The city may also issue an administrative citation pursuant to chapter 38. In addition to any order issued pursuant to section 34-21, the city may require the following:

- (1) The performance of monitoring, analysis, and reporting;
- (2) The implementation of source control or treatment BMPs;

- (3) Any other requirement deemed necessary.

(Ord. No. 1292, § 1, 4-6-2015)

Secs. 110-134—110-139. - Reserved.

Sec. 118-167. - Mississippi River Corridor zoning.

(a) *Findings of fact; purpose.*

- (1) The city finds that the Mississippi River Corridor (Minnesota National River Recreation Area or "MNRRA") within the Metropolitan Twin Cities area and within the city is a unique and valuable resource. The river is an essential element of local, regional, state and national systems of transportation, recreation, sewer and water, and serves important biological and ecological functions. The prevention and mitigation of irreversible damage to this resource and the preservation and enhancement of its natural, aesthetic, cultural and historic values is in furtherance of the health, safety, and general welfare of the city.
- (2) It is the purpose and intent of this chapter to prevent and mitigate irreversible damage to the Mississippi River Corridor, to preserve and enhance its value to the public, and to protect and preserve the Mississippi River Corridor as an essential element in the city's transportation, recreation, sewer and water systems in accordance with the following policies:
 - a. The Mississippi River Corridor shall be managed as a multipurpose public resource by continuing use of the river channel for transportation and commerce, conserving the scenic, environmental, recreational, commercial, historical and cultural resources and functions of the river corridor and providing for the continuation of a variety of urban uses within the river corridor.
 - b. The Mississippi River Corridor shall be managed in a manner consistent with its natural characteristics and its existing development and in coordination with regional plans for the development of the metropolitan area.
 - c. The Mississippi River Corridor shall be managed in accordance with the state's Critical Areas Act of 1973 (Minn. Stat. § 116G.01 et seq.), and Minn. Stat. ch. 116D, the Governor's Order Designating the Mississippi River Corridor Critical Area, and other applicable state and federal statutes and regulations.
 - d. The Mississippi River Corridor shall be managed in accordance with applicable provisions of Minn. Stat. ch. 103F.

(b) *Establishment of river corridor overlay zoning district.*

- (1) The official zoning map of the city, which is on file in the office of the city clerk and which is incorporated by reference in this Code, is hereby amended to include a map overlay district and incorporated by reference, setting forth the boundaries of a river corridor district as established and defined herein.
- (2) The river corridor district shall be that area which has been designated as the Mississippi River Corridor Critical Area in accordance with Minn. Stat. ch. 116G, 6 MCAR 3.051-2.057, and Executive Orders 130 and 130A (November 1976), and whose boundaries are shown on the referenced river corridor zoning map.
- (3) The river corridor district may be referred to by the abbreviation MR.

(c) *General provisions.*

- (1) *Lands to which this section applies.* This section shall apply to all lands within the jurisdiction of the city shown on the official zoning map as being located within the boundaries of the river corridor district.

- (2) *Compliance* . No structure or land shall hereafter be used, and no structure shall be located, extended, converted or structurally altered, without full compliance with the terms of this section and other applicable regulations that apply to uses within the jurisdiction of this section.
 - (3) *Rules for interpretation of district boundaries* . The boundaries of the zoning districts shall be determined by scaling distances on the official zoning map. Where interpretation is needed as to the exact location of the boundaries of the district as shown on the official zoning map, as, for example, where there appears to be a conflict between a mapped boundary and actual field conditions, the board of zoning appeals shall make the necessary interpretation. The person contesting the location of the district boundary shall be given a reasonable opportunity to present the case to the board and to submit technical evidence if so desired.
 - (4) *Abrogation and greater restrictions* . It is not intended by this section to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this section imposes greater restrictions, the provision of this section shall prevail. All other codes inconsistent with this section are hereby repealed to the extent of the inconsistency only.
 - (5) *Interpretation* . In their interpretation and application, the provisions of this section shall be held to be liberally construed in favor of the city council and shall not be deemed a limitation or repeal of any other powers granted by state statutes.
- (d) *Relation of other zoning districts.*
- (1) Lands within the river corridor overlay district shall be subject to the requirements established in this section as well as the requirements of the underlying zoning districts.
 - (2) Lands within the river corridor overlay district which also lie within the floodway district of the flood fringe district, as established in this article, shall also be subject to the requirements of floodplain zoning, as described in section 118-168.
 - (3) Lands within the river corridor overlay district that also lie within the shorelands district, as established by this article, shall also be subject to the requirements of shorelands zoning.
 - (4) Where two or more provisions of this section or of other sections of this chapter or other applicable laws or regulations, are in effect, the more restrictive provision shall apply.
- (e) *Definitions.* For the purposes of this section, certain words, terms, and phrases are defined as follows:

Accessory use or structure . A use or structure on the same lot with and of a nature customarily incidental and subordinate to the principal use or structure.

Adjacent . Having a boundary that physically touches or adjoins.

Barge fleeting area . An area on or adjacent to a river where barges are temporarily parked and secured while tows are assembled or disassembled.

Barge slip . A basin or other body of water, usually adjacent to a wharf, jetty, dock, or other cargo handling facility, where barges are brought for the purpose of loading or unloading cargo.

Bluffline . A line delineating the top of a slope connecting the points at which the slope becomes less than 18 percent. More than one bluffline may be encountered proceeding landward from the water.

Boathouse . A structure used solely for the storage of boats or boating equipment.

Building line . That line measured across the width of the lot at the point where the main structure is placed in accordance with setback provisions.

Clearcutting . The removal of an entire stand of trees and shrubs.

Crowding potential . The ratio of total acreage of a water body to shore miles.

Development . The making of any material change in the use or appearance of any structure or landing, including, but not limited to, a reconstruction, alteration of the size or material change in the external appearance of a structure or the land; a change in the intensity of use of the land; alteration of a

shore or bank of a river, stream, lake, or pond; a commencement of drilling (except to obtain a soil sample); mining ore excavation; demolition of a structure; clearing of land as adjunct to construction; deposit of refuse, solid or liquid waste, or fill on a parcel of land; or the dividing of land into two or more parcels.

Equal degree of encroachment . A method of determining the location of encroachment lines so that the hydraulic capacity of floodplain lands on each side of a stream are reduced by an equal amount when calculating the increases in flood stages due to floodplain encroachments.

Erosion . The general process by which soils are removed by flowing surface or subsurface water or by wind.

Flood . A temporary rise in streamflow or stage that results in inundation of the areas adjacent to the channel.

Flood frequency . The average frequency, statistically determined, for which it is expected that a specific flood stage or discharge may be equaled or exceeded.

Flood fringe . The portion of the floodplain outside of the floodway.

Floodplain . The areas adjoining a watercourse that have been or hereafter may be covered by the regional flood.

Floodproofing . A combination of structural provisions, changes, or adjustments to properties and structures subject to flooding primarily for the reduction or elimination of flood damages.

Floodway . The channel of the watercourse and those portions of the adjoining floodplains that are reasonably required to carry and discharge the regional flood.

Hardship . The property in question cannot be put to a reasonable use under the conditions allowed by the official controls; the plight of the landowner is due to circumstances unique to the property not created by the landowner; and the variance, if granted, will not alter the essential character of the locality.

Landscaping . The arrangement of plants such as trees, grass and shrubs in order to improve the aesthetics of an area.

Mining . The extraction of sand, gravel, rock, soil or other material from the land in the amount of 500 cubic yards or more and the removing thereof from the site without processing with the exception of the removal of materials associated with the construction of a building that is approved in a building permit.

Normal high-water mark . A mark delineating the highest water level that has been maintained for a sufficient period of time to leave evidence of the level upon the adjacent land or terrain. It is commonly that point where the natural vegetation changes from predominately aquatic to predominately terrestrial. When the normal high-water mark is not evident, setbacks shall be measured from the stream bank at the normal pool elevation of the river.

Obstruction . Any dam, wall wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel, rectification, culvert, building, wire, fence, stockpile, refuse, fill structure, or matter in, along, across, or projecting into any channel, watercourse or regulatory flood hazard area which may impede, retard, or change the direction of flow of water, either in itself or by catching or collecting debris carried by such water, or that is placed where the flow of water might carry the same downstream to the damage of life or property.

Planned unit development . A type of development that may incorporate a variety of land uses planned and developed as a unit. The planned unit development is distinguished from the traditional subdivision process of development in that zoning standards such as density, setbacks, height limits, and minimum lot sizes may be altered by negotiation and agreement between the developer, the city, and the commissioner.

Ponding area . A basin that retains stormwater runoff from an adjacent or tributary area.

Reach . A hydraulic engineering term to describe a longitudinal segment of a stream or river influenced by a natural or manmade obstruction. In an urban area, the segment of a stream or river between two consecutive bridge crossings would most typically constitute a reach.

Regional flood. A flood which is representative of large floods known to have occurred generally in the state and reasonably characteristic of what can be expected to occur on an average frequency in the magnitude of the 100-year recurrence interval.

Regulatory flood protection elevation . A point not less than one foot above the water surface profile associated with the regional flood, plus any increases in flood heights attributable to encroachments on the floodplain. It is the elevation to which uses regulated by this section are required to be elevated or floodproofed.

Root aeration zone . The area of land that lies under the tree's canopy. This area is measured by finding the farthest-reaching branches along its circumference and projecting vertically from those branches to the ground.

Sewage disposal system . Any system for the collection, treatment, and dispersion of sewage, including, but not limited to, septic tank soil absorption systems and combined sanitary and storm sewers.

Shoreland . Land located within the following distances from public water:

- (1) One thousand feet from the ordinary high water mark of a lake, pond, or flowage; and
- (2) Three hundred feet from a river or stream, or the landward extent of a floodplain designated by this Code on such a river or stream, whichever is greater. The practical limits of shorelands may be less than the statutory limits whenever the waters involved are bounded by topographic divides that extend landward from the waters for lessor distances and when approved by the commissioner.

Slope . The inclination of the natural surface of the land from the horizontal.

State building code . As authorized by Minn. Stat. § 16.83 et seq. and promulgated as to MCAR 1.0101 et seq.

Structure . Any building or appurtenance thereto, except aerial or underground utility lines, such as sewer, electric, telephone, telegraph, or gas lines, including towers, poles, and other supporting appurtenances.

Substandard use . Any use of shorelands existing prior to the date of enactment of any city ordinance which is permitted within the applicable zoning district but does not meet the minimum lot area and length of water frontage, structure setbacks, or other dimensional standards of this section.

Treeline . The more or less continuous line formed by the tops of trees in a wooded area when viewed from a particular point. Such line shall be determined during all seasons as if under full foliage.

Wetlands . Low-lying areas that may be covered with shallow water. They are frequently associated with a high-water table. Swamps, bogs, marshes, potholes, wet meadows and sloughs are wetlands. They may occur adjacent to or within natural drainageways or as freestanding low areas. Wetlands shall consist of types 1-B as defined in United States Department of Interior Fish and Wildlife Service Circular 39.

(f) *Site plan requirements.*

- (1) *Plan approval; environmental information required .* No building permit, conditional use permit, zoning approval or subdivision approval shall be issued for any development located in the river corridor district unless a site plan has been prepared and approved in accordance with the terms of this section. Such site plans, when submitted, must include environmental information and plans which limit vegetative cutting in riverbank setback areas, protect wetlands, protect slopes over 12 percent, limit the role of surface water runoff, manage reclamation, and encourage underground placement of utility crossing and clustering of overhead crossings.
- (2) *Exceptions .* The site plan application requirements of this section shall not be applied to a single-family dwelling or to the extension, enlargement, change or alteration thereof, nor accessory structure thereto, provided that the dwelling remains a single-family dwelling. Such developments will remain subject to the building permit application requirements of this Code. In the review of an application for a building permit for such a development, a permit shall not be

granted where the proposed action is not in compliance with the standards for river corridor development enumerated in this section.

- (g) *Site plan application.* An application for site plan review shall be filed with the city engineer on forms provided by the city. On receipt of the application, the city engineer shall submit it to the planning commission for recommendations. Upon receiving an application for a site plan review, the planning commission and city council shall, prior to rendering their respective recommendation or decision thereon:
- (1) Require the applicant to furnish such of the following information and any additional information as deemed necessary by the planning commission and city council for determining if the proposed use conforms to the provisions of this section:
 - a. Plans in duplicate drawn to the scale of one inch equals ten feet for parcels of one-half acre in size or less, and to the scale of one inch equals 50 feet for parcels larger than one-half acre in size, prepared and signed by a registered engineer, architect, and/or land surveyor, as applicable, showing the nature, location, dimensions and elevation of the land; existing and proposed surface contours, structures, fill and the locations and elevations of proposed streets, water supply, sanitary facilities, and other utilities, showing the relationship of the above to the river channel and to the river corridor.
 - b. Where applicable provisions of this section apply, combined sets of plans may be required to be submitted by the applicant.
 - (2) Require the applicant to submit copies of this information to the city engineer. The city engineer shall review the plans to see if they meet the criteria and standards set out in this section and shall provide, in writing, to the planning commission and city council and the applicant the engineer's considered opinion of the plans and recommendation as to how the planning commission and city council should respond to the applicant's request for a building permit, zoning approval or subdivision approval. In conducting a review of plans, the city engineer is authorized to solicit the opinions of other city officials and to engage the services of expert persons to assist in the review.
- (h) *Site plan criteria and approval standards.* No site plan that fails to satisfy the following standards shall be approved, unless otherwise permitted by the city engineer:
- (1) *Protection of wetlands.* Filling in a wetland shall comply with the requirements of the United States Army Corps of Engineers, Environmental Protection Agency, Fish and Wildlife Service and the state department of natural resources and pollution control agency.
 - (2) *Dredging of water bodies .* Dredging of water bodies shall be permitted if it will not result in a substantially or significantly adverse effect on the ecological and hydraulic characteristics of the water body and is proposed for a purpose consistent with the critical area designation.
 - (3) *Development on slopes—Classification of zones .* Slopes in excess of 12 percent within the critical area are divided into two classifications. These are:
 - a. *Zone A.* Zone A slopes are those in excess of 12 percent that are still in a natural, undisturbed state.
 - b. *Zone B.* Zone B slopes are those in excess of 12 percent and which have been in one way or another disturbed or affected by cutting, filling, excavating, installation of public improvements, utilities or roadways, or construction of building or retaining walls.
 - (4) *Same—Regulations.*
 - a. No development or disturbance shall be permitted on slopes within Zone A other than for necessary actions to maintain the integrity of the slopes, such as prevention of erosion.
 - b. No development shall be permitted on slopes in zone B over 12 percent unless an applicant submits a plan showing proposed development, drainage, erosion control and landscaping, and proves that the following conditions are met:

1. The foundation and underlying material of any structure, including roads, shall be adequate for the slope condition and soil type.
2. Adequate controls and protections exist uphill from the proposed development such that there is no danger of structures or roads being struck by falling rock, mud, uprooted trees, or other materials, and no loss of lateral support.
3. The proposed development presents no danger of falling rock, mud, uprooted trees or other materials to structures downhill.
4. The view of the developed slope from the river and opposite riverbank is consistent with the natural appearance of the undeveloped slopes, consistent with any historic areas nearby, compatible with surrounding architectural features, and compatible with the view from any historic areas.
5. All structures other than building and roadway surfaces, but including retaining walls, shall meet the following design requirements:
 - (i) Retaining walls or terrace contours shall not generally exceed five feet in height.
 - (ii) Construction should be of native stone or wood or other similar approved methods or materials where conditions so dictate.
6. Development on lands with slopes in excess of 12 percent shall be permitted if approved by the city council and in accordance with other applicable laws and regulations.
7. Any lift stations required to service the slope development with local sewer systems are designed in accordance with local design standards and approved by the city engineer. The applicant shall furnish a satisfactory arrangement or agreement by which the costs of maintenance and operation of the lift station are borne by those serviced by the facility.
8. No septic tank or other similar waste disposal system shall be permitted.

(5) *Minimizing erosion.*

- a. In order to protect and preserve slopes in the river corridor, erosion as a result of construction and development shall be minimized. During construction and until such time as final control measures are fully implemented, adequate development practices shall be maintained to ensure that gross soil loss levels (expressed in terms of tons per acre per year) shall not exceed five tons per acre per year during construction or two tons per acre per year when the site is adjacent to a water body or watercourse; and one-half ton per acre after the construction activities are completed. Soil loss shall be calculated in accordance with the uniform soil loss equation, as provided in the technical appendix to this section on file with the city.
- b. The proposed development will not unduly impact the city's stormwater management.
- c. Erosion protection measures shall make maximum use of natural, in-place vegetation rather than the placing of new vegetation on site as erosion control facilities. The use of natural erosion control devices shall be preferred to the maximum extent over the construction of artificial devices such as culverts, holding ponds and ditches.

(6) *Sediment traps.* Wetlands and other water bodies shall not be used as primary sediment traps during or after construction.

(7) *Preservation of views.* The development shall be consistent with the reasonable preservation of the view of the river corridor from other properties and by the public, and the obstruction of views of the river corridor from other properties and public rights-of-way shall be minimized.

(8) *Preservation of vegetation and trees .*

- a. The development shall be located in such a manner so as to minimize removal of vegetation and alteration of the natural topography.
 - b. The applicant shall demonstrate that there are no feasible or prudent alternatives to cutting trees on the site, and if trees are cut, the density of trees shall be restored to that which existed before development, but in no case shall the applicant be required to increase the density above ten trees per acre. The applicant shall demonstrate that all grading which takes place shall be conducted in a manner that preserves the root aeration zone and stability of existing trees and provides an adequate watering area equal to at least one-half of each tree's crown cover.
 - c. The selective cutting of trees greater than four inches in diameter may be permitted when the cutting is appropriately spaced and stated so that a continuous natural cover is maintained.
 - d. Clearcutting shall not be permitted on the slope or faces of bluffs and within 40 feet of established blufflines.
- (9) *Grading and filling* . Grading and filling in the river corridor or any other substantial alteration of the natural topography shall be controlled in accordance with the following criteria:
- a. The smallest amount of bare ground shall be exposed for as short a time as feasible.
 - b. Temporary groundcover, such as mulch, shall be used, and permanent vegetative ground cover, such as sod, shall be provided.
 - c. Methods to prevent erosion and trap sediment shall be employed.
 - d. Fill shall be stabilized to accepted engineering standards.
 - e. Dredge spoils are acceptable as fill.
- (10) *Use of maintenance equipment* . Any and all erosion control, stormwater runoff, utility access, and similar structures shall be designed to be maintained, cleaned out and otherwise operated without requiring the crossing of private lands with or by the operation of motorized heavy maintenance equipment and vehicles, such as bulldozers, trucks and backhoes, on slopes in excess of approximately eight percent.
- (11) *Street grades* . The grade of any street shall not generally exceed ten percent.
- (12) *Structure setback* . Structures and roads shall be placed no less than 100 feet from the normal high-water mark of the river and no less than 40 feet from the landward side of the blufflines.
- (13) *Soil suitability* . The applicant shall demonstrate that the types and densities of land use proposed shall be suited to the site and soil conditions, shall not present a threat to the maintenance of the groundwater quality or a potential increase in maintenance costs of utilities, parking areas or roads, and shall not be subject to problems due to soil limitation, including, but not limited to, soil bearing strength, shrink/swell potential and excessive frost movement.
- (14) *Runoff quality* . The quality of runoff and water infiltrated to the water table or aquifer shall be as high after development as it was before development on the site.
- (15) *Traffic* . Traffic associated with the proposed development, both vehicular and pedestrian, shall be consistent with local transportation and thoroughfare system capacities and planning.
- (16) *Parking facilities* . Adequate parking facilities shall be provided to service the proposed development. The construction of said parking facilities shall be consistent with the character of the river corridor, screened from river view by natural vegetation and not in excess of facilities reasonably foreseen to be required by the development proposal.
- (17) *Public access* . The proposed development shall neither reduce public access to and along the riverbank, nor preclude consideration of public opportunity to view the river from within the corridor.

- (18) *Preservation of islands.* No developments shall be permitted on presently undeveloped islands except those developments specifically related to wildlife, preservation, recreation and open space uses.
- (19) *Consistency with critical area plan .* The conduct of all grading, landscaping, structure placement and street routing shall be consistent with and to the maximum extent in furtherance of the goals and policies set forth in the plan adopted for the critical area by the city.
- (i) *Mining operations in the river corridor.* Mining operations shall be subject to the following conditions:
- (1) *Operation .* Mining operations shall be regulated according to the standards established by the state pollution control agency, the United States EPA, and other applicable standards, regulations and laws.
 - (2) *Reclamation .* All mining operations shall be required to submit plans for reclamation of mining sites to the planning commission for recommendation and the city council for approval. In these plans, the operators shall indicate they will comply with the following requirements:
 - a. Reclamation shall be a continuing operation occurring as quickly as possible after the mining operation has moved into another part of the extraction site.
 - b. All banks and slopes shall be rehabilitated as necessary. Such ground shall be tended as necessary until it is self-sustaining.
 - c. Reclamation plans shall be submitted within six months of the enactment of the ordinance from which this section is derived.
- (j) *Utility facilities.* Utility crossing of the critical area corridor or routing within the corridor shall meet the following standards:
- (1) Underground placing of the utility facility shall be required unless economic, technological and land characteristic factors make underground placement infeasible. Economic considerations alone shall not be made the major determinate regarding feasibility.
 - (2) Overhead crossings, if required, shall meet the following criteria:
 - a. The crossings shall be adjacent to or part of an existing utility corridor, including bridge or overhead utility lines.
 - b. All structures utilized shall be as compatible as practicable with land use, scenic views, and existing transmission structures in height, material, color and design.
 - c. Right-of-way clearance shall be kept to a minimum.
 - d. Vegetative screening shall be utilized to the maximum extent consistent with safety requirements.
 - e. Routing shall avoid unstable soils, bluffs, or high ridges; the alteration of the natural environment, including grading, shall be minimized.
 - f. The crossings shall be subject to the site planning requirements set forth in other parts of this section.
- (k) *Public access to the river.*
- (1) Public pedestrian access shall be provided to the riverfront of all public property.
 - (2) Public pedestrian access shall be provided to the riverfront of development on publicly owned or publicly controlled property, whether leased to private lessees or not, except where:
 - a. Unavoidable hazards exist to the public.
 - b. Pedestrian access at a particular location cannot be designed or developed to provide a pleasant view or recreational experience.

- c. Access to the riverfront may be denied to any person who creates a nuisance or who engages in illegal conduct on the property. Public access may be temporarily or permanently denied upon a finding by the city that such offensive conduct cannot otherwise be reasonably controlled.
- (3) The city shall cooperate with private property owners to create and maintain public pedestrian access to the riverfront on private property, where practicable.
- (l) *Subdivisions of land.*
 - (1) *Land suitability* . No land in the river corridor district shall be subdivided which is held unsuitable by the city for the proposed use because of flooding, inadequate drainage, soil and rock formations with severe limitations for development, severe erosion potential, unfavorable topography, inadequate water supply or sewage disposal capabilities, or any other feature likely to be harmful to the health, safety, or welfare of future residents of the proposed subdivision or of the community.
 - (2) *Dedications of land* . In any subdivision of land in the river corridor district, the city may require a land dedication or cash donation in lieu thereof. The dedication shall comprise about ten percent of the land area to be subdivided. Dedication may include areas of steep slope or river frontage in order to further the preservation of natural areas in the river corridor, and to promote the recreational usage of the Mississippi River and its environs. Dedication may also include lands for parks, scenic overlooks, trails, or similar public uses.
 - (3) *Floodplain district requirements* . All lots within the floodplain districts created by this division shall contain a building site at or above the regulatory flood protection elevations. All subdivisions shall have water and sewage disposal facilities that comply with the provisions of this division and have road access both to the subdivision and to the individual building sites no lower than two feet below the regulatory flood protection elevation.
 - (4) *Shoreland district requirements* . Any plat within the shoreland district created which is inconsistent with the requirements of this division shall be reviewed by the commissioner of natural resources before approval by the city may be granted. The proposed plat must be received by the commissioner at least ten days before a hearing is called by the city for consideration of approval of a final plat. Copies of all plats within the shoreland district shall be submitted to the commissioner within ten days of final approval by the city.

(Code 1992, § 1500.33, subs. 1—12)

State Law reference— Minnesota Wild and Scenic Rivers Act, Minn. Stat. § 103F.301 et seq.

Sec. 118-169. - Shorelands zoning.

- (a) *Declaration of intent and purpose.* The city finds that it is in the interest of the public health, safety and welfare to provide guidance for wise development of shorelands of public waters and thus to preserve and enhance the quality of surface waters, preserve the economic and natural environmental values of shorelands, and provide for the wise utilization of water and related land resources of the state.
- (b) *Establishment of the shorelands overlay zoning district.*
 - (1) The official zoning map of the city, which is on file in the office of the city clerk and which is incorporated by reference in this Code, is hereby amended to include a map overlay district and incorporated by reference setting forth the boundaries of a shorelands overlay district, as established and defined herein.
 - (2) The shorelands overlay zoning district shall be that area which is within 300 feet of the Mississippi River bank, as measured from the ordinary highwater mark, or the landward extent of the floodplain districts, as defined herein, whichever is greater.

- (3) The shorelands overlay zoning district may be referred to by the abbreviation SL.
- (c) *General provisions.* The shorelands regulations shall apply to all lands within the jurisdiction of the city shown on the official zoning map as being located within the boundaries of the shorelands overlay zoning district.
- (d) *Standards for development within the shorelands districts.*
- (1) Any application for a building permit, conditional use permit, zoning approval, or subdivision approval for any development in the shorelands district shall be subject to the river corridor site plan review requirements as contained herein.
- (2) In addition to the criteria and standards for site plan approval, site plans for development in the shorelands district are also subject to the following standards. No site plan that fails to satisfy these additional standards shall be approved by the city council.
- a. *Lot size .* All lots intended as residential building sites platted or created by metes and bounds after the date of enactment of shorelands regulations shall conform to the following dimensions:
1. Lots not served by a public sewer shall be at least 20,000 square feet (approximately one-half acre) in area and at least 100 feet in width at the building line and at the ordinary highwater mark (for lots abutting a public water). Lots served by public sewer and which abut public water shall be at least 15,000 square feet in area and at least 75 feet in width at the building line and at the ordinary highwater mark. All other lots served by a public sewer shall be at least 10,000 square feet in area and at least 75 feet in width at the building line.
 2. Lots of record in the office of the county register of deeds on the date of enactment of these regulations which do not meet the requirements herein may be allowed as building sites, provided that such use is permitted in the underlying zoning district and that the lot is in separate ownership from abutting lands and is served by public sewer and water.
- b. *Placement of structures on lots .*
1. No structure shall be placed nearer than 50 feet from the right-of-way line of any federal, state, or county trunk highway or 20 feet from the right-of-way line of any public street.
 2. No structure shall exceed 35 feet in height, unless such structures are approved as part of a planned unit development.
 3. The total area of all impervious surfaces on a lot shall not exceed 30 percent of the total lot area.
 4. Subsections (d)(2)b.1 and (d)(2)b.2 of this section shall not apply to the following:
 - (i) Boathouses may be located landward of the ordinary highwater mark as a conditional use, provided they are not used for habitation and they do not contain sanitary facilities.
 - (ii) Locations of piers and docks shall be controlled by applicable state and local regulations.
 - (iii) Where development exists on both sides of a proposed building site, structural setbacks may be altered to take setbacks of existing structures into account.
 - (iv) Commercial, industrial, or permitted open space uses requiring locations on public waters may be allowed as conditional uses closer to such waters than the setbacks described above.

- c. *Placement of roads and parking areas* . The placement of roads and parking areas shall be controlled in order to retard the runoff of surface waters and excess nutrients. The placement of roads and parking areas shall be according to the following criteria:
 - 1. No impervious surface shall be placed within 50 feet of the ordinary highwater mark. Where practical and feasible, no impervious surface shall be placed within 100 feet of the normal highwater mark.
 - 2. Natural vegetation or other natural materials shall be used in order to screen parking areas when viewed from the water.
- d. *Sewage disposal* . Public sewage disposal and commercial, agricultural, solid waste, and industrial disposal shall be subject to the standards, criteria, rules, and regulations of the state pollution control agency and department of health.
- (e) *Nonconforming sanitary facilities*. Sanitary facilities that are not consistent with the provisions of these regulations and of referenced state regulations shall be eliminated within five years of enactment of these regulations.

(Code 1992, § 1500.33, subds. 26—30)

State Law reference— Shoreland management, Minn. Stat. § 103F.201 et seq.; municipal shoreland management, Minn. Stat. § 103F.221.

Sec. 118-171. - Floodplain districts.

(a) *Authority; findings of fact; purpose*.

- (1) *Statutory authorization* . The legislature of the State of Minnesota has, in Minn. Stat. chs. 103F and 462 delegated the responsibility to local government units to adopt regulations designed to minimize flood losses. Therefore, the City Council of the City of South St. Paul, Minnesota, does ordain as follows:
 - (2) *Findings of fact* .
 - a. *[Public health, safety, general welfare.]* The flood hazard areas of the City of South St. Paul, Minnesota, are subject to periodic inundation which results in potential loss of life, loss of property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures or flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.
 - b. *Methods used to analyze flood hazards* . This section is based upon a reasonable method of analyzing flood hazards which is consistent with the standards established by the Minnesota Department of Natural Resources.
 - c. *National Flood Insurance Program compliance* . This section is adopted to comply with the rules and regulations of the National Flood Insurance Program codified as 44 Code of Federal Regulations parts 59—78, as amended, so as to maintain the community's eligibility in the National Flood Insurance Program.
 - (3) *Statement of purpose* . It is the purpose of this section to promote the public health, safety, and general welfare and to minimize those losses described in subsection (a)(2)a. by provisions contained herein.

(b) *General provisions* .

- (1) *Lands to which section applies* . This section shall apply to all lands within the jurisdiction of the city shown on the official zoning map and/or the attachments thereto as being located within the boundaries of the Floodway and Flood Fringe districts.

- (2) *Establishment of official zoning map* . The official zoning map together with all materials attached thereto is hereby adopted by reference and declared to be a part of this section. The attached material shall include the flood insurance study for Dakota County, Minnesota, and incorporated areas and flood insurance rate map panels therein numbered 27037C0041E, 27037C0043E, 27037C0044E, 27037C0107E and the flood insurance rate map index (map number 27037CIND4A), all dated December 2, 2011, and prepared by the Federal Emergency Management Agency. The official zoning map shall be on file in the office of the city clerk and the city planner.
- (3) *Regulatory flood protection elevation* . The regulatory flood protection elevation shall be an elevation no lower than one foot above the elevation of the regional flood plus any increases in flood elevation caused by encroachments on the floodplain that result from designation of a floodway.
- (4) *Interpretation* .
 - a. In their interpretation and application, the provisions of this section shall be held to be minimum requirements and shall be liberally construed in favor of the city council and shall not be deemed a limitation or repeal of any other powers granted by state statutes.
 - b. The boundaries of the zoning districts shall be determined by scaling distances on the official zoning map. Where interpretation is needed as to the exact location of the boundaries of the district as shown on the official zoning map, as for example where there appears to be a conflict between a mapped boundary and actual field conditions and there is a formal appeal of the decision of the zoning administrator, the board of adjustment shall make the necessary interpretation. All decisions will be based on elevations on the regional (100-year) flood profile, the ground elevations that existed on the site at the time the community adopted its initial floodplain ordinance or on the date of the first National Flood Insurance Program map showing the area within the 100-year floodplain if earlier, and other available technical data. Persons contesting the location of the district boundaries shall be given a reasonable opportunity to present their case to the board of adjustment and to submit technical evidence.
- (5) *Abrogation and greater restrictions* . It is not intended by this section to repeal, abrogate, or impair any existing easements, covenants, or deed restrictions. However, where this section imposes greater restrictions, the provisions of this section shall prevail. All other ordinances inconsistent with this section are hereby repealed to the extent of the inconsistency only.
- (6) *Warning and disclaimer of liability* . This section does not imply that areas outside the floodplain districts or land uses permitted within such districts will be free from flooding or flood damages. This section shall not create liability on the part of the city or any officer or employee thereof for any flood damages that result from reliance on this section or any administrative decision lawfully made thereunder.
- (7) *Severability* . If any section, clause, provision, or portion of this section is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of this Ordinance shall not be affected thereby.
- (8) *Definitions* . For purposes of this section, the following definitions shall be used. Unless specifically defined below, words or phrases used in this section shall be interpreted so as to give them the same meaning as they have in common usage and so as to give this section its most reasonable application.
 - a. *Accessory use or structure* means a use or structure on the same lot with, and of a nature customarily incidental and subordinate to, the principal use or structure.
 - b. *Basement* means any area of a structure, including crawl spaces, having its floor or base subgrade (below ground level) on all four sides, regardless of the depth of excavation below ground level.

- c. *Conditional use* means a specific type of structure or land use listed in the official control that may be allowed but only after an in-depth review procedure and with appropriate conditions or restrictions as provided in the official zoning controls or building codes and upon a finding that:
 - 1. Certain conditions as detailed in the zoning ordinance exist.
 - 2. The structure and/or land use conform to the comprehensive land use plan if one exists and are compatible with the existing neighborhood.
- d. *Equal degree of encroachment* means a method of determining the location of floodway boundaries so that floodplain lands on both sides of a stream are capable of conveying a proportionate share of flood flows.
- e. *Flood* means a temporary increase in the flow or stage of a stream or in the stage of a wetland or lake that results in the inundation of normally dry areas.
- f. *Flood frequency* means the frequency for which it is expected that a specific flood stage or discharge may be equaled or exceeded.
- g. *Flood fringe* means that portion of the floodplain outside of the floodway. Flood fringe is synonymous with the term "floodway fringe" used in the Flood Insurance Study for Dakota County, Minnesota, and Incorporated Areas.
- h. *Floodplain* means the beds proper and the areas adjoining a wetland, lake or watercourse which have been or hereafter may be covered by the regional flood.
- i. *Floodproofing* means a combination of structural provisions, changes, or adjustments to properties and structures subject to flooding, primarily for the reduction or elimination of flood damages.
- j. *Floodway* means the bed of a wetland or lake and the channel of a watercourse and those portions of the adjoining floodplain which are reasonably required to carry or store the regional flood discharge.
- k. *Lowest floor* means the lowest floor of the lowest enclosed area (including basement). An unfinished or flood-resistant enclosure, used solely for parking of vehicles, building access, or storage in an area other than a basement area, is not considered a building's lowest floor.
- l. *Manufactured home* means a structure, transportable in one or more sections, which is built on a permanent chassis and is designed for use with or without a permanent foundation when attached to the required utilities. The term "manufactured home" does not include the term "recreational vehicle."
- m. *Obstruction* means any dam, wall, wharf, embankment, levee, dike, pile, abutment, projection, excavation, channel modification, culvert, building, wire, fence, stockpile, refuse, fill, structure, or matter in, along, across, or projecting into any channel, watercourse, or regulatory floodplain which may impede, retard, or change the direction of the flow of water, either in itself or by catching or collecting debris carried by such water.
- n. *Principal use or structure* means all uses or structures that are not accessory uses or structures.
- o. *Reach* means a hydraulic engineering term to describe a longitudinal segment of a stream or river influenced by a natural or manmade obstruction. In an urban area, the segment of a stream or river between two consecutive bridge crossings would most typically constitute a reach.
- p. *Recreational vehicle* means a vehicle that is built on a single chassis, is 400 square feet or less when measured at the largest horizontal projection, is designed to be self-propelled or permanently towable by a light-duty truck, and is designed primarily not for use as a permanent dwelling but as temporary living quarters for recreational, camping, travel, or

seasonal use. For the purposes of this section, the term recreational vehicle shall be synonymous with the term travel trailer/travel vehicle.

- q. *Regional flood* means a flood which is representative of large floods known to have occurred generally in Minnesota and reasonably characteristic of what can be expected to occur on an average frequency in the magnitude of the 100-year recurrence interval. Regional flood is synonymous with the term "base flood" used in a flood insurance study.
 - r. *Regulatory flood protection elevation* means the regulatory flood protection elevation shall be an elevation no lower than one foot above the elevation of the regional flood plus any increases in flood elevation caused by encroachments on the floodplain that result from designation of a floodway.
 - s. *Structure* means anything constructed or erected on the ground or attached to the ground or on-site utilities, including, but not limited to, buildings, factories, sheds, detached garages, cabins, manufactured homes, recreational vehicles not meeting the exemption criteria specified in subsection (h)(3)a. of this section and other similar items.
 - t. *Substantial damage* means damage of any origin sustained by a structure where the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.
 - u. *Substantial improvement* means within any consecutive 365-day period, any reconstruction, rehabilitation (including normal maintenance and repair), repair after damage, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures that have incurred "substantial damage," regardless of the actual repair work performed. The term does not, however, include either:
 - 1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions.
 - 2. Any alteration of a "historic structure," provided that the alteration will not preclude the structure's continued designation as an "historic structure." For the purpose of this section, "historic structure" shall be as defined in 44 Code of Federal Regulations, part 59.1.
 - v. *Variance* means a modification of a specific permitted development standard required in an official control including this section to allow an alternative development standard not stated as acceptable in the official control, but only as applied to a particular property for the purpose of alleviating a hardship, practical difficulty or unique circumstance as defined and elaborated upon in a community's respective planning and zoning enabling legislation.
 - w. *Zoning administrator* means the city engineer or the city engineer's designee.
- (9) *Annexations* . The flood insurance rate map panels adopted by reference into subsection (b)(2) above may include floodplain areas that lie outside of the corporate boundaries of the city at the time of adoption of this section. If any of these floodplain land areas are annexed into the city after the date of adoption of this section, the newly annexed floodplain lands shall be subject to the provisions of this section immediately upon the date of annexation into the city.
- (c) *Establishment of zoning districts.*
- (1) *Districts.*
 - a. *Floodway district* . The Floodway district shall include those areas designated as floodway on the flood insurance rate map adopted in subsection (b)(2).
 - b. *Flood Fringe district* . The Flood Fringe district shall include those areas designated as floodway fringe. The Flood Fringe district shall include those areas shown on the flood

insurance rate map as adopted in subsection (b)(2) as being within zones AE but being located outside of the floodway.

(2) *Compliance* . No new structure or land shall hereafter be used and no structure shall be constructed, located, extended, converted, or structurally altered without full compliance with the terms of this Ordinance and other applicable regulations which apply to uses within the jurisdiction of this section. Within the Floodway and Flood Fringe districts, all uses not listed as permitted uses or conditional uses in subsections (d) and (e) that follow, respectively, shall be prohibited. In addition, a caution is provided here that:

- a. New manufactured homes, replacement manufactured homes and certain travel trailers and travel vehicles are subject to the general provisions of this section and specifically subsection (h).
- b. Modifications, additions, structural alterations, normal maintenance and repair, or repair after damage to existing nonconforming structures and nonconforming uses of structures or land are regulated by the general provisions of this section and specifically subsection (j).
- c. As-built elevations for elevated or floodproofed structures must be certified by ground surveys and floodproofing techniques must be designed and certified by a registered professional engineer or architect as specified in the general provisions of this section and specifically as stated in subsection (i).

(d) *Floodway district (FW)*.

(1) *Permitted uses*.

- a. General farming, pasture, grazing, outdoor plant nurseries, horticulture, truck farming, forestry, sod farming, and wild crop harvesting.
- b. Industrial-commercial loading areas, parking areas, and airport landing strips.
- c. Private and public golf courses, tennis courts, driving ranges, archery ranges, picnic grounds, boat launching ramps, swimming areas, parks, wildlife and nature preserves, game farms, fish hatcheries, shooting preserves, target ranges, trap and skeet ranges, hunting and fishing areas, and single or multiple purpose recreational trails.
- d. Residential lawns, gardens, parking areas, and play areas.

(2) *Standards for floodway permitted uses*.

- a. The use shall have a low flood damage potential.
- b. The use shall be permissible in the underlying zoning district if one exists.
- c. The use shall not obstruct flood flows or increase flood elevations and shall not involve structures, fill, obstructions, excavations or storage of materials or equipment.

(3) *Conditional uses*.

- a. Structures accessory to the uses listed in [subsection] (d)(1) above and the uses listed in [subsections] (d)(3)b. through (d)(3)h. below.
- b. Extraction and storage of sand, gravel, and other materials.
- c. Marinas, boat rentals, docks, piers, wharves, and water-control structures.
- d. Railroads, streets, bridges, utility transmission lines, and pipelines.
- e. Storage yards for equipment, machinery, or materials.
- f. Placement of fill or construction of fences.

- g. Recreational vehicles either on individual lots of record or in existing or new subdivisions or commercial or condominium type campgrounds, subject to the exemptions and provisions of subsection (h)(3).
- h. Structural works for flood control such as levees, dikes and floodwalls constructed to any height where the intent is to protect individual structures and levees or dikes where the intent is to protect agricultural crops for a frequency flood event equal to or less than the ten-year frequency flood event.

(4) *Standards for floodway conditional uses.*

- a. All uses. No structure (temporary or permanent), fill (including fill for roads and levees), deposit, obstruction, storage of materials or equipment, or other uses may be allowed as a conditional use that will cause any increase in the stage of the 100-year or regional flood or cause an increase in flood damages in the reach or reaches affected.
- b. All floodway conditional uses shall be subject to the procedures and standards contained in subsection (i)(4).
- c. The conditional use shall be permissible in the underlying zoning district if one exists.
- d. Fill.
 - 1. Fill, dredge spoil, and all other similar materials deposited or stored in the floodplain shall be protected from erosion by vegetative cover, mulching, riprap or other acceptable method.
 - 2. Dredge spoil sites and sand and gravel operations shall not be allowed in the floodway unless a longterm site development plan is submitted which includes an erosion/sedimentation prevention element to the plan.
 - 3. As an alternative, and consistent with subsection 2. immediately above, dredge spoil disposal and sand and gravel operations may allow temporary, on-site storage of fill or other materials which would have caused an increase to the stage of the 100-year or regional flood but only after the city council has received an appropriate plan which assures the removal of the materials from the floodway based upon the flood warning time available. The conditional use permit must be title registered with the property in the office of the county recorder.
- e. Accessory structures.
 - 1. Accessory structures shall not be designed for human habitation.
 - 2. Accessory structures, if permitted, shall be constructed and placed on the building site so as to offer the minimum obstruction to the flow of floodwaters:
 - (i) Whenever possible, structures shall be constructed with the longitudinal axis parallel to the direction of flood flow; and
 - (ii) So far as practicable, structures shall be placed approximately on the same flood flow lines as those of adjoining structures.
 - 3. Accessory structures shall be elevated on fill or structurally dry floodproofed in accordance with the FP-1 or FP-2 floodproofing classifications in the State Building Code. As an alternative, an accessory structure may be floodproofed to the FP-3 or FP-4 floodproofing classification in the State Building Code provided the accessory structure constitutes a minimal investment, does not exceed 500 square feet in size at its largest projection, and for a detached garage, the detached garage must be used solely for parking of vehicles and limited storage. All floodproofed accessory structures must meet the following additional standards:
 - (i) The structure must be adequately anchored to prevent flotation, collapse or lateral movement of the structure and shall be designed to equalize hydrostatic flood forces on exterior walls;

- (ii) Any mechanical and utility equipment in a structure must be elevated to or above the regulatory flood protection elevation or properly floodproofed; and
 - (iii) To allow for the equalization of hydrostatic pressure, there must be a minimum of two "automatic" openings in the outside walls of the structure having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. There must be openings on at least two sides of the structure and the bottom of all openings must be no higher than one foot above the lowest adjacent grade to the structure. Using human intervention to open a garage door prior to flooding will not satisfy this requirement for automatic openings.
 - f. Storage of materials and equipment.
 - 1. The storage or processing of materials that are, in time of flooding, flammable, explosive, or potentially injurious to human, animal, or plant life is prohibited.
 - 2. Storage of other materials or equipment may be allowed if readily removable from the area within the time available after a flood warning and in accordance with a plan approved by the city council.
 - g. Structural works for flood control that will change the course, current or cross section of protected wetlands or public waters shall be subject to the provisions of Minn. Stat., ch. 103G. Community-wide structural works for flood control intended to remove areas from the regulatory floodplain shall not be allowed in the floodway.
 - h. A levee, dike or floodwall constructed in the floodway shall not cause an increase to the 100-year or regional flood and the technical analysis must assume equal conveyance or storage loss on both sides of a stream.
- (e) *Flood Fringe district (FF).*
- (1) *Permitted uses* . Permitted uses shall be those uses of land or structures listed as permitted uses in the underlying zoning use district(s). If no preexisting, underlying zoning use districts exist, then any residential or nonresidential structure or use of a structure or land shall be a permitted use in the Flood Fringe district provided such use does not constitute a public nuisance. All permitted uses shall comply with the standards for Flood Fringe district "permitted uses" listed in subsection (e)(2) and the "standards for all flood fringe uses" listed in subsection (e)(5).
 - (2) *Standards for flood fringe permitted uses.*
 - a. All structures, including accessory structures, must be elevated on fill so that the lowest floor including basement floor is at or above the regulatory flood protection elevation. The finished fill elevation for structures shall be no lower than one foot below the regulatory flood protection elevation and the fill shall extend at such elevation at least 15 feet beyond the outside limits of the structure erected thereon.
 - b. As an alternative to elevation on fill, accessory structures that constitute a minimal investment and that do not exceed 500 square feet at their largest projection may be internally floodproofed in accordance with subsection (d)(4)e.3.
 - c. The cumulative placement of fill where at any one time in excess of 1,000 cubic yards of fill is located on the parcel shall be allowable only as a conditional use, unless said fill is specifically intended to elevate a structure in accordance with subsection (e)(2)a.
 - d. The storage of any materials or equipment shall be elevated on fill to the regulatory flood protection elevation.
 - e. The provisions of subsection (e)(5) shall apply.
 - (3) *Conditional uses* . Any structure that is not elevated on fill or floodproofed in accordance with subsections (e)(2)a. and (e)(2)b. and or any use of land that does not comply with the standards in subsections (e)(2)c. and (e)(2)d. shall only be allowable as a conditional use. An application

for a conditional use shall be subject to the standards and criteria and evaluation procedures specified in subsections (e)(4), (e)(5) and (i)(4).

(4) *Standards for flood fringe conditional uses.*

- a. Alternative elevation methods other than the use of fill may be utilized to elevate a structure's lowest floor above the regulatory flood protection elevation. These alternative methods may include the use of stilts, pilings, parallel walls, etc., or above-grade, enclosed areas such as crawl spaces or tuck under garages. The base or floor of an enclosed area shall be considered above-grade and not a structure's basement or lowest floor if:
 1. The enclosed area is above grade on at least one side of the structure;
 2. It is designed to internally flood and is constructed with flood-resistant materials; and
 3. It is used solely for parking of vehicles, building access or storage. The above-noted alternative elevation methods are subject to the following additional standards:
 - (i) *Design and certification.* The structure's design and as-built condition must be certified by a registered professional engineer or architect as being in compliance with the general design standards of the State Building Code and, specifically, that all electrical, heating, ventilation, plumbing and air conditioning equipment and other service facilities must be at or above the regulatory flood protection elevation or be designed to prevent flood water from entering or accumulating within these components during times of flooding.
 - (ii) *Specific standards for above-grade, enclosed areas.* Above-grade, fully enclosed areas such as crawl spaces or tuck under garages must be designed to internally flood and the design plans must stipulate:
 - (iii) A minimum area of openings in the walls where internal flooding is to be used as a floodproofing technique. There shall be a minimum of two openings on at least two sides of the structure and the bottom of all openings shall be no higher than one foot above grade. The automatic openings shall have a minimum net area of not less than one square inch for every square foot of enclosed area subject to flooding unless a registered professional engineer or architect certifies that a smaller net area would suffice. The automatic openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters without any form of human intervention; and
 - (iv) That the enclosed area will be designed of flood-resistant materials in accordance with the FP-3 or FP-4 classifications in the State Building Code and shall be used solely for building access, parking of vehicles or storage.
- b. Basements, as defined by subsection (b)(8)b., shall be subject to the following:
 1. Residential basement construction shall not be allowed below the regulatory flood protection elevation.
 2. Nonresidential basements may be allowed below the regulatory flood protection elevation provided the basement is structurally dry floodproofed in accordance with subsection (e)(4)c.
- c. All areas of nonresidential structures including basements to be placed below the regulatory flood protection elevation shall be floodproofed in accordance with the structurally dry floodproofing classifications in the State Building Code. Structurally dry floodproofing must meet the FP-1 or FP-2 floodproofing classification in the State Building Code and this shall require making the structure watertight with the walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy. Structures floodproofed to the FP-3 or FP-4 classification shall not be permitted.

- d. When at any one time more than 1,000 cubic yards of fill or other similar material is located on a parcel for such activities as on-site storage, landscaping, sand and gravel operations, landfills, roads, dredge spoil disposal or construction of flood control works, an erosion/sedimentation control plan must be submitted unless the community is enforcing a state approved shoreland management ordinance. In the absence of a state approved shoreland ordinance, the plan must clearly specify methods to be used to stabilize the fill on site for a flood event at a minimum of the 100-year or regional flood event. The plan must be prepared and certified by a registered professional engineer or other qualified individual acceptable to the city council. The plan may incorporate alternative procedures for removal of the material from the floodplain if adequate flood warning time exists.
 - e. Storage of materials and equipment:
 - 1. The storage or processing of materials that are, in time of flooding, flammable, explosive, or potentially injurious to human, animal, or plant life is prohibited.
 - 2. Storage of other materials or equipment may be allowed if readily removable from the area within the time available after a flood warning and in accordance with a plan approved by the city council.
 - f. The provisions of subsection (e)(5) shall also apply.
- (5) Standards for all flood fringe uses.
- a. *[New principal structures.]* All new principal structures must have vehicular access at or above an elevation not more than two feet below the regulatory flood protection elevation. If a variance to this requirement is granted, the city council must specify limitations on the period of use or occupancy of the structure for times of flooding and only after determining that adequate flood warning time and local flood emergency response procedures exist.
 - b. *Commercial uses.* Accessory land uses, such as yards, railroad tracks, and parking lots may be at elevations lower than the regulatory flood protection elevation. However, a permit for such facilities to be used by the employees or the general public shall not be granted in the absence of a flood warning system that provides adequate time for evacuation if the area would be inundated to a depth and velocity such that when multiplying the depth (in feet) times velocity (in feet per second) the product number exceeds four upon occurrence of the regional flood.
 - c. *Manufacturing and industrial uses.* Measures shall be taken to minimize interference with normal plant operations especially along streams having protracted flood durations. Certain accessory land uses such as yards and parking lots may be at lower elevations subject to requirements set out in subsection (e)(5)b. above. In considering permit applications, due consideration shall be given to needs of an industry whose business requires that it be located in floodplain areas.
 - d. *[Fill.]* Fill shall be properly compacted and the slopes shall be properly protected by the use of riprap, vegetative cover or other acceptable method. The Federal Emergency Management Agency (FEMA) has established criteria for removing the special flood hazard area designation for certain structures properly elevated on fill above the 100-year flood elevation; FEMA's requirements incorporate specific fill compaction and side slope protection standards for multistructure or multilot developments. These standards should be investigated prior to the initiation of site preparation if a change of special flood hazard area designation will be requested.
 - e. *[Floodplain developments.]* Floodplain developments shall not adversely affect the hydraulic capacity of the channel and adjoining floodplain of any tributary watercourse or drainage system where a floodway or other encroachment limit has not been specified on the official zoning map.
 - f. Standards for recreational vehicles are contained in subsection (h)(3).

- g. All manufactured homes must be securely anchored to an adequately anchored foundation system that resists flotation, collapse and lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state or local anchoring requirements for resisting wind forces.

(f) *Subdivisions.*

- (1) *Review criteria* . No land shall be subdivided which is unsuitable for the reason of flooding, inadequate drainage, water supply or sewage treatment facilities. All lots within the floodplain districts shall be able to contain a building site outside of the Floodway district at or above the regulatory flood protection elevation. All subdivisions shall have water and sewage treatment facilities that comply with the provisions of this section and have road access both to the subdivision and to the individual building sites no lower than two feet below the regulatory flood protection elevation. For all subdivisions in the floodplain, the Floodway and Flood Fringe district boundaries, the regulatory flood protection elevation and the required elevation of all access roads shall be clearly labeled on all required subdivision drawings and platting documents.
- (2) *Removal of special flood hazard area designation* . The Federal Emergency Management Agency (FEMA) has established criteria for removing the special flood hazard area designation for certain structures properly elevated on fill above the 100-year flood elevation. FEMA's requirements incorporate specific fill compaction and side slope protection standards for multistructure or multilot developments. These standards should be investigated prior to the initiation of site preparation if a change of special flood hazard area designation will be requested.

(g) *Public utilities, railroads, roads, and bridges.*

- (1) *Public utilities.* All public utilities and facilities such as gas, electrical, sewer, and water supply systems to be located in the floodplain shall be floodproofed in accordance with the State Building Code or elevated to above the regulatory flood protection elevation.
- (2) *Public transportation facilities.* Railroad tracks, roads, and bridges to be located within the floodplain shall comply with subsections (d) and (e). Elevation to the regulatory flood protection elevation shall be provided where failure or interruption of these transportation facilities would result in danger to the public health or safety or where such facilities are essential to the orderly functioning of the area. Minor or auxiliary roads or railroads may be constructed at a lower elevation where failure or interruption of transportation services would not endanger the public health or safety.
- (3) *On-site sewage treatment and water supply systems.* Where public utilities are not provided:
 - a. On-site water supply systems must be designed to minimize or eliminate infiltration of floodwaters into the systems; and
 - b. New or replacement on-site sewage treatment systems must be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into floodwaters and they shall not be subject to impairment or contamination during times of flooding. Any sewage treatment system designed in accordance with the state's current statewide standards for on-site sewage treatment systems shall be determined to be in compliance with this section.

(h) *Manufactured homes and manufactured home parks and placement of recreational vehicles.*

- (1) New manufactured home parks and expansions to existing manufactured home parks shall be subject to the provisions placed on subdivisions by subsection (f).
- (2) The placement of new or replacement manufactured homes in existing manufactured home parks or on individual lots of record that are located in floodplain districts will be treated as a new structure and may be placed only if elevated in compliance with subsection (e). If vehicular road access for preexisting manufactured home parks is not provided in accordance with

subsection (e)(5)a., then replacement manufactured homes will not be allowed until the property owner(s) develops a flood warning emergency plan acceptable to the city council.

- a. All manufactured homes must be securely anchored to an adequately anchored foundation system that resists flotation, collapse and lateral movement. Methods of anchoring may include, but are not to be limited to, use of over-the-top or frame ties to ground anchors. This requirement is in addition to applicable state or local anchoring requirements for resisting wind forces.
- (3) Recreational vehicles that do not meet the exemption criteria specified in subsection (h)(3)a. below shall be subject to the provisions of this section and as specifically spelled out in subsections (h)(3)c. and (h)(3)d. below.
- a. *Exemption* . Recreational vehicles are exempt from the provisions of this section if they are placed in any of the areas listed in subsection (h)(3)b. below and further they meet the following criteria:
 1. Have current licenses required for highway use.
 2. Are highway ready meaning on wheels or the internal jacking system, are attached to the site only by quick disconnect type utilities commonly used in campgrounds and recreational vehicle parks and the recreational vehicle has no permanent structural type additions attached to it.
 3. The recreational vehicle and associated use must be permissible in any pre-existing, underlying zoning use district.
 - b. *Areas exempted for placement of recreational vehicles*.
 1. Individual lots or parcels of record.
 2. Existing commercial recreational vehicle parks or campgrounds.
 3. Existing condominium type associations.
 - c. *[Loss of exemption.]* Recreational vehicles exempted in subsection (h)(3)a. lose this exemption when development occurs on the parcel exceeding \$500.00 for a structural addition to the recreational vehicle or exceeding \$500.00 for an accessory structure such as a garage or storage building. The recreational vehicle and all additions and accessory structures will then be treated as a new structure and shall be subject to the elevation/floodproofing requirements and the use of land restrictions specified in subsections (d) and (e). There shall be no development or improvement on the parcel or attachment to the recreational vehicle that hinders the removal of the recreational vehicle to a flood-free location should flooding occur.
 - d. New commercial recreational vehicle parks or campgrounds and new residential type subdivisions and condominium associations and the expansion of any existing similar use exceeding five (5) units or dwelling sites shall be subject to the following:
 1. Any new or replacement recreational vehicle will be allowed in the Floodway or Flood Fringe districts provided said recreational vehicle and its contents are placed on fill above the regulatory flood protection elevation and proper elevated road access to the site exists in accordance with subsection (e)(5)a. No fill placed in the floodway to meet the requirements of this section shall increase flood stages of the 100-year or regional flood.
 2. All new or replacement recreational vehicles not meeting the criteria of [subsection] (a) above may, as an alternative, be allowed as a conditional use if in accordance with the following provisions and the provisions of [subsection] (i)(4). The applicant must submit an emergency plan for the safe evacuation of all vehicles and people during the 100-year flood. Said plan shall be prepared by a registered engineer or other qualified individual, shall demonstrate that adequate time and personnel exist to carry out the evacuation, and shall demonstrate the provisions of subsections (h)(3)a.1. and

(h)(3)a.2. will be met. All attendant sewage and water facilities for new or replacement recreational vehicles must be protected or constructed so as to not be impaired or contaminated during times of flooding in accordance with subsection (g)(3).

(i) *Administration.*

(1) *Zoning administrator* . A zoning administrator or other official designated by the city council shall administer and enforce this section. If the zoning administrator finds a violation of the provisions of this section the zoning administrator shall notify the person responsible for such violation in accordance with the procedures stated in subsection (k).

(2) *Permit requirements.*

- a. *Permit required* . A permit issued by the zoning administrator in conformity with the provisions of this section shall be secured prior to the erection, addition, modification, rehabilitation (including normal maintenance and repair), or alteration of any building, structure, or portion thereof; prior to the use or change of use of a building, structure, or land; prior to the construction of a dam, fence, or on-site septic system; prior to the change or extension of a nonconforming use; prior to the repair of a structure that has been damaged by flood, fire, tornado, or any other source; and prior to the placement of fill, excavation of materials, or the storage of materials or equipment within the floodplain.
- b. *Application for permit* . Application for a permit shall be made in duplicate to the zoning administrator on forms furnished by the zoning administrator and shall include the following where applicable:
 1. Plans in duplicate drawn to scale, showing the nature, location, dimensions, and elevations of the lot;
 2. Existing or proposed structures, fill, or storage of materials; and
 3. The location of the foregoing in relation to the stream channel.
- c. *State and federal permits* . Prior to granting a permit or processing an application for a conditional use permit or variance, the zoning administrator shall determine that the applicant has obtained all necessary state and federal permits.
- d. *Certificate of zoning compliance for a new, altered, or nonconforming use* . It shall be unlawful to use, occupy, or permit the use or occupancy of any building or premises or part thereof hereafter created, erected, changed, converted, altered, or enlarged in its use or structure until a certificate of zoning compliance shall have been issued by the zoning administrator stating that the use of the building or land conforms to the requirements of this section.
- e. *Construction and use to be as provided on applications, plans, permits, variances and certificates of zoning compliance* . Permits, conditional use permits, or certificates of zoning compliance issued on the basis of approved plans and applications authorize only the use, arrangement, and construction set forth in such approved plans and applications, and no other use, arrangement, or construction. Any use, arrangement, or construction at variance with that authorized shall be deemed a violation of this section, and punishable as provided by subsection (k).
- f. *Certification* . The applicant shall be required to submit certification by a registered professional engineer, registered architect, or registered land surveyor that the finished fill and building elevations were accomplished in compliance with the provisions of this section. Floodproofing measures shall be certified by a registered professional engineer or registered architect.
- g. *Record of first floor elevation* . The zoning administrator shall maintain a record of the elevation of the lowest floor (including basement) of all new structures and alterations or additions to existing structures in the floodplain. The zoning administrator shall also

maintain a record of the elevation to which structures or alterations and additions to structures are floodproofed.

- h. *Notifications for watercourse alterations* . The zoning administrator shall notify, in riverine situations, adjacent communities and the Commissioner of the Department of Natural Resources prior to the community authorizing any alteration or relocation of a watercourse. If the applicant has applied for a permit to work in the beds of public waters pursuant to Minn. Stat., ch. 103G, this shall suffice as adequate notice to the Commissioner of Natural Resources. A copy of said notification shall also be submitted to the Chicago Regional Office of the Federal Emergency Management Agency (FEMA).
- i. Notification to FEMA when physical changes increase or decrease the 100-year flood elevation. As soon as is practicable, but not later than six months after the date such supporting information becomes available, the zoning administrator shall notify the Chicago Regional Office of FEMA of the changes by submitting a copy of said technical or scientific data.

(3) *City council.*

- a. *Rules.* The city council shall adopt rules for the conduct of business and may exercise all of the powers conferred on such boards by state law.
- b. *Administrative review.* The city council shall hear and decide appeals where it is alleged there is error in any order, requirement, decision, or determination made by an administrative official in the enforcement or administration of this section.
- c. *Variances.* The city council may authorize upon appeal in specific cases such relief or variance from the terms of this section as will not be contrary to the public interest and only for those circumstances such as hardship, practical difficulties or circumstances unique to the property under consideration, as provided for in the respective enabling legislation for planning and zoning for cities or counties as appropriate. In the granting of such variance, the city council shall clearly identify in writing the specific conditions that existed consistent with the criteria specified in this section, any other zoning regulations in the community, and in the respective enabling legislation that justified the granting of the variance. No variance shall have the effect of allowing in any district uses prohibited in that district, permit a lower degree of flood protection than the regulatory flood protection elevation for the particular area, or permit standards lower than those required by state law. The following additional variance criteria of the Federal Emergency Management Agency must be satisfied:
 - 1. Variances shall not be issued by a community within any designated regulatory floodway if any increase in flood levels during the base flood discharge would result.
 - 2. Variances shall only be issued by a community upon:
 - (i) A showing of good and sufficient cause,
 - (ii) A determination that failure to grant the variance would result in exceptional hardship to the applicant, and
 - (iii) A determination that the granting of a variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or ordinances.
 - 3. Variances shall only be issued upon a determination that the variance is the minimum necessary, considering the flood hazard, to afford relief.
- d. *Hearings.* upon filing with the city council of an appeal from a decision of the zoning administrator, or an application for a variance, the city council shall fix a reasonable time for a hearing and give due notice to the parties in interest as specified by law. The city council shall submit by mail to the Commissioner of Natural Resources a copy of the

application for proposed variances sufficiently in advance so that the commissioner will receive at least ten days' notice of the hearing.

- e. *Decisions.* The city council shall arrive at a decision on such appeal or variance within 60 days. In acting upon an appeal, the city council may, so long as such action is in conformity with the provisions of this section, reverse or affirm, wholly or in part, or modify the order, requirement, decision or determination of the zoning administrator or other public official. It shall make its decision in writing setting forth the findings of fact and the reasons for its decisions. In granting a variance the city council may prescribe appropriate conditions and safeguards such as those specified in subsection (i)(4)e., which are in conformity with the purposes of this section. Violations of such conditions and safeguards, when made a part of the terms under which the variance is granted, shall be deemed a violation of this section punishable under subsection (k). A copy of all decisions granting variances shall be forwarded by mail to the Commissioner of Natural Resources within ten days of such action.
 - f. *Appeals.* Appeals from any decision of the city council may be made, and as specified in this community's official controls and also by Minnesota Statutes.
 - g. *Flood insurance notice and record keeping.* The zoning administrator shall notify the applicant for a variance that:
 - 1. The issuance of a variance to construct a structure below the base flood level will result in increased premium rates for flood insurance up to amounts as high as \$25.00 for \$100.00 of insurance coverage; and
 - 2. Such construction below the 100-year or regional flood level increases risks to life and property. Such notification shall be maintained with a record of all variance actions. A community shall maintain a record of all variance actions, including justification for their issuance, and report such variances issued in its annual or biennial report submitted to the administrator of the National Flood Insurance Program.
- (4) *Conditional uses.* The city council and planning commission shall hear and decide applications for conditional uses permissible under this section. Applications shall be submitted to the zoning administrator who shall forward the application to the planning commission for consideration. The planning commission will make a recommendation and then forward to the city council for consideration.
- a. *Hearings.* Upon filing with the city an application for a conditional use permit, the city shall submit by mail to the Commissioner of Natural Resources a copy of the application for proposed conditional use sufficiently in advance so that the commissioner will receive at least ten days' notice of the hearing.
 - b. *Decisions.* The city council shall arrive at a decision on a conditional use within 60 days except where additional time is permitted. In accordance with state law, in no case shall the city take longer than 120 days to arrive at a decision. In granting a conditional use permit the city council shall prescribe appropriate conditions and safeguards, in addition to those specified in subsection (i)(4)e., which are in conformity with the purposes of this section. Violations of such conditions and safeguards, when made a part of the terms under which the conditional use permit is granted, shall be deemed a violation of this section punishable under subsection (k). A copy of all decisions granting conditional use permits shall be forwarded by mail to the Commissioner of Natural Resources within ten days of such action.
 - c. *Procedures to be followed by the City Council and Planning Commission in acting on conditional use permit applications within all floodplain districts.*
 - 1. Require the applicant to furnish such of the following information and additional information as deemed necessary by the planning commission and city council for determining the suitability of the particular site for the proposed use:

- (i) Plans in triplicate drawn to scale showing the nature, location, dimensions, and elevation of the lot, existing or proposed structures, fill, storage of materials, floodproofing measures, and the relationship of the above to the location of the stream channel; and
 - (ii) Specifications for building construction and materials, floodproofing, filling, dredging, grading, channel improvement, storage of materials, water supply and sanitary facilities.
 2. Transmit one copy of the information described in subsection 1. to a designated engineer or other expert person or agency for technical assistance, where necessary, in evaluating the proposed project in relation to flood heights and velocities, the seriousness of flood damage to the use, the adequacy of the plans for protection, and other technical matters.
 3. Based upon the technical evaluation of the designated engineer or expert, the city council shall determine the specific flood hazard at the site and evaluate the suitability of the proposed use in relation to the flood hazard.
- d. *Factors upon which the decision of the planning commission and city council shall be based* . In passing upon conditional use applications, the planning commission and city council shall consider all relevant factors specified in other sections of this section, and:
 1. The danger to life and property due to increased flood heights or velocities caused by encroachments.
 2. The danger that materials may be swept onto other lands or downstream to the injury of others or they may block bridges, culverts or other hydraulic structures.
 3. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination, and unsanitary conditions.
 4. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owner.
 5. The importance of the services provided by the proposed facility to the community.
 6. The requirements of the facility for a waterfront location.
 7. The availability of alternative locations not subject to flooding for the proposed use.
 8. The compatibility of the proposed use with existing development and development anticipated in the foreseeable future.
 9. The relationship of the proposed use to the comprehensive plan and floodplain management program for the area.
 10. The safety of access to the property in times of flood for ordinary and emergency vehicles.
 11. The expected heights, velocity, duration, rate of rise, and sediment transport of the floodwaters expected at the site.
 12. Such other factors which are relevant to the purposes of this Ordinance.
- e. *Conditions attached to conditional use permits* . Upon consideration of the factors listed above and the purpose of this section, the planning commission and city council shall attach such conditions to the granting of conditional use permits as it deems necessary to fulfill the purposes of this section. Such conditions may include, but are not limited to, the following:
 1. Modification of waste treatment and water supply facilities.
 2. Limitations on period of use, occupancy, and operation.

3. Imposition of operational controls, sureties, and deed restrictions.
4. Requirements for construction of channel modifications, compensatory storage, dikes, levees, and other protective measures.
5. Floodproofing measures, in accordance with the State Building Code and this section. The applicant shall submit a plan or document certified by a registered professional engineer or architect that the floodproofing measures are consistent with the regulatory flood protection elevation and associated flood factors for the particular area.

(j) *Nonconforming uses.*

- (1) A structure or the use of a structure or premises which was lawful before the passage or amendment of this section but which is not in conformity with the provisions of this section may be continued subject to the following conditions. Historic structures, as defined in subsection (b)(8)u.2., shall be subject to the provisions of subsections (j)(1)a. through (j)(1)d.
 - a. No such use shall be expanded, changed, enlarged, or altered in a way that increases its nonconformity except as authorized by law.
 - b. Any structural alteration or addition to a nonconforming structure or nonconforming use which would result in increasing the flood damage potential of that structure or use shall be protected to the regulatory flood protection elevation in accordance with any of the elevation on fill or floodproofing techniques (i.e., FP-1 through FP-4 floodproofing classifications) allowable in the State Building Code, except as further restricted in [subsection] (j)(1)c. below.
 - c. If any nonconforming use is discontinued for 12 consecutive months, any future use of the building premises shall conform to this section. The assessor shall notify the zoning administrator in writing of instances of nonconforming uses that have been discontinued for a period of 12 months.
 - d. If any nonconforming use or structure is substantially damaged, as defined in subsection (b)(8)t. it shall not be reconstructed except in conformity with the provisions of this section. The applicable provisions for establishing new uses or new structures in subsections (d) and (e) will apply depending upon whether the use or structure is in the Floodway or Flood Fringe district, respectively.

(k) *Penalties for violation.*

- (1) Violation of the provisions of this section or failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with grants of variances or conditional uses) shall constitute a misdemeanor and shall be punishable as defined by law.
- (2) Nothing herein contained shall prevent the city from taking such other lawful action as is necessary to prevent or remedy any violation. Such actions may include but are not limited to:
 - a. In responding to a suspected ordinance violation, the zoning administrator and other government agencies may utilize the full array of enforcement actions available to it including but not limited to prosecution and fines, injunctions, after-the-fact permits, orders for corrective measures or a request to the National Flood Insurance Program for denial of flood insurance availability to the guilty party. The community must act in good faith to enforce these official controls and to correct ordinance violations to the extent possible so as not to jeopardize its eligibility in the National Flood Insurance Program.
 - b. When an ordinance violation is either discovered by or brought to the attention of the zoning administrator, the zoning administrator shall immediately investigate the situation and document the nature and extent of the violation of the official control. As soon as is reasonably possible, this information will be submitted to the appropriate Department of

Natural Resources and Federal Emergency Management Agency Regional Office along with the community's plan of action to correct the violation to the degree possible.

- c. The zoning administrator shall notify the suspected party of the requirements of this section and all other official controls and the nature and extent of the suspected violation of these controls. If the structure and/or use is under construction or development, the zoning administrator may order the construction or development immediately halted until a proper permit or approval is granted by the community. If the construction or development is already completed, then the zoning administrator may either:
 1. Issue an order identifying the corrective actions that must be made within a specified time period to bring the use or structure into compliance with the official controls; or
 2. Notify the responsible party to apply for an after-the-fact permit/development approval within a specified period of time not to exceed 30 days.
- d. If the responsible party does not appropriately respond to the zoning administrator within the specified period of time, each additional day that lapses shall constitute an additional violation of this section and shall be prosecuted accordingly. The zoning administrator shall also upon the lapse of the specified response period notify the landowner to restore the land to the condition which existed prior to the violation of this section.

(l) *Amendments.*

- (1) The floodplain designation on the official zoning map shall not be removed from floodplain areas unless it can be shown that the designation is in error or that the area has been filled to or above the elevation of the regulatory flood protection elevation and is contiguous to lands outside the floodplain. Special exceptions to this rule may be permitted by the Commissioner of Natural Resources if they determine that, through other measures, lands are adequately protected for the intended use.
- (2) All amendments to this section, including amendments to the official zoning map, must be submitted to and approved by the Commissioner of Natural Resources prior to adoption. Changes in the official zoning map must meet the Federal Emergency Management Agency's (FEMA) Technical Conditions and Criteria and must receive prior FEMA approval before adoption. The Commissioner of Natural Resources must be given ten days' written notice of all hearings to consider an amendment to this section and said notice shall include a draft of the ordinance amendment or technical study under consideration.

(Ord. No. 1251, § 2, 11-7-2011)

State Law reference— Floodplain Management Law, Minn. Stat. § 103F.101 et seq.; local floodplain management ordinances, Minn. Stat. § 103F.121.

**APPENDIX H – CITY OF SOUTH ST. PAUL’S STORMWATER
MANAGEMENT DESIGN STANDARDS**



Stormwater Management Design Standards

City of South St. Paul

May 2018

Stormwater Management Design Standards

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1. DESIGN OVERVIEW

The City of South St. Paul's Stormwater Pollution Prevention Plan (SWPPP) identifies the goals and policies that define the City's stormwater management program, which are implemented via the City Stormwater Management Ordinance (Article IV) and these Stormwater Management Design Standards. South St. Paul's stormwater requirements were written to meet the City's goals to preserve, protect, and manage its water resources as well as to meet federal, state, and watershed stormwater regulations and to meet the following objectives:

- Minimize increases in stormwater runoff rates from any development to reduce flooding, siltation and erosion and in order to maintain the integrity of stream channels,
- Minimize increases in nonpoint source pollution caused by stormwater runoff from development which would otherwise degrade local water quality,
- Minimize the total annual volume of surface water runoff that flows from any specific site during and following development so as not to exceed the predevelopment hydrologic regime to the maximum extent practicable,
- Ensure that these management controls are properly maintained and pose no threat to public safety, and
- Implement stormwater management controls to help meet current and future total maximum daily load (TMDL) goals, to address the need to improve water quality, and to meet objectives in the Local Surface Water Management Plan.

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2. DEFINITIONS

For the purpose of this Design Manual, the following definitions describe the meaning of the terms used in this Design Manual:

Applicant means a property owner or agent of a property owner who has filed an application for a Stormwater Management Permit.

Applicability means any land disturbing activity requiring a City of South St. Paul's Stormwater Management Plan as defined in City Zone Code Article IV: Stormwater Management.

Channel means a natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

Erosion and Sediment Control Plan means otherwise known as a stormwater pollution prevention plan (SWPPP) which is a set of plans prepared by or under the direction of a licensed professional engineer or certified contractor indicating the specific measures and sequencing to be used to control the sediment and erosion on a project site during and after construction.

Impervious Area means those surfaces that cannot effectively infiltrate rainfall (e.g., building rooftops, pavement, sidewalks, gravel, driveways, swimming pools, etc.).

Land Disturbance Activity means any activity that changes the volume or peak discharge rate of stormwater runoff from the land surface. This may include the grading, digging, cutting, scraping, or excavating of soil, placement of fill materials, paving, construction, substantial removal of vegetation, or any activity that bares soil or rock or involves the diversion or piping of any natural or fabricated watercourse.

Maintenance Agreement means document recorded against the property which provides for long-term maintenance of stormwater treatment practices.

Minimum Impact Design Standards (MIDS) means design requirements such that the rate and volume control and water quality standards of predevelopment stormwater reaching receiving waters is unchanged compared to the runoff from developed land.

National Pollutant Discharge Elimination System (NPDES) means the program for issuing, modifying, revoking, reissuing, terminating, monitoring, and enforcing permits under the

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Clean Water Act (Sections 301, 318, 402, and 405) and United States Code of Federal Regulations Title 33, Sections 1317, 1328, 1342, and 1345.

New Development means all construction activity that is not defined as redevelopment. Land that was previously developed, but now razed and vacant, will not be considered new development.

Nonpoint Source Pollution means pollution from any source other than from any discernible, confined, and discrete conveyances, and shall include but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

Off-Site Facility means a stormwater management measure located outside the subject property boundary described in the permit application for land development activity.

Redevelopment means any construction activity where, prior to the start of construction, the areas to be disturbed have 15 percent or more of impervious surface(s).

Responsible Party means the entity which will be responsible for ownership and maintenance of Stormwater Treatment Practices.

Stop Work Order means an order which requires that all construction activity on a site be stopped.

Stormwater Management means the use of structural or non-structural practices that are design to reduce stormwater runoff pollutant loads, discharge volumes, and/or peak discharge rates.

Stormwater Management Plan means a set of drawings or other documents submitted by a person as a prerequisite to obtaining a stormwater management approval, which contains all of the required information and specifications pertaining to Stormwater Management.

Stormwater Reviews means any site that the either increases impervious surface by greater than 1 acre or redevelops 1 acre or greater of impervious. The review will be completed to evaluate compliance with the City of South St. Paul's water quality and water quality requirements as specified in these standards. For sites either creating or redeveloping less than 1 acre of impervious the City will work with the applicant to determine if water quality practices can be incorporated into the site. Sites less than 1 acre will also not be allowed their drainage to negatively impact downstream properties (or water bodies).

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Stormwater Runoff means flow on the surface of the ground, resulting from precipitation.

Stormwater Treatment Practices (STPs) means measures, either structural or nonstructural, that are determined to be the most effective and practical means of preventing or reducing point source or nonpoint-source pollution inputs to stormwater runoff and waterbodies.

Water Quality Volume (WQ_v) means that runoff storage volume needed to treat the specified phosphorus loading as determined in the South St. Paul Stormwater Management Design Standards.

Watercourse means a permanent or intermittent stream or other body of water, either natural or fabricated, which gathers or carries surface water.

Watershed means the total drainage area contributing runoff to a single point.

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3. APPLICABILITY

An Erosion and Sediment Control (ESC) Plan and/or Stormwater Management Plan (SWMP) may be required, based on the criteria outlined below. These plans shall be consistent with NPDES permit requirements, and the filing or approval requirements of other regulatory bodies. When required, these plans shall be approved prior to the issuance of any permits.

3.1 Erosion and Sediment Control

Unless otherwise exempted by these Standards, Applicants are required to follow the Erosion and Sediment Control requirements of Section 6 of these Standards and are encouraged to incorporate the Stormwater Management requirements of Section 7 and 8, for all proposed land disturbing activities within the City that meet any or all of the following:

1. Involves excavation or filling, or a combination of excavation and filling, in excess of 100 cubic yards of material; or
2. Is a land disturbing activity, regardless of size, that the City determines is likely to cause an adverse impact to an environmentally sensitive area or other property, or may violate any other erosion and sediment control standard set forth in this ordinance.

3.2 Stormwater Management

Unless otherwise exempted in these Standards, Applicants are required to develop a Stormwater Management Plan that meets the requirements of Sections 7 and 8 of these Standards, for all proposed land disturbing activities that meet any or all of the following:

1. Any land disturbing activity that may ultimately result in the addition of 1.0 acre or greater of impervious surfaces, including smaller individual sites that are part of a common plan of development that may be constructed at different times; or
2. Any land disturbance activity, regardless of size, that the City determines is likely to cause an adverse impact to an environmentally sensitive area or other property.

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4. SUBMITTAL REQUIREMENTS

Stormwater Management Plan Requirements

A stormwater management plan shall be submitted with the permit application for a project equaling or exceeding the thresholds of Section 3. The stormwater management plan shall fully address the design and function of the project proposal and the effects of altering the landscape relative to the direction, rate of discharge, volume of discharge and timing of runoff.

No building permit will be approved unless it includes a Stormwater Management Plan detailing how runoff and associated water quality impacts resulting from the development will be controlled or managed. This plan must indicate whether stormwater will be managed on-site or off-site and, if on-site, the general location and type of practices.

The Stormwater Management Plan must be signed by a licensed professional engineer in the State of Minnesota, who will verify that the design of all stormwater management practices meet the submittal requirements outlined in the Submittal Checklist found in Appendix A. No building permit, grading permit, sediment control permit, or subdivision approval shall be issued until a satisfactory final Stormwater Management Plan, or a waiver thereof, shall have undergone a review and been approved by the City after determining that the plan waiver is consistent with the requirements of this manual.

Record drawings are required for all projects that impact wetlands and/or the floodplain, require water quality ponding, have significant grade changes, and/or have other unusual circumstances. Record drawings must be certified by a professional land surveyor or civil engineer. (Record drawings should not include temporary erosion control measures.)

Stormwater Management Conceptual Plan Requirements

A stormwater management concept plan submittal is required. A concept plan identifies basic site information, locations of proposed development features, and preliminary locations and sizing of STPs. The City prefers to provide water quality improvement through the use of regional stormwater treatment systems versus site-by-site systems. If regional systems are not available, on-site treatment may be required. The concept submittal has a greater chance of identifying major obstacles and can facilitate alternative stormwater management arrangements in a timely fashion and at the onset of project planning. If a concept plan is submitted for review, it should include sufficient information (e.g., maps, basic hydrologic and water quality calculations etc.) to evaluate the environmental characteristics of the project site. This information should show the potential impacts of all proposed development of the site, both present and future, on the water resources, and show the effectiveness and acceptability of the measures proposed for managing stormwater generated at the project site. The intent of this

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conceptual planning process is to determine the type of stormwater management of stormwater runoff from future development, and to identify major issues prior to completing final plans. The concept plan is less time consuming and more efficient to evaluate proposed development plans with this step of the review process. The following information shall be included with this concept plan:

1. A map (or maps) indicating the location of existing and proposed buildings, roads, parking areas, utilities, structural stormwater management and sediment control facilities. The map(s) will also clearly show proposed land use with tabulation of the percentage of surface area to be adapted to various uses; drainage patterns; locations of utilities, roads and easements; the limits of clearing and grading; a written description of the site plan and justification of proposed changes in natural conditions may be required.
2. Sufficient calculations to show that the proposed stormwater management measures are capable of controlling runoff from the site in compliance with this Stormwater Management Design Manual.
3. A written or graphic inventory of the natural resources at the site and surrounding area as it exists prior to the commencement of the project and a description of the watershed and its relation to the project site. This description should include a discussion of solid conditions, forest cover, topography, wetlands, and other native vegetative areas on the site. Particular attention should be paid to environmentally sensitive features that provide opportunities or constraints for development.
4. A brief written description of the required maintenance burden for the proposed stormwater management facility.

The final plan provides more detailed design information for the proposed STPs, and includes much more detail in terms of hydrologic conditions and site features.

For redevelopment, an applicant should include within a concept plan measures for controlling existing stormwater runoff discharges and water quality from the site in accordance with the standards of this Manual. After review of the concept plan and modifications are made to that plan as deemed necessary by the City, a final Stormwater Management Plan may be submitted for approval.

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5. PLAN REVIEW PROCEDURES

The general review process, from the submittal of the concept and final plans to the issuance of the Stormwater Management Plan approval, is summarized in the following seven steps:

1. Determine what stormwater management provisions apply (stormwater management, erosion control, buffers, floodplain management).
2. What permits, or approvals, are required for the project site, and what waivers and/or exemptions are applicable (COE, DNR, MPCA, Lower Mississippi Watershed District, WCA, etc.)
3. Are the selected practices appropriate for this site?
4. Are the practices designed to meet the minimum performance criteria?
5. Does the Plan meet other resource protection requirements as specified in the City of South St. Paul's Code?
6. Are provisions for long-term maintenance adequate, including access and methods for maintenance defined?

Any changes to the approved plan must be submitted to the City for review and approval before work can commence.

No development, utility or street construction will be allowed and no Building Permits will be issued unless the development is in full compliance with the requirements of these Standards.

If the City determines that the Stormwater Management Plans and/or Runoff Control Plan and an Erosion and Sediment Control Plan meet the requirements of these standards, the City shall issue a permit valid for a specified period of time that authorizes the land disturbance activity contingent on the implementation and completion of this plan.

If the City determines that the Stormwater Management Plan and/or Erosion and Sediment Control Plan do not meet the requirements of these Standards, the City shall not issue a permit for the land disturbance activity. The Plans must be resubmitted for approval before the land disturbance activity can begin. All land use and building permits shall be suspended until the developer has an authorized permit.

Modification of Plan – The applicant must amend the ESC Plan or SWMP as necessary to correct problems identified or address situations whenever:

1. A change in design, construction, operation, maintenance, weather, or seasonal conditions that has a significant effect on the discharge or pollutants to surface waters or underground waters.

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2. Inspections or investigations indicate the plans are not effective in eliminating or significantly minimizing the discharge or pollutants to surface waters or underground waters or that the discharges are causing water quality degradation;
or
3. The plan is not achieving the general objectives of minimizing pollutants in stormwater discharges associated with construction activity; or
4. The plan is not consistent with the terms and conditions of these standards.

6. CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

6.1 Erosion Control

1. The Permittee must plan for and implement appropriate construction phasing vegetative buffer strips, horizontal slope grading, and other construction practices to minimize erosion. All areas not to be disturbed shall be marked (e.g. with flags, stakes, signs, silt fence etc.) on the project site before any work begins.
2. 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 and no later than seven (7) days after construction activity in that portion of the site has temporarily or permanently ceased when discharge points on the project is within one mile of a special or impaired water and flows to that special or impaired water.
3. Additional BMPs together with enhanced runoff controls, are required for discharges to special waters and impaired waters. The BMPs identified for each special or impaired water are required for those areas of the project draining to a discharge point on the project that is within one mile of a special or impaired water and flows to that water. The additional BMPs are identified in Appendix A of the NPDES Construction General Permit.
4. The permittee must stabilize the normal wetted perimeter of any temporary or permanent drainage ditch or swale that drains water from any portion of the construction site, or diverts water around the site, within 200 linear feet from the property edge, or from the point of discharge into any surface water. Stabilization of the last 200 linear feet must be completed within 24-hours after connecting to a surface water or property edge.
5. Pipe outlets must have temporary or permanent energy dissipation before connecting to surface water.
6. When possible, all slopes must be graded in such a fashion so that tracking marks made from heavy equipment are perpendicular to the slope.
7. All areas disturbed during construction must be restored as detailed in these requirements. The type of permanent restoration shall be clearly shown on the plans including but not limited to sod, seed, impervious cover and structures. A minimum of 6 inches of topsoil must be installed prior to permanent restoration. Areas in which the top soil has been placed and finish graded or areas that have been disturbed and other grading or site building construction operations are not actively underway must be temporary or permanently restored as set forth in the following requirements.
 - 1) Areas with slopes that are less than 3:1 must be seeded and mulched within 14 days of the area not being actively worked.

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- 2) Areas with slopes that are greater or equal to 3:1 must be seeded and erosion control blanket placed within 14 days of the area not being actively worked.
- 3) All seeded area must be either mulched and disc anchored, hydro- mulched, or covered by erosion control blanket to reduced erosion and protects the seed. Temporary or permanent mulch must be disc anchored and applied at a uniform rate of 2 tons per acre and have 90% coverage.
- 4) If the disturbed area will be re-disturbed within a six-month period, temporary vegetative cover shall be required consisting of an approved seed mixture and application rate.
- 5) If the disturbed area will not be re-disturbed within a six-month period, permanent vegetative cover shall be required consisting of an approved seed mixture and application rate.
- 6) All areas that will not have maintenance done such as mowing as part of the final design shall be permanently restored using an approved seed mixture and application rate.
- 7) Restoration of disturbed wetland areas shall be accomplished using an approved seed mixture and application rate.
8. All erosion control measures must be maintained for the duration of the project until final stabilization has been achieved. If construction operations or natural events damage or interfere with any erosion control measures, they shall be restored to serve their intended function.
9. Additional erosion control measures shall be added as necessary to effectively protect the natural resources of the City. The temporary and permanent erosion control plans shall be revised as needed based on current site conditions and to comply with all applicable requirements

6.2 Sediment Control Practices

1. Sediment control practices must be established on all down gradient perimeters before any up gradient land disturbing activities begin. These practices must remain in place until final stabilization has been achieved.
2. If down gradient treatment system is overloaded additional up gradient sediment control practices must be installed to eliminate overloading. The SWPPP must be amended to identify the additional practices.
3. All storm drain inlets must be protected by approved BMPs during construction until all potential sources for discharge have been stabilized. These devices must be maintained until final stabilization is achieved. Inlet protection may be removed if a specific safety concern (street flooding/freezing) has been identified.
4. Temporary stockpiles must have silt fence or other effective sediment controls on the down gradient side of the stockpile and shall not be placed within twenty-five

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- (25) feet from any road, wetland, protected water, drainage channel, or stormwater inlets. Stockpiles left for more than 14 days must be stabilized with mulch, vegetation, tarps or other approved means.
5. Vehicle tracking of sediment from the project site shall be minimized by approved BMPs. These shall be installed and maintained at the City approved entrances. Individual lots shall each be required to install and maintain entrances throughout the construction building until a paved driveway is installed.
 6. Sediment that has washed or tracked from the site by motor vehicles or equipment shall be cleaned from paved surfaces throughout the duration of construction.
 7. Silt fence or other approved sediment control devices must be installed in all areas as shown on the SWPPP.
 8. Silt fence or other approved sediment control devices shall be required along the entire curb line, except for approved opening where construction entrance will be installed or drainage flows away from curb. This device must be maintained until final stabilization is achieved. Ditch checks shall be required in ditch bottoms. Spacing for the ditch checks must be as followed:
$$\frac{\text{Height (of the sediment device used)[ft]} \times 100}{\text{Slope Gradient}}$$
 9. Dust control measures, such as application of water must be performed periodically due to weather, construction activity, and/or as directed by the City.
 10. Flows from diversion channels or pipes (temporary or permanent) must be routed to sedimentation basins or appropriate energy dissipaters to prevent the transport of sediment to outflow or lateral conveyors and to prevent erosion and sediment buildup when runoff flows into the conveyors.
 11. A concrete washout shall be installed on projects that require the use of concrete. All liquid and solid wastes generated by concrete washout operations must be contained in a leak-proof containment facility or impermeable liner. A sign must be installed adjacent to each washout facility to inform operators to utilize the proper facilities.
 12. All sediment control measures shall be used and maintained for the duration of the project until final. If construction operations or natural events damage or interfere with any erosion control measures, they must be restored to serve their intended function.
 13. Additional sediment control measures shall be added as necessary to effectively protect the natural resources of the City. The temporary and permanent erosion control plans shall be revised as needed based on current site conditions and to comply with all applicable requirements.
 14. Restrict clearing and grading adjacent to an existing wetland boundary to

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provide for a protective buffer strip of natural vegetation as per Section 8.

6.3 Temporary Sediment Basins

A temporary sediment basin (or permanent) shall be provided when 10 or more acres of disturbed soil drain to a common location prior to the runoff leaving the site or entering surface waters. The Permittee is also encouraged, but not required to install temporary sediment basins in areas with steep slope or highly erodible soils even if the area is less than ten (10) acres and it drains to one common area. The basins shall be designed and constructed according to the following requirements:

1. The basins must provide storage below the outlet pipe for a calculated volume of runoff from a 2-year, 24-hour storm from each acre drained to the basin, except that in no case shall the basin provide less than 1,800 cubic feet of storage below the outlet pipe from each acre drained to the basin.
2. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage below the outlet pipe per acre drained to the basin shall be provided where attainable until final stabilization of the site.
3. Temporary basin outlets will be designed to prevent short-circuiting and the discharge of floating debris. The basin must be designed with the ability to allow complete basin drawdown (e.g., perforated riser pipe wrapped with filter fabric and covered with crushed gravel, pumps or other means) for maintenance activities, and provide a stabilized emergency overflow to prevent failure of pond integrity. Energy dissipation must be provided for the basin outlet.
4. In the construction of new basin outlets, skimmers are required. Skimmers are also required to be incorporated into the existing system whenever feasible and practical.
5. Temporary (or permanent) basins must be constructed and made operational concurrent with the start of soil disturbance that is up gradient of the area and contributes runoff to the pond.
6. Where the temporary sediment basin is not attainable due to site limitations, equivalent sediment controls such as smaller sediment basins, and/or sediment traps, silt fences, vegetative buffer strips or any appropriate combination of measures are required for all down slope boundaries of the construction area and for those side slope boundaries deemed appropriate as dictated by individual site conditions. In determining whether installing a sediment basin is attainable, the Permittee must consider public safety and may consider factors such as site soils, slope, and available area on-site. This determination must be documented in the SWPPP.

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7. The Permittee shall maintain the sedimentation basins and will remain functional until an acceptable vegetative cover is restored to the site, resulting in a pre-development level rate of erosion. The city will not issue building permits for lots containing sediment basins until they have been removed or relocated based on the projects restoration progress.
8. Basins designed to be used for permanent stormwater management shall be brought back to their original design contours prior to acceptance by the City.

6.4 Dewatering and Basin Draining

1. If water cannot be discharged into a sedimentation basin before entering a surface water it must be treated with appropriate BMPs, such that the discharge does not adversely affect the receiving water or downstream landowners. The Permittee must make sure discharge points are appropriately protected from erosion and scour. The discharge must be dispersed over riprap, sand bags, plastic sheeting or other acceptable energy dissipation measures. Adequate sediment control measures are required for discharging water that contains suspended soils.
2. All water from dewatering or basin draining must discharge in a manner that does not cause nuisance conditions, erosion in receiving channels or on downslope properties, or inundation in wetlands causing significant adverse impacts to wetlands.

6.5 Inspections and Maintenance

1. The Permittee shall be responsible for inspecting and maintenance of the BMPs.
2. The Permittee must routinely inspect the construction project once every seven (7) days during active construction and within 24-hours of a rainfall event of 0.5 inches or greater in 24-hours.
3. All inspections and maintenance conducted during construction must be recorded in writing and must be retained with the SWPPP. Records of each inspection and maintenance activity shall include:
 - 1) Date and time of inspections.
 - 2) Name of person(s) conducting the inspections.
 - 3) Findings of inspections, including recommendations for corrective actions.
 - 4) Corrective actions taken (including dates, times, and the party completing the maintenance activities).
 - 5) Date and amount of all rainfall events 0.5 inches or greater in 24-hours.
 - 6) Documentation of changes made to SWPPP.
4. Parts of the construction site that have achieved final stabilization, but work continues on other parts of the site, inspections of the stabilized areas can be reduced to once a month. If work has been suspended due to frozen ground

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conditions, the required inspections and maintenance must take place as soon as runoff occurs or prior to resuming construction, whichever happens first.

5. All erosion and sediment BMPs shall be inspected to ensure integrity and effectiveness. All nonfunctional BMPs shall be repaired, replaced or supplemented with a functional BMP. The Permittee shall investigate and comply with the following inspection and maintenance requirements:
 - 1) All silt fences must be repaired, replaced, or supplemented when they become nonfunctional or the sediment reaches 1/2 of the height of the fence. These repairs shall be made within 24-hours of discovery, or as soon as field conditions allow access.
 - 2) Temporary and permanent sedimentation basins must be drained and the sediment removed when the depth of sediment collected in the basin reaches 1/2 the storage volume. Drainage and removal must be completed within 72-hours of discovery, or as soon as field conditions allow access.
 - 3) Surface waters, including drainage ditches and conveyance systems, must be inspected for evidence of sediment being deposited by erosion. The Permittee shall remove all deltas and sediment deposited in surface waters, including drainage ways, catch basins, and other drainage systems, and restabilize the areas where sediment removal results in exposed soil. The removal and stabilization shall take place within seven (7) days of discovery unless precluded by legal, regulatory, or physical access constraints. The Permittee shall use all reasonable efforts to obtain access. If precluded, removal and stabilization shall take place within seven (7) calendar days of obtaining access. The Permittee is responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work.
 - 4) Construction site vehicle exit locations shall be inspected for evidence of off-site sediment tracking onto paved surfaces. Tracked sediment shall be removed from all off-site paved surfaces, within 24-hours of discovery, or if applicable, within a shorter time. It shall be the responsibility of the developer / contractor to keep streets and property adjacent to construction areas free from sediment carried by construction traffic at sites entrances and access points, and from site runoff and blowing dust.
 - 5) The Permittee is responsible for the operation and maintenance of temporary and permanent water quality management BMPs, as well as all erosion prevention and sediment control BMPs, for the duration of the construction work at the site. The Permittee is responsible until another Permittee has assumed control over all areas of the site that have not been finally stabilized

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or the site has undergone final stabilization, and a Notice of Termination (NOT) has been submitted to the MPCA.

- 6) If sediment escapes the construction site, off-site accumulations of sediment shall be removed in a manner and at a frequency sufficient to minimize off-site impacts (e.g., fugitive sediment in streets could be washed into storm sewers by the next rain and/or pose a safety hazard to users of public streets).
6. All infiltration areas shall be inspected to ensure that no sediment from ongoing construction activities is reaching the infiltration area and that these areas are protected from compaction due to construction equipment driving across the infiltration area.

6.6 Pollution Management Measures/Construction Site Waste Control

1. The Permittee must implement the following pollution prevention management measures on the site.
 - 1) Solid Waste – Collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other wastes must be disposed of properly and must comply with MPCA disposal requirements.
 - 2) Hazardous Materials including oil, gasoline, paint and other hazardous substances must be properly stored, including secondary containment to prevent spills, leaks or other discharge. Restricted access to storage areas shall be provided to prevent vandalism. Storage and disposal of hazardous waste shall be in compliance with MPCA regulations.
 - 3) External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff shall be contained and waste from the washing activity properly disposed of. No engine degreasing is allowed on-site.
 - 4) The City of South St. Paul prohibits discharges of any material other than stormwater or treated discharges from dewatering or basin draining activities. Prohibited discharges include but are not limited to vehicle and equipment washing, maintenance spills, wash water, and discharges of oil and other hazardous substances.
 - 5) The Permittee must comply with all other pollution prevention/good housekeeping requirements of the MPCA NPDES Construction General Permit.

6.7 Final Stabilization

1. The Permittee must ensure final stabilization of the project. Final stabilization is not complete until the following is completed:

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- 1) All soil disturbing activities at the site have been completed and all soils will be stabilized by a uniform perennial vegetative cover with a density of at least 70 percent over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions; and
 - 2) All drainage ditches, constructed to drain water from the site after construction is complete, must be stabilized to preclude erosion; and
 - 3) All temporary synthetic, and structural erosion prevention and sediment control BMPs (such as silt fence) must be removed as part of the site final stabilization; and
 - 4) The Permittee must clean out all sediment from conveyances and from temporary sedimentation basins that are to be used as permanent water quality management basins. Sediment must be stabilized to prevent it from washing back into the basin, conveyances or drainage ways discharging off-site or to surface waters. The cleanout of permanent basins must be sufficient to return the basin to design capacity.
2. For residential construction only, final stabilization has been achieved when:
- 1) Temporary erosion protection and down gradient perimeter control for individual lots has been completed and the residence has been transferred to the homeowner.
 - 2) The Permittee has distributed the MPCA “Homeowner Fact Sheet” to the homeowner so the homeowner is informed for the need, and benefits, of final stabilization.

6.8 Training

1. The SWPPP must provide a chain of command showing who prepared the SWPPP, who is responsible for the management of the construction site and inspections.
2. The training shall consist of a course developed by a local, state or federal agency, professional organization, water management organization, or soil and water conservation district and must contain information that is related to erosion prevention, sediment control, or permanent stormwater management and must relate to the work that the trainee is responsible for managing.

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7. STORMWATER MANAGEMENT DESIGN STANDARDS

7.1 Guidance on Stormwater Treatment Practices (STPs)

The Stormwater Management Plan shall meet the volume control, water quality, and water quantity requirements of these Standards and the *Minnesota Stormwater Manual*. Designers are also expected to follow the Minimal Impact Design Standards (MIDS) flowchart detailed in the *Minnesota Stormwater Manual* (Appendix C). Deviations from recommended guidance will require detailed written explanation with discretion given by the City.

Final site design and choice of permanent stormwater volume reduction practices shall be based on outcomes of the MIDS Calculator (or other model that shows the performance goal can be met) and shall meet the performance goals in Section 8 of these design standards. The MIDS calculator is available on the MPCA's [website](#).

7.2 List of Acceptable Stormwater Treatment Practices

In the development of appropriate Stormwater Treatment Practices (STP) appropriate for the development and redevelopment, volume control systems are foremost of importance to apply in the design. Filtration is warranted when site conditions do not allow for an effective infiltration facility. For flooding or rate control, detention systems are typically the preferred practice. Low Impact Design (LID) practices are encouraged when they can be functionally incorporated into the design. Alternative practices may be approved at the discretion of the City Engineer. For projects where infiltration is not feasible the STPs proposed shall meet the performance identified in the MIDS Flexible Treatment Options (FTO) (Appendix C).

The *Minnesota Stormwater Manual* identifies a number of potential STPs that can be used during design. The following include a list of potential options that can be considered during development and redevelopment.

Volume Control Systems:

- Infiltration trench
- Infiltration basin
- Raingarden
- Underground storage
- Reuse
- Green Roofs
- Trees/Tree Planters

Detention Systems:

- Wet pond
- Stormwater re-use systems
- Multiple pond systems
- Extended detention basin
- Micro-pool extended detention basin
- Dry detention ponds
- Underground storage
- Other, as approved by the City of South St. Paul

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Filtration Systems:

- Surface sand filter
- Underground sand filter
- Perimeter sand filter
- Organic filter
- Bioretention system
- Raingarden with underdrain
- Pervious pavement with underdrain
- Underground storage with underdrain
- Tree trench
- Enhanced turf

Wetlands:

- Shallow wetland
- Pond/wetland systems
- Extended detention wetland

Open Channel Systems:

- Dry swale
- Wet swale
- Grass swale
- Natural channel, or stream

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8. STORMWATER TREATMENT PLAN DESIGN CRITERIA

Proposed Stormwater Management Plans must incorporate Volume Control, Water Quality, and Rate Control as the basis for stormwater management in the proposed development plan. The City of South St. Paul, as a permitted MS4, requires for new development projects to have a no net increase from pre-project conditions of total volume, TSS, and TP; in addition, for redevelopment projects within the city, it is required to have a net reduction from pre-project conditions of total volume, TSS and TP.

8.1 Volume Control Requirements

Volume control measures are required on projects to meet the water quality criteria of the South St. Paul City Code and the MS4 Permit. Volume control shall be required for proposed new impervious areas greater than 1 acre or redevelopment of impervious greater than 1 acre. If an applicant can demonstrate that the volume control standard has been met, then the water quality sizing criteria shall be considered satisfied.

Volume control may be waived by the city for sites with impermeable soil, where the seasonally high groundwater table is less than three feet from the bottom of the infiltration basin, bedrock depth is less than three feet from the bottom of the infiltration basin, in a stormwater hot spot, or is in an area where groundwater has a high vulnerability for contamination. If the applicant claims that infiltration is not feasible on-site, the applicant must provide supporting documentation to the city. If the city agrees that infiltration is not feasible, the applicant shall design alternative stormwater runoff treatment methods meeting the requirements as established in Section 8.2

8.2 Volume Control Calculations

Depending on applicability, new and redevelopment projects shall capture and retain on-site 1.1 inches of runoff from the impervious surfaces in post-construction conditions. For projects that create or redevelop less than 1 acre of impervious surfaces, the City encourages applicants to incorporate volume control or the water quality provisions to the extent feasible. Linear projects shall retain the larger of 1.1” from all new impervious or 0.55” from all new and fully reconstructed impervious.

For projects where it is not feasible to meet the volume reductions requirements it will be required to meet the water quality requirements of these stormwater management design standards. Infiltration is infeasible when:

- Where industrial facilities are not authorized to infiltrate industrial stormwater under and NPDES/SDS Industrial Stormwater Permit issued by the MPCA.
- Where vehicle fueling and maintenance occur.

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- With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of the bedrock.
- infiltrating stormwater.

The use of infiltration techniques shall be restricted and subject to additional City review where the infiltration BMP will be constructed in any of the following areas:

- Soils are predominately Hydrologic Soil Group D (clay) soils.
- Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
- Drinking Water Supply Management Areas are present, as defined by Minn. R. 4720.51000, subp. 13, unless precluded by a local unit of government with an MS4 permit.
- Soil infiltration rates are more than 8.3 inches per hour unless soils are amended to flow the infiltration rate below 8.3 inches per hour.

The City Engineer may allow a lesser volume reduction requirement than required if the project meets one of the prohibitions listed above and if the project implements to the Maximum Extent Practicable (MEP) other volume reduction techniques such as evapotranspiration, reuse/harvesting, conservation design, green roofs, etc. on site. If other volume reduction techniques are not used, documentation must be provided on why that decision was made.

8.3 Water Quality

The water quality requirements shall be considered satisfied if the volume control standard has been satisfied. In the event that it is infeasible to meet the volume control standard due to site constraints, the proposed STP will need to provide for the following in decreasing order of preference:

Flexible Treatment Option 1

- Applicant attempts to comply with the following conditions
 - Achieve at least 0.55 inch volume reduction goal, and
 - Remove 75 percent of the annual total phosphorus load, and
 - Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site

Flexible Treatment Option 2

- Applicant attempts to comply with the following conditions
 - Achieve volume reduction to the maximum extent practicable (as determined by the City), and

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- Remove 60 percent of the annual total phosphorus load, and
- Options considered and presented shall examine the merits of relocating project elements to address varying soil conditions and other constraints across the site

Flexible Treatment Option 3

- Off-site mitigation (including banking or cash or treatment on another project, as determined by the City) equivalent to the volume reduction performance goal can be used in areas selected in the following order of preference:
 - Locations that yield benefits to the same receiving water that receives runoff from the original construction activity
 - Locations within the same DNR catchment area as the original construction activity
 - Locations in the next adjacent DNR catchment area up-stream
 - Locations anywhere with the City's jurisdiction

For areas that discharge directly to the Mississippi River or to an impaired water body for which a TMDL has been completed, the findings of the TMDL will replace this requirement (where more stringent). The required reduction of total phosphorus may be accomplished through the use of regional or on-site stormwater BMPs such: ponds, NURP (National Urban Runoff Program) basins, infiltrations basins, biofiltration, vegetated swales, mechanical devices, porous pavements, or any other techniques effective at phosphorus reduction. Linear construction projects should meet the above water quality policy where possible and feasible. Linear projects will be required to meet NPDES Construction Permit requirements.

1. It is required that implementation of best management practices during development and redevelopment to achieve the goal of reducing nonpoint source pollution, with emphasis placed on the watershed that drain (or will drain) to the Mississippi River.
2. It is encouraged to reduce the amount of impervious surface upon development or redevelopment.
3. For replacement discharge points/outfalls or existing stormwater discharge points/outfalls, there should be pretreatment of stormwater prior to its discharge to wetlands and other water resources.
4. For new stormwater discharge points/outfalls, the City will provide pretreatment (at least grit removal) of stormwater prior to its discharge to wetlands and other water resources.

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8.4 Rate Control

1. At a minimum, detention basins should maintain existing flow rates for the 2, 10, and 100-year 24-hour rainfalls in accordance to the City's Stormwater Management Plan storm data as shown in the table below:

Event	Rainfall/Snowmelt Depth (inches)
2-year, 24 hour	2.8
10-year, 24 hour	4.2
100-year, 24 hour	7.4
100-year, 10-day snowmelt	7.2

2. Detention basins shall be designed with capacity for the critical 100-year event, which is defined as the 100-year event that produces the highest water level among a 2-hour, 6-hour, 12-hour, or 24-hour rainfall events or the 10-day, 7.2-inch snowmelt runoff event.
3. The maximum duration for rainfall critical event analysis shall be 24-hours except in cases where basins are landlocked, where back to back 24-hour events and the 10-day 7.2-inch snowmelt runoff event shall also be used. In all cases a hydrograph method of analysis should be used. For the 24-hour rainfall event, or back to back 24-hour rainfall events, a MSE 3 distribution should be used. For shorter duration, critical events other distributions may be used with the approval of the City Engineer.
4. Easements over floodplains, detention areas, wetlands, ditches, and all other parts of the stormwater system as areas develop or redevelop are required.
5. All drainage system analyses and designs shall be based on proposed full development land use patterns.
6. Future discharge rates from new development and redevelopment will at a minimum not exceed the existing discharge rates, or rates which would interfere with sensitive downstream uses.
7. It is preferred to provide rate control through the use of regional stormwater detention/retention systems versus site-by-site retention systems. If regional systems are not available, on-site systems may be required.
8. Development adjacent to a landlocked basin and the basin is not provided an outlet, freeboard should be determined based on one of three methods (whichever provides for the highest freeboard elevation):
 - 1) Two feet above the HWL determined by modeling back to back 100-year, 24-hour events,
 - 2) Three feet above the highest known water level, or

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- 3) Five feet above the HWL determined by modeling a single 100-year, 24-hour event.
9. When modeling landlocked basins, the starting water surface elevation should be the basins Ordinary High Water elevation, which can be determined through hydrologic modeling or, in the case of a DNR regulated basin, from a DNR survey.
10. For basins with a suitable outlet, freeboard will be 2 feet above the HWL determined by modeling the 100-year critical event. Emergency overflows a minimum of 1.5 feet below lowest ground elevation adjacent to a structure should also be provided.
11. Adjacent to channels, creeks, and ravines freeboard will also be 2 feet to the 100-year critical event elevation.
12. A MSE 3 24-hour rainfall distribution with average antecedent moisture conditions should be utilized for runoff calculations.
13. The recommended minimum outlet diameter is 6 inches due to plugging susceptibility and may supersede the rate control requirement for the 2-year event.
14. City standard detail plates should be utilized for pond outlet structures.
15. Multistage outlets are to be incorporated into pond designs to control flows from smaller, less frequent storms and help maintain base flows in downstream open channels where practicable.

8.5 Freeboard

Building elevation separations of with respect to ponds, lakes, streams, and stormwater features shall be designed as follows:

1. The basement floor elevation of any new building shall be placed at least two feet above the elevation of any known historic high groundwater elevations for the area and at least two feet above the 100-year high surface water elevation in the area.
2. The low building opening elevation of any new building shall be at least three feet above the projected 100-year high water elevation for the area. If this standard is considered a hardship, the standard may be lowered to placing the low building opening elevation at least two feet above the projected 100-year high water elevation if the following can be demonstrated:
 - 1) That within the two-foot freeboard area above the 100-year high water elevation, stormwater storage is at least 50 percent of the stormwater storage capacity below the 100-year high water elevation; and
 - 2) That a 25 percent obstruction of the basin outlet for a 100-year critical-duration rainfall event would not result in a high-water elevation greater than one foot above the 100-year high water elevation; and

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- 3) An adequate overflow route from the basin will assure that water levels, even for extreme rainfall events, will be greater than one foot below the low building opening elevation.
3. An emergency spillway from ponding areas shall be installed a minimum of one foot below the lowest building opening and shall be designed to have a capacity to overflow water at an elevation below the lowest building opening at a rate not less than three times the 100-year peak discharge rate from the basin or the 100-year inflow rate to the basin, whichever is higher.

8.6 Floodplain Management

The City prohibits filling activities within the 100-year floodplain that will cause an increase in the stage of the 100-year or regional flood or cause an increase in the flood damages in the reach affected unless compensatory storage is provided and/or channel improvement is provided that will not result in the flood stage. Filling within the floodway is prohibited unless the filling meets FEMA, DNR, and Watershed District requirements, and City Zoning Code. Applications proposing to alter the floodplain shall submit the following:

1. Cut/fill diagrams along with calculations demonstrating that the filling or alteration of the floodplain is not resulting in a reduction in the flood stage/storage.

8.7 Buffers

Buffers are required adjacent to wetlands for projects requiring a stormwater management permit as defined in City's Comprehensive Stormwater Management Plan.

1. The Buffers zones are as follows:
 - 1) Buffers based on a MnRAM classification or similar classification system will be as follows (measured from the delineated wetland edge):

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

- 2) 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:
 - i. For every 5 percent decrease in average buffer slope from 20 percent, the Base Buffer Width may be reduced by 2 feet.

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

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

- 3) 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.
- 4) The Applied Buffer Width may be further reduced by the City 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.
- 5) 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.
- 6) 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) Buffer strip vegetation should be appropriate to the goals for the water body. Where acceptable natural vegetation exists in buffer strip areas, the retention of such vegetation in an undisturbed state is preferred. The MPCA's manual "Plants for Stormwater Design: Species Selection for the Upper Midwest" provides guidance on buffer plant selection.
- 8) A protective buffer strip of vegetation surrounding the permanent pool at a minimum width of 16 1/2 feet.

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8.8 Shoreland Management

The City of South St. Paul has an established shoreland management Code Section 118.169: Shorelands Zoning. The City Code has established setbacks for placement of structures and impervious and also requirements for shoreland alterations. The City also encourages the following for work occurring within the shoreland zone:

1. Encourage the use of natural vegetation or bioengineering techniques for the stabilization of shorelines.
2. Use materials such as granite or fieldstone for shoreline stabilization project where hard armoring is necessary.
3. Encourage the use of techniques that will minimize runoff and improve water quality associated with new development and redevelopment. When possible use existing natural drainage ways, wetlands, and vegetated soil surfaces to convey, store, filter, and retain stormwater runoff before discharge to public waters. When development density, topographic features, and soil and vegetation conditions are not sufficient to adequately handle stormwater 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. Preference shall be given to designs using surface drainage, vegetated filter strips, bioretention areas, rainwater gardens, enhanced swales, off-line retention areas, and natural depressions for infiltration rather than buried pipes and human-made materials and facilities (*MnDNR Alternative Shoreland Standards, 2005*).

8.9 Mitigation Requirements

Under certain circumstances, some construction projects cannot meet the TSS and/or TP reduction requirements for new or redevelopment projects on the site of the original construction. All methods must be exhausted prior to considering alternative locations where TSS and TP treatment standards can be achieved. If the City has determined that all methods have been exhausted, the permittee will be required to identify alternative locations where TSS and TP treatment standards can be achieved.

- Mitigation projects will be chosen in the following order of preference:
 1. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
 2. Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity.
 3. Locations in the next adjacent DNR catchment area up-stream.
 4. Locations anywhere within the City of South St. Paul.
- Mitigation projects shall involve the establishment new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMPs.

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- Previously required routine maintenance of structural stormwater BMPs cannot be considered mitigation.
- Mitigation projects must be finished within 24 months after the original construction activity begins.

8.10 Long Term Inspection and Maintenance of Stormwater Facilities

1. No private stormwater facilities may be approved unless a maintenance plan is provided that defines how access will be provided, who will conduct the maintenance, the type of maintenance and the maintenance intervals. At a minimum, all private stormwater facilities shall be inspected annually and maintained in proper condition consistent with the performance goals for which they were originally designed and as executed in the stormwater facilities maintenance agreement.
2. Access to all stormwater facilities must be inspected annually and maintenance shall be performed as needed. The applicant shall obtain all necessary easement or other property interests to allow access to the facilities for inspection or maintenance for both the responsible party and the City of South St. Paul.
3. All settled materials including settled solids, shall be removed from ponds, sumps, grit chambers, and other devices, and disposed of properly.

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9. STORMWATER TREATMENT PRACTICE DESIGN STANDARDS

9.1 Storm Sewers

1. Manhole spacing shall not exceed 400 feet.
2. Where more than one pipe enters a structure, a catch basin/manhole shall be used.
3. Storm sewer pipe should match top of pipe to top of pipe unless grade constraints prevent this. In that case, hydraulic calculations will be necessary to verify that excessive surcharging will not occur.
4. Stormwater pipes shall be designed utilizing the Rational Method. Channel design shall be hydrograph method only. All methods are subject to the City Engineer's approval.
5. Lateral systems shall be designed for the 10-year rainfall using the Rational Method. State Aid roadway storm sewer shall be designed per the State Aid requirements.
6. The minimum full flow velocity within the storm sewer should be 3 feet per second (fps). The maximum velocity shall be 10 fps, except when entering a pond, where the maximum velocity shall be limited to 6fps.
7. Trunk storm sewer should be designed at a minimum to carry the 100-year storm event pond discharge in addition to the 10-year design flow for directly tributary areas. The following table shall be used for the calculation of peak rates using the Rational Method:

Cover Type	10-Year Runoff Coefficient
Single-family Residential	0.4
Multi-family Residential	0.5
Commercial	0.7
Industrial	0.7
Parks, Open Space	0.2
Ponds, Wetlands	1.0

8. For storms greater than the 10-year event, and in the case of plugged inlets, transient street ponding will occur. For safety reasons, the maximum depth in streets should not exceed 1.5 feet at the deepest point.
9. To promote efficient hydraulics within manholes, manhole benching shall be provided to 1/2 diameter of the largest pipe entering or leaving the manhole.
10. Vaned grate (3067V) catch basin castings shall be used on all streets.
11. The maximum design flow at a catch basin for the 10-year storm event shall be three (3) cubic feet per second (cfs), unless high capacity grates are provided.

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Catch basins at low points will be evaluated for higher flow with the approval of the City Engineer.

12. All structures located in the street are to be a minimum of four feet deep (rim to invert) and a minimum of three feet deep elsewhere. Two-by-three catch basins are to be four (4) feet deep.

9.2 Outlet and Inlet Pipes

1. Inlet pipes of stormwater ponds shall be extended to the pond normal water level whenever possible.
2. Outfalls with velocities greater than 4 fps into channels, where the angle of the outfall to the channel flow direction is greater than 30 degrees, requires energy dissipation or stilling basins.
3. Outfalls with velocities of less than 4 fps, that project flows downstream into a channel in a direction 30 degrees or less from the channel flow direction, generally do not require energy dissipaters or stilling basins, but will require riprap protection.
4. In the case of discharge to channels, riprap shall be provided on all outlets to an adequate depth below the channel grade and to a height above the outfall or channel bottom. Riprap shall be placed over a suitably graded filter material and filter fabric to ensure that soil particles do not migrate through the riprap and reduce its stability. Riprap shall be placed to a thickness at least 2.5 times the mean rock diameter to ensure that it will not be undermined or rendered ineffective by displacement. If riprap is used as protection for overland drainage routes, grouting may be recommended.
5. Discharge velocity into a pond at the outlet elevation shall be 6 fps or less. Riprap protection is required at all inlet pipes into ponds from the NWL to the pond bottom.
6. Where outlet velocities to ponds exceed 6 fps, the design should be based on the unique site conditions present. Submergence of the outlet or installation of a stilling basin approved by the City is required when excessive outlet velocities are experienced.
7. Submerged outlet pipes from ponds are not allowed.

Multi-stage outlets are to be incorporated into pond designs to control flows from smaller, less frequent storms and help maintain base flows in downstream open channels where practicable.

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9.3 Channels and Overland Drainage

1. Overland drainage routes where velocities exceed 4 fps should be reviewed by the City Engineer and approved only when suitable stabilization measures are proposed.
2. Open channels and swales are recommended where flows and small grade differences prohibit the economical construction of an underground conduit. Open channels and swales can provide infiltration and filtration benefits not provided by pipe.
3. Design of streambank stabilization and streambed control measures should consider unique or special site conditions, energy dissipation potential, adverse effects, preservation of natural processes and habitat and aesthetics in addition to standard engineering and economic criteria.
4. Point discharges of stormwater to open channels or detention basins shall be constructed in a manner that minimizes added erosion.
5. Effective energy dissipation devices should be provided at all conveyance system discharges to prevent bank, channel or shoreline erosion.
6. Open channels shall be designed to convey the critical 100-year event.
7. The minimum grade in all unpaved areas shall be 2%.
8. Maximum length for drainage swales shall be 400 feet.
9. Channel side slopes should be a maximum of 4:1 (horizontal to vertical) with gentler slopes being desirable.
10. Riprap shall be provided at all points of juncture, particularly between two open channels and where storm sewer pipes discharge into a channel.
11. Open channels should be designed to handle the expected velocity from a 10-year design storm without erosion. Riprap may need to be provided.
12. Acceptable erosion in drainageways is limited to that which causes no net degradation of the watercourse or destruction of properties adjacent to the watercourse.
13. Grassed waterways are encouraged to maximize infiltration where feasible and not detrimental to groundwater supplies.
14. Periodic cleaning of an open channel is required to ensure that the design capacity is maintained. Therefore, all channels shall be designed to allow easy access for equipment.

9.4 Ponds

Where on-site water quality detention basins are required, copies of the calculations determining the design of the basin(s) shall be provided. The size and design considerations will be dependent on the receiving water body's water quality category, the imperviousness of the development and the degree to which on-site infiltration of runoff is achieved. Design

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of on-site detention basins, as described in the site's runoff water management plan, shall incorporate recommendations from the nationwide urban runoff program (NURP) and "Protecting Water Quality in Urban Areas", published by the Minnesota Pollution Control Agency, as adopted by the city, or the applicable publications, as adopted by the city. The following design considerations are required for on-site water quality detention basins based on the receiving water's water quality category. These designs include permanent detention for water quality treatment; extended detention designs may be substituted if they provide treatment equivalent to the requirements below:

1. A permanent pool (dead storage) volume below the normal outlet shall be greater than or equal to the runoff from a two and one-half inch (2.5") 24-hour storm over the entire contributing drainage area assuming full development.
2. A permanent pool average depth (basin volume/basin area) which shall be greater than four feet (4'), with a maximum depth of less than ten feet (10').
3. An emergency spillway (emergency outlet) adequate to control the 100-year frequency critical duration rainfall event.
4. Basin side slopes above the normal water level should be no steeper than three to one (3:1) when possible, and preferably flatter. A basin shelf with a minimum width of ten feet (10') and a maximum slope of ten to one (10:1) below the normal water level is recommended to enhance wildlife habitat, reduce potential safety hazards, and improve access for long term maintenance.
5. To prevent short circuiting, the distance between the major inlets and normal outlet shall be maximized.
6. A flood pool (temporary storage) volume above the principal outlet spillway shall be adequate so that the peak discharge rate from the 1-, 10- and 100-year frequency critical duration storm is not greater than the peak discharge for a similar storm and predevelopment watershed conditions.
7. Extended detention of runoff from the more frequent (1-year to 5-year) storms shall be achieved through a principal spillway design which shall include a perforated vertical riser, a small orifice outlet or a compound weir. The spillway must be constructed of a limited maintenance material. The use of treated or naturally decay resistant timber shall not be allowed.
8. Effective energy dissipation devices which reduce outlet velocities to four feet per second (4 fps) or less shall consist of riprap, stilling pools or other such measures to prevent erosion at all stormwater outfalls into the basin and at the detention basin outlet.
9. Trash and floatable debris skimming devices shall be placed on the outlet of all on-site detention basins to provide treatment up to the critical duration 10-year storm event. These devices can consist of baffled weirs, submerged inlets or other such measures capable of restricting the overflow of floatable materials, including

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litter, oil and grease. The skimming device must be constructed of a limited maintenance material. The use of treated or naturally decay resistant timber shall not be allowed. Computations for the design of such devices shall be included. The maximum velocity through the skimming device shall be less than one foot per second (1 fps) on the 2-year 24-hour event.

10. For purposes of erosion control, vegetation protection and wildlife habitat enhancement, the 10-year flood level of the basin shall be no more than two feet (2') above the normal level of the basin.
11. All constructed ponds shall be provided a maintenance access from an adjacent roadway. The maintenance access shall be provided in the form of an easement no narrower than 20 feet. The maintenance access shall have a longitudinal slope no steeper than 6:1 and minimal cross slope. Maintenance access routes, due to their extra width, also serve well as emergency overflow (EOF) routes.

9.5 Infiltration/Filtration Practices

1. Sizing of filtration/infiltration practices, or STPs, shall be in conformance with the volume control requirements of this manual and the *Minnesota Stormwater Manual*.
2. When designing an infiltration practice for volume control and water quality management, on-site testing and detailed analysis are strongly encouraged in order to determine the infiltration rates of the proposed infiltration facility. Documented site-specific infiltration or hydraulic conductivity measurements (double-ring infiltrometer) completed by a licensed soil scientist or engineer is required. In the absence of a detailed analysis, the saturated infiltration rates listed in the Infiltration Rates for Infiltration STPs table found on the *Minnesota Stormwater Manual* shall be used. A piezometer shall be installed in order to ascertain the level of the local groundwater table and demonstrate at least three feet of separation between the bottom of the proposed facility and the groundwater. The soil boring is required to go to a depth of at least five feet below the proposed bottom of the STP. The soils shall be classified using the Unified Soil Classification system. The least permeable soil horizon will dictate the infiltration rate. Infiltration practices shall be designed to infiltrate the required runoff volume within 48 hours.
3. Pretreatment, in the form of ponds, forebays, filter strips, or other approved methods, shall be provided for all infiltration areas. Pretreatment upstream of volume management practices is a key element in the long-term viability of infiltration areas. The level of pretreatment varies largely depending on the STP and drainage area of the watershed. City staff and *Minnesota Stormwater Manual*

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recommendations shall be utilized for determining the appropriate level of pretreatment on a case-by-case basis.

4. The infiltration practice shall not be used within fifty feet of a municipal, community or private well, unless specifically allowed by an approved wellhead protection plan.
5. The infiltration practice shall not be used for runoff from fueling and vehicle maintenance areas and industrial areas with exposed materials posing contamination risk, unless the infiltration practice is designed to allow for spill containment.
6. The infiltration practice shall not be used in Hydrologic Soil Group (HSG) C or D soils without soil corrections.
7. Vegetation of infiltration/filtration practices shall be as shown in the City of South St. Paul's Standard Details. A plan for management for vegetation shall be included in the Stormwater Pollution Prevention Plan.
8. If soils are unsuitable for infiltration, then filtration may be used with drain tile, provided in accordance with the City of South St. Paul's Standard Details.
9. Subgrade soils for infiltration/filtration practices shall be as presented in the City of South St. Paul's Standard Details. Assume a 40% void ratio for clean washed rock and 20% for construction sand for the purposes of volume calculations.
10. Rock storage beds shall be constructed using crushed angular granite that has been thoroughly washed to remove all fine particles that could result in clogging of the system.
11. For infiltration benches adjacent to ponds, benches shall have slopes no steeper than 5:1 over the proposed infiltration zone. A slope of 10:1 is preferred. The *Minnesota Stormwater Manual* cites concerns with locating infiltration features immediately adjacent to ponds. To address this, benches shall be located to maintain hydraulic separation from the saturated zone of the pond to minimize the loss of infiltration potential over time.

9.6 Emergency Overflow Paths

1. Emergency Overflows (EOFs) shall be sized with a minimum bottom width of five feet and 4:1 side slopes.
2. The maximum flow depth in EOFs shall be less than or equal to one foot as calculated for a 100-year back-to-back storm event.

9.7 Outlets for Landlocked Basins

1. Only the existing tributary area may discharge to a landlocked basin unless provision has been made for an outlet from the basin.

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2. The form of outlet may range from temporary pumps to gravity storm sewers. The outlet is to be in place before increased water levels are likely to affect vegetation, slope stability and property values.
3. It is recommended to reduce the amount of impervious area coverage and increase infiltration opportunities in watershed tributary to landlocked basins.
4. In establishing high water elevations and whether outlets are needed for landlocked basins, the long duration events, such as multiple-year wet cycles and high runoff volume events will be considered (e.g. snowmelt events that last for many weeks).
5. Emergency overflows or outlets to drainage systems will be required to any landlocked area if the available stormwater storage capacity is inadequate to prevent flooding of residences and if the available downstream conveyance system capacity is adequate to accept additional flow.

10. DESIGN EXAMPLES

The design process for each of the acceptable Stormwater Treatment Practices is detailed in the [Minnesota Stormwater Manual](#).

11. STORMWATER TREATMENT PRACTICE DETAIL DRAWINGS

Please refer to the City of South St. Paul's Engineering Details for the following:

- Bioretention
- Media Filter System
- Vegetative Filter System
- Infiltration Trench
- Infiltration Basin
- Stormwater Pond/Wetland

12. CONSTRUCTION SPECIFICATIONS

Construction specifications and details are found in the *Minnesota Stormwater Manual* for each of the acceptable STPs, unless otherwise restricted by this manual.

13. CHECKLISTS

Refer to Appendix A & B

- Checklists for Construction Inspection and Operation & Maintenance
- Construction Inspection and Operation & Maintenance Checklists for each of the approved Stormwater Treatment Practices are available in the *Minnesota Stormwater Manual*.



MS4 Stormwater Pollution Plan Review

Permit #		Date Received:		SWPPP Reviewer:		
Project Name:	Site Size:	acres				
	Area of Disturbance:	acres				
Address / Location:	Existing Impervious:	acres				
	Proposed Impervious:	acres				
Notes:						
<ol style="list-style-type: none"> 1. A completed checklist shall be provided for all projects requiring the development of a stormwater management plan in the city. 2. Provide a comment for any item checked with a no. 						
Permits						
				Yes ✓	No ✓	NA ✓
Has an NPDES Construction General Permit been obtained?				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are Wetlands shown on plans and has wetland permitting been completed?				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is any work being proposed within a DNR Public Water? If yes, have all applicable permits been obtained?				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are any other permits necessary and have they been obtained?				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						
Plan Details						
				Yes ✓	No ✓	NA ✓
A description of the construction activities and the potential for sediment and other pollutant discharges from the site.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maps showing the locations of all surface waters, including wetlands, stormwater ponds or basins within one mile of the site.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Areas of the site that will drain to a public water the Department of Natural Resources has promulgated "work in water restrictions" for fish spawning timeframes.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A determination whether surface waters within one mile of the site are special or impaired for one of the construction-related parameters and additional or enhanced BMPs that will be utilized to address the special or impaired waters.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stormwater pollution mitigation measures to be utilized as a result of an environmental review.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional measures needed at the site to address karst or drinking water supply management areas.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Training documentation for all individuals required to be trained in associated duties in regard to the SWPPP.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A site map showing both the existing and final grades, including direction of flow and pre and post drainage area divides. The site map must also include locations of steep slopes, impervious surfaces, soil types, and pollutant-generating activities (building products, pesticides, herbicides, fertilizer, treatment chemicals, hazardous materials, solid waste, portable toilets, etc.).				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Estimated quantities of all erosion prevention and sediment control BMPs to be used for the life of the project.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timing of installation for all erosion prevention and sediment control BMPs and permanent stormwater management systems.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Location and type of all permanent and temporary erosion prevention and sediment control BMPs to be installed at the site along with procedures to establish additional BMPs as necessary.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A description of methods to be used for site dewatering and basin draining.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Areas not to be disturbed on the site, including the location of buffer zones.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Locations of areas to be phased to minimize duration of exposed soils.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Methods to minimize soil compaction and preserve top soil at the site.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Methods used to achieve final stabilization.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Timing of installation for all erosion prevention and sediment control BMPs and permanent stormwater management systems.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A description of pollution prevention measures for storage, handling and disposal of hazardous materials, solid waste, concrete and equipment wash water, portable toilets, construction products and materials.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A description of inspection and maintenance activities and record keeping.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Procedures for terminating permit coverage.				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:						

Temporary Erosion Control BMPs			
	Yes ✓	No ✓	NA ✓
Does the plan show the location of erosion control measures (with standard detail plates and maintenance information for each)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are temporary rock entrances/exits for all vehicle access points shown on plan (provide detail)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the perimeter silt fence shown? Silt fence and/or rock checks should also be placed along swales or slopes greater than 50 feet in length (flare ends of silt fence up slope).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is the type of each storm sewer inlet protection and location graphically shown?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are temporary sediment basins shown?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the plan provide temporary stabilization measures to stabilize the soils no later than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased, and no later than seven (7) days after construction activity in that portion of the site has temporarily or permanently ceased when discharge points on the project are within one mile of a special or impaired water and flows to that special or impaired water? Options for temporary or permanent stabilization may include: erosion control mat, fiber blankets, netting, temporary seed, or temporary mulch.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are soil stockpile areas (indicate temporary stabilization measures) shown?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is street sweeping required?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the plan include a note indicating that all adjacent streets will be swept daily, or as directed by the City, to remove all accumulated materials? Failure to perform any street sweeping within six hours of notice by the City will result in the work being performed by the City and all associated costs billed. The City also requires removal of accumulated materials on streets during winter.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the SWPPP include an erosion and sediment control inspection schedule along with a person responsible for conducting inspections and ensuring maintenance is being performed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			
Stormwater Management Plan			
	Yes ✓	No ✓	NA ✓
Has a subwatershed delineation map been provided for the existing and proposed conditions?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have modeling calculations been provided comparing the existing and proposed runoff conditions for the 2-year, 10-year, and 100-year 24-hour storm event using Atlas 14?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the directly connected impervious been modeled separately (Composite CN Approach)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has off-site drainage been included and accounted for with modeling calculations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are skimmer structures being proposed on the outlets of all ponds?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has a maintenance plan been provided to satisfy the requirements of the City's maintenance agreement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			
Volume Control			
	Yes ✓	No ✓	NA ✓
Does the plan provide volume control?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
What is the required volume?			
What is the proposed volume?			
Soil Borings: a. Do the design infiltration rates match the soil conditions? b. Is there at least three feet of separation to seasonally high groundwater or bedrock?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has pretreatment been provided for prior to the discharge to all proposed infiltration/filtration features?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does the plan prohibit infiltration when the system will receive discharges from the areas identified in <i>Section 8.2</i> of the Stormwater Management Design Standards for Stormwater Management?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			
Water Quality			
	Yes ✓	No ✓	NA ✓
Is volume control provided? If yes, then water quality requirements satisfied.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If volume control is not provided, does the plan have the required total phosphorus removal from runoff leaving new development and redevelopment projects that exceed one acre of land disturbance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			
Final Stabilization			
	Yes ✓	No ✓	NA ✓
For new resident construction, is required vegetated stabilization from the front curb line to the back of the structure for the entire width of the lot present? Show seeding and/or turf establishment locations and specifications, including: type of seeding (permanent, temporary, dormant); seed type and application rate; fertilizer type and application rate; mulch type, application rate, and method of anchoring; specifications for installation and maintenance of erosion control mats, blankets, or netting; note requiring seeding/restoration to be completed within 48 hours of final grading; location of all areas to be vegetated.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments:			



Construction ESC Inspection Form

Date & Time of Inspection:	
Weather Conditions:	
Reason for Inspection:	<input type="checkbox"/> Routine <input type="checkbox"/> Rainfall > 0.5" in 24 Hours
24hr Precipitation:	

Project Name:	Project Number:
NPDES Permit #	Owner / Permittee:
MN State Duty Officer: 651.649.5451 or 800.422.0798	Contractor / Permittee:

General Site Activities:

Inspection Findings: NA = Not Applicable, C = Compliant, D = Deficient, NC = Non-Compliant

		NA	C	D	NC			NA	C	D	NC
1	Buffer Zones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2	Construction Entrance / Access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Concrete Washout	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4	Construction Phasing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Dewatering / Bypass Pumping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6	Dewatering NTU Reading	TBD = Inflow		TBD = Treated	
7	Polymer / Flocculent Application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8	Ditch Checks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Dust Control / Wind Erosion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10	Grading / Earthwork	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	ESC BMP Maintenance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12	Inlet Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Inclement Weather Ready	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14	Outlet Control Structure (24 hrs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Offsite Discharges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16	Perimeter Sediment Controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Directional Drilling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18	Redundant Perimeter Controls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Secondary / Hazard Containment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20	Stabilization Measures / 24 Hour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	Soil Stockpile Protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	22	Stabilization Measures / 7 Day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Silt Fence / Filter Log	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	24	Stabilization Measures / 14 Day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Detention / Sediment Pond	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	26	Turbidity Curtain / Fence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	Inspection Log / Amendments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	28	Waste / Trash Containment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Inspector Signature:	Date: / /
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- Conduct Site Review:**
- Aerial Photos and Topographic Maps
 - County Soil Surveys and other Soil Information as Available
 - County Geologic Atlas
 - Local Groundwater Levels
 - DWSMA and Wellhead Protection Maps
 - FEMA and Local Floodplain Maps
 - Soil Borings and Site Survey
 - MPCA Listing of Potentially Contaminated Sites
 - Phase 1 and 2 Environmental Site Assessments
 - TMDLs and Local Water Quality Standards
 - Wetland Delineations, MNRAM Assessments, and Wetland Classifications
 - Proposed Conditions, Conceptual/Preliminary Site Design
 - Local zoning and land use requirements/ordinances, including stormwater rate control requirements
 - Communication with Local Landowners, LGU, or Others Knowledgeable about the Site
 - Site Inspection

Define Performance Goal

New and redevelopment projects: Retain on site a volume of 1.1" from impervious surfaces

Linear projects: Retain on site the larger of 1.1" from all new, or .55" from all new and fully reconstructed (D) impervious surfaces.



MIDS Project Flexible Treatment Options (FTO)

The Flexible Treatment Options (FTO) alternatives presented here should be employed when the Performance Goal is not feasible and/or allowed. The designer should document the reasons why the Performance Goal and rejected FTO Alternatives are not feasible and/or allowed.

FTO #1
Applicant attempts to comply with the following conditions:
1.a. Achieve at least 0.55" volume reduction goal, and
1.b. Remove 75% of the annual TP load, and
1.c. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site

FTO #2
Applicant attempts to comply with the following conditions:
2.a. Achieve volume reduction to the maximum extent practicable (as determined by the Local Authority), and
2.b. Remove 60% of the annual TP load, and
2.c. Options considered and presented shall examine the merits of relocating project elements to address, varying soil conditions and other constraints across the site.

FTO #3
Off-site mitigation (including banking or cash or treatment on another project, as determined by the local authority) equivalent to the volume reduction performance goal can be used in areas selected in the following order of preference:
1. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity
2) Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity
3) Locations in the next adjacent DNR catchment area up-stream
4) Locations anywhere within the local authorities jurisdiction

Notes:
A. Volume reduction techniques considered shall include infiltration, rainwater harvesting & reuse, bioretention, permeable pavement, tree boxes, grass swales and/or additional techniques included in the MIDS calculator or the Minnesota Stormwater Manual.
B. Applicant shall document the flexible treatment options decision sequence, following the order of alternatives presented here.
C. For Alternative #2, the applicant is encouraged to use BMPs that reduce volume. Secondary preference is to employ filtration techniques, followed by rate control BMPs.
D. Fully reconstructed impervious surfaces: Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects and other pavement rehabilitation projects that do not alter the underlying soil material beneath the structure, pavement or activity are not considered full reconstruction. In addition, other maintenance activities such as catch basin and pipe repair/replacement, lighting, and pedestrian ramp improvements shall not be considered fully reconstructed impervious surfaces. Reusing an existing building foundation and re-roofing of an existing building are not considered fully reconstructed.
E. Soils that infiltrate too quickly may not provide sufficient pollutant removal before the infiltrated runoff enters groundwater.
F. A reasonable attempt must be made to obtain right-of-way during the project planning process
G. Other, this is not an exhaustive list
H. Hotspots includes any portion of a facility where infiltration is prohibited under an NPDES/SDS industrial stormwater permit issued by the MPCA