Water Resources Management Plan

Prepared for the
City of Lilydale on the Mississippi

November 2013

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Prepared for:

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

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Reg. No. 48031

Water Resources Management Plan
City of Lilydale on the Mississippi

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List of Acronyms

BMP: best management practice

CFS: cubic feet per second

CMP: corrugated metal pipe

CPEP: corrugated polyethylene pipe

DNR: Department of Natural Resources

FIS: Flood Insurance Study

GIS: Geographic Information System

I&I: inflow and infiltration

LGU: local governmental unit

LMRWD: Lower Minnesota River Watershed District

LMRWMO: Lower Mississippi River Watershed Management Organization

MCES: Metropolitan Council Environmental Services

MPCA: Minnesota Pollution Control Agency

MS4: Municipal Separate Storm Sewer System

NC: not calculated

NPDES: National Pollutant Discharge Elimination System

NURP: Nationwide Urban Runoff Program

PCB: Polychlorinated Biphenyl

PEP: Polyethylene Pipe

PUD: Planned Unit Development

RCP: Reinforced Concrete Pipe

SCSWMP: Supplement to Comprehensive Stormwater Management Plan

SWCD: Soil and Water Conservation District

SWCS: Soil and Water Conservation Society

SWPPP: Stormwater Pollution Prevention Program

TMDL: Total Maximum Daily Load

TP: Total Phosphorus

TSS: Total Suspended Solid

USDA: Department of Agriculture

USEPA: United States Environmental Protection Agency

WCA: Wetland Conservation Act

WRMP: Water Resources Management Plan

1.0 Executive Summary

This Water Resources Management Plan (WRMP) has been prepared for the City of Lilydale on the Mississippi to meet the requirements of the Lower Mississippi River Watershed Management Organization (LMRWMO) and the Lower Minnesota River Watershed District (LMRWD). This WRMP may be amended in order to keep the plan current with conditions within Lilydale and to remain current with updates to watershed plans and Metropolitan Council requirements.

The 2008 WRMP was designed to be an integral part of the Lilydale Comprehensive Plan completed in 2011. The 2013 WRMP replaces the WRMP that was developed in 2008 and is still intended to be an integral part of the Lilydale Comprehensive Plan. It will serve as a planning document to guide Lilydale in protecting its water resources, especially as additional development and redevelopment occur.

The descriptions of the physical environment (Section 3) and hydrologic systems (Section 4) are intended to provide relevant background information to understand the major components that affect runoff and how the runoff is routed to receiving waters.

Past and current stormwater management issues are detailed in Section 5 to provide a framework for continuing to work with these management issues as they are resolved or as problems arise in the future.

General goals and specific policies (Section 6) outline Lilydale's policies pertaining to water resources and stormwater management, and they provide a direction for future policy considerations. Virtually the entire developable area within Lilydale has already been developed. Therefore, these goals and policies have been written with strong consideration towards redevelopment activities.

The implementation of this WRMP is described in Section 7, with special attention of the requirements of Lilydale's MS4 Permit.

Amendment procedures for this WRMP are detailed in Section 8.

2.0 Introduction

This Water Resources Management Plan (WRMP) has been prepared for the City of Lilydale on the Mississippi to meet the requirements of the Lower Mississippi River Watershed Management Organization (LMRWMO) and the Lower Minnesota River Watershed District (LMRWD). The WRMP updates and supersedes the Comprehensive Stormwater Management Plan prepared by Orr Schelen Mayeron & Associates, Inc. (November 9, 1990), the Supplement to Comprehensive Stormwater Management Plan (SCSWMP) prepared by Barr Engineering (August 20, 1997) and the Water Resources Management Plan prepared by Barr Engineering (February 11, 2008). This WRMP draws from and builds on the resources listed below in Table 1 and is intended to be an integral part of the 2011 Lilydale Comprehensive Plan.

Table 1. Documents on which this WRMP is based.

Document	Publication Year	Issuing Entity
Comprehensive Stormwater Management Plan	1990	City of Lilydale
Supplement to Comprehensive Stormwater Management Plan	1997	City of Lilydale
Water Resources Management Plan	2008	City of Lilydale
Comprehensive Plan	2011	City of Lilydale
Local Surface Water Management Plan	2006	City of Mendota Heights
Minnesota Stormwater Manual Wiki	2013	MPCA
Watershed Management Plan	2011	LMRWMO
Water Management Plan	2011	LMRWD

2.1 Purpose and Scope

The purpose of this Water Resources Management Plan (WRMP) is identical to the purpose given in Minnesota Statute 103B.201 for metropolitan water management programs. According to statute, the purposes of these water management programs are to:

- Protect, preserve, and use natural surface and groundwater storage and retention systems;
- Minimize public capital expenditures needed to correct flooding and water quality problems;
- Identify and plan for means to effectively protect and improve surface and groundwater quality;

- Establish more uniform local policies and official controls for surface and groundwater management;
- Prevent erosion of soil into surface water systems;
- Promote groundwater recharge;
- Protect and enhance fish and wildlife habitat and water recreational facilities; and
- Secure the other benefits associated with proper management of surface and ground water.

This WRMP will guide Lilydale in protecting, preserving, and managing its surface water resources and stormwater system.

This WRMP will serve as a planning document and guide Lilydale in efforts to minimize adverse impacts on its surface water resources through proper protection and enhance water resources and management practices. This plan is based on and is consistent with the requirements of Minnesota Statutes 103B.235, Minnesota Rules Chapter 8410, the watershed organizations with jurisdiction in Lilydale, the Lower Mississippi River Watershed Management Organization (LMRWMO), the Lower Minnesota River Watershed District (LMRWD), and Lilydale's Municipal Separate Storm Sewer System (MS4) Permit.

3.0 Physical Environment

3.1 Location

Lilydale is located in northern Dakota County. It is bordered on the north by the City of St. Paul, on the east by Mendota Heights, on the south by Mendota Heights and Mendota, and on the west by the Mississippi River, as shown on Figure 1. Lilydale covers an area of 454 acres of which approximately 300 acres are in Lower Lilydale. Lower Lilydale has largely been developed into a park that is owned and administered by St. Paul Parks. A map showing the location of Lilydale and the boundaries of the LMRWMO and LMRWD is included as Figure 2.

3.2 Climate

The climate within the Minneapolis/St. Paul area is described as a humid continental climate with moderate precipitation, wide daily temperature variations, warm humid summers, and cold winters.

The mean annual temperature for Lilydale is 46.2°F, as measured at the Minneapolis/ St. Paul (MSP) airport station (1981-2010). Mean monthly temperatures vary from 15.6°F in January to 73.8°F in July (1981-2010). Extreme temperatures recorded were a high of 108°F on July 14, 1936 and a low of -41°F on January 21, 1888. For the period 1948-2005, the average date for latest occurrence of freezing temperatures was April 29 at MSP, while the average date for the first autumn frost is October 7. The average frost-free period (growing season) is 166 days.

Table 2 summarizes precipitation data for the MSP airport station. Average total annual precipitation (1981-2010) is 30.6 inches at the MSP airport station, and has ranged from a low of 11.5 inches in 1910 to a high of 40.2 inches in 1911. The mean monthly precipitation (1981-2010) varies from 4.3inches in August to 0.77 inches in February. From May to September, the growing season months, the average rainfall (1981-2010) is 19.0inches, or about 62 percent of the average annual precipitation. Average annual lake evaporation is about 36 inches (1981-2010 average). Average annual snowfall (1981-2010) is 54.4 inches. Extreme snowfall records range from 98.6 inches during the 1983-1984 season to 14.2 inches during the 1930-1931 season.

Table 2. Precipitation Summary—Minneapolis/St. Paul Airport Station

Averages: 1981-2010 Extremes: 1891-2001

Total Precipitation, Inches					Snow, inches		# Days with Precip.		
Month	Mean	High—Yr	Low—Yr	1-Day Max	Mean	High—Yr	≥ .10	≥ .50	≥ 1.0
Jan	0.90	3.63 1967	0.05 1892	1.21 1/24/1967	12.2	46.4 1982	3.0	0.3	0.0
Feb	0.77	3.25 1922	0.03 1894	1.90 2/4/1930	7.7	26.5 1962	2.6	0.2	0.0
Mar	1.89	4.75 1965	0.09 1910	1.62 3/1/1965	10.3	46.1 1965	4.8	0.9	0.2
Apr	2.66	7.00 2001	0.16 1987	2.22 4/27/1975	2.4	21.8 1983	5.9	1.7	0.2
May	3.36	10.33 1906	0.21 1934	3.16 5/21/1906	0.0	2.4 1954	7.7	2.2	0.7
Jun	4.25	9.82 1990	0.22 1988	2.91 6/7/1984	0.0	0.0 1949	7.4	3.0	1.1
Jul	4.04	17.90 1987	0.11 1936	9.15 7/23/1987	0.0	0.0 1948	6.4	2.4	0.9
Aug	4.30	9.31 1977	0.20 1925	7.28 8/30/1977	0.0	0.0 1948	6.1	2.9	0.9
Sep	3.08	7.77 1903	0.41 1940	4.96 9/12/1903	0.0	0.4 1985	5.9	2.1	0.6
Oct	2.43	6.42 1911	0.01 1952	2.75 10/19/1934	0.6	8.2 1991	4.7	1.4	0.4
Nov	1.77	5.29 1991	0.02 1939	2.52 11/11/1940	9.3	46.9 1991	4.2	1.1	0.2
Dec	1.16	4.27 1982	0.00 1943	1.50 12/14/1891	11.9	33.5 1969	3.1	0.3	0.1
Annual	30.61	40.15 1911	11.54 1910	9.15 7/23/1987	54.4	101.5 1983	61.8	18.5	5.3
Winter	2.83	6.24 1967	0.69 1958	1.90 2/24/1930	32.1	71.7 1967	9.3	0.8	0.2
Spring	7.41	16.13 1965	2.12 1910	3.16 5/21/1906	13.7	48.1 1965	17.8	4.3	1.0
Summer	12.43	23.52 1987	1.73 1894	9.15 7/23/1987	0.0	0.0 1949	20.2	8.0	3.2
Fall	6.74	13.50 1911	1.71 1952	4.96 9/12/1903	10.6	55.1 1991	14.5	4.0	1.3

Source: Minnesota State Climatology Office (http://www.climate.umn.edu)

The amount, rate, and type of precipitation are important in determining flood levels and stormwater runoff rates. In urbanized watersheds, shorter duration events tend to play a larger role in predicting high water levels on basins. Shorter duration events are generally used by hydrologists to study local issues (sizing catch basins, storm sewer pipes, etc.). Longer duration events are generally used to study regional issues, such as predicting high water levels for regional basins, landlocked basins, and basins with small outlets relative to their watershed size.

Snowmelt and rainstorms that occur with snowmelt in early spring are significant in this region. The volumes of runoff generated, although occurring over a long period, can have significant impacts where the contributing drainage area to a lake or pond is large and the outlet is small or non-existent.

Average weather imposes little strain on the typical stormwater drainage system. Snowmelt and rainfall extremes are important for flood control system design. The National Weather Service has data on extreme precipitation events that can be used to aid in the design of flood control systems. Snowmelt extremes most often affect major rivers, large stormwater storage areas, and landlocked basins; while rainfall extremes most often affect conveyance facilities.

In contrast with stormwater drainage facilities, stormwater quality treatment systems are designed based on the smaller, more frequent storms, which account for the majority of the annual pollutant loadings from urban watersheds. Analysis of rainfall data (1971-2000) from the MSP station found that 90 percent of the storms produced 1.05 inches or less of precipitation (*The MN Stormwater Manual*, 2005).

In the past, the major sources of information regarding rainfall in the region are publications TP-40 and TP-49 issued by the National Weather Bureau (now the National Weather Service) in 1961 and 1964, respectively. In 2013, the National Oceanic and Atmospheric Administration (NOAA) released a new study commonly referred to as "Atlas 14" The revised maps in Atlas 14 incorporated more rain gaging stations and longer rainfall records, and published a report that essentially serves as an update to TP 40. The sources give information on storm durations of up to 10 days. The Soil Conservation Service's *National Engineering Handbook*, Hydrology, Section 4, presents maps of regional runoff volume. The information from all of these sources (except for the Yarnell analysis) is summarized in the *Hydrology Guide for Minnesota*, published by the USDA's Soil Conservation Service. Table 3 lists many of the precipitation and runoff events used for design purposes.

Table 3. Selected Precipitation and Runoff Events

Type of Event and Frequency	Duration	Amount from TP40 (Inches)	Amount from Atlas 14 (Inches)
Rainfall			
1-year	24-hour	2.4	2.5
2-year		2.8	2.8
5-year		3.6	3.5
10-year	24-hour	4.2	4.2
25-year		4.8	5.4
50-year		5.3	6.4
100-year		6.0	7.5
25 year	10-day	8.8	8.0
50-year		10.0	9.1
100-year		11.0	10.1
Runoff (snowmelt)			
10-year	10-day	4.7	N/A
25-year		5.7	N/A
50-year		6.4	N/A
100-year		7.1	N/A

Source: TP40: *Hydrology Guide for Minnesota* (USDA Soil Conservation Service), Atlas 14: NOAA's National Weather Service Hydrometeorological Design Studies Center Precipitation Frequency Data Server (PFDS)

For the design of future stormwater systems, the City of Lilydale will consider the impact of the return period precipitation totals from Atlas 14 with additional consideration that the in-place systems were designed using the return period precipitation totals from TP 40.

Even with wide variations in climate conditions, climatologists have found four significant climate trends in the Upper Midwest (*Minnesota Weather Almanac,* Seeley, 2006):

- Warmer winters
- Higher minimum temperatures
- Higher dew points
- Changes in precipitation trends – more rainfall is coming from heavy thunderstorm events and increased snowfall

According to the Soil and Water Conservation Society's (SWCS) 2003 report on climate change, total precipitation amounts in the United States (and in the Great Lakes region) are trending upward, as are storm intensities. Precipitation records in the Twin Cities area show the annual average precipitation has increased, as shown in the following examples:

- Minneapolis-St. Paul Airport station – the average annual precipitation increased from 28.32 inches (1961-1990 average) to 29.41 inches (1971-2000 average), a 3.8% increase. The average annual precipitation further increased to 30.61 inches (1981-2010 average), a 4.1% increase (data from the Climatology Working Group website: http://climate.umn.edu/).

As noted by the SWCS, increased storm intensities result in increased soil erosion and increased runoff. The MPCA's global warming website (http://www.pca.state.mn.us/hot/globalwarming.html) states that increased flooding could also result from more intense precipitation events.

Climate information can be obtained from a number of sources, such as the following websites:

- For climate information about the Twin Cities metropolitan area: http://climate.umn.edu/doc/twin_cities/twin_cities.htm
- For a wide range of Minnesota climate information: http://climate.umn.edu/
- For other Minnesota climate information: http://www.dnr.state.mn.us/climate/index.html

3.3 Geology and Soils

Lilydale lies immediately south of the Mississippi River and slightly east of the confluence of the Mississippi and Minnesota Rivers. Lilydale is on the edge of the Mississippi River gorge, which is a unique geologic region, carved out about 12,000 years ago by the retreat of glacial St. Anthony Falls.

The geologic strata underlying the soil of Upper Lilydale can be physically observed in the vicinity of the steep bluffs that are present within Lilydale. A plan sheet of Lilydale's sanitary sewer system identifies the geologic strata present for much of Lilydale southwest of Interstate 35E. This plan sheet may be viewed at Lilydale's City Hall.

From the elevation of the Mississippi River, which is generally at an elevation between 690 and 710 feet above mean sea level, to an elevation of approximately 772 feet is St. Peter Sandstone. From 772 feet to 776 feet is Glenwood Shale; from 776 feet to 880 feet is Platteville Limestone. In the northeast corner of Lilydale, a layer of Decorah Shale has been exposed to an elevation of approximately 890 feet (City of Lilydale, 1990).

The soils on the slopes below the bluff lines are comprised of red and gray glacial till and exposed fragments of bedrock. These slopes are generally very steep and have only a thin layer of soil.

On the bluff tops, soils in Upper Lilydale are generally shallow, well drained, and light to moderately dark-loams and sandy-loams. These soils are generally overlying glacial till and bedrock, but in some cases lie directly over bedrock. In most cases, these soils are suited to urban development.

3.4 Topography

The topography within Lilydale has been affected in the geologic past by the actions of the Mississippi River and the retreat of the glacial St. Anthony Falls. Most of the developed portions of the City are located between two bluffs. The first bluff rises from the elevation of the Mississippi River to the elevation of Highway 13. The second bluff runs roughly parallel to and southeast of Highway 13. Most of the land in Lower Lilydale, which is generally the area between the Mississippi River and the toe of the lower bluff, consists of land that has been purchased by St. Paul Parks. Elevations within Lilydale range from elevations of approximately 690 feet above mean sea level at the Mississippi River to elevations of approximately 890 feet above mean sea level in the northeast corner of Lilydale. Figure 3 shows the elevation contours within Lilydale. Additional topographic detail can be found in Lilydale's Comprehensive Plan.

3.5 Land Use

Lilydale's Comprehensive Plan should be consulted for detailed information on current land use within Lilydale. The current land use is shown in Figure 4 and is summarized in Table 4.

Table 4. Land Use in Lilydale

Land Use	Percent of Lilydale
Commercial	4.6%
Park/Open Space	48.5%
Public	0.1%
Residential – Low Density	0.1%
Residential – Multi-Family	11.6%
Residential – Single Family	0.5%
Right of Way	2.6%
Water (including River)	30.4%
Vacant	0.9%

4.0 Hydrologic System

4.1 Drainage System and Watersheds

The drainage system serving Lilydale is shown in Figures 5a and 5b. Culverts and storm sewers on this figure include field-verified storm sewers and culverts and storm sewers and culverts as reported in Mn/DOT plans, in the Mendota Heights Local Surface Water Management Plan, and in the November 1990 Lilydale Comprehensive Stormwater Management Plan.

The subwatersheds which drain into Lilydale or include portions of Lilydale are shown on Figures 6a and 6b. The watersheds are based on the 1997 SCSWMP, updated to reflect the redevelopment of the Shiely Property (now Stonebridge) since that time. No attempt was made to delineate the subwatersheds lying between the Dakota County Big Rivers Regional Trail and the Mississippi River (the area north of subwatersheds L-1, L-3, L-6, L-7, L-8, and L-9); rather flows traversing this narrow strip of land are treated as discharging to the Mississippi River. All watersheds have either natural outlets or storm sewer outlets, so there are no land-locked basins within the City.

Peak flows for 10-year and 100-year storm events using TP 40 precipitation data are presented in Appendix A. Some stormwater runoff flows originate in Mendota Heights and enter Lilydale through storm sewers, overland flow, or through culverts. The 2006 Mendota Heights Local Surface Water Management Plan presents peak flows for the areas that drain towards Lilydale; however, the modeling was less detailed than that done for Lilydale in 1997. Therefore, the 1997 modeling results are presented in Appendix A because they provide a more detailed representation of the different ways water flows through Lilydale, and appear to be broadly consistent with the 2006 Mendota Heights Plan.

4.2 Water Resources Inventory

The City of Lilydale has many natural water resources available for the use and enjoyment of its residents. These water resources are briefly described here and are shown, along with a National Wetland Inventory, in Figure 7.

4.2.1 Mississippi River

The Mississippi River is listed on the Minnesota Public Waters Inventory and forms the bulk of the boundary along the west side of Lilydale. It serves as a major transportation corridor for the shipping industry and as a major recreation area for boaters, anglers, and nature lovers. Approximately half of the streambanks of the Mississippi River within the Lilydale city limits are located in Lower Lilydale, which is managed by St. Paul Parks. The remaining streambanks within

Lilydale are located on private land, but remain undeveloped except for the Dakota County Regional Trail that runs adjacent to the river.

The Minnesota Pollution Control Agency (MPCA) publishes a bi-annual list of impaired waters. A full description of this list and criteria for including water bodies on this list can be found on the MPCA's website (www.pca.state.mn.us). The Mississippi River at Lilydale is included on the 2010 impaired waters list. It is listed as being impaired for fecal coliform, mercury, and turbidity. There are Fish Consumption Advisories for mercury, PCB, and PFOS.

4.2.2 Minnesota River

The Minnesota River is also listed on the Minnesota Public Waters Inventory and forms the remaining portion of the western boundary for Lilydale. It serves the same transportation and recreation functions as the Mississippi River.

The Minnesota River at Lilydale is included on the 2010 impaired waters list. It is listed as being impaired for fecal coliform, mercury, turbidity, and dissolved oxygen. There are Fish Consumption Advisories for mercury and PCB.

4.2.3 Interstate Valley Creek

Interstate Valley Creek begins near the intersection of Highway 110 and Highway 149 (Dodd Road) in the City of Mendota Heights. The creek flows northward and generally parallels Interstate 35E. It passes through a culvert in Lilydale Road, then along Lilydale Road and drains directly into the Mississippi River. Within Lilydale, the stream is generally in good condition. There are some eroding streambanks near the Big Rivers Regional Trail that were remedied as part of the Lilydale Senior Living redevelopment. In addition, the bluff area adjacent to the Lilydale Senior Living was placed in a conservation easement.

4.2.4 Ivy Falls Creek

Ivy Falls Creek begins in the Somerset Golf Course in the City of Mendota Heights. It has a steep gradient within Mendota Heights that has resulted in some erosion problems. It drops over a waterfall down the river bluffs, then drains to Pickerel Lake within Lilydale, and eventually drains to the Mississippi River. Within Lilydale, the stream is generally in good condition.

4.2.5 Pickerel Lake

Pickerel Lake, a 78-acre lake located in Lilydale and St. Paul, is in the Lilydale-Harriet Island Regional Park complex. Ivy Falls Creek (and its watershed) discharges into Pickerel Lake. Pickerel

Lake also receives drainage from the wetland south of the lake. Pickerel Lake discharges to the Mississippi River. When river levels are high enough, the Mississippi River backs up into Pickerel Lake, which can greatly affect the water quality of the lake. There is a public access on the lake; possible future improvements by St. Paul Parks include fish stocking, a nature/interpretive center, a parking area, and other public improvements. There is a Fish Consumption Advisory for bluegill, sunfish and northern pike in Pickerel Lake.

Pickerel Lake is included on the MPCA's 2010 impaired waters list. There is a Fish Consumption Advisory for mercury on this lake.

4.2.6 Wetlands

The only DNR designated wetlands within the City's boundaries are Pickerel Lake and the wetlands in Lower Lilydale. The National Wetland Inventory (Figure 7) includes Pickerel Lake and the Lower Lilydale wetlands and also includes the Mississippi and Minnesota Rivers within the city limits. Lower Lilydale can generally be described as the area north of the Pool and Yacht Club property, from the toe of the bluffs to the Mississippi River. Lower Lilydale north of the Pool and Yacht Club is within the floodway of the Mississippi River, which precludes it from most categories of future development. These natural wetland areas are strongly influenced by flooding from the Mississippi River.

4.3 Water Quality Data

Water quality data for the Mississippi River and Minnesota River are available through the MPCA at the following website: http://www.pca.state.mn.us/water/milestone-sites.html#lowermiss or through http://www.pca.state.mn.us/water/. Data is also available through the US Environmental Protection Agency (USEPA) at http://www.epa.gov/storet/.

A limited amount of water quality data is available for Pickerel Lake (Appendix C).

No water quality data was found for Ivy Falls Creek or Interstate Valley Creek.

4.4 Pollutant Sources

Land use within the City consists of residential, commercial, and parkland. Therefore, any pollution in the stormwater runoff is believed to be consistent with typical pollution from these types of land uses.

According to the Dakota County GIS database (http://gis.co.dakota.mn.us/website/dakotanetgis/), there are eleven old waste sites, five dumps, five spill sites and four underground storage tanks within the city limits. Contact Dakota County or the MPCA for up-to-date maps and information about these sites.

4.5 Flood Insurance Study

The Mississippi River and the Minnesota Rivers are the only water bodies within Lilydale that have been included in the Dakota County Flood Insurance Study (FIS). The FIS provides floodplain maps and profiles for water bodies included in the study. One recent change to the FIS is that the Pool and Yacht Club is located in the Mississippi River floodplain, but it is no longer located within the floodway. A copy of the current Dakota County FIS is available for viewing at the Dakota County offices in Apple Valley. It can also be viewed on FEMA's website: http://www.fema.gov/hazard/flood/index.shtm.

4.6 Existing Understandings with Landowners for Stormwater Management

As a condition for approval of development and redevelopment plans, Lilydale has required the use of stormwater detention and/or flow rate restrictions (Section 6.2.2). The following conditions are part of the development agreements at the properties and have been successfully implemented:

- Lilydale Senior Living (Figure 6a, subwatershed L-9): Provide runoff detention and infiltration with ponds and rainwater gardens for major portions of the property to reduce the peak flows and eliminate a top-of-bluff discharge location behind the Lilydale Garden Center. The property owners are responsible for maintaining the system, including the ponds, rainwater gardens, pipes, energy dissipation, and inlets.

- Stonebridge (Figure 6a, subwatershed L-7): The Stonebridge stormwater drains to a large detention basin. The outlet from the pond is designed to retain floating materials, as well as sediment, in the pond. The Homeowners Association is responsible for all maintenance of the storm sewer system within this development.

- Lilywood Estates (Figure 6a, subwatershed L-4): Provide ponding of 1.5 feet deep over the dual catch basin inlets at the northwest end of the driveway. This is needed to develop 10 cfs of inlet capacity in storms of up to 100-year return frequency. Overflow for larger storms is to be directed west so that it passes west of the Riverain Condominiums.

- Cliff Side (Figure 6a, subwatershed MB-7): Provide ponding of 1,100 cubic feet of water on the driveway, in order to reduce the 10-year discharge rate to 1 cfs.

- Lilydale Garden Center (Figure 6a, subwatershed L-9): In concert with the construction of the storm sewer system for Lilydale Senior Living, Lilydale Garden Center directs their stormwater into a pond that drains into that system, taking measures to minimize sediment carried by the water.

5.0 Stormwater Management Issues

Lilydale has two on-going stormwater management issues (Section 5.1) and one issue that has a pending resolution (Section 5.2). The City has addressed the stormwater flooding issues identified in the 1989 LMRWMO Watershed Management Plan. These issues were intercommunity issues, and the resolutions are discussed in Section 5.3. The 2011 LMRWMO Watershed Management Plan includes discussion about the Lexington Avenue - Highway 13 drainage issues discussed in Section 5.2.

5.1 Unresolved Issues

5.1.1 Pickerel Lake TMDL

Pickerel Lake is a Minnesota DNR public water body (19-79P) that drains to the Mississippi River, which is also a DNR public water body. Pickerel Lake is currently included on the State of Minnesota Impaired Waters List. Options have been considered to reduce pollutant loading to the lake, and the LMRWMO is currently completing a TMDL study to identify sources of pollution and develop Waste Load Allocations and Load Allocations for the cities within the Pickerel Lake watershed (Lilydale, Mendota Heights, and West St. Paul).

Ivy Falls Creek drains directly into Pickerel Lake and is one source of pollutant loading for the lake. Another important source is the Mississippi River, which overflows its banks and inundates Pickerel Lake more than once a decade. Since Ivy Falls Creek flows through an urbanized watershed, it receives typical urban pollution during the initial portions of storm runoff. The initial portion of the storm runoff in which a relatively large percentage of the pollution is washed off of urban surfaces is often referred to as the "first flush." The Water Quality Feasibility Study (LMRWMO, 2004) prepared for the LMRWMO, identified an option involving diverting "first flush" flows from Ivy Falls Creek into a treatment wetland.

The first flush diversion structure discussed in the Water Quality Feasibility Study was determined to not be feasible at the time because the object of the study was reducing total pollutant load to the Mississippi River. Pickerel Lake effectively functions as a treatment pond for any pollution discharged by Ivy Falls Creek. Therefore, as far as the Mississippi River is concerned, additional treatment would not provide significant benefit. However, if concerns arise about the water quality in Pickerel Lake, then an option such as the first flush diversion structure may be reconsidered.

The LMRWMO is currently completing a TMDL study of Pickerel Lake with the goal of identifying sources of nutrient loading. Because a portion of Lilydale drains to Pickerel Lake, the outcome of the TMDL may result in Waste Load Allocations and Load Allocations that impact the City. The City may be required to implement projects to treat stormwater runoff generated within the City in order to meet its Waste Load and Load Allocations.

5.1.2 Interstate Valley Creek Bacteria Impairment

In early 2013, the MPCA issued a draft Upper Mississippi River Bacterial TMDL and Protection Plan. The draft study determined that Interstate Valley Creek is impaired for bacteria, and the City learned that it can expect to receive a Waste Load Allocation for reducing bacteria levels in stormwater runoff.

The study included one sampling location on Interstate Valley Creek between the railroad tracks and Lilydale Pool and Yacht Club. The data showed that bacteria concentrations were strongly correlated to stormwater runoff. The study did not determine if the bacteria is of animal or human origin.

Once the final TMDL is issued, the City will likely coordinate efforts with other cities in the Interstate Valley Creek watershed to determine sources and origins of the bacteria in the runoff in order to provide targeted implementation projects to meet the TMDL requirements.

5.2 Pending Issues

5.2.1 Lexington West Watershed

Despite the drainage improvements made in the vicinity of Lexington Avenue (Sections 5.2.1 and 5.2.2), peak runoff rates continue to be a concern at the intersection of Lexington Avenue and Highway 13. Stormwater runoff continues to result in sediment deposition within the Highway 13 right-of-way; create a potential for I/I issues at Lexington-Riverside Condominiums (Section 5.3); and contribute to long-term concerns about bluff erosion and stability.

LMRWMO and the City of Lilydale completed a feasibility study in 2010 to examine potential drainage improvements in the vicinity of Lexington Avenue and Highway 13. The study recommended two feasible alternatives, both including capturing runoff in an extension of the Lilydale Stormwater Project #1 storm sewer system. The more feasible option was to construct a new storm sewer along Lexington Avenue and tie into storm sewer Project #1 in front of Lilywood.

Following completion of the feasibility study, the Minnesota Department of Transportation (MnDOT) informed the City of their intent to complete a project along Highway 13 that would

involve repaving the road, installing curb and gutter, and improving drainage within the right-of-way. An informal agreement was reached to do a combined project in which MnDOT would be permitted to tie into Lilydale's Storm Sewer Project #1 and Lilydale would pay for the cost of increasing pipe sizes to accommodate more drainage than included in MnDOT's original plan. Construction is scheduled to occur in 2015.

5.3 Resolved Issues

5.3.1 Lexington West Watershed

Stormwater from this area, shown as MB-13 on Figure 5a, formerly ran overland down Lexington Avenue. This caused erosion in the steep ditch along Lexington Avenue. The sediment was deposited at the Lexington-Riverside Condominiums lawn at the outlet of a culvert under Highway 13. The water passed across the lawn, down a limestone bank, onto the driveway leading to the garages at the condominiums, and then alongside the garages to the condominium back lawn and the river bluffs. Large storms would also flood into the garages.

Two projects and improvements at Lexington-Riverside Condominiums have alleviated the excess flows that caused this situation. A new storm sewer was constructed to convey the watershed MB-13 stormwater (from Lexington Court and Kingsley Estates) to Mayfield Heights Pond. That pond had ample excess capacity to receive this water. The pond improves water quality and releases the water at a slow rate along Mayfield Heights Road. This project was completed in 1994.

The second project provided storm sewer along the lower part of Lexington Avenue, on the west side, that carries the water along Highway 13, then across the Colony Townhomes property and down a drop shaft to a tunnel that connects to the Mississippi River. This project also eliminated use of an old storm sewer that discharged near the top of the bluffs, eliminating a potential source of bluff erosion. This project was completed in 1995.

5.3.2 Mayfield District

The drainage system from the intersection of Highway 13 and Mayfield Heights was inadequate to convey the storm drainage without erosion of this channel, sedimentation, and erosion of the Mississippi River Bluffs. When a new development was constructed (Lilywood Estates) that would add water to this system, a new storm sewer system was installed from the north side of Highway 13 to the Big Rivers Regional Trail. This system, in addition to serving the Lilydale developments that border it, receives the outflow from Mayfield Heights Pond, and other runoff from Mendota Heights and from Highway 13. This project was completed in 1995.

5.4 Top-of-Bluff Outfalls

Stormwater runoff being discharged in a channel or pipe at or near the top of the bluff creates a long-term erosion problem for the bluff. New discharges have not been permitted for many years and the City has sought ways to either eliminate or reduce the volume of flow going over any existing outfall locations. The City will continue to explore means to eliminate or reduce runoff being discharged at or near the top of the bluff.

5.5 Inflow and Infiltration

In the Metropolitan Council's 2005 report titled "Preliminary Inflow/Infiltration Surcharge Program," Lilydale was identified a potential source of excess stormwater inflow and infiltration (I&I) into the metro-wide sanitary sewer system. A study to determine sources of excess stormwater inflow will be completed in 2008. Inflow is where stormwater is misdirected into Lilydale's sanitary sewer system through intentional connections such as sump pumps, outside area drains, and roof leaders. Infiltration is where storm and ground water enter the sanitary sewer system through cracks or leaks in the sewer pipes or manholes. I&I can lead to backups, overflows and unnecessary and expensive treatment of stormwater.

A certain amount of I&I is inevitable in all sanitary systems, and systems are designed to account for some I&I. However, excessive and uncontrolled I&I creates the need to build larger interceptors and treatment plants than would otherwise be needed all to treat relatively clean stormwater that would otherwise not require this level of treatment. As a result, Metropolitan Council Environmental Services (MCES) is dealing with the I&I problem by adding a surcharge to Lilydale's sewer bill to pay for the costs of constructing the larger interceptors and treatment plants. Lilydale can avoid paying the surcharge if they can fix any I&I problems by the year 2012. Most identified issues have been addressed and Lilydale is working with the remaining properties to implement corrective actions.

It is the policy of Lilydale to correct any sources of excess inflow that originate from City-owned property. It is also the policy of Lilydale to work with private land owners to correct sources of excess inflow that originate from private property.

6.0 Goals and Policies

Almost all of the developable land within Lilydale has already been developed, therefore, Lilydale's Goals and Policies relate almost entirely to the maintenance of existing systems or to redevelopment activities.

Lilydale participates in both the LMRWMO and LMRWD. Both organizations were formed as agreements between cities and residents within each watershed to work together towards the common goal of maintaining or improving the quality of the surface waters and stormwater runoff. The goals and policies of these organizations are also the policies of Lilydale. The goals and policies of the DNR, MPCA, Metropolitan Council, and any other relevant regulatory agency should also be consulted in addition to those discussed here.

6.1 Lake and Stream Water Quality

Goal

All work in Lilydale will be managed for non-degradation of the surface water quality within the city limits, with allowance for natural variability. Therefore, it is Lilydale's intention, as property redevelops, to require stormwater management practices that will minimize adverse impacts on the surface waters within the city limits.

Policies

WQ1. Land development, redevelopment and other projects within the tributary watershed will be designed to preserve or improve existing water quality so far as reasonably possible. To conform to this policy, Lilydale will require implementation of best management practices during land development and other construction in the tributary watershed.

WQ2. Lilydale will address any future mandatory Total Maximum Daily Load (TMDL) requirements.

WQ3. For redevelopment of properties, the developer should propose systems to provide pretreatment of stormwater runoff for those portions of the stormwater system that receive direct stormwater runoff (i.e., no pretreatment) from highly impervious land uses.

WQ4. Lilydale will cooperate with the LMRWMO, Met Council, Minnesota DNR, City of Mendota Heights, City of St. Paul, Dakota County SWCD or any other agency that desires to conduct water quality monitoring for surface waters within Lilydale.

WQ5. Lilydale will cooperate with the LMRWMO, Met Council, Minnesota DNR, City of Mendota Heights, City of St. Paul, Dakota County SWCD, or other interested governmental bodies to establish water quality goals for surface waters that pass through or lie within the city limits.

WQ6. Lilydale will assess and prioritize shoreland areas for restoration. Shoreland areas include streambanks and lakeshore areas. Any areas identified for restoration will be included in future management plans. Lilydale will prepare a schedule for the assessment and prioritization of shoreland areas. The schedule will be based on the stability of the areas, local major rain events, and changes in the watersheds to the shoreland areas. Lilydale will assess shoreland areas on Ivy Falls Creek and Interstate Valley Creek. Lilydale will cooperate with St. Paul Parks on assessments of shoreland areas of Pickerel Lake and will cooperate with the United States Army Corps of Engineers on assessments of shoreland areas of the Mississippi River.

WQ7. Lilydale encourages the use of low impact development (LID) practices during development or redevelopment, wherever possible, to reduce impervious surfaces and improve water quality. Where infiltration practices are not recommended, filtration practices or low impact site design may be used as alternatives.

WQ8. An average 15 foot buffer of natural vegetation above the 100-year High Water Level (if established) or wetted boundary shall be used around lakes, streams, and wetlands, upon 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). (See WM3)

WQ9. 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.

WQ10. Regulated substances, hazardous or biological waste, or petroleum products, whether treated or untreated, may not be discharged to any stormwater BMP devices that may have a deleterious effect upon a water of the state (surface and groundwater), unless the discharge is in compliance with federal, state, and local regulations.

6.2 Stormwater Quality, Rates and Volumes

6.2.1 Recent Practice and General Approach

Lilydale is committed to and has been incorporating stormwater quality improvement measures into its drainage system improvements. The 1993/1994 Mayfield Heights Diversion Project, performed jointly by Lilydale and Mendota Heights, diverted the runoff from 8.5 acres of Lilydale's urban land (subwatershed MB-13, Figure 6a) to a stormwater pond in subwatershed MB-10 that provides significant water quality benefits through removal of suspended sediments. Individual developments have been required to provide significant stormwater improvement as well. Riverwood Apartments (subwatershed L-7, Figure 6a) constructed stormwater detention basins to limit their postdevelopment runoff to predevelopment rates. The 2002 Stonebridge development (23 acres) included a pond designed to remove sediment, and with an outlet designed to retain both floating and heavier-than-water materials. The Lilydale Senior Living redevelopment (4.1 acres above the bluffs in subwatersheds L-8 and L-9, Figure 6a) reduces impervious area by over 40 percent, and provides detention and rainwater garden treatment for the runoff from paved surfaces. The controlled area of these projects, which provide substantial water quality improvement, represents more than one-half of Lilydale's developable land above the river bluffs.

In general, Lilydale requires that property owners manage their own stormwater and all drainage that flows across their property. Lilydale has, at its discretion, participated in providing stormwater management that involves intercommunity drainage from upstream communities. In such cases, Lilydale, in cooperation with the LMRWMO and/or LMRWD, the upstream communities, and other non-City property owners (such as the Minnesota Department of Transportation and Dakota County), has worked cooperatively with landowners to provide improved stormwater management.

Stormwater management systems will be designed to provide conveyance capacity for the 10-year storm event (level of service). The 10-year storm is the critical precipitation or runoff event which has approximately a 10-percent chance of occurring in any year. The "level of service" is that part of the storm sewer system's total capacity needed to convey runoff without unusual hardship or significant interference with day-to-day public activities. By selecting a 10-year storm event, Lilydale accepts a 10-percent probability in any year that some inconvenience will occur for the day of the storm.

Lilydale intends for drainage systems to provide a 100-year "level of protection" from flooding. (The 100-year event is the critical-duration runoff event (precipitation or snowmelt) which has a one-percent chance of occurring in any year.) Thus, ponds are designed for 100-year events.

Likewise, the secondary capacity provided by overflow channels and temporary storage in local depressions must be sufficient to protect permanent facilities from flood damage in the 100-year event. If damage or other unacceptable risk is predicted to occur, then the conveyance system is to be sized for a larger event, such that improvements in these areas are provided 100-year protection. Thus, the level of protection along all trunk conveyors, streams, and open channels and around all wetlands, ponds, detention basins, and lakes will be based on the 100-year event.

The portions of the system that convey outflows from ponding areas will be sized to convey the critical 10-year storm flow or the 100-year event outflow from upstream ponding areas, whichever is greater.

The design storms described above are determined through statistical analysis of rainfall records across the region and country. In previous versions of Lilydale's Water Resources Management Plan, Technical Paper 40 (TP 40) (Hershfield, 1961) was the document used to determine design storms. In early 2013, the National Oceanic and Atmospheric Administration (NOAA) released draft maps of return period precipitation totals, with a full draft study expected to be issued later in 2013. The revised maps incorporated more rain gaging stations and longer rainfall records, and published a report that essentially serves as an update to TP 40. The new study is commonly referred to as "Atlas 14". Both studies examined total rainfall over various lengths of time, so a complete comparison of design storm rainfall totals between the two studies would require several tables. The 24-hr storm is one of the most common storm durations used in design storms, and a comparison of the 24-hour rainfall totals for various return periods is provided in Table 3 in Section 3.2.

Most previously completed storm sewer systems in Lilydale (Stormwater Project No. 1, Stormwater Project No. 2, Mayfield Heights diversion) were designed with capacity to convey the 100-year frequency peak flow rate from the TP 40 rainfall totals. There is generally some excess capacity in the system; however, some of Lilydale's storm sewer systems may no longer meet the level of service for which they originally designed. Since these systems were originally designed to convey the peak flows from the 100-year storm, they still have enough capacity to convey the peak flows from at least the 10-year storm. The current Level of Service and Level of Protection will be evaluated during the implementation of this Water Resources Management Plan. It is Lilydale's intention that new trunk stormwater conveyance systems be designed to accommodate the 100-year frequency peak flow rate, insofar as feasible.

Lateral systems that feed the trunk systems are to be designed consistent with the receiving trunk system capacity. For instance, systems feeding to the 10-year-design system in Victoria Road (subwatershed MB-7) should be designed for 10-year flows. The Lilywood Estates system (subwatershed L-4) was designed for the 100-year flows from the ponded runoff in the driveway, consistent with the design standard for Lilydale Stormwater Project No. 1.

6.2.2 Goals and Policies for Stormwater Quality, Rates and Volumes

Goal 1

Operate, manage, and maintain Lilydale's stormwater system to ensure proper functioning of the system and to meet the requirements of Lilydale's NPDES Phase II MS4 Permit and other agency requirements.

Policies

SWPPP1. Lilydale will implement the BMPs identified in its SWPPP for its NPDES Phase II MS4 Permit.

SWPPP2. Lilydale will inspect, operate, maintain, and repair its stormwater system, following a regular work schedule (see Lilydale's SWPPP, Appendix I).

SWPPP3. Lilydale will implement BMPs on City projects in accordance with the NPDES General Construction Stormwater Permit and Lilydale's NPDES Phase II MS4 Permit.

SWPPP4. Lilydale will address any future mandatory Total Maximum Daily Load (TMDL) requirements.

Goal 2

Improve the quality of stormwater runoff reaching the Minnesota River and Mississippi River by reducing nonpoint source pollution (including sediment) carried in stormwater runoff, reducing volumes of stormwater runoff and reducing the amount of impervious surface in the developed parts of Lilydale.

Policies

SQ1. Lilydale will require implementation of best management practices (BMPs) for new development projects in order to achieve removal rates consistent with LMRWMO and NPDES standards. BMPs must achieve a minimum 50% removal of total phosphorus for runoff from the project site, and the development may not result in a net increase of TSS or TP loading to downstream water bodies. Findings in TMDLs may supersede established standards and may require greater removal rates. BMPs can be found in the Minnesota Pollution Control Agency's publication "Protecting Water Quality in Urban

Areas," the *Minnesota Stormwater Manual* (www.pca.state.mn.us/water/stormwater/stormwater-manual.html), and other resources. Lilydale requires pretreatment of stormwater prior to discharge into any new system to protect the functionality of the system. Pretreatment shall collect sediment, skim floatables, and be easily accessed for inspection and maintenance. The development shall include provisions for the ongoing operation, maintenance, renewal, and replacement of the BMPs to assure their effectiveness. Each development shall annually submit a letter to Lilydale describing the maintenance or other work performed on their BMPs, and characterizing their condition and whether they appear to remain effective for stormwater quality improvement.

SQ2. Redevelopment shall incorporate best management practices that result in net reductions in TSS and TP consistent with LMRWMO policies and NPDES requirements. The target reductions of TSS and TP are 80% and 50%, respectively, and explanations must be provided if the redevelopment is unable to achieve these targets. Findings in TMDLs may supersede established standards and may require greater removal rates. The redevelopment shall include provisions for the ongoing operation, maintenance, renewal, and replacement of the BMPs to assure their effectiveness. Each redevelopment shall annually submit a letter to Lilydale describing the maintenance or other work performed on their BMPs, and characterizing their condition and whether they appear to remain effective for stormwater quality improvement.

SQ3. For new development and redevelopment projects unable to meet required reductions of TSS and TP, Lilydale may allow pollutant reductions to be completed through off-site mitigation consistent with the stipulations in Liydale's MS4 Permit, MPCA regulations, and Lilydale ordinances.

SQ4. Lilydale will require submittal of stormwater management plans (Runoff Control Plans or Runoff Management Plans in terminology used by the LMRWMO and LMRWD, respectively) for land disturbance and development or redevelopment activities. The stormwater management plans must meet the stormwater management design criteria in this WRMP, City of Lilydale ordinances, and either the Lower Mississippi River Watershed Management Organization Watershed Management Plan or the Lower Minnesota River Watershed District Watershed Management Plan (depending on the project location), including stormwater rate control and water quality treatment requirements. Peak rate of

runoff from new development or redevelopment must not exceed the existing rate for the 1-year, 2-year, 10-year and 100-year events.

SQ5. Lilydale is in a unique setting, at the bluffs of the Mississippi River. An important consequence of this setting is that water which infiltrates above the bluffs tends to discharge at the steep bedrock and soil slopes of the bluffs. Such discharges accelerate the weathering and deterioration of the steep bluff slopes. Therefore, Lilydale does not encourage infiltration of stormwater for groundwater recharge. Filtration for stormwater quality improvement is encouraged, such as incorporating a subsurface drain system in a rainwater garden to convey the infiltrated water to a stormwater conveyance system.

SQ6. Lilydale discourages stormwater infiltration practices when soil conditions, groundwater supply issues, safety issues, snow removal, and other concerns would make such practices inappropriate or impractical.

SQ7. Lilydale may prohibit infiltration where:

a) Industrial facilities are not authorized to infiltrate industrial stormwater uner and NPDES/SDS Industrial Stormwater permit issued by the MPCA.
b) Vehicle fueling and maintenance occur.
c) 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) High levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.

SQ8. Lilydale may restrict the use of infiltration techniques in the following circumstances:

a) Where Hydrologic Soil Group D (clay) soils are predominant.
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.

SQ9. If an infiltration practice is determined to be appropriate and practical, pretreatment of stormwater prior to discharge into the new infiltration practice must be included to protect the functionality of the system. Pretreatment shall remove sediment, skim floatables, and be easily accessed for inspection and maintenance.

Goal 3

Minimize flood damage to residential, business, commercial and public structures and property, and protect against increased flooding caused by land disturbing activities and other projects.

Policies

SRV1. Stormwater System Capacity Criteria

a. Conveyance systems should handle 10-year flows without overtopping, and should handle 100-year flows without damage.

b. Ponds should be designed to accommodate 100-year volumes, with a minimum of one foot of freeboard to overflow.

   Detention basins on trunk stormwater systems must be designed for the 100-year event that produces the highest ponding (considering storms of short duration through long snowmelt events), plus a minimum of one foot of freeboard. The effect of exceeding the detention basin capacity must also be considered. Lilydale will promote the use of multi-stage outlets into pond designs to control flows from smaller, less frequent storms and help maintain base flows in downstream open channels.

c. All structures and permanent improvements should be protected from failure or severe damage for 100-year frequency storms. If possible, this is to be accomplished with the stormwater management system. Otherwise, this may be accomplished with "floodproofing."

d. A safe pathway for flows in excess of 100-year return frequency should be provided. Lilydale will require the incorporation of emergency overflow structures (e.g., swales, spillways), where feasible, to minimize the potential for flooding from storms larger than the 100-year (1 percent) event or plugged outlet conditions.

SRV2. Lilydale requires that development and redevelopment cause no increase over existing conditions in 1-year, 2-year, 10-year and 100-year discharges from the property, and safely conveys that discharge to the existing downstream drainage facility. In addition, Lilydale requires that proposed development, redevelopment, and/or infrastructure projects show that they will not overtax the capacity of the existing downstream stormwater management system.

SRV3. For Lilydale-owned drainage systems, as areas develop or redevelop, Lilydale will secure easements extending up to at least the 100-year flood elevation over floodplains, detention areas, wetlands, ditches, storm sewers and all other Lilydale-owned parts of the stormwater system.

SRV4. Any intercommunity water resources planning conducted by Lilydale will consider alternative solutions.

a. All drainage studies or feasibility studies conducted by Lilydale that lead to projects in a subwatershed with an intercommunity drainage issue will consider the impact of the project on the drainage issue and will consider the total intercommunity project cost.

b. No solutions or partial solutions to intercommunity drainage issues will be implemented without prior completion of a feasibility study of the options and adoption of a preferred option by the WMO, except in emergencies.

SRV5. It is the policy of Lilydale that existing drainage is the responsibility of the landowners. Landowners must provide safe, erosion-resistant conveyance of stormwater across their property for natural and/or existing drainage. This includes the responsibility to convey the water from groundwater seeps and springs, as well as culverts, drainageways, and overflow pathways. Water is to be conveyed in a drain system to the next downstream property, lake, stream, or pond. Along the bluffs of the Mississippi River, the City encourages property owners to convey the water to the drainage system under the Big Rivers Regional Trail in a manner that does not erode or damage the bluffs or the receiving drainage system.

SRV6. Lilydale will respond appropriately to citizen-identified drainage issues, depending on the type of drainage issue:

a. If the drainage issue is limited to the resident's lot, it is the responsibility of the property owner to resolve the drainage problem, but City staff can provide recommendations to the property owner if so directed by the City Council.

b. If the drainage issue is the result of a larger scale problem that is not covered by Lilydale's Code, Ordinances, or Policies, it is the involved property owners' responsibility to resolve the drainage problem.

c. If the drainage issue is the result of a larger scale problem that is covered by Lilydale's Code, Ordinances, or Policies, there are two levels of City involvement:

1. Relatively minor issues that can be resolved/addressed quickly by maintenance staff; or

2. Larger issues that can be resolved only through a public improvement project, which requires a longer process to implement.

SRV7. Land disturbing activities on bluffs adjacent to property, waterbodies, and unique natural resources shall incorporate protection from erosion, sedimentation, flooding, and other damage.

6.3 Erosion and Sediment Control

Goal 1

Prevent erosion and sedimentation to the greatest extent possible.

Goal 2

Regulate land-disturbing activities to protect against erosion and sedimentation.

Goal 3

Implement soil protection and sedimentation controls to maintain health, safety, and welfare.

Policies

ESC1. Lilydale requires the preparation and submittal of erosion control plans for land development, redevelopment, and other construction work through its stormwater ordinance. Erosion control plans must be prepared by a qualified individual, conform to the MPCA's NPDES General Permit to Discharge Stormwater from Construction Sites, and incorporate the appropriate BMPs described in *Protecting Water Quality in Urban Areas* (MPCA, 2000), the *Minnesota Stormwater Manual*, and other resources. Erosion control plans shall also conform to all NPDES stormwater regulations that apply to erosion control. The NPDES General Permit requirements cover both temporary and permanent erosion controls.

The erosion control plan must contain sufficient detail to show erosion control methods on individual building sites, such as silt fence and gravel driveway entrances. Waterborne sediment must be prevented from leaving the site during and after construction to prevent sedimentation of downstream water bodies.

ESC2. Lilydale requires implementation of site restoration and erosion control measures for development or redevelopment excavation or fill activities under Lilydale's Erosion Control-Stormwater Runoff Ordinance (903.09).

ESC3. To prevent bluff erosion, new outfalls of any kind at the top of the bluffs are prohibited. Outfalls include storm sewer pipes, drains, channels, or any other point source of concentrated runoff. Existing outfalls will be assessed as part of the development of a bluff management plan. If existing outfalls are causing erosion, they may be required to be modified. As requested, Lilydale will provide advice and resources to assist property owners find economically feasible best management practices to prevent erosion.

ESC4. Lilydale will inspect City-permitted/approved projects to monitor compliance with and enforce City requirements and permit/approval conditions. The frequency of inspection will depend upon the project size, the risk of failure, and the level of activity. City enforcement includes promptly notifying permittees of any erosion and sedimentation problems found on the site and requiring permittees to correct the problems.

ESC5. Lilydale will collect a cash surety charge or another type of fee or obligation to ensure that City-permitted/ approved projects are completed in accordance with City regulations and permit/approval conditions. If a permittee does not correct an identified problem within a reasonable amount of time, Lilydale will use the cash surety (or other collected fee) to pay for correcting the problem. Lilydale will use other enforcement measures as necessary and as allowed by Minnesota law. *(Lilydale will review and revise if necessary its stormwater management ordinance to include these provisions.)*

ESC6. Lilydale will require effective energy dissipation devices at all conveyance system discharges to minimize bank, channel or shoreline erosion.

ESC7. Acceptable erosion in drainage ways is limited to that which causes no increase in erosion over the natural erosion process of the watercourse and does not cause destruction of properties adjacent to the watercourse.

6.4 Groundwater

Goal:

Protect the quality and quantity of Lilydale's groundwater resources.

Policies

GW1. Lilydale will cooperate with Dakota County in its efforts to promote awareness of groundwater resource issues through public education and information programs and support the policies in the Dakota County groundwater plan.

GW2. Lilydale will consider the use of specific pollution prevention methods to protect groundwater quality where necessary.

GW3. Lilydale will advise citizens that Dakota County provides water test kits and sampling assistance to well owners for the purposes of water quality monitoring.

GW4. Lilydale will require landowners to seal abandoned wells. Landowners may seek assistance through Dakota County's Well Sealing Grant Program.

GW5. Lilydale will maintain updated records of the one known on-site septic systems, and prohibit installation of new individual sewer systems or alteration, repair or extension of existing systems when connection can be made to a publicly-owned sanitary sewer system. The owner of the on-site septic system must submit annual records to the City pertaining to the septic system. The City will maintain the records.

6.5 Wetland Management

The only DNR designated wetlands within the City's boundaries are Pickerel Lake and the wetlands in Lower Lilydale. The National Wetland Inventory (Figure 7) includes Pickerel Lake and the Lower Lilydale wetlands and also includes the Mississippi and Minnesota Rivers within the city limits. Lower Lilydale can generally be described as the area north of the Pool and Yacht Club property, from the toe of the bluffs to the Mississippi River. Lower Lilydale north of the Pool and Yacht Club is within the floodway of the Mississippi River, which precludes it from most categories of future development. These natural wetland areas are strongly influenced by flooding from the Mississippi River. Lilydale will cooperate with St. Paul Parks to manage the wetlands in the Pickerel Lake area. Should any new wetlands be constructed within the City of Lilydale, Lilydale will manage and preserve the wetlands according to the following goals and policies.

Goal 1

Preserve wetlands for water retention, recharge, soil conservation, wildlife habitat, aesthetics, and natural enhancement of water quality.

Goal 2

Achieve no net loss of wetlands, in conformance with the Minnesota Wetland Conservation Act (WCA) and associated rules (Minnesota Rules 8420).

Policies

WM1. Lilydale is the local governmental unit (LGU) responsible for administering the Wetland Conservation Act and rules.

WM2. Lilydale will protect wetlands from impacts (e.g., filling or draining) in the following order: avoid, minimize, mitigate. Mitigation of unavoidable wetland impacts must be accomplished through restoration (first priority), enhancement (second priority), or wetland creation (third priority). Wetland functions and values will be assessed on a case-by-case basis. Lilydale does not have sufficient natural wetland area subject to development pressure to merit development of a comprehensive wetland inventory.

WM3. An average 15 foot buffer of natural vegetation above the 100-year High Water Level (if established) or wetted boundary shall be used around lakes, streams, and wetlands, upon 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). (See WQ8)

WM4. Lilydale will inventory, classify and assess function of wetlands that will be impacted, directly or indirectly, by development and redevelopment projects, in accordance with LMRWMO policy. Since all wetlands within Lilydale are located within land operated by St. Paul Parks, it is anticipated that wetland inventory and classification will be a collaborative effort with St. Paul Parks.

6.6 Water Resources Enjoyment

Goal

Protect and enhance fish and wildlife habitat, recreation opportunities, and shoreland integrity.

Policies

WRE1. Lilydale will encourage public and private landowners to maintain wetlands and natural habitat for the benefit of wildlife.

WRE2. Lilydale will promote and encourage protection of undisturbed shoreland areas and restoration of disturbed shoreland areas to their natural state as much as possible.

WRE3. Lilydale will encourage the creation of a buffer zone along shorelines where natural vegetation is maintained to provide wildlife habitat and help improve water quality.

WRE4. Lilydale will seek opportunities to maintain, enhance, or provide new habitat as part of wetland modification, stormwater facility construction, or other appropriate projects.

WRE5. Lilydale will seek to incorporate into proposed projects alternative landscape designs that (a) increase beneficial habitat, wildlife and recreational uses; promote vegetative water use; and (b) decrease detrimental wildlife uses (such as beaver dams, goose overabundance) that damage water control facilities, shoreline vegetation, water quality or recreational facilities.

WRE6. Lilydale currently meets Mississippi River Critical Area requirements for protecting the bluffs and the shoreland of the Mississippi River. Lilydale will strive to meet any future requirements.

7.0 Implementation

This section describes the significant parts of Lilydale's WRMP implementation program, including its NPDES Phase II MS4 permit, operation and maintenance of its stormwater system, education and public involvement, funding, design standards, ordinance implementation and official controls, implementation priorities, and WRMP update and amendment procedures. As required by the LMRWMO, Lilydale will submit an annual report that documents progress made in the implementation of this plan.

7.1 NPDES Phase II MS4 Permit

Under the U.S. Environmental Protection Agency's (EPA) Stormwater Phase II National Pollutant Discharge Elimination System (NPDES) Rules, small municipal separate storm sewer systems ("MS4s") serving populations under 100,000 that are located in urbanized areas are required to obtain a NPDES Phase II Stormwater permit under the Clean Water Act. MS4s must develop, implement, and enforce a Stormwater Pollution Prevention Plan (SWPPP) designed to minimize the discharge of pollutants from the MS4, to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. Common pollutants include oils and grease from roadways, pesticides from lawns, sediment from construction sites, and litter. Once runoff containing these contaminants reaches storm sewer systems, it is typically untreated before discharging to receiving waters. The MPCA identified Lilydale as a MS4 based on the 2000 census. A complete description of the MS4 Stormwater Program and its requirement can be found at the MPCA's MS4 website (http://www.pca.state.mn.us/water/stormwater/stormwater-ms4.html).

Lilydale applied for and received a NPDES Phase II MS4 Permit in 2003 and applied for reissuance in 2006 and 2011. In May 2013, MPCA approved new permit requirements as Part II of the 2011 application for reissuance. Once the application process is complete, it is anticipated that the approved permit will be added to this plan as a minor amendment, along with any necessary items to the implementation plan. As part of the permit, Lilydale prepared and adopted a SWPPP in 2006 that will be updated as part of the 2013 Part II Application. The SWPPP outlines the appropriate best management practices (BMPs) for Lilydale to control or reduce the pollutants in stormwater runoff. Lilydale will accomplish this through the implementation of the BMPs outlined within its SWPPP. These BMPs could be a combination of education, maintenance, control techniques, system design and engineering methods, and other such provisions that are appropriate to meet the requirements of

the NDPES Phase II permit. BMPs have been prepared to address each of the six minimum control measures as outlined in the rules:

1. Public education and outreach on stormwater impacts
2. Public participation/involvement
3. Illicit discharge detection and elimination
4. Construction site stormwater runoff control
5. Post-construction stormwater management in new development and redevelopment
6. Pollution prevention/good housekeeping for municipal operations

For each of these six minimum control measures, Lilydale identified appropriate BMPs, along with measurable goals, an implementation schedule, and the persons responsible to complete each measure.

Prior to June 30 of each year of the five-year permit cycle, Lilydale must hold an annual public meeting. At this meeting, Lilydale also receives oral and written statements and considers them for inclusion into the SWPPP.

Also prior to June 30 of each year, Lilydale must submit an annual report to the MPCA. This annual report summarizes the following:

1. **Status of Compliance with Permit Conditions**. The annual report contains an assessment of the appropriateness of the BMPs and Lilydale's progress toward achieving the identified measurable goals for each of the minimum control measures. This assessment is based on results collected and analyzed, inspection findings, and public input received during the reporting period.
2. **Work Plan**. The annual report lists the stormwater activities that are planned to be undertaken in the next reporting cycle.
3. **Modifications to the SWPPP**. The annual report identifies any changes to BMPs or measurable goals for any of the minimum control measures.
4. **Notice of Coordinated Activities**. A notice is included in the annual report for any portions of the permit for which a government entity or organization outside of the MS4 is being utilized to fulfill any BMP contained in the SWPPP.

Lilydale implements the requirements of the MS4 Stormwater Program through the following measures.

7.1.1 Public Education and Outreach

It is important and necessary for Lilydale to conduct a public education and outreach program with regards to stormwater management. When the general public has a working knowledge of stormwater issues and pollution prevention, they are better able to contribute to the dialogue regarding any proposed stormwater projects; they have a better understanding of actions that can be taken on their properties; and they are better equipped to notice and report problems within Lilydale, such as a failure of the stormwater system or an illicit discharge into Lilydale's storm sewer system.

The primary method of public education and outreach has been and will continue to be through the newsletter Lilydale sends to all residents. Lilydale periodically receives material about stormwater issues from a variety of sources, including the Lower Mississippi River Watershed Management Organization (LMRWMO), the Lower Minnesota River Watershed District (LMRWD), their member cities, and their advisory bodies. The information may be the LMRWMO or the LMRWD annual newsletter, or other information provided by the LMRWMO or the LMRWD. Educational material received will be compiled and distributed in the spring newsletter. This information will also be made available at the City Hall.

In accordance with LMRWMO policy, Lilydale will seek opportunities to provide presentations to active community groups to increase awareness of water resources issues.

Lilydale will continue to seek public input about stormwater issues. Lilydale will specifically request public comments when stormwater issues are before the City Council, and there will be a section about stormwater on the agenda at each annual meeting. All comments will be noted and considered. Prior to the annual meeting, a public notice will be printed in the newspaper of record, the South-West Review. Unsolicited comments throughout the year will also be welcomed.

7.1.2 Public Participation and Involvement

The public is invited and encouraged to participate in the development of a Stormwater Pollution Prevention Plan (SWPPP). Participation has been and will continue to be facilitated by an annual meeting to discuss the SWPPP; however, comments will be accepted at any time.

7.1.3 Illicit Discharge Detection and Elimination

As of the writing of this WRMP, Lilydale has contracted with the City of Mendota Heights to provide inspection of the outfall/energy dissipation structure of the storm sewer at Riverwood Apartments, and of the drop structure portion of the storm sewer outfall system at Colony

Townhomes. The scope of the Mendota Heights work includes observing for evidence of illicit discharges.

If illicit discharge is found, the source will be investigated and the property owner/manager will be contacted to eliminate the discharge.

7.1.4 Construction Site Stormwater Runoff Control

Lilydale has ordinances regarding the many aspects of construction site stormwater runoff control. Ordinances are occasionally updated or added, so Lilydale should be contacted directly for information regarding current ordinances. In addition, permits may need to be obtained from state or federal agencies. The current City ordinance on erosion and stormwater control is in Appendix B (Ordinance 903.09).

7.1.5 Post-Construction Stormwater Management in New Development and Redevelopment

As part of the approval process for new development and redevelopment, City ordinances require a plan for the management of stormwater. Agreements with developers regarding stormwater management are summarized in Section 4 of this WRMP. Ordinances are occasionally updated or added, so Lilydale should be contacted directly for information regarding current ordinances. In addition, permits may need to be obtained from state or federal agencies.

7.1.6 Pollution Prevention and Good Housekeeping

Lilydale coordinates street sweeping activities for all City-owned streets. Street sweeping on streets owned by other entities is coordinated by those entities. Lilydale also keeps records of all relevant stormwater pollution prevention documents.

7.2 Operation and Maintenance of Stormwater Systems

Lilydale will continue its operation and maintenance activities to ensure that Lilydale's stormwater system functions as designed. Lilydale's operation and maintenance program is closely tied with Lilydale's implementation of its NPDES Phase II MS4 permit (described in Section 7.1).

7.3 Assessment and Prioritization of Shoreland Restoration

Lilydale will assess and prioritize shoreland areas for restoration in cooperation with St. Paul Parks and the Army Corps of Engineers. Shoreland areas include streambanks and lakeshore areas. Any areas identified for restoration will be included in future management plans and will be budgeted for as necessary. Lilydale will prepare a schedule for the assessment and prioritization of shoreland

areas. The schedule will be based on the stability of the areas, local major rain events, and changes in the watersheds to the shoreland areas.

7.4 Record Keeping for On-Site Septic Systems

Lilydale shall maintain updated records of the one known on-site septic system. The property owner will be required to submit a report to the City annually on the maintenance and operation of the septic system. The City will maintain these annual records. Alteration, repair, or extension of existing systems shall be prohibited when connection can be made to a city sanitary sewer system. The Mendota Heights sanitary sewer system is the closest to the property and the most likely connection location.

7.5 Funding of Implementation Program

Lilydale has implemented a stormwater utility to fund the implementation of this plan and to provide funding for additional future stormwater work (Appendix G).

7.6 Ordinance Implementation and Official Controls

Lilydale's current ordinances are provided in Appendices D through G. Some of Lilydale's ordinances and official controls are tied with Lilydale's implementation of its NPDES Phase II MS4 permit (described in Section 7.1).

To meet the future needs of Lilydale, City ordinances need to be reviewed to determine if updates are necessary to existing ordinances or if new ordinances need to be adopted if existing ordinances do not sufficiently meet the needs of the City in meeting regulatory requirements. The list below includes the ordinances and topics that will be reviewed and considered for updates or new ordinances.

- Waste control for construction site operators
- Regulatory Mechanism to Address Post Construction Runoff from New Development and Redevelopment
- Wetland Protection Ordinance
- Stormwater Maintenance Ordinance
- Shoreland Protection Ordinance

7.6.1 Permitting Process

To ensure that all development and redevelopment meets Lilydale's ordinances, goals and policies, development and redevelopment plans must go through a review process and receive permits prior to construction. The typical permits and reviews related to stormwater that are required of redevelopments are listed here:

- General Stormwater Permit for Construction Activity from the MPCA
- NPDES Permit from the MPCA
- Review of onsite erosion control measures during construction
- Review of proposed BMPs and their effectiveness in improving stormwater quality
- Review of plan for post-construction stormwater management (Runoff Control Plan)

A complete list of all permits and approvals required by Lilydale can be found in Lilydale's Comprehensive Plan. In addition to the typical stormwater permits and reviews listed above, additional permits and reviews typically required include the following:

- PUD Plan review and approval, including Concept Plan and Final Plan
- Plat review and approval, including Preliminary and Final Plat
- Environmental Review
- Building Permit
- Demolition Permit (for redevelopment)

Additional permits and reviews may be required, depending on the nature of the development/ redevelopment.

Table 6. Water Resources Implementation Program—City of Lilydale

Project Number	Project Description	Cost Estimate[1]	Potential Funding Sources	Proposed Year(s) of Implementation
1.0 Ongoing Projects				
1.1	Newsletter distribution. Distribute newsletter to provide residents with critical information regarding stormwater issues.	$2,500/year	Stormwater/ General Fund	2013-2023
1.2	Annual Stormwater Pollution Prevention Plan (SWPPP) public hearing	$1,000/year	Stormwater Fund	2013-2023
1.3	Complete Annual Report for SWPPP	$1,000/year	Stormwater Fund	2013-2023
1.4	Complete Annual Report to LMRWMO	$1,000/year	Stormwater Fund	2013-2023
1.5	Provide presentations about water quality to community	$1,000/year	Stormwater Fund	2013-2023
1.6	Street Sweeping Program. Sweep streets once annually. Record the annual number of times streets are brush swept as well as document any additional activities that were undertaken regarding this program.	$200/year	Stormwater Fund	2013-2023
1.7	Complete initial and follow-up assessment of streambanks and shoreland	$2,000/ assessment	Stormwater/General Fund	2014 (initial) TBD (follow-up)
1.8	Maintain records of septic systems	$250/year	Stormwater Fund	2013-2023
1.9	Inflow and Infiltration projects	$10,338-$25,200/ year	Sewer Fund	2013-2014
2.0 One-time Projects				
2.1	Complete Part II of the MS4 Permit	$2,500	Stormwater Fund	2013
2.2	Review Level of Service and Level of Protection provided by existing Lilydale storm sewer systems	$5,000	Stormwater Fund	2014
2.3	Complete joint project with MnDOT to install new storm sewer between Lexington Avenue and Stormwater Project No. 1	$200,000	Stormwater Fund	2015
3.0 Ordinance reviews and updates				
3.1	Review, revise, and adopt (if necessary) stormwater management and maintenance ordinance	$3,500	Stormwater Fund	2014
3.2	Review, revise, and adopt (if necessary) ordinance for wetland protection	$3,500	Stormwater Fund	2014
3.3	Review, revise, and adopt (if necessary) ordinance for shoreland protection	$3,500	Stormwater Fund	2014
3.4	Review, revise, and adopt (if necessary) ordinance regarding waste controls for construction site operators	$3,500	Stormwater / General Fund	2014
3.5	Review, revise and adopt (if necessary) ordinance regarding post construction runoff from new development and redevelopment	$3,500	Stormwater Fund	2014

1. Assumes that City staff will be able to provide model ordinances for consideration.

8.0 Plan Update and Amendment Procedure

This Water Resources Management Plan (WRMP) will guide Lilydale's activities through 2023, or until superseded by adoption and approval of a subsequent WRMP. Lilydale will begin the process of updating this plan one to two years before its expiration date. The updated plan will meet the requirements of the applicable Minnesota laws and rules, the LMRWMO, and the LMRWD.

Lilydale may revise this WRMP through an amendment prior to updating the plan, if either minor changes are required, or if problems arise that are not addressed in the WRMP. However, this WRMP remains in full force and effect until an updated WRMP is approved by the LMRWMO and the LMRWD.

Any significant changes to this WRMP must be approved by both the LMRWMO and the LMRWD. Minor changes to this WRMP will not require LMRWMO or LMRWD approval and can be made by City staff, but such minor amendments will be supplied to the LMRWMO and LMRWD for their information. Lilydale considers minor changes to be those that do not modify the goals, policies, or commitments identified in the WRMP. Examples of minor changes include:

- Inclusion of new or corrected hydrologic modeling results and mapping, as long as the changes do not significantly affect the rate or quality of intercommunity stormwater runoff.
- Inclusion of new/updated water quality monitoring data.
- Minor changes to Lilydale's implementation program, such as added projects, schedule changes, and revised cost estimates, as long as there are no intercommunity impacts of such changes and the changes stem from the goals and policies in the WRMP.

If it is unclear whether a proposed WRMP change is minor or not, Lilydale will bring the issue to the LMRWMO and LMRWD Boards for their determination.

Lilydale's amendment procedure for significant changes to the WRMP is as follows:

- City Staff preparation and review of WRMP amendment.
- City Council consideration of WRMP amendment. City Council would either approve submittal of the amendment for LMRWMO and LMRWD review and approval, or decide not to move forward with the amendment. If the City Council decides to submit the amendment for LMRWMO and LMRWD approval, the council would also need to determine when/if a public hearing or other public process should be undertaken.

- Submittal of proposed WRMP amendment to LMRWMO and LMRWD for review and approval. Lilydale must also submit the proposed WRMP amendment to the Metropolitan Council and Dakota County. The proposed WRMP amendment would also be distributed to appropriate City staff (e.g., City Cleark/Treasurer, City Engineer). The review process for a WRMP amendment is the same as for the original WRMP—the LMRWMO and LMRWD have 60 days to review and comment on the proposed WRMP amendment.
- City Council adoption of WRMP amendment, after LMRWMO and LMRWD approval of the WRMP amendment.

9.0 References

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Appendix A

Stormwater Design Flow Rates

Table A-1. Stormwater Design Flow Rates for Lilydale, Minnesota. This table is reprinted from the 1997 Supplement to Comprehensive Stormwater Management Plan for the City of Lilydale

Subwatershed	Area (acres)	Downstream Subwatershed	Outlet Type	Peak Discharge (cfs)		Stormwater Detention	Comments
				10-Year	100-Year		
South Tip of Lilydale							
MB-14A	7.8	L-1		7	14	N	Mn/DOT drainage system serves this area.
L-1	NC	Minnesota River		NC	NC	N	Dakota County trail drainage system serves this area.
Lilydale Stormwater Project No. 2 Watershed							
MB-13A	1.0	MB-14	Overland	NC	2.8	N	This area drains by 12" RCP to Mayfield Heights Pond, but overflows in most large storms, draining to Stormwater Project No. 2.
MB-14	5.3	L-2 Outlet System	18” RCP	NC	13	N	See Lilydale Stormwater Project No. 2 for details.
L-2	1.3	12” Drop Shaft and 22” CPEP outlet to Dakota County Trail drainage system	12” RCP	NC	21	N	This watershed is Colony Townhomes’ driveway and front lot area. See Lilydale Stormwater Project No. 2 for details.
Between Lilydale Stormwater Projects No. 1 and No. 2							
MB-12L	7.4	L-3	24” CMP	21.0	58.0	N	Outlets to Lexington-Riverside lawn.
MB-12A	5.0	L-3	18” and 15” CMPs	21.0	36.0	N	Outlets to Lexington-Riverside decorative pond.
L-3	NC	Mississippi River	—	—	—	Y	Lexington-Riverside decorative pond.
Mayfield Heights Pond and Lilydale Stormwater Project No. 1 Watershed							
MB-13	12.5	MB-12U	36” RCP	47	80	Y	This stormwater detention area serves primarily to allow the head to build up, increasing the pipe flow rate. Overflow above 100-year discharge goes to Lilydale Stormwater Project No. 2.
MB-12U	2.6	MB-10	30” RCP	39	67	N	

Table A-1. Stormwater Design Flow Rates for Lilydale, Minnesota. This table is reprinted from the 1997 Supplement to Comprehensive Stormwater Management Plan for the City of Lilydale

Subwatershed	Area (acres)	Downstream Subwatershed	Outlet Type	Peak Discharge (cfs)		Stormwater Detention	Comments
				10-Year	100-Year		
MB-10	22.6	MB-11	6" CMP and 15" RCP two-stage outlet	2.1	9.1	Y	Mayfield Heights Pond.
MB-11	10.3	L-6	30" RCP	29	42	Y	The 100-year flow rate was revised down from 55 cfs in the 2006 Mendota Heights plan to 42 cfs for Lilydale Stormwater Project No. 1 based on a detailed review of MB-11 drainage.
L-4	2	L-6	12" RCP	NC	10	Y	This stormwater detention, up to 1.5 feet deep, serves primarily to allow the head to build up, increasing the pipe flow rate.
MB-19	16.7	L-5	24" CMP	26	48	N	Watershed shown on map is reduced to about half the area listed here. No revised flow rates were available at time of publication.
L-5	NC	L-6	Three 12" RCP One 24" RCP from driveway catch basins		18	Y	See Riverwood drainage planning for details, included with Riverwood ditch evaluation.
L-6	NC	Mississippi River	36" PEP	NC	55	N	See Lilydale Stormwater Project No. 1 for details.
Between Lilydale Stormwater Project No. 1 and Interstate 35E Drainage Area							
Bluff	NC	Mississippi River	None	NC	NC	N	
Interstate 35E Drainage Area							
MB-8	39.4	MB-9	None	NC	4.0	Y	Includes stormwater flow modeling from Caren Road and Caren Court
MB-9	7.9	L-7	12" CMP	16	35	N	
L-7	23.2	L-8	24" RCP	NC	18	Y	

Table A-1. Stormwater Design Flow Rates for Lilydale, Minnesota. This table is reprinted from the 1997 Supplement to Comprehensive Stormwater Management Plan for the City of Lilydale

Subwatershed	Area (acres)	Downstream Subwatershed	Outlet Type	Peak Discharge (cfs)		Stormwater Detention	Comments
				10-Year	100-Year		
MB-6	29.2	L-8		68	117	N	
MB-7	6.1	L-8		21	NC	Y	10-year flow rate set at 21 cfs per Mn/DOT calculation and added flows from Amoco, Chet's Liquors, and Cliff Side (10-year flow rate was 11 cfs in 2006 Mendota Heights Plan; 100-year flow rate was 23 cfs in 2006 Mendota Heights Plan). Stormwater detention at the Cliff Side development is required for flow rate control. See Strub development file for copy of Mn/DOT computations.
L-8	NC	Mississippi River	Open channel	NC	NC	Y	Mn/DOT system along Interstate 35E.
Interstate Valley Creek							
IV-139	—	IV-140	60" RCP	491	626	Y	Stormwater detention on the upstream side of the Lilydale Road embankment is minor.
IV-140	30.6	L-9	Creek	500	633	N	
L-9	NC	Mississippi River	Open channel	NC	NC	Y	Stormwater detention is required at Lilydale Gardens located in L-9.
Between Ivy Falls Creek and Interstate Valley Creek							
MB-5	9.6	L-10		22.8	46.3	N	
MB-4	41.2	L-10	24" CMP	140	253	N	

Table A-1. Stormwater Design Flow Rates for Lilydale, Minnesota. This table is reprinted from the 1997 Supplement to Comprehensive Stormwater Management Plan for the City of Lilydale

Subwatershed	Area (acres)	Downstream Subwatershed	Outlet Type	Peak Discharge (cfs)		Stormwater Detention	Comments
				10-Year	100-Year		
Ivy Falls Creek							
IF-15	13.9	IF-16	12” RCP	9.0	9.0	Y	See Mendota Heights Water Resources Management Plan.
IF-16	15.3	IF-21	12” RCP	7.0	8.3	Y	See Mendota Heights Water Resources Management Plan.
IF-28	23.0	L-10	Creek	290	610	N	Flows to Pickerel Lake.
North End of Lilydale							
MB-2	21.9	L-10		34.8	62.7	N	
MB-20	NC	L-10	24” CMP	NC	NC	N	No information in Mendota Heights Water Resource Management Plan.
L-10	NC	Mississippi River		NC	NC	Y	Pickerel Lake and Mississippi River floodplain.

Appendix B

Figures

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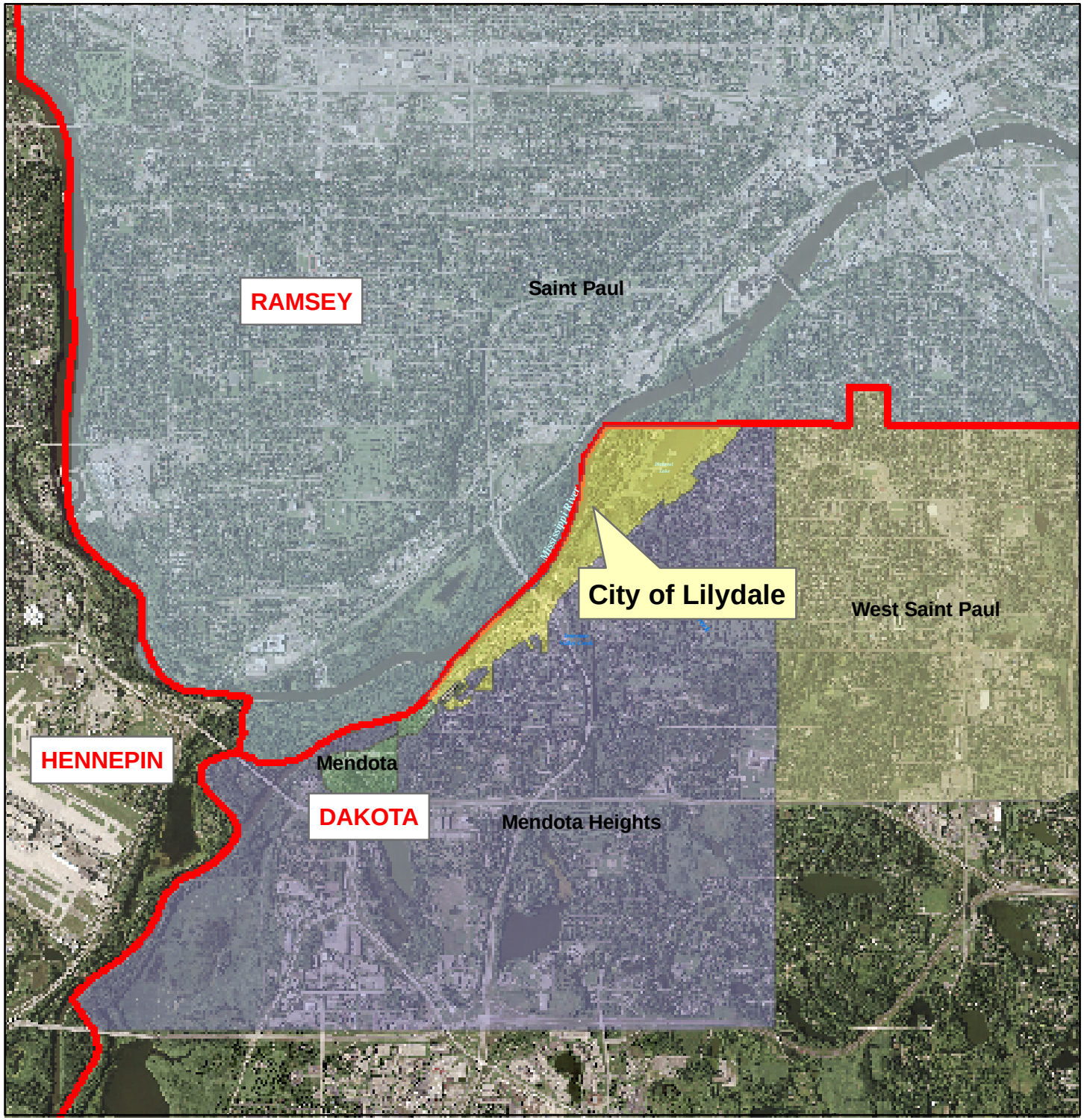

Legend

- Lilydale City Limits
- County boundaries

Neighboring Cities

- Mendota
- Mendota Heights
- Saint Paul
- West Saint Paul

Miles
1 0 1

Kilometers
1 0 1 2

Figure 1

LOCATION OF LILYDALE
IN THE METRO AREA
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota

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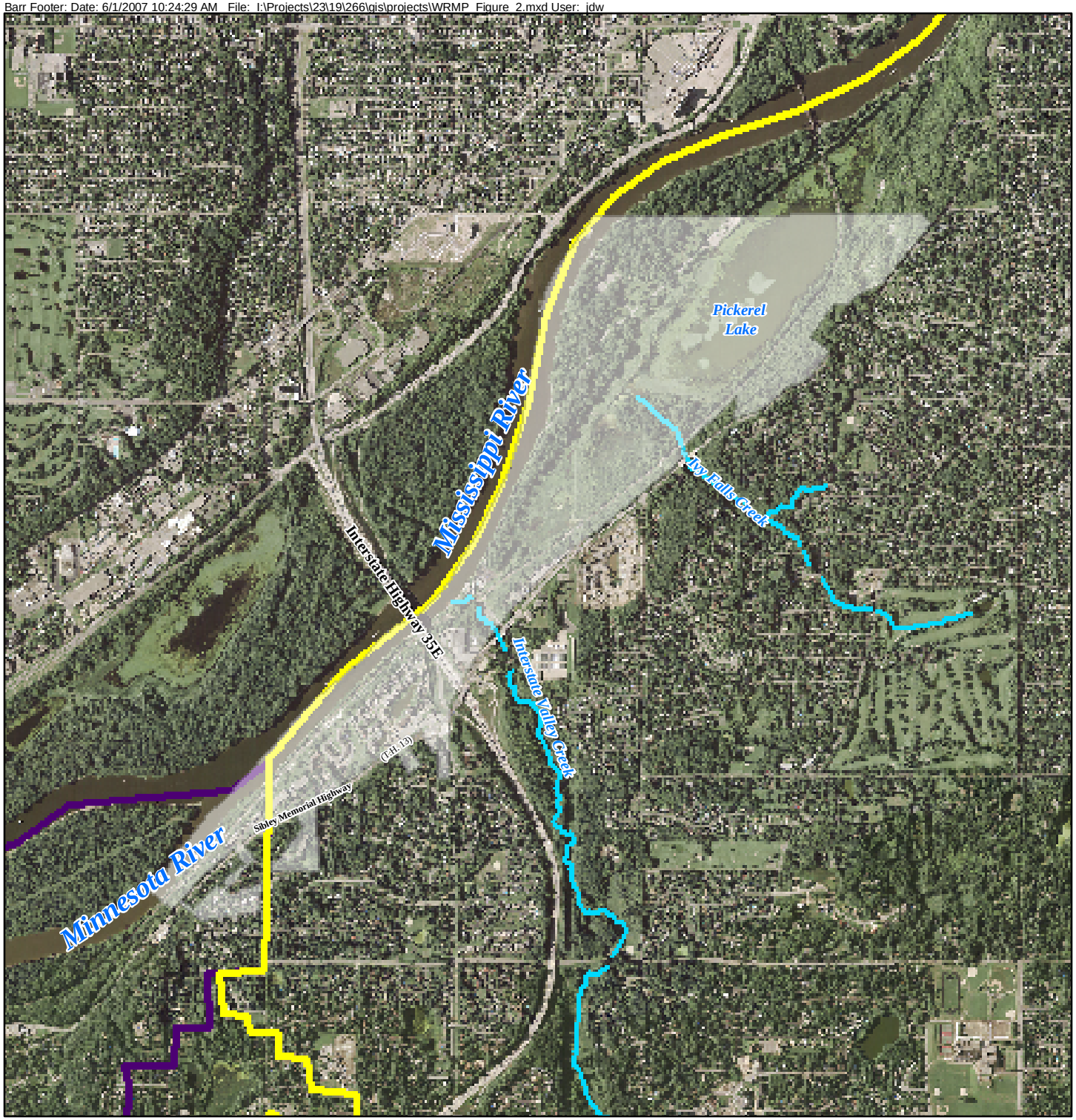

Legend

- Lilydale_city_limits
- LMRWMO Boundary
- LMRWD Boundary
- Streams

Feet
2,000 0 2,000

Meters
500 0 500

Figure 2

BOUNDARIES FOR LILYDALE, LMRWMO AND LMRWD
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota

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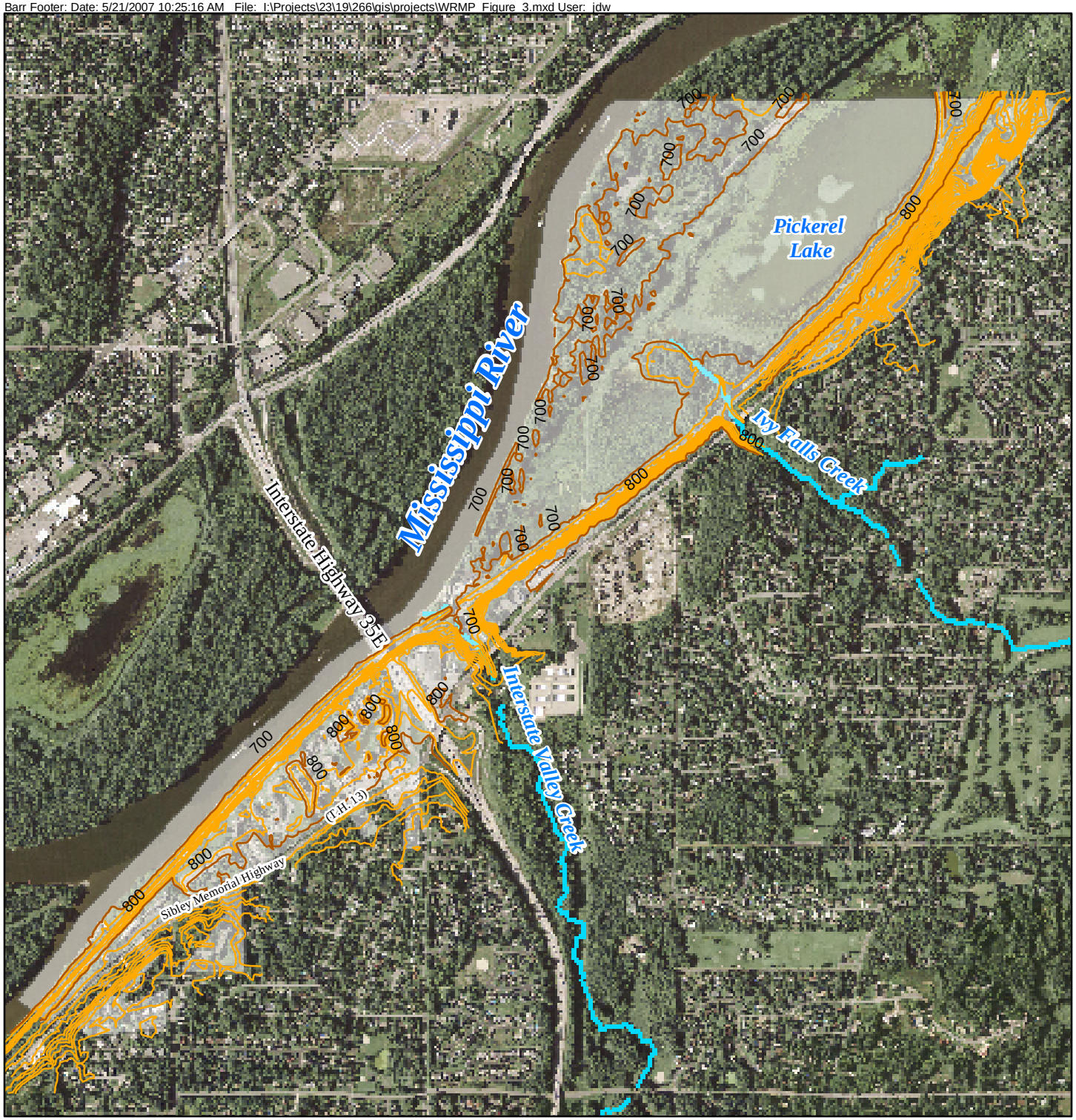

Legend

- 100-ft contours
- 10-foot contours
- Lilydale City Limits
- Streams

Feet
1,000 0 1,000 2,000

Meters
500 0 500

Figure 3

TOPOGRAPHY IN LILYDALE
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota

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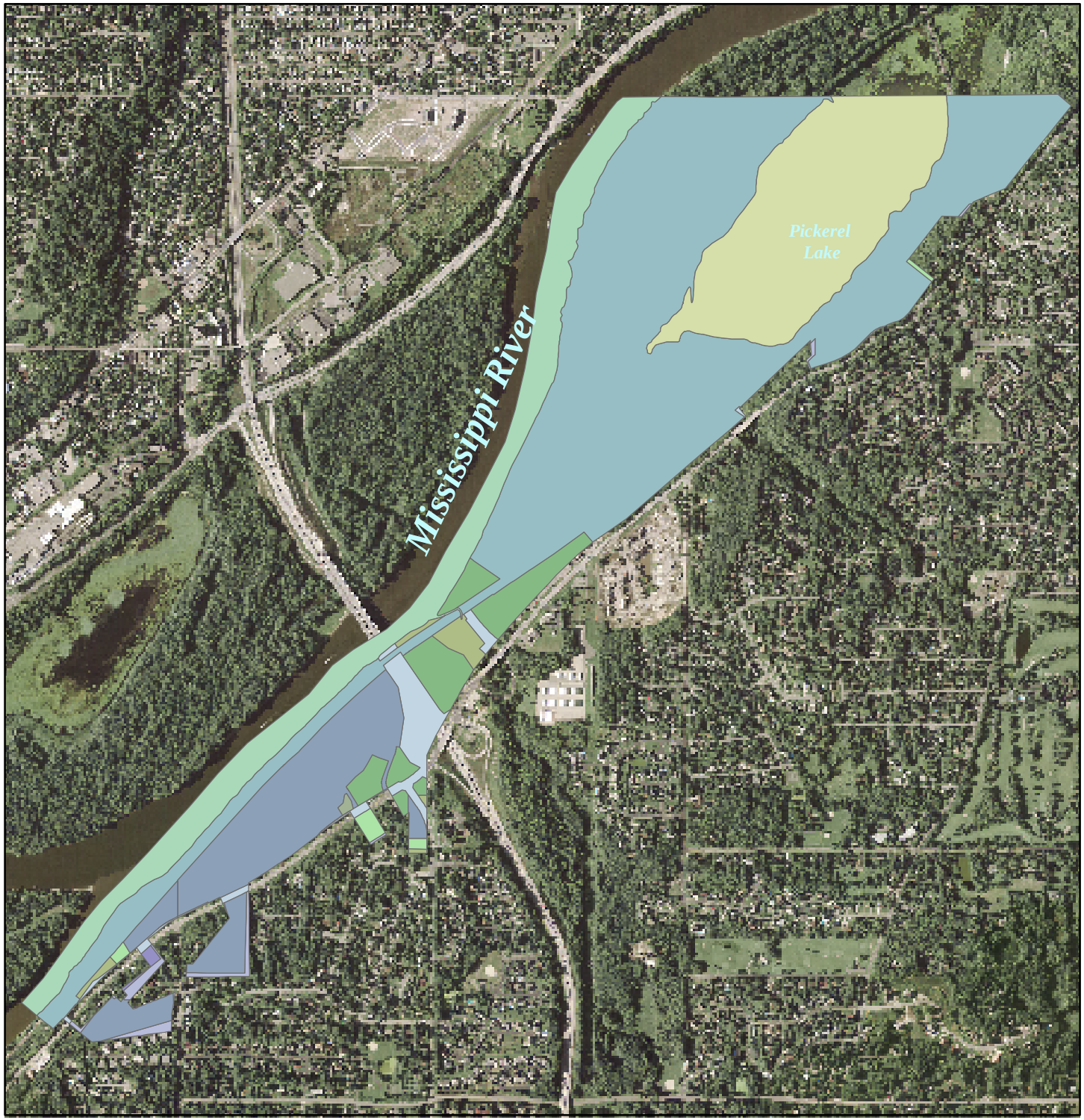


Legend

2007 Land Use

- Commercial
- Low Density
- Multi-Family Residential
- Park/Open Space
- Public
- Right-of-Way
- River
- Single Family Residential
- Vacant
- Water
- Other

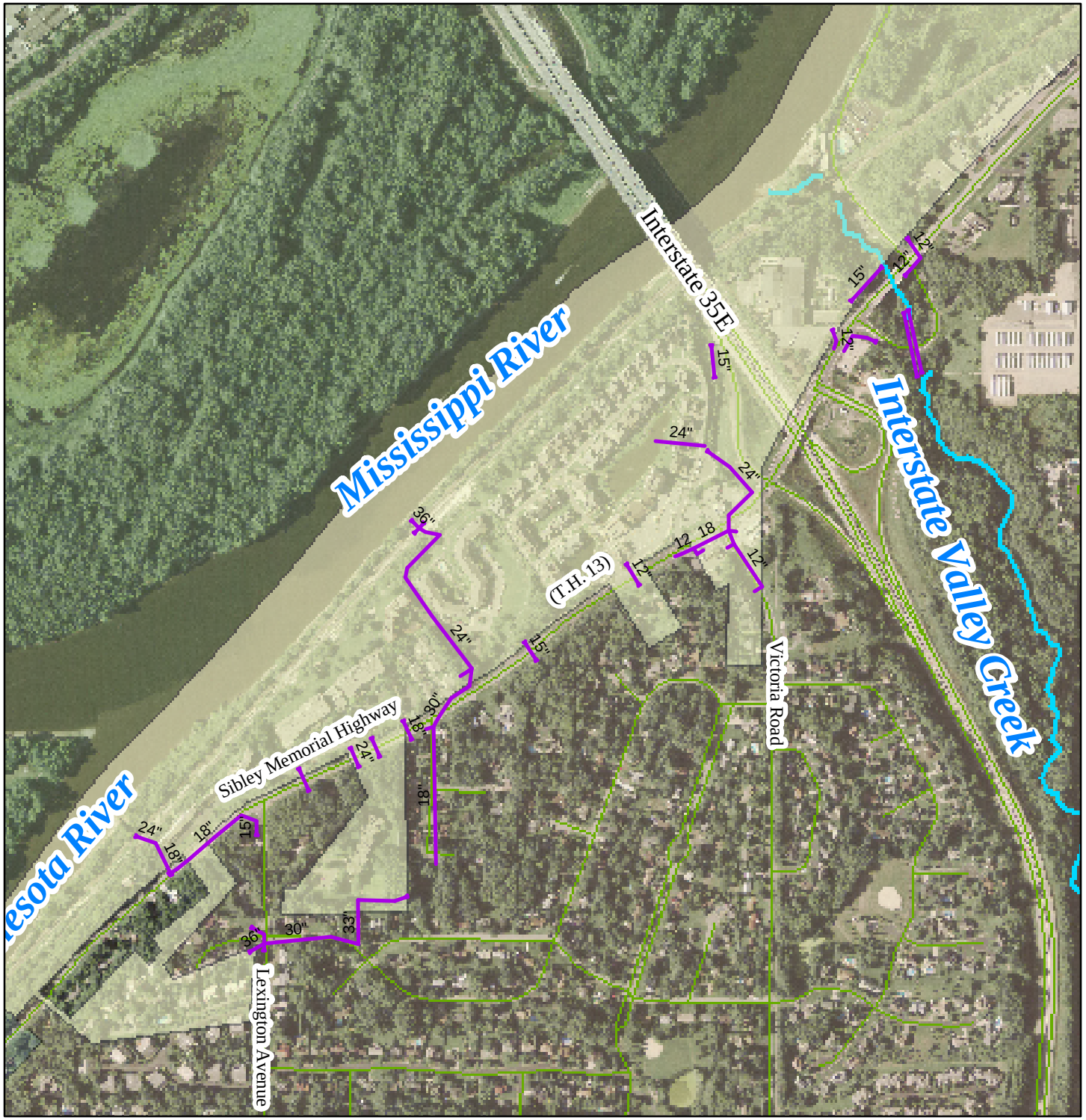
N

Feet
1,000 0 1,000 2,000

Meters
500 0 500

Figure 4

LILYDALE LAND USE
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota



Legend

- Storm Sewer and Culverts
- Lilydale City Limits
- Streams

Feet
500 0 500 1,000

Meters
200 0 200

Figure 5a

STORM SEWERS AND CULVERTS - WEST
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota

Legend

- Storm Sewer and Culverts
- Lilydale City Limits
- Streams

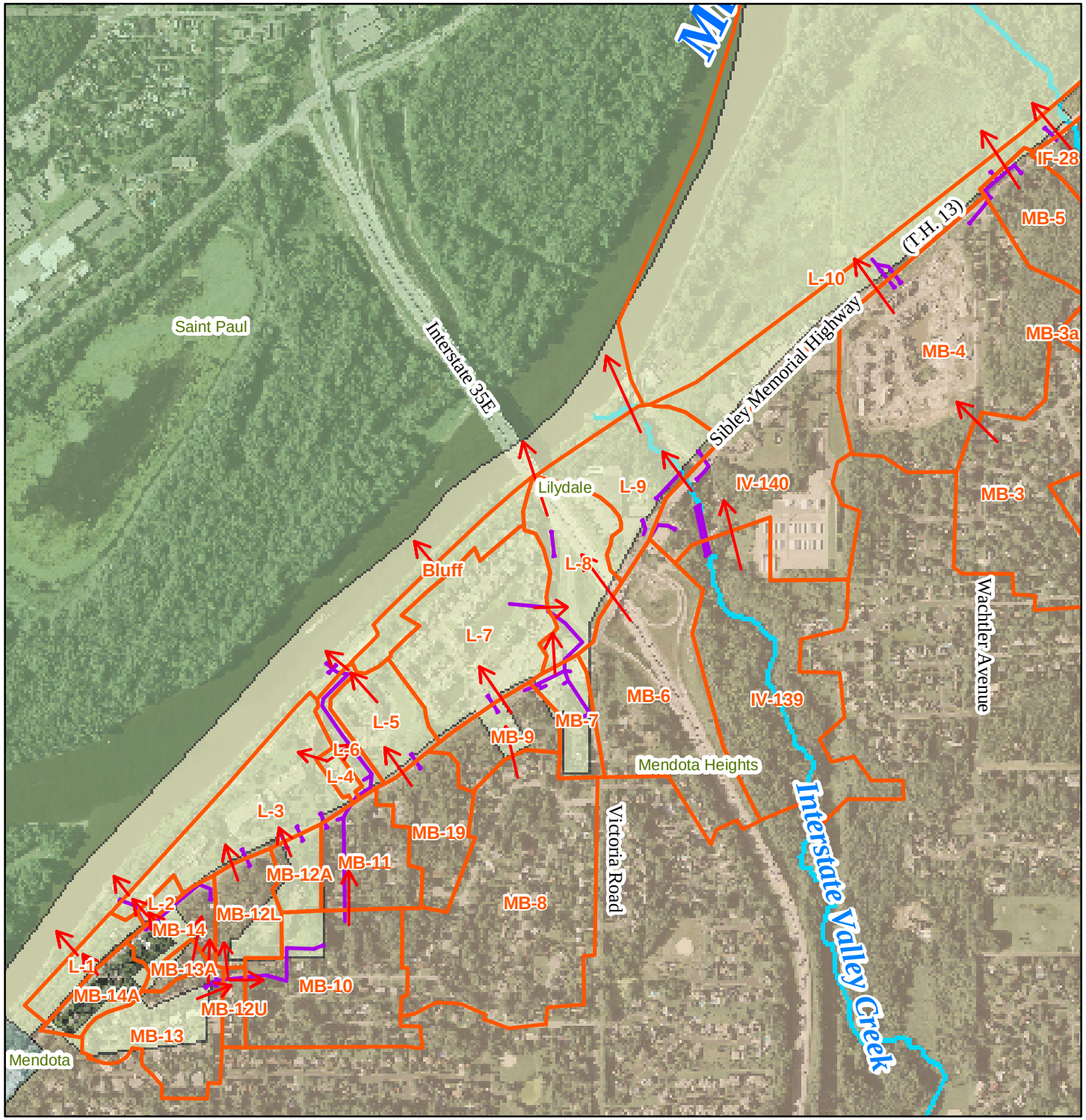
N

Feet
500 0 500 1,000

Meters
100 0 100 200 300 400

Figure 5b

STORM SEWERS AND CULVERTS - EAST
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota



Legend

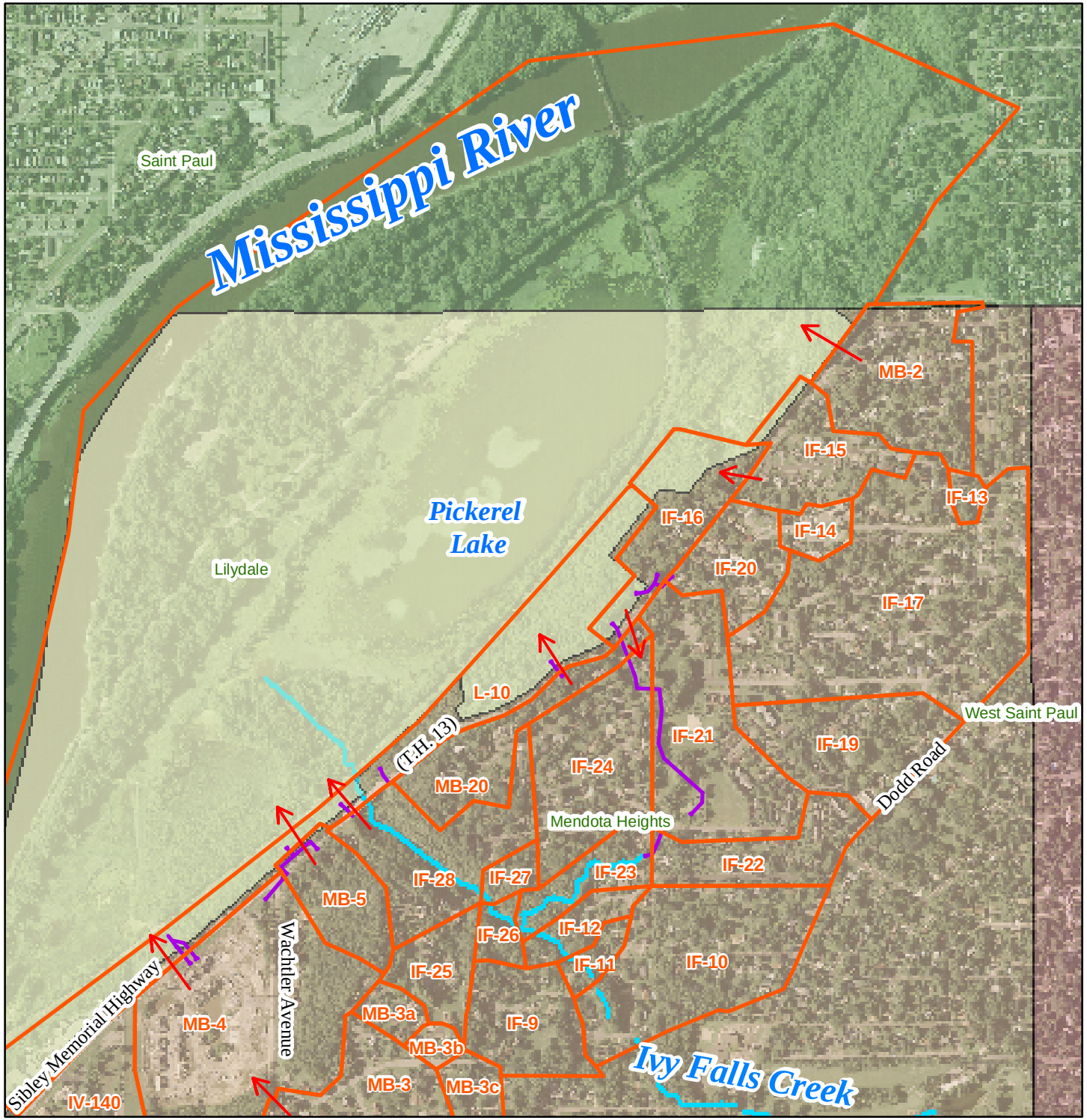
- Drainage Areas
- Drainage Arrows
- Lilydale City Limits
- Storm Sewer and Culverts
- Streams

Feet
1,000 0 1,000

Meters
200 0 200 400

Figure 6a

DRAINAGE AREAS THAT DRAIN TO THE CITY OF LILYDALE - WEST
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota



Legend

- Drainage Areas
- Drainage Arrows
- Lilydale City Limits
- Storm Sewer and Culverts
- Streams

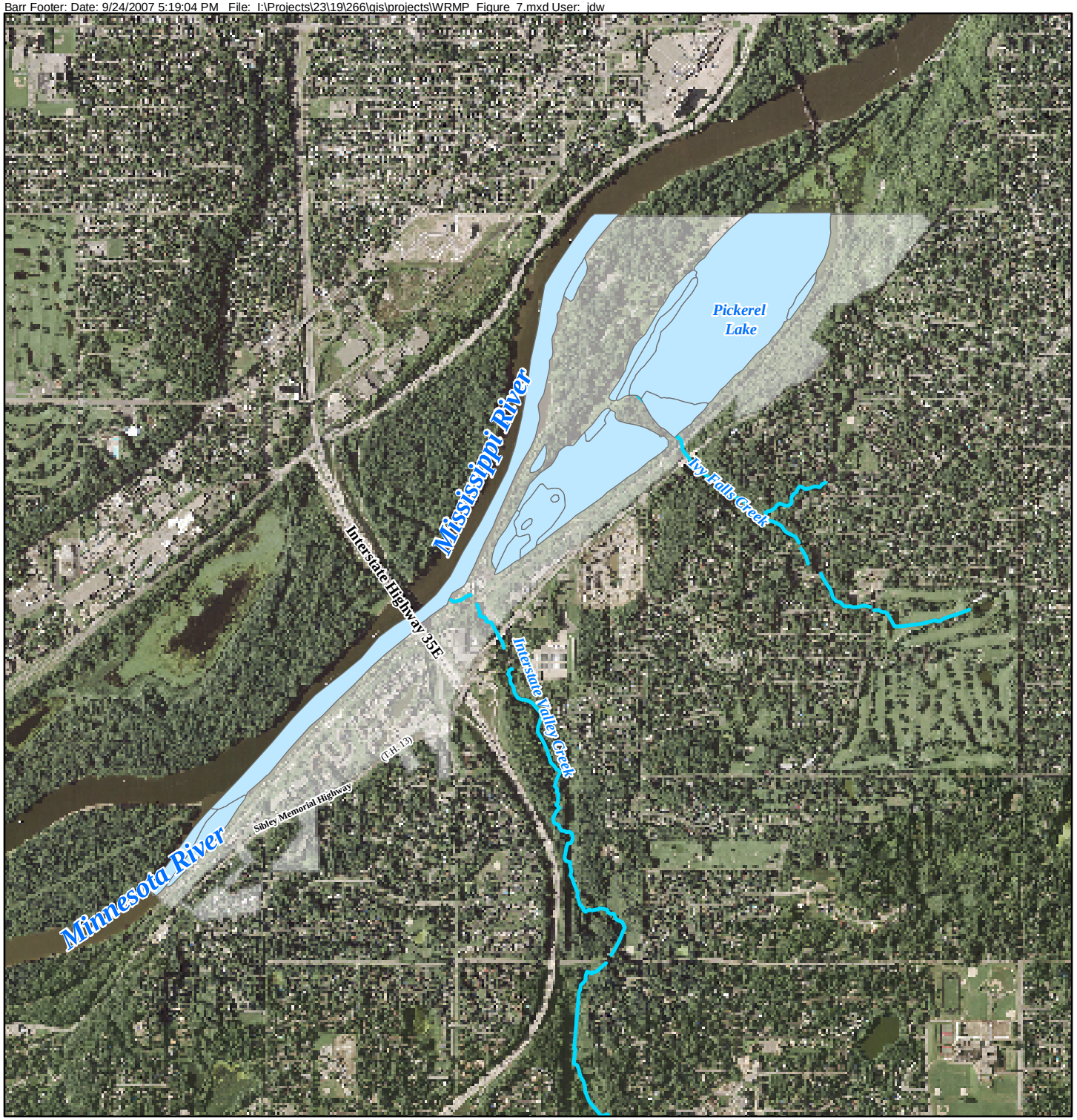
N

Feet
1,000 0 1,000

Meters
200 0 200 400

Figure 6b

DRAINAGE AREAS THAT DRAIN TO THE CITY OF LILYDALE - EAST
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota



Legend

- NWI Wetlands
- Streams
- Lilydale City Limits

Feet
2,000 0 2,000

Meters
500 0 500

Figure 7

WATER RESOURCES INVENTORY
Water Resources Management Plan
City of Lilydale on the Mississippi
Lilydale, Minnesota

Appendix C

Pickerel Lake Water Quality Data

CITY OF SAINT PAUL
INTERDEPARTMENTAL MEMORANDUM

October 3, 1984

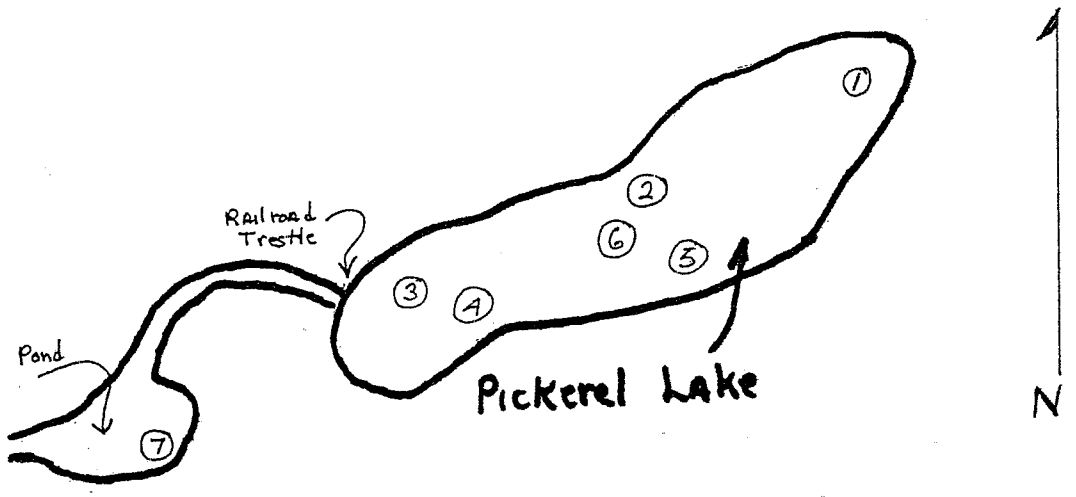
TO: Timothy M. Agness

FROM: William F. Gunther, Laboratory Director WFG
CITY OF ST. PAUL HEALTH DIVISION

SUBJECT: Test results from Pickerel Lake

The test results from the water samples taken from Pickerel Lake on Sept. 14, 1984 are as follows:

Location number	Fecal Coliform	Total Plate Count
1	43	220
2	93	750 est
3	9	160
4	< 3	430 est
5	< 3	320 est
6	3	170
7	240	1,080 est



The standard for natural water for swimming is less than 200 fecal coliforms and less than a 1,000 on the total plate count. All of the samples passed bacteriologically accept the pond sample #7.

The samples indicate that the lake water quality is bacteriologically safe for swimming.

WFG:cw

NA-01473-02
DF-9 Rev. 2/80

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FISH AND WILDLIFE

FISHERIES LAKE SURVEY

Date of Survey 6/30-7/2/80

Date Mapped None

☐ Initial Survey
☐ Re-Survey
☒ Other Population Assessment

Lake Identification, Location and Accessibility

(1) Name(s) Pickeral (2) D.O.W. No. 19-79 (3) Watershed No. 33 (4) Meandered Yes

(5) County(ies) Dakota, Ramsey Twp. 28 R. 23 S. 12,13

(6) Nearest town (Distance and direction to lake) in Lilydale

(7) Accessibility

(a) Designated public access (Location and Ownership) None

(b) Other access areas

(8) Reason for Survey and Requested by Initial assessment of fish population. Edward L. Feiler, Area Fisheries Manager

(9) Previous Investigations, Surveys, and Dates None

Lake and Drainage Basin Characteristics and Use

(10) Lake Area 78.4 acres (Planimetered from U.S.G.S. Quads 1972 (date) sounding map) D.O.W. 103 acres

(11) Maximum Depth 10 ft.

(12) Littoral Area 78.4 acres Percent littoral 100

(13) Length of Shoreline 1.86 mile(s) Greatest length .71 mile(s)

Field Crew: Richard Berowski, Donn Schrader

Lake Pickeral

County(ies) Dakota - Ramsey

Special Problems and Conditions Affecting Fish or Fishing (Winter kill records, algae problems, etc.)

Frequent winterkill; periodic inundation from Mississippi River.

(37) Additional Field Notes

(38) Present Fish Population Status The fish population of Pickeral Lake consists of 19 different species. Of these species only northern pike, black bullhead, and bluegill are particularly numerous. Because this is a river backwater lake, it is difficult to judge the nature of this population against typical lakes of the region. The northern pike appear to maintain themselves quite well by natural reproduction. Reproduction o bluegill is also apparently quite good. Frequent winterkills may hold down their numbers. Black bullhead reproduction is evident.

Crew Leader

LILYDALE

ENVIRONMENTAL ASSESSMENT

Applicant: Ramsey County, Minnesota

Statement Draft

Administrative Action

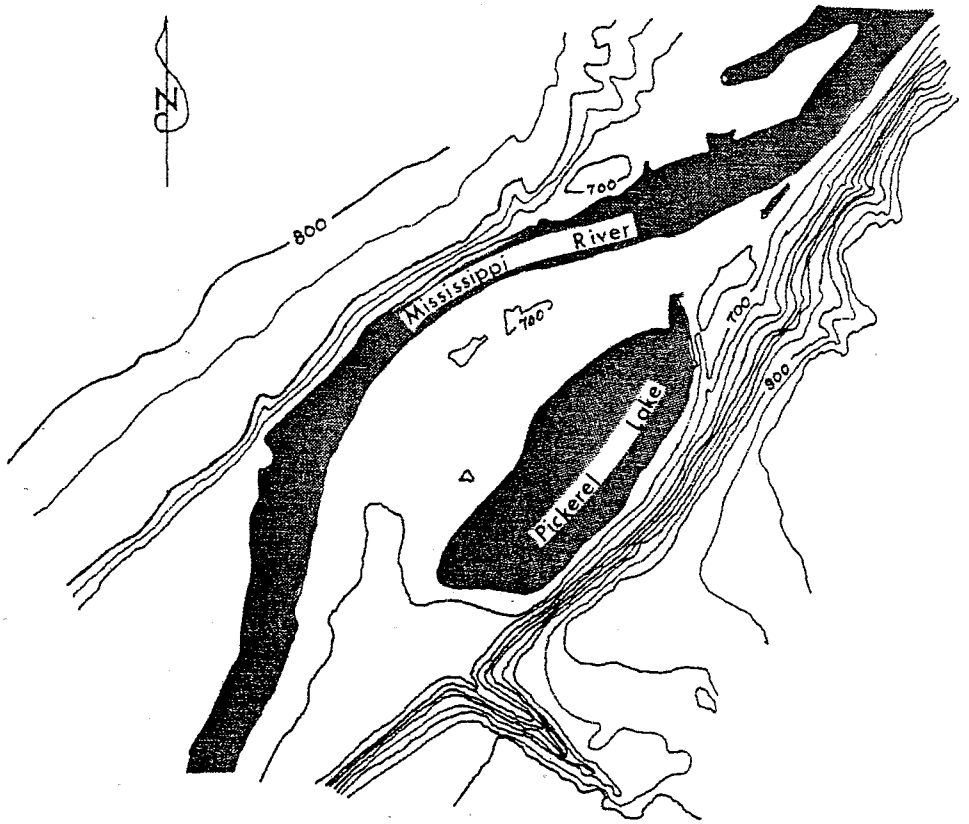
Project Number: LW 27-00561

Minneapolis and St. Paul Parkway System, Riverside Park - St. Paul, Minnehaha Park, Fort Snelling State Park, Mendota Historical sites, Crosby Lake, Hidden Falls Park, Cherokee Heights Park, Harriet Island Park, and Port Authority property. Other park and recreation areas within the region include the Hennepin County Park Reserve District,* the Old Soldiers' Home in Minneapolis and 2200 acres along the Minnesota River acquired by the City of Bloomington. Also, it will extend the Minnesota Valley Trail System which will provide 70 miles of contiguous open space to LeSueur, Minnesota.

Topography

The physiographic features of this site are noteworthy. It is defined by the Mississippi River on the north and west and by steep bluffs on the south and east. These cliffs rise 200 feet from the base of the flood plain and have an average slope of 45°. Pickerel Lake is entirely within the Mississippi flood plain and is approximately 100 acres in size. Its length is 3500 feet and it is 1250 feet at the widest point. The steep hillside is heavily wooded and a small stream flows down its face into the eastern marsh.**

Pickerel Lake is 692 feet above mean sea level; The Mississippi River at this point has an elevation of 687 feet. Land between the lake and the River is approximately 702 feet above mean sea level.



*The Hennepin County Park Reserve District includes 6 major parks; Lake Rebecca, Crow-Hassan, Carver, Morris T. Baker, Elm Creek and Hyland Lake.

** Ivy Falls

The Minnesota Science Museum regularly conducts field trips to the site to study geologic formations and hunt fossils.*

Numerous springs** occur along the River bluff. These are formed where glacial drift overlies the shale and limestone formations. Water percolates down through the drift material and is forced to flow horizontally when it encounters the Platteville limestone.

Air Quality

There is no scientific data concerning the air quality at Lilydale. Since there is little vehicular traffic or industry, air quality can safely be called good.

Water Quality

Pickerel Lake is a hard water lake with moderate submerged plant life. The maximum depth is 11 feet and it is not presently suitable for swimming or boating other than canoes.

At this point the Mississippi River has a high coliform count and does not meet Pollution Control Agency standards for swimming.

Flora

The vegetation in this area is primarily of three types: flood plain, hillside, and marsh associations. Some of the main species identified:

FLOODPLAIN

Species	Common Name
Populus deltoides	Cottonwood
Ulmus americana	American elm
Acrs saccharinum	Silver maple
Cornus florida	Dogwood
Urtica sp.	Nettle
Parthenociseus sp.	Virginia creeper
Alnus rugosa	Alder
Populus tremuloides	Aspen

*Typical fossils include brachiopods, trilobites, cephalopods, crinoids, bryozoams and others

** "Spring" here is used to denote underground water flowing to the surface from a natural channel.

Appendix D

Erosion Control Stormwater Runoff Ordinance

(v) Advertising signs shall not exceed one hundred (100) square feet in gross area per surface and no sign shall be constructed to have more than two (2) surfaces.

(4) Advertising Sign - A sign erected for the purpose of advertising a product, event, person or subject not usually related to the premises on which said sign is located.

(a) Advertising signs that are visible from the river are prohibited. In addition, advertising signs:

(1) Are prohibited between the River and all county, state, and federal highways located within 1,000 feet of the River, except where the roadway cannot be viewed from the river.

(2) May be located only on the non-riverward side of public transportation routes which are parallel and adjacent to the river front.

(3) Shall not impair views of the water from scenic overlooks and public roads.

(b) All advertising signs existing on the effective date of this ordinance which do not conform to the provisions set forth in subparagraphs (a) (b) (c) above are non-conforming and shall be removed within five years of the effective date of this Ordinance.

903.09 Erosion Control - Stormwater Runoff.

(1) During construction and until such time as final control measures are fully implemented and established, adequate development practices will be maintained to insure the 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 during construction when the site is adjacent to a water body or water course; and one-half ton per acre per year after the construction activities are completed as calculated in accordance with the Uniform Soil Loss Equation. (The Uniform Soil Loss Equation is contained in footnote 30, page 44, of the Metropolitan Council publication entitled "Environmental Protection: Model Ordinances for Use by Local Governments." Said footnote is hereby incorporated herein and adopted by reference).

(2) Wetlands, as defined by the Wetland Conservation Act (WCA), and other waterbodies shall not be used as primary sediment traps during or after construction. Runoff shall not be discharged directly into a wetland without presettlement of the runoff. Any modifications to a wetland must adhere to the provisions found in the (WCA) and other applicable laws.

(3) The proposed development will not increase the runoff rate or decrease the stormwater infiltration rate. All discharges shall be conveyed in a safe, non-erosive manner to any river, lake, detention basin, or holding pond. In order to minimize runoff and improve the quality of any runoff into adjoining streets and water courses, water runoff shall be minimized and treated in accordance with the provisions found in the City's approved Surface Water Management Plan and shall be subject to the approval of the City Engineer. Standards for Best Management Practices are found in Protecting Water Quality in Urban Areas, MN Pollution Control Agency, October 1989 and as amended, and Minnesota Construction Site Erosion and Sediment Control Planning Handbook, Board of Water & Soil Resources and Association of Metropolitan Soil and Water Conservation Districts, updated, and as amended.

(4) Erosion protection measures shall first make maximum use of natural in-place vegetation. If that is not possible, the placing of new vegetation on the site as erosion control facilities will be allowed. The construction of artificial drainage devices including culverts, holding ponds, and ditches shall be used only if the use of natural erosion control devices is not feasible.

(5) The development shall be located in such a manner as to minimize the removal of vegetation and alteration of the natural topography. Any removal or alteration shall be the minimum area necessary for a structure or development undertaken pursuant to an approved building permit or site plan. In order to achieve erosion control and buffering, revegetation will be required wherever removal of vegetation and alteration of the natural topography occurred. Any revegetation should be comprised of native and other compatible vegetation and landscaping. Existing developments should pursue strategies to incorporate native plantings or other appropriate means to stabilize the bank on top of the bluff and near their structures.

(6) The grades of any streets shall not exceed 10 percent.

(7) 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 the operation of motorized heavy maintenance vehicles and equipment, such as bulldozers, trucks, and back-hoes on slopes in excess of 8 percent. As used in this section, "private lands" include all out-lots.

(8) The applicant shall demonstrate that the types and densities of land use proposed shall be suited to the site and soil conditions and shall not present a threat to the maintenance of the groundwater quality, a potential increase in maintenance cost of utilities, parking areas, or roads, and shall not be subject to problems due to soil limitations, including but not limited to soil-bearing strength, shrink/swell potential, and excessive frost movement.

(9) The quality of water runoff and water infiltrated to the water table or aquifer shall be as high after development as it was before development of the site within reasonable limits.

(10) For proposals which will involve development at or near the riverfront, applicants are encouraged to use plantings or similar appropriate natural means to stabilize river banks which are subject to erosion.

(11) All drainage, and grading plans shall be reviewed by the City Engineer and other advisors as the Planning Commission or City Council may direct prior to action by that body. The City Council may require additional conditions to be met and/or revisions in the plans to conform to the standards and intent of this ordinance.

903.10 River Corridor Crossings.

All utility facilities and public and private roads located within Lilydale shall meet the following standards:

Subd. 1 Underground Placing. Underground placing of the utility facility shall be required unless economic, technological and land characteristic factors make underground placement unfeasible.

Appendix E

Flood Plain Management Ordinance

Flood Plain Management Ordinance/
General Flood Plain Ordinance

TABLE OF CONTENTS

Part 5. Flood Plain Management Ordinance/ General Flood Plain Ordinance

SECTION 905.1 STATUTORY AUTHORIZATION, FINDINGS OF FACT AND PURPOSE.

Subd. 1. Statutory Authorization. The Legislature of the State of Minnesota has, in Minnesota Statutes Chapters 103F and Chapter 462 delegated the authority to local governmental units to adopt regulations designed to minimize flood losses. Minnesota Statute, Chapter 104 further stipulates that communities subject to recurrent flooding must participate and maintain eligibility in the National Flood Insurance Program. Therefore the City of Lilydale, Minnesota does ordain as follows:

Subd. 2. Statement of Purpose. The purpose of this Ordinance is to maintain the community's eligibility in the National Flood Insurance Program and to minimize potential losses due to periodic flooding including loss of life, loss of property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety and general welfare.

Subd. 3. Warning of Disclaimer of Liability. This Ordinance does not imply that areas outside of the flood plain district or land uses permitted within such districts will be free from flooding and flood damages. This Ordinance shall not create liability on the part of the City of Lilydale or any officer or employee thereof for any flood damages that result from reliance on this Ordinance or any administrative decisions lawfully made thereunder.

SECTION 905.2 GENERAL PROVISIONS

Subd. 1. Adoption of Flood Insurance Rate Map. The Flood Insurance Rate Map for the City of Lilydale, dated November 14, 1975, developed by the Federal Emergency Management Agency is hereby adopted by reference as the Official Flood Plain Zoning District Map and made a part of this Ordinance. This map was previously entitled the Flood Hazard Boundary map dated October, 1972.

Subd. 2. Lands to Which Ordinance Applies. This Ordinance shall apply to all lands designated as flood plain within the jurisdiction of City of Lilydale.

Subd. 3. Interpretation. The boundaries of the flood plain district shall be determined by scaling distances on the Official Flood Plain Zoning District Map. Where interpretation is needed as to the exact location of the boundaries of the flood plain district, the City of Lilydale shall make the necessary interpretation based on elevations on the regional (100-year) flood profile, if available. If 100-year flood elevations are not available, the community shall: 1) Require a flood plain evaluation consistent with Section 905.4 Subd. 3. of this Ordinance to determine a 100-year flood elevation for the site; or 2) base its decision on available hydraulic/hydrologic or site

elevation survey data which demonstrates the likelihood the site is within or outside of the flood plain.

Subd. 4. Definitions. Unless specifically defined below, words or phrases used in this Ordinance shall be interpreted so as to give them the same meaning as they have in common usage and so as to give this Ordinance its most reasonable application.

(1) 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.

(2) 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.

(3) Flood Fringe - that portion of the flood plain outside of the floodway.

(4) Flood Plain - the channel or beds proper and the areas adjoining a wetland, lake or watercourse which have been or hereafter may be covered by the regional flood. Flood plain areas within the City of Lilydale shall encompass all areas designated as Zone A on the Flood Insurance Rate Map.

(5) Floodway - the bed of a wetland or lake and the channel of a watercourse and those portions of the adjoining flood plain which are reasonably required to carry or store the regional flood discharge.

(6) Obstruction - any dam, wall, wharf, embankment, levee, dike, pile, abutment, projection, excavation, dredged spoil, channel modification, culvert, building, wire, fence, stockpile, refuse, fill, structure, stockpile of sand or gravel or other material, or matter in, along, across, or projecting into any channel, watercourse, lake bed, or regulatory flood plain which may impede, retard, or change the direction of flow, either in itself or by catching or collecting debris carried by floodwater.

(7) Regional Flood - 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 magnitude of the 100-year recurrence interval. Regional flood is synonymous with the term "base flood" used in the Flood Insurance Rate Map.

(8) 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 flood plain that result from designation of a floodway.

(9) Structure - 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, travel trailers/vehicles not meeting the exemption criteria specified in Section 905.12, Subd. 1 of this Ordinance and other similar items.

SECTION 905.3 CONFLICT WITH PRE-EXISTING ZONING REGULATIONS AND GENERAL COMPLIANCE

Subd. 1. The Flood Plain District as Overlay Zoning District. The flood plain zoning district shall be considered an overlay zoning district to all existing land use regulations of the community. The uses permitted in Sections 905.4 and 905.5 of this Ordinance shall be permitted only if not prohibited by any established, underlying zoning district. The requirements of this Ordinance shall apply in addition to other legally established regulations of the community and where this Ordinance imposes greater restrictions, the provisions of this Ordinance shall apply.

Subd. 2. Compliance. No new 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 Ordinance and other applicable regulations which apply to uses within the jurisdiction of this Ordinance. Within the Floodway and Flood fringe, all uses not listed as permitted uses in Section 905.4 shall be prohibited. In addition, a caution is provided here that:

(1) New manufactured homes, replacement manufactured homes and certain travel trailers and travel vehicles are subject to the general provisions of this Ordinance and specifically Sections 905.4 and 905.12;

(2) Modifications, additions, structural alterations or repair after damage to existing nonconforming structures and nonconforming uses of structures or land are regulated by the general provisions of this Ordinance and specifically Sections 905.9; and

(3) As-built elevations for elevated structures must be certified by ground surveys as stated in Section 905.7 of this Ordinance.

SECTION 905.4 PERMITTED USES, STANDARDS, AND FLOOD PLAIN EVALUATION CRITERIA

Subd. 1. Permitted Uses in the Flood Plain. The following uses of land are permitted uses in the flood plain district:

(1) Any use of land which does not involve a structure, an addition to the outside dimensions to an existing structure or an obstruction to flood flows such as fill, excavation, or storage of materials or equipment.

(2) Any use of land involving the construction of new structures, the placement or replacement of manufactured homes, the addition to the

outside dimensions of an existing structure or obstructions such as fill or storage of materials or equipment, provided these activities are located in the flood fringe portion of the flood plain. These uses shall be subject to the development standards in Section 905.4 Subd. 2. of this Ordinance and the flood plain evaluation criteria in Section 905.4 Subd. 3. of this Ordinance for determining floodway and flood fringe boundaries.

(3) Travel trailers and travel vehicles are regulated by Section 905.12 of this Ordinance.

Subd. 2. Standards for Flood Plain Permitted Uses.

(1) 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 multi-structure or multi-lot 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.

(2) Storage of Materials and Equipment:

(a) 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.

(b) Storage of other materials or equipment may be allowed if readily removable from the area within the time available after a flood warning or if placed on fill to the Regulatory Flood Protection Elevation.

(3) No use shall be permitted which will adversely affect the capacity of the channels or floodways of any tributary to the main stream, or of any drainage ditch, or any other drainage facility or system.

(4) All structures, including accessory structures, additions to existing structures and manufactured homes, shall be constructed on fill so that the basement floor, or first floor if there is no basement, is at or above the Regulatory Flood Protection Elevation. The finished fill elevation must be no lower than one foot below the Regulatory Flood Protection Elevation and shall extend at such elevation at least 15' beyond the limits of the structure constructed thereon.

(5) All Uses. Uses that do not have vehicular access at or above an elevation not more than two feet below the Regulatory Flood Protection Elevation to lands outside of the flood plain shall not be permitted unless granted a variance by the City Council. In

granting a variance, the Council shall specify limitations on the period of use or occupancy of the use and only after determining that adequate flood warning time and local emergency response and recovery procedures exist.

(6) Commercial and Manufacturing 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 greater than two feet or be subject to flood velocities greater than four feet per second upon occurrence of the regional flood.

(7) On-site Sewage Treatment and Water Supply Systems: Where public utilities are not provided: 1) On-site water supply systems must be designed to minimize or eliminate infiltration of flood waters into the systems; and 2) New or replacement on-site sewage treatment systems must be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters 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.

(8) 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.

Subd. 3. Flood Plain Evaluation

(1) Upon receipt of an application for a permit, manufactured home park development or subdivision approval within the flood plain district, the City of Lilydale shall require the applicant to furnish sufficient site development plans and a hydrologic/hydraulic analysis by a qualified engineer or hydrologist specifying the nature of the development and whether the proposed use is located in the floodway or flood fringe and the Regulatory Flood Protection Elevation for the site. Procedures consistent with Minnesota Rules 1983 Parts 6120.5600 (Technical Standards and Requirements For Floodplain Evaluation) and 6120.5700 (Minimum Floodplain Management Standards for Local Ordinances) shall be followed during the technical evaluation and review of the development proposal.

(2) The City of Lilydale shall submit one copy of all information required by Section 905.4 Subd. 3.(1) of this Ordinance to the

respective Department of Natural Resources' Area Hydrologist for review and comment at least 20 days prior to the granting of a permit or manufactured home park development/subdivision approval by the community. The City of Lilydale shall notify the respective Department of Natural Resources Area Hydrologist within 10-days after a permit or manufactured home park development/subdivision approval is granted.

SECTION 905.5 UTILITIES, RAILROADS, ROADS AND BRIDGES IN THE FLOOD PLAIN DISTRICT

All utilities and transportation facilities, including railroad tracks, roads and bridges, shall be constructed in accordance with state flood plain management standards contained in Minnesota Rules 1983 Parts 6120.5000 - 6120.6200.

SECTION 905.6 SUBDIVISIONS

Subd. 1. No land shall be subdivided and no manufactured home park shall be developed or expanded where the site is determined to be unsuitable by the City of Lilydale for reason of flooding, inadequate drainage, water supply or sewage treatment facilities. The City of Lilydale shall review the subdivision/development proposal to insure that each lot or parcel contains sufficient area outside of the floodway for fill placement for elevating structures, sewage systems and related activities.

Subd. 2. In the Flood Plain District, applicants for subdivision approval or development of a manufactured home park or manufactured home park expansion shall provide the information required in Section 905.4 Subd. 3.(1) of this Ordinance. The City of Lilydale shall evaluate the proposed subdivision or mobile home park development with the standards established in Sections 905.4.2, 905.4.3 and 905.5 of this Ordinance.

Subd. 3. For all subdivisions in the flood plain, the Floodway and Flood Fringe boundaries, the Regulatory Flood Protection Elevation and the required elevation of all access roads shall be clearly labelled on all required subdivision drawings and platting documents.

Subd. 4. 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 multi-structure or multi-lot 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.

SECTION 905.7 ADMINISTRATION

Subd. 1. Permit Required. A Permit issued by the City of Lilydale shall be secured prior to the construction, addition, or alteration of any building or structure; prior to the use or change of use of a building,

structure, or land; prior to the change or extension of a nonconforming use; and prior to excavation or the placement of an obstruction within the flood plain.

Subd. 2. State and Federal Permits. Prior to granting a Permit or processing an application for a Variance, the City of Lilydale shall determine that the applicant has obtained all necessary State and Federal permits.

Subd. 3. Certification of Lowest Floor Elevations. 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 Ordinance. The City of Lilydale shall maintain a record of the elevation of the lowest floor (including basement) for all new structures and alterations or additions to existing structures in the flood plain district.

SECTION 905.8 VARIANCES

Subd. 1. A variance means a modification of a specific permitted development standard required in an official control including this Ordinance 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.

Subd. 2. The City Council may authorize upon appeal in specific cases such relief or variance from the terms of this Ordinance 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 the respective enabling legislation which justified the granting of the variance.

Subd. 3. Variances from the provisions of this Ordinance may be authorized where the City Council has determined the variance will not be contrary to the public interest and the spirit and intent of this Ordinance. No variance shall allow in any district a use prohibited in that district or permit a lower degree of flood protection than the Regulatory Flood Protection Elevation. Variances may be used to modify permissible methods of flood protection.

Subd. 4. The City Council shall submit by mail to the Commissioner of Natural Resources a copy of the application for proposed Variance sufficiently in advance so that the Commissioner will receive at least ten days notice of the hearing. A copy of all decisions granting a Variance shall be forwarded by mail to the Commissioner of Natural Resources within ten (10) days of such action.

Subd. 5. Appeals. Appeals from any decision of the City Council may be made, and as specified in this Community's Official Controls and also Minnesota Statutes.

Subd. 6. Flood Insurance Notice and Record Keeping. The Chairperson of the Planning Commission 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 for $100 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.

SECTION 905.9 NONCONFORMITIES

A structure or the use of a structure or premises which was lawful before the passage or amendment of this Ordinance but which is not in conformity with the provisions of this Ordinance may be continued subject to the following conditions:

Subd. 1. No such use shall be expanded, changed, enlarged, or altered in a way which increases its nonconformity.

Subd. 2. An alteration within the inside dimensions of a nonconforming use or structure is permissible provided it will not result in increasing the flood damage potential of that use or structure.

Subd. 3. The cost of all structural alterations or additions both inside and outside of a structure to any nonconforming structure over the life of the structure shall not exceed 50 percent of the market value of the structure unless the conditions of this Section are satisfied. The cost of all structural alterations and additions constructed since the adoption of the Community's initial flood plain controls must be calculated into today's current cost which will include all costs such as construction materials and a reasonable cost placed on all manpower or labor. If the current cost of all previous and proposed alterations and additions exceeds 50 percent of the current market value of the structure, then the structure must meet the standards of Section 905.4 of this Ordinance for new structures.

Subd. 4. If any nonconforming use of a structure or land or nonconforming structure is destroyed by any means, including floods, to an extent of 50 percent or more of its market value at the time of destruction, it shall not be reconstructed except in conformity with the provisions of this Ordinance. The City of Lilydale may issue a Permit for reconstruction if the use is located outside the floodway and, upon reconstruction, is adequately elevated on fill in conformity with the provisions of this Ordinance.

SECTION 905.10 PENALTIES FOR VIOLATION

A violation of the provisions of this Ordinance or failure to comply with any of its requirements (including violations of conditions and safeguards established in connection with grants of Variance) shall constitute a misdemeanor.

Subd. 1. In responding to a suspected Ordinance violation, the Planning Commission and/or City Council and Local Government 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.

Subd. 2. When an Ordinance violation is either discovered by or brought to the attention of the Planning Commission, the Planning Commission 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.

Subd. 3. The Chairperson of the Planning Commission shall notify the suspected party of the requirements of this Ordinance 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 Chairperson of the Planning Commission 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 Planning Commission or City Council 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.

Subd. 4. If the responsible party does not appropriately respond to the Planning Commission or City Council within the specified period of time, each additional day that lapses shall constitute an additional violation of this Ordinance and shall be prosecuted accordingly. The Planning Commission or City Council 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 Ordinance.

SECTION 905.11 AMENDMENTS

All amendments to this Ordinance, including revisions to the Official Flood Plain Zoning District Map, shall be submitted to and approved by the

Commissioner of Natural Resources prior to adoption. The flood plain designation on the Official Flood Plain Zoning District Map shall not be removed unless the area is filled to an elevation at or above the Regulatory Flood Protection Elevation and is contiguous to lands outside of the flood plain. 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 10-days written notice of all hearings to consider an amendment to this Ordinance and said notice shall include a draft of the Ordinance amendment or technical study under consideration.

SECTION 905.12 TRAVEL TRAILERS AND TRAVEL VEHICLES

Travel trailers and travel vehicles that do not meet the exemption criteria specified in Section 12.1 below shall be subject to the provisions of this Ordinance and as specifically spelled out in Sections 905.12 Subd. 3. - 905.12 Subd. 4. below.

Subd. 1 Exemption. Travel trailers and travel vehicles are exempt from the provisions of this Ordinance if they are placed in any of the areas listed in Section 905.12 Subd. 2. below and further they meet the following criteria:

(a) Have current licenses required for highway use.

(b) 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 trailer parks and the travel trailer/travel vehicle has no permanent structural type additions attached to it.

(c) The travel trailer or travel vehicle and associated use must be permissible in any pre-existing, underlying zoning use district.

Subd. 2. Areas Exempted For Placement of Travel/Recreational Vehicles:

(a) Individual lots or parcels of record.

(b) Existing commercial recreational vehicle parks or campgrounds.

(c) Existing condominium type associations.

Subd. 3. Travel trailers and travel vehicles exempted in Section 905.12 lose this exemption when development occurs on the parcel exceeding 500 dollars for a structural addition to the travel trailer/travel vehicle or an accessory structure such as a garage or storage building. The travel trailer/travel vehicle and all additions and accessory structures will then be treated as a new structure and shall be subject to the elevation requirements and the use of land restrictions specified in Section 905.4 of this Ordinance.

Subd. 4. New commercial travel trailer or travel 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:

(a) Any new or replacement travel trailer or travel vehicle will be allowed in the Floodway or Flood Fringe Districts provided said trailer or vehicle and its contents are placed on fill above the Regulatory Flood Protection Elevation determined in accordance with the provisions of Section 905.5 Subd. 3 of this Ordinance and proper elevated road access to the site exists in accordance with Section 905.04 of this Ordinance. No fill placed in the floodway to meet the requirements of this Section shall increase flood stages of the 100-year or regional flood.

(b) All new or replacement travel trailers or travel vehicles not meeting the criteria of (a) above may, as an alternative, be allowed if in accordance with the following provisions. 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 and shall demonstrate that adequate time and personnel exist to carry out the evacuation. All attendant sewage and water facilities for new or replacement ravel trailers or other recreational vehicles must be protected or constructed so as to not be impaired or contaminated during times of flooding in accordance with Section 905.4 Subd. 2(7) of this Ordinance.

SECTION 905.13 SUMMARY

The City Council hereby determines that the test of the summary marked "Official Summary of Ordinance Number 92-2", a copy of which is attached hereto clearly informs the public of the intent and effect of the Ordinance. The City Council further determines that the publication of the title and such summary will clearly inform the public of the intent and effect of the Ordinance.

Part 6. Zoning Districts

906.01 Zoning Districts

The zoning districts as described in this Chapter IX are indicated on the official Municipal Zoning Map of the City of Lilydale prepared by Dahlgren, Shardlow and Uban, and dated May 19, 1997, which shall be kept on display at the Lilydale City Hall.

Appendix F

Prohibited Discharge into Sanitary Sewer System Ordinance

Part 2. Individual Sewage Disposal Systems

402.01 On-Site Sewage Disposal

In general, the City of Lilydale will not permit the location of new on-site sewage disposal systems within the City. However, existing systems may be upgraded in accord with the policies contained in the Lilydale Comprehensive Plan. All work performed on individual sewage treatment systems must meet the standards promulgated by the Minnesota Pollution Control Agency. These standards, contained in the document entitled "Individual Sewage Treatment Systems Standards", (6 Minnesota Code of Agency Rules, 4.8040), are hereby incorporated herein and adopted by reference.

403. PROHIBITED DISCHARGE INTO SANITARY SEWER SYSTEM.

403.01. No person shall discharge or cause to be discharged any stormwater, groundwater, roof runoff, yard drainage, yard fountain, pond overflow or any substance other than sanitary sewage into the sanitary collection system.

403.02. No roof runoff, sump pump, swimming pool discharge, or surface water drainage shall be connected to the sanitary sewer system and no building shall hereafter be constructed nor shall any existing buildings be hereafter altered in such a manner that the roof drainage or any other source of discharge or drainage other than sanitary sewer shall connect with the sanitary sewer system inside or outside the building.

403.03. Any person, firm or corporation having a roof, sump pump, swimming pool discharge, cistern overflow pipe or surface drain now connected and/or discharging into the sanitary sewer system shall disconnect and/or remove same prior to September 1, 2006. Any disconnects or openings in the sanitary sewer shall be closed or repaired in an effective, workmanlike manner as described in the next Section.

403.04. All sump pumps shall have a discharge pipe installed to the outside wall of the building with one (1) inch inside minimum diameter. The pipe attachment must be a permanent fitting such as PVC pipe with glued fittings. The discharge shall extend at least three (3) feet outside of the foundation wall and must be directed toward the front yard or rear yard area of the property.

403.05. Every person owning improved real estate that discharges into the City's sanitary sewer system shall allow the City employee(s) to inspect the buildings to confirm that there is no sump pump or other prohibited discharge into the sanitary sewer system. Any person refusing to allow their property to be inspected shall immediately become subject to the surcharge hereinafter provided for. Any property found to violate this Section shall make the necessary changes to comply with this Section and such changes shall be verified by City employee(s).

403.06. A surcharge of One Hundred Fifty and no/100 ($150.00) Dollars per month is hereby imposed and shall be added to every sewer billing mailed on and after September 1, 2006, to property owners who are not in compliance with this Section. The surcharge shall be added every month, until the property is in compliance. The imposition of such surcharge shall in no way limit the right of the City to seek an injunction in District Court ordering the property owner to disconnect the non-conforming connection to the sanitary sewer system or from pursuing any other legal remedies available.

403.07. Upon verified compliance with this Section, the City reserves the right to inspect such property at least yearly to verify compliance herewith.

Appendix G

Stormwater Utility Ordinance

403.06 A surcharge of One Hundred Fifty and no/100 ($150.00) Dollars per month is hereby imposed and shall be added to every sewer billing mailed on and after September 1, 2006, to property owners who are not in compliance with this Section. The surcharge shall be added every month, until the property is in compliance. The imposition of such surcharge shall in no way limit the right of the City to seek an injunction in District Court ordering the property owner to disconnect the non-conforming connection to the sanitary sewer system or from pursuing any other legal remedies available.

403.07 Upon verified compliance with this Section, the City reserves the right to inspect such property at least yearly to verify compliance herewith.

404. Establishing a Storm Water Drainage Utility

404.01. Utility Established. A storm water drainage utility for the City is hereby established. The municipal storm sewer system shall be operated as a public utility pursuant to Minnesota Statutes Section 444.075, from which revenue will be derived subject to the provisions of this Section and to Minnesota Statutes.

404.02. Purpose of Funds, Allocation of Revenues. The purpose of all funds derived is to pay for all or part of the construction, reconstruction, repair, enlargement, improvement or other obtainment and the maintenance, operation and use of the storm sewer utility as established by the City. All revenues derived from the fee shall be credited to the appropriate storm sewer fund.

404.03. Storm Sewer Utility Fee.

(A) Determination of Fee: A storm sewer utility fee for the use of the storm sewer facilities shall be determined by Resolution of the City Council.

(B) Exemption From Fee: The following land uses are exempt from storm water drainage fees:

(1) Public rights of way, public park land, public trails, and other lands owned by the City.

(2) Vacant, unimproved land with ground cover.

(C) Bill for Service: Bills for charges for the use and service of the storm drainage system shall be made out by the City Clerk/Treasurer in accordance with the usual and customary practice. All bills shall be payable at City Hall. Bills shall be rendered semi-annually.

(D) Recalculation of Fee: If a property owner or person responsible for paying the storm water drainage fee questions the correctness of an invoice for such charge, such person may have the determination of the charge recomputed by written request to the Clerk-Treasurer made within six (6) months of mailing of the invoice in question by the City.

(E) Payment of Fee, Delinquencies: All charges of the storm water drainage utility are due on the semi-annual due date specified by the City for the respective account and shall be delinquent twenty-one (21) days thereafter. If such a payment is not made when due, an additional late charge of Two and no/100 ($2.00) Dollars or five percent (5%), whichever is greater, shall be added to the semi-annual payment then due. In the event that such semi-annual sewer rental charges are not paid prior to December 1, the City Clerk-Treasurer shall certify the same together with the late charge set forth above plus an additional certification fee of Fifty and no/100 ($50.00) Dollars to the County Auditor, and the same shall be collected and the collection thereof enforced in the same manner, in all respects, as County and State real estate taxes, subject to like penalty, costs and interest charges.

Appendix H

Prohibited Discharges into the Storm Sewer System Ordinance

ORDINANCE NO. 11-01

AN ORDINANCE ADDING LILYDALE CODE SECTION 406

The City Council of the City of Lilydale, Minnesota, hereby ordains:

Lilydale Code Section 406 is hereby adopted as follows:

AN ORDINANCE CREATING SECTION 406 OF THE LILYDALE CITY CODE RELATED TO ILLICIT DISCHARGES TO THE STORM SEWER SYSTEM

SECTION ONE: That the Lilydale City Code be amended by adding Section 406, entitled "Stormwater and Urban Runoff Pollution Control" as follows:

Section 406 Stormwater and Urban Runoff Pollution Control

406.01 Purpose/Intent

The purpose of this ordinance is to provide for the health, safety, and general welfare of the citizens of Lilydale through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This ordinance establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of this ordinance 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 and monitoring procedures necessary to ensure compliance with this ordinance

406.02 Definitions.

For the purposes of this ordinance, the following shall mean:

Best Management Practices (BMPs). Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

City. The City of Lilydale, Minnesota.

Illegal Discharge. Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in section 406.06 of this ordinance.

Illicit Connections. An illicit connection is defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm

water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by the City. Any drain or conveyance connected from a 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.

National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge Permit.
A permit issued by EPA (or by a State under authority delegated pursuant to 33 USC § 1342(b)) that authorizes the discharge of pollutants to waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

Non-Storm Water Discharge. Any discharge to the storm drain system that is not composed entirely of storm water.

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

Pollutant. Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, ordinances, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

Storm Drainage System. Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Storm Water. Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

406.03 Applicability.

This ordinance shall apply to all water entering the storm drain system generated on any developed and undeveloped lands unless explicitly exempted by the City.

406.04 Severability.

The provisions of this ordinance are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this Ordinance or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this Ordinance.

406.05 Illegal Disposal.

No person shall throw, deposit, place, leave, maintain, or keep or permit to be thrown, placed, left, maintained or kept, any refuse, rubbish, garbage, or any other discarded or abandoned objects, articles, *or* accumulations, in or upon any street, alley, sidewalk, storm drain, inlet, catch basin

conduit or drainage structure, business place, or upon any public or private plot of land in community, so that the same might be *or* become a pollutant, except in containers, recycling bags, or other lawfully established waste disposal facility.

No person shall intentionally dispose of grass, leaves, dirt, or other landscape debris into a water resource buffer, street, road, alley, catch basin, culvert, curb, gutter, inlet, ditch, natural watercourse, flood control channel, canal, storm drain or any fabricated natural conveyance.

406.06 Illegal Discharges.

No person shall discharge or cause to be discharged into the municipal storm drain system or watercourses any materials, including but not limited to pollutants or waters containing any pollutants that cause or contribute to a violation of applicable water quality standards, other than storm water.

The commencement, conduct or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

1. The following discharges are exempt from discharge prohibitions established by this ordinance: is associated with fire fighting activities, water line flushing, landscape and irrigation water, diverted stream flows, rising ground water, uncontaminated groundwater infiltration, uncontaminated pumped groundwater, discharges from potable ground water sources, foundation and footing drains, air conditioning condensation, individual car washing, flows from riparian habitats and wetlands, de-chlorinated swimming pool discharges, street wash water, and any other water source not containing Pollutants.
2. Discharges specified in writing by the City as being necessary to protect public health and safety.
3. Dye testing is an allowable discharge, but requires a verbal notification to the City prior to the time of the test.
4. The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the Federal Environmental Protection Agency, provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

406.07 Illicit Connections.

1. The construction, use, maintenance or continued existence of illicit connections to the storm drain system is prohibited.
2. 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.
3. A person is considered to be in violation of this ordinance if the person connects a line conveying sewage to the MS4, or allows such a connection to continue.

406.08 Suspension of MS4 Access.

Suspension due to Illicit Discharges in Emergency Situations.

The City may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the United States. 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 MS4 or Waters of the United States, or to minimize danger to persons.

Suspension due to the Detection of Illicit Discharge.

Any person discharging to the MS4 in violation of this ordinance may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The City will notify a violator of the proposed termination of its MS4 access. The violator may petition the City for a reconsideration and hearing.

406.08 Monitoring of Discharges.

Access to Facilities.

1. Duly authorized City employees bearing proper identification shall, at reasonable times, be permitted to enter upon properties served by storm sewer for the purpose of inspection, measurement, sampling and testing in connection with operation of the storm sewer system.
2. The City shall be permitted to enter and inspect facilities subject to regulation under this ordinance as often as may be necessary to determine compliance with this ordinance.
3. If the City has 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 ordinance, or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this ordinance or any order issued hereunder, or to protect the overall public health, safety, and welfare of the community, then the City may seek issuance of a search warrant from any court of competent jurisdiction.

406.09 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 storm water, the storm drain system, or water of the U.S. said 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 said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the City in person or by phone or facsimile no later than the next business day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the City within three business days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

406.10 Notice of Violation.

Whenever the City finds that a person has violated a prohibition or failed to meet a requirement of this Ordinance, the City may order compliance by written notice of violation to the responsible person. Such notice may require without limitation:

1. The performance of monitoring, analyses, and reporting;
2. The elimination of illicit connections or discharges;
3. That violating discharges, practices, or operations shall cease and desist;
4. The abatement or remediation of storm water pollution or contamination hazards and the

restoration of any affected property; and
5. Payment of a fine to cover administrative and remediation costs; and
6. The implementation of source control or treatment BMPs.

If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor and the expense thereof shall be charged to the violator.

406.11 Appeal of Notice of Violation.

Any decision in the enforcement of this section may be appealed to the City Council by filing a written petition with the City Administrator within 30 days of the ruling. The petition shall specify in detail the matter or matters involved and every ground or basis on which objections are made. The petition shall show the names, addresses and telephone numbers of all objectors and their attorney at law or spokesman. The filing of a petition shall stay all proceedings unless the engineer shall file within 72 hours after the filing of a petition a certificate stating that a stay would cause peril to life or property of specifying other good reason.

406.12 Enforcement Measures After Appeal.

If the violation has not been corrected pursuant to the requirements set forth in the Notice of Violation, or, in the event of an appeal, within 15 days of the decision of the municipal authority upholding the decision of the City, then representatives of the City shall enter upon the subject private property and are authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent or person in possession of any premises to refuse to allow the City or designated contractor to enter upon the premises for the purposes set forth above.

406.13 Cost of Abatement of the Violation.

Civil Damages. Any user violating any of the provisions of this section or who has a discharge which causes a deposit, obstruction, damage or other impairment to the City's stormwater system shall be liable to the City for any expense, loss, or damage caused by the violation or discharge. The City Engineer may add to the user's charges and fees the cost assessed for any cleaning, repair, or replacement work caused by the violation or discharge. Refusal to pay the assessed costs is a violation of this section.

406.14 Injunctive Relief.

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this Ordinance. If a person has violated or continues to violate the provisions of this ordinance, the City may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

406.15 Violations Deemed A Public Nuisance.

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this Ordinance is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken.

406.16 Criminal Prosecution.

Any person who is found to be in violation of any provision this ordinance, shall be guilty of a misdemeanor and punished accordingly, including the payment of all appropriate costs as prescribed in this ordinance.

This Ordinance shall take effect and be in force after its publication.

Passed by the City Council of the City of Lilydale the ____ day of _____, 2011.

	Yes	No
Anita M. Pampusch	___	____
Robert. J. Bullard	____	____
Marilyn D. Lundberg	____	____
Warren E. Peterson	____	____
John E. Diehl	____	____

This Ordinance shall be effective upon publication.

ATTEST:

_____
Teish Stafne, City Administrator
Date: _____, 2011

_____
Anita M. Pampusch, Mayor
Date: _____, 2011

440741

Appendix I

Stormwater Pollution Prevention Program (SWPPP)

BMP Summary Sheet Instructions

Introduction

The MPCA is required by law to place all Storm Water Pollution Prevention Programs (SWPPP) on public notice. Standardized summary sheets provide an easy mechanism for those wishing to reference comments to specific locations in a SWPPP. Standardized summaries also make SWPPPs easier to understand. The BMP (Best Management Practice) Summary Sheets included in this packet are a required attachment to your application for Permit coverage. Failure to include *all* required BMP Summary Sheets constitutes an incomplete application. All required information must also be included on the sheets for the application to be considered complete.

The MPCA is requiring that the attached BMP Summary Sheets (Sheets) be used. You may however, choose to organize the components of your MS4's SWPPP in any order you feel appropriate. The Sheets may be included as an attachment to your SWPPP, used as a lead-in for each section of the SWPPP, or they may be expanded to contain all of the information related to the BMP and Permit requirements in your SWPPP. The Sheets are designed to aid in the public review process of SWPPPs.

What to put in the BMP Summary Sheets

The Sheets are designed for you to outline the *major* components of each Permit requirement in a required BMP and how you plan to implement the controls associated with it. If the Sheets are only used to summarize what is explained in greater detail elsewhere, then the Sheet may contain a more brief explanation of the BMP's purpose, major milestones and timelines. Additional, more detailed information would then be referenced and provided in the body of your Storm Water Pollution Prevention Program (SWPPP).

The MPCA recognizes that some MS4s have been actively developing and implementing the programs and procedures in the required BMPs. It is important that each MS4 provide a statement on the current status of BMP implementation in the BMP Description section of each Sheet. The Measurable Goals and Timeline/Implementation Schedule for that BMP should also reflect its current status of development and implementation.

Although these Sheets will be included when SWPPPs are placed on public notice, they are not intended to replace or limit what would be necessary to develop a complete SWPPP. For many minimum control measures, effective implementation of the SWPPP will require a more detailed explanation of BMP activities. On the Sheets, provide the specific locations where any additional information relating to each BMP can be found in your SWPPP.

Blank Sheets are provided for additional BMPs. Instructions are provided related to the specific information that must be provided for each part of the Sheet. The intent of these description sheets is to provide a uniform framework for MS4s to summarize activities which have or will take place to fulfill the minimum requirements of a BMP.

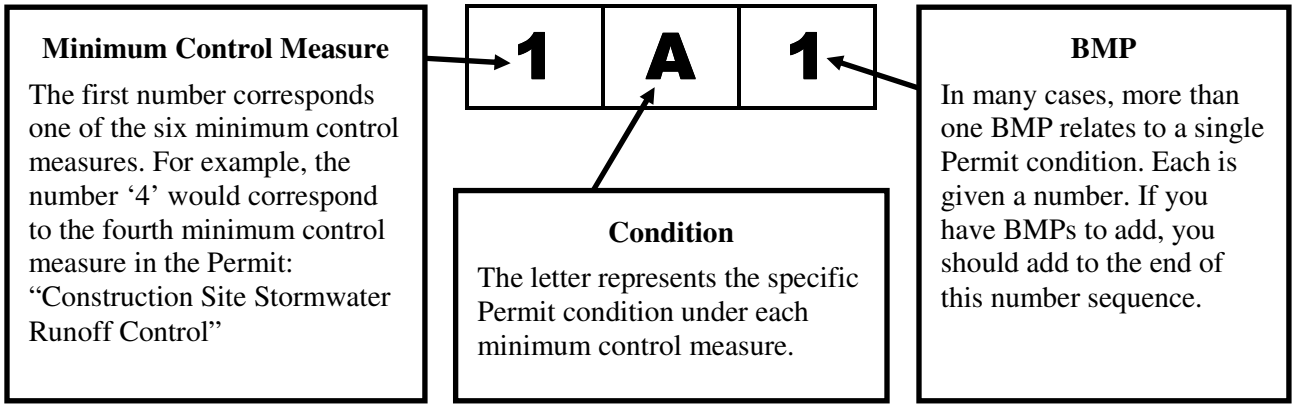
The BMP Numbering System

Your BMP Summary Sheets (Sheets) are a required attachment to use for your Permit Application for Permit coverage. Failure to include *all* required Sheets will constitute an incomplete application. The Sheets are numbered to correspond to each minimum control measure (MCM) identified in the Permit. All required information must be included on the Sheets for the application to be considered complete.

The purpose of these summary sheets is to provide an overview of the information contained in the MS4 SWPPP. These standardized sheets provide a uniform framework for each MS4 to organize and summarize activities which have or will take place to fulfill the Permit requirements (using various BMPs) for each of the six minimum control measures.

For the purpose of efficient public review, you must use the numbering system set forth in the instructions for each minimum control measure. The Permit's 30 required BMP Sheets have each been assigned a unique identification number that corresponds to its location in the Permit. Unique identification numbers consist of a number-letter-number format (Fig. 1). Blank Sheets are provided to be adapted for additional BMPs not specifically identified or required by the Permit. Be sure to follow the numbering sequence (Fig. 1) for each of those additional BMPs.

Figure 1: BMP Unique Identification Numbers



Measurable Goals

Measurable goals, which are required for each minimum control measure and for each BMP, are intended to gauge Permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the geographic and natural resource area served and how the BMPs will be implemented (operated) by the MS4. Measurable goals should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure. Finally, they should allow the MS4 to make improvements to its program over each 5-year Permit term by providing information and feedback to the operators and citizens on program successes and shortfalls.

The MPCA has adopted from EPA the definition of *measurable goals*: "*BMP design objectives or goals that quantify the progress of program implementation* ***and*** *the performance of your BMP."* The use of the term *performance* in this context does not refer to water quality monitoring but rather to progress and effectiveness achieved for implementation of the BMP

Timeline/Implementation Schedule

The Permit requires MS4s to provide an implementation schedule for measurable goals that includes any deadlines or timelines set forth in the Permit. When completing this section for each BMP Summary Sheet you must identify the measurable goals, milestones and elements of the BMP which you intend to accomplish during each year of the MS4 Permit.

Additional Resources for SWPPP Preparation

The MPCA encourages MS4s to use other work products whether voluntarily developed or required by another rule or law to assist in completing a SWPPP. Some examples would be water quality diagnostic or analysis studies, water management plans and stormwater management plans, to name a few, to assist in the development of the MS4 SWPPP and ultimately in the implementation of an integrated water quality and quantity management program for your area.

Many other agencies and organizations have completed guidance documents that may be useful in the development of your SWPPP. Keep in mind that these are simply guidance and do not hold the same legal authority as the Permit. This list is not necessarily inclusive of all materials that are available or may be used:

- **Minnesota Pollution Control Agency**
  - Stormwater Manual: **http://www.pca.state.mn.us/water/stormwater/stormwater-manual.html**
    - Chapter 6: *Introduction to Best Management Practices (BMPs)*
    - Chapter 7: *Choosing Best Management Practices (BMPs)*
    - Chapter 12: *Details of Stormwater Best Management Practices (BMPs)*
  - Guidance Manual for Small Municipal Separate Storm Sewer Systems: **http://www.pca.state.mn.us/publications/wq-strm4-25b.pdf**

- **U.S. Environmental Protection Agency**
  - Menu of BMPs: **http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm**
  - Measurable Goals Guidance: **http://cfpub.epa.gov/npdes/stormwater/measurablegoals/index.cfm**
  - Stormwater Phase II Final Rule Fact Sheet Series: **http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm?program_id=6**

BMP Summary Sheet Instructions

Minimum Control Measure 1: PUBLIC EDUCATION AND OUTREACH

Key to Unique BMP ID Numbers	Required BMP Title	Permit Reference
1a-1	Distribute Educational Materials	**V.G.1.a**
1b-1	Implement an Education Program	**V.G.1.b**
1c-1	Education Program: Public Education and Outreach	**V.G.1.c**
1c-2	Education Program: Public Participation	**V.G.1.c**
1c-3	Education Program: Illicit Discharge Detection and Elimination	**V.G.1.c**
1c-4	Education Program: Construction Site Run-off Control	**V.G.1.c**
1c-5	Education Program: Post-Construction Stormwater Management in New Development and Redevelopment	**V.G.1.c**
1c-6	Education Program: Pollution Prevention/Good Housekeeping for Municipal Operations	**V.G.1.c**
1d-1	Coordination of Education Program	**V.G.1.d**
1e-1	Annual Public Meeting	**V.G.1.e**
	Additional BMP Summary Sheet (Copy as Necessary)	

For each of the Best Management Practices (BMPs) associated with Minimum Control Measure 1 (MCM-1), **Public Education and Outreach**, fill out the attached BMP Summary Sheets completely. The completion of all of the associated BMP Summary Sheets for the BMPs listed above are mandatory for a complete application. To aid in review and comment by the public, you must use the numbers listed in the key above and the BMP Titles which are consistent with the MS4 Permit language. This summary is simply an overview of the BMP and does not contain all of the details associated with implementation. Be sure to include a reference to the specific location of detailed information on which the summary sheet is based in your Storm Water Pollution Prevention Program (SWPPP).

1. BMP Description
Summarize the major components of this BMP and how you plan to implement them. Define the following:

- BMP program components
- Plans for program implementation
- Target audience
- Types of materials to be distributed
- Methods of distribution or communication
- Include the exact locations (page numbers) of detailed information in the SWPPP

2. Measurable Goals
Define the milestones that are to be accomplished by the implementation of this BMP. Establish a baseline from which you will measure effectiveness, how the measurements are to be made, and how the success will be defined and quantified.

3. Timeline/Implementation Schedule
Provide specific dates that milestones identified as measurable goals are to be met. Include when materials will be created, printed, and distributed. The schedule should also outline dates when measurable goals will be evaluated to determine program effectiveness.

4. Specific Components and Notes for this MCM
Include any additional notes relevant to the specific purpose of each BMP and how the BMPs for the minimum control measure have been modified from past practice based on experience and monitoring.

5. Responsible Party for this BMP
Indicate who specifically is responsible for the implementation and monitoring of this BMP. This should be the individual who is actively involved with the BMP and not simply a city official who is signing the application for permit coverage.

Additional Instructions for BMPs 1c-1 through 1c-6:
The Minnesota MS4 General Permit requires that "For each minimum control measure, your education program must identify: 1) The audience or audiences involved; 2) Educational goals for each audience in terms of increased awareness, increased understanding, acquired skills, and/or desired changes in behavior; 3) Activities used to reach educational goals for each audience; 4) Activity implementation plans, including responsible department in charge, entities responsible for given activities, and schedules; and 5) Available performance measures that can be used to determine successes in reaching educational goals." [**V.G.1.c**]

1. Audience(s) Involved
Define the specific audience or audiences that will be the target of the education program for the minimum control measured addressed in this BMP.

2. Educational Goals for Each Audience
Define the educational goal of the BMP and how they are associated with each audience.

3. Activities Used to Reach Educational Goals
Outline the specific activities that will be in place to ensure that the educational goals are met.

4. Activity Implementation Plan
Define how you will put each specified activity into place. Also indicate the specific timeline that you will follow. Include major milestones and the dates by which each will be implemented.

5. Performance Measures
Outline how you will measure the success of this BMP. Determine a baseline from which the measurements will be made. Briefly describe how you will quantify the success of an increase in education.

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 1-PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1a-1

***BMP Title:** Distribute Educational Materials

***BMP Description:**

Include stormwater management and/or pollution prevention information in at least one of the City's quarterly newsletters.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

One mailing per year

***Timeline/Implementation Schedule:**

Educational materials will be distributed annually in the spring. Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

Information sources include the University of Minnesota, Lower Mississippi River Watershed Management Organization (LMRWMO), the Lower Minnesota River Watershed District (LMRWD), their member cities, and their advisory bodies. The information may be the LMRWMO or the LMRWD annual newsletter, or other information provided by the LMRWMO or the LMRWD.

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1b-1

***BMP Title:** Implement an Education Program

***BMP Description:**

Will distribute educational materials from the BMP 1a-1 sources in the City's quarterly newsletter. Educational materials will cover all six minimum control measures in the eduction program. This information will also be available at the City offices.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

One mailing per year.

***Timeline/Implementation Schedule:**

Educational materials will be distributed annually. Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1c-1

***BMP Title:** Education Program: Public Education and Outreach

***Audience(s) Involved:**

Residents of the City of Lilydale

***Educational Goals for Each Audience:**

Increased awareness of pollution prevention, stormwater quality, and factors that influence stormwater management activities

***Activities Used to Reach Educational Goals:**

Information included in City's quarterly newsletter
Annual public meeting addressing SWPPP

***Activity Implementation Plan:**

Implementation has already begun and will continue through the duration of the permit.

***Performance Measures:**

Hold the annual public meeting
At least one mailing per year contains stormwater information

***Responsible Party for this BMP:**

Name: Joan Olin
Department: City of Lilydale, City Clerk and Treasurer
Phone: 651-457-2316
E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1c-2

***BMP Title:** Education Program: Public Participation

***Audience(s) Involved:**

Residents of the City of Lilydale

***Educational Goals for Each Audience:**

Increase awareness of pollution prevention, stormwater quality, and factors that influence stormwater management activities.

***Activities Used to Reach Educational Goals:**

Information included in City's quarterly newsletter
Annual public meeting addressing SWPPP

***Activity Implementation Plan:**

Implementation has already begun and will continue through the duration of the permit.

***Performance Measures:**

Hold the annual public meetnig
At least one mailing per year contains stormwater information

***Responsible Party for this BMP:**

Name: Joan Olin
Department: City of Lilydale, City Clerk and Treasurer
Phone: 651-457-2316
E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1c-3

***BMP Title:** Education Program: Illicit Discharge Detection and Elimination

***Audience(s) Involved:**

Residents of the City of Lilydale. Additional information regarding Illicit Discharge Detection and Elimination is located in BMP 3d-1.

***Educational Goals for Each Audience:**

Ensure that all citizens understand what constitutes and illicit discharge; are aware that illicit discharges are illegal; that illicit discharges cause significant environmental harm; and what can be done to eliminate illicit discharges. Alert property owners/managers to illicit discharges from their property.

***Activities Used to Reach Educational Goals:**

Inclusion of this information in publicly available literature and at annual public meetings.

***Activity Implementation Plan:**

Inclusion in at least one newsletter per year.
Inclusion in the agenda for the annual public meeting.

***Performance Measures:**

Sending the newsletter.
Holding the annual public meeting.

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1c-4

***BMP Title:** Education Program: Construction Site Run-off Control

***Audience(s) Involved:**

Construction, development or redevelopment permit applicants

***Educational Goals for Each Audience:**

Understand the need for run-off control at construction sites.

***Activities Used to Reach Educational Goals:**

Publication of MS4 permit, Stormwater Management Plan, and additional literature such as the MPCA BMP website and other relevant resources that become available.

***Activity Implementation Plan:**

Part of the permitting process.

***Performance Measures:**

Preparation of erosion and sediment control plan by devleoper

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1c-5

***BMP Title:** Education Program: Post-Construction Stormwater Management in New Development and Redevelopment

***Audience(s) Involved:**

Development owners and contractors.

***Educational Goals for Each Audience:**

The goal is to make sure that all development owners and contractors understand the importance of managing stormwater after construction is complete and maintaining their stormwater management systems for the life of the project. The entire City is located within the Mississippi River Critical Area Corridor, so the DNR has review authority for stormwater management. The goal is to provide the City Council a memorandum or letter from the DNR or the City's advisors that includes review of stormwater quality provisions for each proposed development, redevelopment, or stormwater management system alteration.

***Activities Used to Reach Educational Goals:**

Referencing developers to BMPs from other agencies

***Activity Implementation Plan:**

Implementation has already begun and will continue through the duration of the permit.

***Performance Measures:**

Receipt of memorandum for each development, redevelopment, or stormwater management system alteration that there is a plan in place to post construction stormwater management and for stormwater management for the life of the project. Details of the management plans and who is responsible for stormwater management must be provided.

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1c-6

***BMP Title:** Education Program: Pollution Prevention/Good Housekeeping for Municipal Operations

***Audience(s) Involved:**

The City of Lilydale owns only approximately 500 feet of municipal road and only 2 paid staff members. The 2 staff members are actively involved in the development of the MS4 permit application and in the education program for the City residents. The City of Mendota Heights maintains the small section of municipal road.

***Educational Goals for Each Audience:**

Not applicable

***Activities Used to Reach Educational Goals:**

Not applicable

***Activity Implementation Plan:**

Not applicable

***Performance Measures:**

Not applicable

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1d-1

***BMP Title:** Coordination of Education Program

***BMP Description:**

Scheduling and outlining the annual meeting which will discuss SWPPP. The education program will also utilize materials from sources listed in the Notes section below. Efforts will be made to contact neighboring cities and area watershed organizations (LMRWMO and LMRWD) in order to discuss educational materials.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Public meeting to discuss SWPPP at least once per year.

***Timeline/Implementation Schedule:**

SWPPP public meeting will be scheduled annually; currently in practice.

Specific Components and Notes:

Information sources include the University of Minnesota, Lower Mississippi River Watershed Management Organization (LMRWMO), the Lower Minnesota River Watershed District (LMRWD), their member cities, and their advisory bodies. The information may be the LMRWMO or the LMRWD annual newsletter, or other information provided by the LMRWMO or the LMRWD.

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number: 1e-1

***BMP Title:** Annual Public Meeting

***BMP Description:**

Conduct an annual public meeting to discuss SWPPP and solicit public comments

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

An annual public meeting to discuss SWPPP

***Timeline/Implementation Schedule:**

Annually, prior to the submittal of the annual report. Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

Additional BMP Summary Sheet Copy as Necessary

MS4 Name:

Minimum Control Measure: 1-PUBLIC EDUCATION AND OUTREACH

Unique BMP Identification Number:

***BMP Title:**
***BMP Description:** Location(s) in SWPPP of detailed information relating to this BMP:
***Measurable Goals:**
***Timeline/Implementation Schedule:**
Specific Components and Notes:
***Responsible Party for this BMP:** Name: Department: Phone: E-mail:

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet Instructions

Minimum Control Measure 2: PUBLIC PARTICIPATION/INVOLVEMENT

Key to Unique BMP ID Numbers	Required BMP Title	Permit Reference
2a-1	Comply with Public Notice Requirements	**V.G.2.a**
2b-1	Solicit Public Input and opinion on the Adequacy of the SWPPP	**V.G.2.b**
2c-1	Consider Public Input	**V.G.2.c**
	Additional BMP Summary Sheet (Copy as Necessary)	

For each of the Best Management Practices (BMPs) associated with Minimum Control Measure 2 (MCM-2), **Public Participation/Involvement**, fill out the attached BMP Summary Sheets completely. The completion of all of the associated BMP Summary Sheets for the BMPs listed above are mandatory for a complete application. To aid in review and comment by the public, you must use the numbers listed in the key above and the BMP Titles which are consistent with the MS4 General Permit language. This summary is simply an overview of the BMP and does not contain all of the details associated with implementation. Be sure to include a reference to the specific locations of detailed information on which the summary sheet is based in your Storm Water Pollution Prevention Program (SWPPP).

1. BMP Description
Summarize the major components of this BMP and how you plan to develop and/or implement them. Also identify the following:

- BMP program components
- Plans for program implementation
- Target audience
- Process for collecting input
- Avenues in which comments may be submitted
- Procedure for submitting oral and/or written comments
- Include the exact locations (page numbers) of detailed information in the SWPPP

2. Measurable Goals
Define the milestones that are to be reached through the implementation of this BMP. Establish a baseline from which you will measure effectiveness, how the measurements are to be made, and how the success will be defined and quantified.

3. Timeline/Implementation Schedule
Provide specific dates that milestones identified as measurable goals are to be met. Include specific dates for the following:

- Due date for submitting comments
- Dates review will occur
- Timeframe for response to comments
- Annual time period in which SWPPP adjustments will be made to reflect those comments which were determined appropriate to reflect changes to the SWPPP

The schedule should also outline dates when measurable goals will be evaluated to determine program effectiveness.

4. Specific Components and Notes for this MCM
Include any additional notes relevant to the specific purpose of each BMP and how the BMPs for the minimum control measure have been modified from past practice based on experience and measures.

5. Responsible Party for this BMP

Indicate who specifically is responsible for the implementation and monitoring of this BMP. This should be the individual who is actively involved with the BMP and not simply a city official who is signing the application for permit coverage.

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 2-PUBLIC PARTICIPATION/INVOLVEMENT

Unique BMP Identification Number: 2a-1

***BMP Title:** Comply with Public Notice Requirements

***BMP Description:**

Place discussion of SWPPP on publicly available meeting agenda in advance.
Place notice of the meeting in the newspaper of record at least 30 days prior to the annual public meeting.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Appearance of 30-day notice of the annual public meeting notice in the newspaper of record annually.

***Timeline/Implementation Schedule:**

Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin
Department: City of Lilydale, City Clerk and Treasurer
Phone: 651-457-2316
E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 2-PUBLIC PARTICIPATION/INVOLVEMENT

Unique BMP Identification Number: 2b-1

***BMP Title:** Solicit Public Input and opinion on the Adequacy of the SWPPP

***BMP Description:**

Discussion of SWPPP at annual public meeting and additionally as necessary. Comments and questions about the SWPPP will be specifically solicited during the public meeting. The public is also welcome to submit comments through other means of communication (orally, written, email) in addition to the comment/question and answer session at the public meeting.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Ask for public input during annual public meeting.

***Timeline/Implementation Schedule:**

Activity is currently in place and will continue throughout length of permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 2-PUBLIC PARTICIPATION/INVOLVEMENT

Unique BMP Identification Number: 2c-1

***BMP Title:** Consider Public Input

***BMP Description:**

Note and consider public input during discussion about SWPPP at annual public meeting. Any comments received during the public hearing will be considered by the City Council. Any comments received outside of the public hearing will be collected and given by the City Clerk to the City Council for consideration. Minutes from the public meeting will include all comments and answers to the comments and be made publically available.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Keep minutes from the annual public meeting.

***Timeline/Implementation Schedule:**

Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

Any comments received during the public hearing will be considered by the City Council

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

Additional BMP Summary Sheet Copy as Necessary

MS4 Name:

Minimum Control Measure: 2-PUBLIC PARTICIPATION/INVOLVEMENT

Unique BMP Identification Number:

***BMP Title:**
***BMP Description:** Location(s) in SWPPP of detailed information relating to this BMP:
***Measurable Goals:**
***Timeline/Implementation Schedule:**
Specific Components and Notes:
***Responsible Party for this BMP:** Name: Department: Phone: E-mail:

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet Instructions

Minimum Control Measure 3: ILLICIT DISCHARGE DETECTION AND ELIMINATION

Key to Unique BMP ID Numbers	Required BMP Title	Permit Reference
3a-1	Storm Sewer System Map	**V.G.3.a**
3b-1	Regulatory Control Program	**V.G.3.b**
3c-1	Illicit Discharge Detection and Elimination Plan	**V.G.3.c**
3d-1	Public and Employee Illicit Discharge Information Program	**V.G.3.d**
3e-1	Identification of Non Stormwater Discharges and Flows	**V.G.3.e**
	Additional BMP Summary Sheet (Copy as Necessary)	

For each of the Best Management Practices (BMPs) associated with Minimum Control Measure 3 (MCM-3), **Illicit Discharge Detection and Elimination**, fill out the attached BMP Summary Sheets completely. The completion of all of the associated BMP Summary Sheets for the BMPs listed above are mandatory for a complete application. To aid in review and comment by the public, you must use the numbers listed in the key above and the BMP Titles which are consistent with the MS4 General Permit language. This summary is simply an overview of the BMP and does not contain all of the details associated with implementation. Be sure to include a reference to the specific locations of detailed information on which the summary sheet is based in your Storm Water Pollution Prevention Program (SWPPP).

1. BMP Description
Summarize the major components of this BMP and how you plan to implement them. Also identify the following:

- BMP program components
- Plans for program implementation
- Target audience
- Include the exact locations (page numbers) of detailed information in the SWPPP

2. Measurable Goals
Define the milestones that are to be reached through the implementation of this BMP. Establish a baseline from which you will measure effectiveness, how the measurements are to be made, and how the success will be defined and quantified.

3. Timeline/Implementation Schedule
Provide specific dates that milestones identified as measurable goals are to be met. The scheduled should also outline dates when measurable goals will be evaluated to determine program effectiveness.

4. Specific Components and Notes for this MCM
Include any additional notes relevant to the specific purpose of each BMP and how the BMPs for the minimum control measure have been modified from past practice based on experience and measures. For the Storm Sewer System Map identify the resource materials which were or will be used to create the map. Concerning your Regulatory Control Program identify who has regulatory authority concerning ordinances or other regulatory instruments.

5. Responsible Party for this BMP
Indicate who specifically is responsible for the implementation and monitoring of this BMP. This should be the individual who is actively involved with the BMP and not simply a city official who is signing the application for permit coverage.

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 3-ILLICIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number: 3a-1

***BMP Title:** Storm Sewer System Map

***BMP Description:**

This map is in the Lilydale stormwater management plan. It will be updated in the 2006 (draft) update to the stormwater management plan.

Location(s) in SWPPP of detailed information relating to this BMP:

Supplement to Comprehensive Stormwater Management Plan, 1997

***Measurable Goals:**

Map is in the document.

***Timeline/Implementation Schedule:**

Already complete. Updated map to be published before the end of 2007.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 3-ILLICIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number: 3b-1

***BMP Title:** Regulatory Control Program

***BMP Description:**

Ordinance prohibiting illicit discharges.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Assessment of need for new ordinance.
Adoption of new ordinance if needed.

***Timeline/Implementation Schedule:**

Assessment: 2007 Existing ordinances will be assessed to determine if they fully meet standards to completely address illicit discharges
Adoption: 2008

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin
Department: City of Lilydale, City Clerk and Treasurer
Phone: 651-457-2316
E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 3-ILLICIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number: 3c-1

***BMP Title:** Illicit Discharge Detection and Elimination Plan

***BMP Description:**

The City has contracted with the City of Mendota Heights to provide inspection of the outfall/energy dissipation structure of the storm sewer at Riverwood Apartments, and of the drop structure portion of the storm sewer outfall system at Colony Townhomes. The scope of the Mendota Heights work includes observing for evidence of illicit discharges. If illicit discharge is found, determine the source and contact the property owner/manager to eliminate the discharge.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Identify any illicit discharges observed in the annual report from Mendota Heights after inspection of 2 storm sewer outfalls.

***Timeline/Implementation Schedule:**

Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

There are only two small storm sewers in the public system in the City of Lilydale. Therefore, if an illicit discharge is detected, there are a limited number of possible sources.

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 3-ILLICIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number: 3d-1

***BMP Title:** Public and Employee Illicit Discharge Information Program

***BMP Description:**

Discuss illicit discharge matter at annual public meeting and, if problems are suspected, distribute information to City residents and employees regarding illicit discharges in quarterly newsletters. Additional information about the Illicit Discharge Program is in BMP 1c-3.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Inclusion of this topic in the annual public meeting.

***Timeline/Implementation Schedule:**

Implementation to begin in 2007 and continue through duration of the permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 3-ILLICIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number: 3e-1

***BMP Title:** Identification of Non Stormwater Discharges and Flows

***BMP Description:**

The City has contracted with the Mendota Heights to provide inspection of the outfall/energy dissipation structure of the storm sewer at Riverwood Apartments, and of the drop structure portion of the storm sewer outfall system at Colony Townhomes. The scope of the Mendota Heights work includes observing for evidence of illicit discharges.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Annual report from the City of Mendota Heights that identifies the existance of illicit discharges

***Timeline/Implementation Schedule:**

Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

Additional BMP Summary Sheet Copy as Necessary

MS4 Name:

Minimum Control Measure: 3-ILLICIT DISCHARGE DETECTION AND ELIMINATION

Unique BMP Identification Number:

***BMP Title:**
***BMP Description:** Location(s) in SWPPP of detailed information relating to this BMP:
***Measurable Goals:**
***Timeline/Implementation Schedule:**
Specific Components and Notes:
***Responsible Party for this BMP:** Name: Department: Phone: E-mail:

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet Instructions

Minimum Control Measure 4: CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Key to Unique BMP ID Numbers	Required BMP Title	Permit Reference
4a-1	Ordinance or other Regulatory Mechanism	**V.G.4.a**
4b-1	Construction Site Implementation of Erosion and Sediment Control BMPs	**V.G.4.b**
4c-1	Waste Controls for Construction Site Operators	**V.G.4.c**
4d-1	Procedure for Site Plan Review	**V.G.4.d**
4e-1	Establishment of Procedures for the Receipt and Consideration of Reports of Stormwater Noncompliance	**V.G.4.e**
4f-1	Establishment of Procedures for Site Inspections and Enforcement	**V.G.4.f**
	Additional BMP Summary Sheet (Copy as Necessary)	

For each of the Best Management Practices (BMPs) associated with Minimum Control Measure 4 (MCM-4), **Construction Site Stormwater Runoff Control**, fill out the attached BMP Summary Sheets completely. The completion of all of the associated BMP Summary Sheets for the BMPs listed above are mandatory for a complete application. To aid in review and comment by the public, you must use the numbers listed in the key above and the BMP Titles which are consistent with the MS4 General Permit language. This summary is simply an overview of the BMP and does not contain all of the details associated with implementation. Be sure to include a reference to the specific locations of detailed information on which the summary sheet is based in your Storm Water Pollution Prevention Program (SWPPP).

1. BMP Description
Summarize the major components of this BMP and how you plan to implement them. Define the following:

- BMP program components
- Target audience
- Specific information relating to content of local ordinance already in place
- Waste control guidelines
- System(s) in place to receive and respond to complaints related to construction site noncompliance
- Priority areas of inspection and enforcement activities related to construction sites
- Include the exact locations (page numbers) of detailed information in the SWPPP

2. Measurable Goals
Define the milestones that are to be reached through the implementation of this BMP. Establish a baseline from which you will measure effectiveness, how the measurements are to be made, and how the success will be defined and quantified. It is mandatory that the ordinance be at least as strict as those requirements set forth in the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Stormwater Permit for Construction Activity.

3. Timeline/Implementation Schedule
Provide specific dates that milestones identified as measurable goals are to be met. The schedule should also outline dates when measurable goals will be evaluated to determine program effectiveness.

4. Specific Components and Notes for this MCM
Include any additional notes relevant to the specific purpose of each BMP and how the BMPs for the minimum control measure have been modified from past practice based on experience and measures.

5. Responsible Party for this BMP

Indicate who specifically is responsible for the implementation and monitoring of this BMP. This should be the individual who is actively involved with the BMP and not simply a city official who is signing the application for permit coverage.

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Unique BMP Identification Number: 4a-1

***BMP Title:** Ordinance or other Regulatory Mechanism

***BMP Description:**

The City Building and Zoning ordinance has an Erosion Control-Stormwater Runoff component.

Location(s) in SWPPP of detailed information relating to this BMP:

Ordinance 903.09: Erosion Control-Stormwater Runoff; Ordinance 903.16: Site Planning; Ordinance 904.07: Planned Unit District

***Measurable Goals:**

Adopted ordinance.

***Timeline/Implementation Schedule:**

Implementation has already begun and will continue through the duration of the permit. Ordinances have already been adopted. Updated ordinances will be considered when presented.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Unique BMP Identification Number: 4b-1

***BMP Title:** Construction Site Implementation of Erosion and Sediment Control BMPs

***BMP Description:**

Grading plan and sediment and erosion control plans for all development or redevelopment over 1 acre. Specific details of the requirements for the grading plans and sediment and erosion control plans are listed in the ordinances below.

Location(s) in SWPPP of detailed information relating to this BMP:

Ordinance 903.09: Erosion Control-Stormwater Runoff; Ordinance 903.16: Site Planning; Ordinance 904.07: Planned Unit District

***Measurable Goals:**

Submittal of grading plan and sediment and erosion control plan for development and redevelopment projects.

***Timeline/Implementation Schedule:**

As development/redevelopment occurs.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Unique BMP Identification Number: 4c-1

***BMP Title:** Waste Controls for Construction Site Operators

***BMP Description:**

Make sure construction site operators meet MPCA requirements for contruction waste controls.
Due to the fact that the City of Lilydale is a relatively small city, completely developed and surrounded by completely developed urban area, a very limited amount of construction activity takes place within the City. When there is construction activity, it is generally the only construction activity occurring at that time. Therefore, the City Council maintains interest in all construction activites as they are occurring. Currently, any additional necessary waste controls beyond MPCA requirements are considered on a case-by-case basis with details worked out with the developer prior to the construction.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Adoption of an ordinance for waste control for construction site operators.

***Timeline/Implementation Schedule:**

Assessment of existing ordinances: 2007 Existing ordinances will be examined to determine if they properly cover construction waste control.
Adoption (if needed) of additional ordinance: 2008

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin
Department: City of Lilydale, City Clerk and Treasurer
Phone: 651-457-2316
E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Unique BMP Identification Number: 4d-1

***BMP Title:** Procedure for Site Plan Review

***BMP Description:**

Review site plans for consistency with the Lilydale stormwater management plan and City ordinances. Plans are reviewed by the City Engineer and City Planner as needed.

Location(s) in SWPPP of detailed information relating to this BMP:

See stormwater management plan and City ordinances.

***Measurable Goals:**

Memo or report on plan review.

***Timeline/Implementation Schedule:**

Each redevelopment or development.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Unique BMP Identification Number: 4e-1

***BMP Title:** Establishment of Procedures for the Receipt and Consideration of Reports of Stormwater Noncompliance

***BMP Description:**

Reports of noncompliance are to be directed to the City offices for further action. Reports may be submitted in any reasonable form of communication (orally, email, letter, etc). A specific form of communication, such as a letter, may be requested. City may have the City Engineer, Mendota Heights, or other provider review the report of noncompliance and provide a letter report.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Letter to City regarding the review of the reported noncompliance.

***Timeline/Implementation Schedule:**

Begin in 2007.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Unique BMP Identification Number: 4f-1

***BMP Title:** Establishment of Procedures for Site Inspections and Enforcement

***BMP Description:**

Construction inspector review of construction during construction to ensure that all control measures are in place and functioning properly. If problems occur and corrections are not made, Council will use legal means available will be used to remedy situation.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Construction inspection reports, documented in City Council's minutes.

***Timeline/Implementation Schedule:**

As development occurs.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

Additional BMP Summary Sheet Copy as Necessary

MS4 Name:

Minimum Control Measure: 4-CONSTRUCTION SITE STORMWATER RUNOFF CONTROL

Unique BMP Identification Number:

***BMP Title:**
***BMP Description:** Location(s) in SWPPP of detailed information relating to this BMP:
***Measurable Goals:**
***Timeline/Implementation Schedule:**
Specific Components and Notes:
***Responsible Party for this BMP:** Name: Department: Phone: E-mail:

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet Instructions

Minimum Control Measure 5: POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Key to Unique BMP ID Numbers	Required BMP Title	Permit Reference
5a-1	Development and Implementation of Structural and/or Non-structural BMPs	**V.G.5.a**
5b-1	Regulatory Mechanism to Address Post Construction Runoff from New Development and Redevelopment	**V.G.5.b**
5c-1	Long-term Operation and Maintenance of BMPs	**V.G.5.c**
	Additional BMP Summary Sheet (Copy as Necessary)	

For each of the Best Management Practices (BMPs) associated with Minimum Control Measure 5 (MCM-5), **Post Construction Stormwater Management in New Development and Redevelopment**, fill out the attached BMP Summary Sheets completely. The completion of all of the associated BMP Summary Sheets for the BMPs listed above are mandatory for a complete application. To aid in review and comment by the public, you must use the numbers listed in the key above and the BMP Titles which are consistent with the MS4 General Permit language. This summary is simply an overview of the BMP and does not contain all of the details associated with implementation. Be sure to include a reference to the specific locations of detailed information on which the summary sheet is based in your Storm Water Pollution Prevention Program (SWPPP).

1. BMP Description
Summarize the major components of this BMP and how you plan to implement them. Identify the following:

- BMP program components
- Plans for program implementation
- Target audience
- Post-Construction BMPs already in place in the MS4 – include information that specifies if the stormwater is treated prior to discharge to receiving waters
- Future plans for the long-term goal of stormwater management
- Include the exact locations (page numbers) of detailed information in the SWPPP

2. Measurable Goals
Define the milestones that are to be reached through the implementation of this BMP. Establish a baseline from which you will measure effectiveness, how the measurements are to be made, and how the success will be defined and quantified. Ensure that the measurable goals include a strategy for reducing pollutants in stormwater discharge as well as control of the rate of discharge to receiving waters. Determine the baseline from which quantifiable measurements will be taken. Also include information related to sites that disturb less than one acre of land but are part of a larger common plan of development.

3. Timeline/Implementation Schedule
Provide specific dates that milestones identified as measurable goals are to be met. The schedule should also outline dates when measurable goals will be evaluated to determine program effectiveness.

4. Specific Components and Notes for this MCM
Include any additional notes relevant to the specific purpose of each BMP and how the BMPs for the minimum control measure have been modified from past practice based on experience and measures.

5. Responsible Party for this BMP

Indicate who specifically is responsible for the implementation and monitoring of this BMP. This should be the individual who is actively involved with the BMP and not simply a city official who is signing the application for permit coverage.

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Unique BMP Identification Number: 5a-1

***BMP Title:** Development and Implementation of Structural and/or Non-structural BMPs

***BMP Description:**

As part of the approval process for new development and redevelopment, City ordinances require a plan for the management of stormwater. Specific details for the BMPs to be used in the stormwater management plan must be provided.

Location(s) in SWPPP of detailed information relating to this BMP:

Lilydale stormwater management plan, City ordinances.

***Measurable Goals:**

Review of stormwater management plan for proposed new development and redevelopment. This will be in a memo or report to the City.

***Timeline/Implementation Schedule:**

As each development is proposed.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Unique BMP Identification Number: 5b-1

***BMP Title:** Regulatory Mechanism to Address Post Construction Runoff from New Development and Redevelopment

***BMP Description:**

Assess existing ordinances and adopt additional ordinances if appropriate.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Adoption or identification of ordinance to address post-construction runoff management.

***Timeline/Implementation Schedule:**

Review ordinances: 2007-2008
Adopt new ordinance if needed: 2009-2011

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin
Department: City of Lilydale, City Clerk and Treasurer
Phone: 651-457-2316
E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Unique BMP Identification Number: 5c-1

***BMP Title:** Long-term Operation and Maintenance of BMPs

***BMP Description:**

City has no BMPs on its storm sewer system.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Not applicable.

***Timeline/Implementation Schedule:**

Not applicable.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin
Department: City of Lilydale, City Clerk and Treasurer
Phone: 651-457-2316
E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

Additional BMP Summary Sheet Copy as Necessary

MS4 Name:

Minimum Control Measure: 5-POST-CONSTRUCTION STORMWATER MANAGEMENT IN NEW DEVELOPMENT AND REDEVELOPMENT

Unique BMP Identification Number:

***BMP Title:**
***BMP Description:** Location(s) in SWPPP of detailed information relating to this BMP:
***Measurable Goals:**
***Timeline/Implementation Schedule:**
Specific Components and Notes:
***Responsible Party for this BMP:** Name: Department: Phone: E-mail:

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet Instructions

Minimum Control Measure 6: POLLUTION PREVENTION/GOOD HOUSEKEEPING

Key to Unique BMP ID Numbers	Required BMP Title	Permit Reference
6a-1	Municipal Operations and Maintenance Program	V.G.6.a
6a-2	Street Sweeping**	
6b-2	Annual Inspection of All Structural Pollution Control Devices	V.G.6.b.2
6b-3	Inspection of a Minimum of 20 percent of the MS4 Outfalls, Sediment Basins and Ponds Each Year on a Rotating Basis	V.G.6.b.3
6b-4	Annual Inspection of All Exposed Stockpile, Storage and Material Handling Areas	V.G.6.b.4
6b-5	Inspection Follow-up Including the Determination of Whether Repair, Replacement, or Maintenance Measures are Necessary and the Implementation of the Corrective Measures	V.G.6.b.5
6b-6	Record Reporting and Retention of all Inspections and Responses to the Inspections	V.G.6.b.6
6b-7	Evaluation of Inspection Frequency	V.G.6.b.7
	Additional BMP Summary Sheet (Copy as Necessary)	

For each of the Best Management Practices (BMPs) associated with Minimum Control Measure 6 (MCM-6), **Pollution Prevention/Good Housekeeping**, fill out the attached BMP Summary Sheets completely. The completion of all of the associated BMP Summary Sheets for the BMPs listed above are mandatory for a complete application. To aid in review and comment by the public, you must use the numbers listed in the key above and the BMP Titles which are consistent with the MS4 General Permit language. This summary is simply an overview of the BMP and does not contain all of the details associated with implementation. Be sure to include a reference to the specific locations of detailed information on which the summary sheet is based in your Storm Water Pollution Prevention Program (SWPPP).

1. BMP Description
Summarize the major components of the BMP and how you plan to implement them. Define the following:

- BMP program components
- Target audience
- Plans for program implementation
- Include the exact locations (page numbers) of detailed information in the SWPPP

2. Measurable Goals
Define the milestones that are to be reached through the implementation of this BMP. Establish a baseline from which you will measure effectiveness, how the measurements are to be made, and how the success will be defined and quantified.

3. Timeline/Implementation Schedule
Provide specific dates that milestones identified as measurable goals are to be met. Determine a scheduled that outlines dates that effectiveness measurements will be calculated and included in your annual reports. Include specific information related to the frequency that regular tasks will take place (i.e. street sweeping).

4. Specific Components and Notes for this MCM
Include any additional notes relevant to the specific purpose of each BMP and how the BMPs for the minimum control measure have been modified from past practice based on experience and measures.

5. Responsible Party for this BMP
Indicate who specifically is responsible for the implementation and monitoring of this BMP. This should be the individual who is actively involved with the BMP and not simply a city official who is signing the application for permit coverage.

Additional Information Requested for BMP 6a-2: Street Sweeping**
Provide the following information specific to your Street Sweeping BMP in the Specific Components and Notes section:

- Frequency of street sweeping events, including the time(s) of year that it will be conducted
- Type of street sweeping equipment used (brush or vacuum)
- Target areas for more frequent street sweeping, if applicable. Also indicate the reason for selecting the specific target area and how the frequency differs.
- Overview of street sweeping waste management plan

** Although not specifically required by the MS4 permit, street sweeping has been demonstrated to be an effective stormwater management BMP when properly conducted. The MPCA is considering developing a study on street sweeping and your information would be helpful in developing such a study.

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6a-1

***BMP Title:** Municipal Operations and Maintenance Program

***BMP Description:**

Not applicable. Lilydale has no municipal operations. The City owns only 500 feet of public road, and maintenance of this road is performed by the City of Mendota Heights. The City owns no automobiles. The only property the City owns is the 500 feet of public road, and the City Hall and the parking lot for the City Hall. Maintenance (primarily snow plowing) for the parking lot for the City Hall is contracted out. The City does not have a Public Works department.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Not Applicable

***Timeline/Implementation Schedule:**

Not Applicable

Specific Components and Notes:

Not Applicable

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6a-2

***BMP Title:** Street Sweeping**

***BMP Description:**

The only City-owned public road within the City is a short stretch (approximately 500 feet) of Victoria Curve. The City of Mendota Heights has agreed to sweep the street as part of their street maintenance program. All other public roads are maintained by either MnDOT or Dakota County and all street sweeping of those roads is coordinated by those entities.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Agreement with Mendota Heights for continued street sweeping of Victoria Curve.

***Timeline/Implementation Schedule:**

Annual contact with Mendota Heights to continue the agreement

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6b-2

***BMP Title:** Annual Inspection of All Structural Pollution Control Devices

***BMP Description:**

Not applicable; the City has no structural pollution control devices in its stormwater system.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Not applicable

***Timeline/Implementation Schedule:**

Not applicable

Specific Components and Notes:

Not applicable

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6b-3

***BMP Title:** Inspection of a Minimum of 20 percent of the MS4 Outfalls, Sediment Basins and Ponds Each Year on a Rotating Basis

***BMP Description:**

There are two MS4 outfalls within the City of Lilydale. The City has contracted with the Mendota Heights to provide inspection of the outfall/energy dissipation structure of the storm sewer at Riverwood Apartments, and of the drop structure portion of the storm sewer outfall system at Colony Townhomes.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Receive annual report from Mendota Heights following the inspection of the outfalls.

***Timeline/Implementation Schedule:**

Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6b-4

***BMP Title:** Annual Inspection of All Exposed Stockpile, Storage and Material Handling Areas

***BMP Description:**

Not applicable. There are no exposed stockpiles, storage, or material handling areas operated by the City of Lilydale. All road maintenance activities are carried out by MnDOT, Dakota County, or the City of Mendota Heights.

Location(s) in SWPPP of detailed information relating to this BMP:

This summary.

***Measurable Goals:**

Not Applicable

***Timeline/Implementation Schedule:**

Not Applicable

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6b-5

***BMP Title:** Inspection Follow-up Including the Determination of Whether Repair, Replacement, or Maintenance Measures are Necessary and the Implementation of the Corrective Measures

***BMP Description:**

When the City offices receive notice of stormwater management system deficiencies, the City will have the City Engineer, Mendota Heights, or other provider review the condition and provide a letter report.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Receipt of letter report.

***Timeline/Implementation Schedule:**

When City receives notice, the review and letter are to be completed within 90 days, unless an alternate schedule is stated.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6b-6

***BMP Title:** Record Reporting and Retention of All Inspections and Responses to the Inspections

***BMP Description:**

The City keeps a file and submits annual reports along with the MS4 reports.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Send annual report and MS4 reports to MPCA as scheduled.

***Timeline/Implementation Schedule:**

Implementation has already begun and will continue through the duration of the permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

BMP Summary Sheet

MS4 Name: City of Lilydale

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number: 6b-7

***BMP Title:** Evaluation of Inspection Frequency

***BMP Description:**

Adequacy of inspection will be considered every 5 years when the MS4 permit is renewed or more often if inspectors identify issues.

Location(s) in SWPPP of detailed information relating to this BMP:

***Measurable Goals:**

Submittal of MS4 permit application.

***Timeline/Implementation Schedule:**

Every 5 years for this MS4 permit.

Specific Components and Notes:

***Responsible Party for this BMP:**

Name: Joan Olin

Department: City of Lilydale, City Clerk and Treasurer

Phone: 651-457-2316

E-mail: cityoflilydale@comcast.net

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

Additional MP Summary Sheet Copy as Necessary

MS4 Name:

Minimum Control Measure: 6-POLLUTION PREVENTION/GOOD HOUSEKEEPING

Unique BMP Identification Number:

***BMP Title:**
***BMP Description:** Location(s) in SWPPP of detailed information relating to this BMP:
***Measurable Goals:**
***Timeline/Implementation Schedule:**
Specific Components and Notes:
***Responsible Party for this BMP:** Name: Department: Phone: E-mail:

**Indicates a REQUIRED field. Failure to complete any required field will result in rejection of the application due to incompleteness.*

Appendix

Local ordinances for the City of Lilydale cited within MS4 permit application.

BMP ID Number	Ordinance Number	Subject
4a-1, 4b-1	903.09	Erosion Control-Stormwater Runoff
4a-1, 4b-1	903.16	Site Planning
4a-1, 4b-1	904.07	Planned Unit District

BMP Summary Sheet

MS4 Name: City of Lilydale
Permit Condition: IV.D Section 303(d) listings
Unique BMP Identification Number: IV.D – 1

BMP Title: Impaired Waters Review Process

BMP Description:
Lilydale will review all discharges stormwater discharges to determine if they are received by waters that are currently listed as impaired waters, as defined by the current USEPA approved 303(d) list. The review will also determine for what pollutants these waters are considered impaired and determine if stormwater runoff contributes to the impairment. Contributing watersheds, land uses, and stormwater flow paths are already known, however the review will check for accuracy and recent changes.

Based on the review above, Lilydale will determine if any changes to the existing stormwater system or BMPs are needed to minimize the impact of discharges to the impaired water(s). If such modifications are deemed necessary, Lilydale will modify our SWPPP and submit those modifications to the MPCA with the current year's annual report.

Lilydale has and will continue to require stormwater quality improvements during redevelopment activities. More than half of the City has been redeveloped in recent years or installed state of the art BMPs to improve stormwater quality. Due to Lilydale's small size, there are very few areas where additional improvements can be made. The City will continue to work towards improving stormwater quality through these means.

Measurable Goals:
Inclusion of a report of the review in the annual report.

Timeline/Implementation Schedule:
2008 – complete review and include a report of stormwater discharges with annual report.

Require stormwater BMPs when redevelopment occurs.

Additional reviews will be completed when the USEPA updates the 303(d) list for impaired waters, which generally occurs every two years. Updated lists should be expected in 2008, 2010, 2012, and so on.

Specific Components and Notes:
Lilydale has and will continue to require stormwater quality improvements during redevelopment activities. More than half of the City has been redeveloped in recent years or installed state of the art BMPs to improve stormwater quality. Due to Lilydale's small size, there are very few areas where additional improvements can be made. The City will continue to work towards improving stormwater quality through these means.

Responsible Party for this BMP:

Name:	Joan Olin
Department:	City of Lilydale, City Clerk and Treasurer
Phone:	651-457-2316
E-mail:	cityoflilydale@comcast.net