

**CITY OF CIRCLE PINES, MINNESOTA
PLANNING COMMISSION MEETING**

**April 15, 2019
7:00 P.M.**

AGENDA

1. Call to Order
2. Roll Call
3. Approval of Minutes – March 18, 2019
4. Public Comments
5. Council Report

6. **COMMISSION BUSINESS**

- a. 2040 Comprehensive Plan (Memo)

Commission Action _____

- b.

Commission Action _____

7. **ADJOURNMENT**

**CITY OF CIRCLE PINES, MINNESOTA
PLANNING COMMISSION MEETING**

**March 18, 2019
7:00 p.m.**

1. CALL TO ORDER

Chair Kula called the meeting to order at 7:00 p.m.

2. ROLL CALL

Also present were Commissioners Thompson, Petska, Poppinga and McChesney and Assistant City Administrator for Public Services Peterson.

3. APPROVAL OF MINUTES

MOTION:

Petska moved, seconded by Poppinga, to approve the April 16, 2018 minutes as presented. **Motion carried 5-0.**

4. PUBLIC COMMENTS

There were no public comments.

5. COUNCIL REPORT

Assistant City Administrator for Public Services Peterson reported that the Council approved the Anoka County Library site plan, as recommended by the Planning Commission.

6. COMMISSION BUSINESS

a. 2040 Comprehensive Plan

Assistant City Administrator for Public Services Peterson commented that every 10 years the Metropolitan Council asks communities to do a Comprehensive Plan. The plan is presented to the commission for review in sections, as it is a large document. Chapters 1, 3, 6 and 8 are the first for review by the Planning Commission.

Peterson said there will be additional sections for Planning Commission review and by June 1, the plan will be sent to neighboring communities and local jurisdictions for their review and comments. After a six-month review period, the commission will make suggested changes, if necessary, and then submit the plan to the council for approval.

Chapter 1 Community Overview

There were no comments on this chapter.

Chapter 3 Transportation

Peterson noted that city engineers put this chapter together. She gave a summary of the contents of the chapter.

Chair Kula commented that he has observed an increase in traffic in the Indian Hills area of Circle Pines. He noted according to projections, County Road J will not be sufficient to handle traffic congestion in that area and asked what the Planning Commission and City Council can do, as it is a “shared” road with half in Ramsey County and half in Anoka County. Peterson said she could find out what plans are for Ash Street that would help alleviate traffic problems.

Kula suggested the middle section of County Road J could possibly be used for turn lanes to make it safer.

Commission members noted there has been an increase in housing developments in Lino Lakes that contributes to traffic on County Road J.

Thompson asked if there is a traffic change plan for the intersection of Lake Drive and Lexington Avenue due to the apartment complex currently being built in Lexington. Peterson said she is not sure.

Kula commented that there is a proposal for a road from Robin Hood Lane running south to County Road J. Peterson explained this has to do with the amount of roadway necessary for State Aid funding and is an effort to add to the amount of roads that provide access into and out of the city.

Petska asked if the Planning Commission would address proposed trails and pedestrian facilities at a later date. Peterson said most of those trails are currently there and are already in a pedestrian facility plan that the commission has already done. She added that improvements to some of the trails are proposed as funding becomes available.

Kula expressed appreciation to city staff and WSB for the amount of detail put into gathering the information for this review.

Chapter 6 Housing

Assistant City Administrator for Public Services Peterson gave an overview of the chapter.

Petska noted that Option X is highlighted on page 9. Peterson said that is something that will need to be addressed in how to accomplish affordable housing. Petska asked how the affordable housing could be addressed if there is no room in the city to build. Peterson said it has been used as a guideline.

McChesney asked if there is a city or state program to assist with addressing homes in an area that remain in disrepair. Peterson said the city does look internally first and then would go to experts to get advice on moving forward, but there are no plans for redevelopment in the next 10 years.

Commission members discussed the rental market in the Circle Pines area. Chair Kula asked where the data comes from. Peterson said it is from the Metropolitan Council.

Chapter 8 Resilience

Assistant City Administrator for Public Services Peterson commented that this is a statement we are required to make regarding solar energy and energy efficiency.

It was noted a draft of the 2040 Comprehensive Plan would need to be ready by June 1.

Thompson mentioned the elementary school grades on page 3 are incorrect. Peterson said she will make that change.

Kula asked how the joint services works with police and fire coverage when you have a city that is several miles away. Peterson explained there are fire stations in Circle Pines and Centerville that cover the areas. She said Centerville also has a police department office and each officer has their own zone.

Kula asked if there are other opportunities that aren't currently being utilized that might become available for sharing of services. Peterson said there are always opportunities and it would be nice to share GIS services or have a building inspector who would also be a zoning monitor for violations.

Thompson asked if there is an update on the Down Under Bar. Peterson said the owners have hired a demolition company and demolition was to take place over a week ago but the demolition company was busy with snow removal and is now having equipment issues so hopefully demolition will take place this week. Peterson added it is anticipated that the owners will submit an application for construction of another building on the site in the future.

7. ADJOURNMENT

MOTION: Thompson moved, seconded by Petska, to adjourn the meeting. **Motion carried 5-0.**

The meeting was adjourned at 7:52 p.m.

Chair

Clerk



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TO: Planning Commission Members
FROM: Chandra Peterson 
DATE: April 9, 2019
RE: 2040 Comprehensive Plan Chapters

As promised, I have enclosed a portion of Chapter 4, Water Resources, Surface Water and Water Supply and Chapter 5 Parks and Trails.

The Water Resource Chapter includes Waste Water, Surface Water and Water Supply sections. The Surface Water section is a plan that was approved by the City Council and the city has been utilizing the implements of the plan for storm water. The water supply section of the plan has been approved by the Utility Commission and Council. Staff is working with the DNR and Met Council on finishing some of the minor details of the plan. What you see in your packet should be the final look of the plan.

The Parks and Trails Chapter was reviewed by the Park Board at their last meeting and comments and changes from the board were implemented in the chapter.

I look forward to questions and comments you may have.

Surface Water

1. EXECUTIVE SUMMARY

1.1. Surface Water Management Plan Purpose

The City of Circle Pines Surface Water Management Plan (plan, City plan, local plan, SWMP) is a local management plan that meets the requirements of Minnesota Statutes 1038.235, Minnesota Rules 8410, and the Rice Creek Watershed District (RCWD) Watershed Management Plan (adopted January 4, 2010 and amended November 9, 2016). Minnesota Statute 103B.201 states that the purposes of the 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 the proper management of surface and groundwater.

The Circle Pines Surface Water Management Plan addresses these purposes.

1.2. Water Resource Management Responsibilities and Related Agreements

Well Head Protection Plan was approved by the Minnesota Department of Health on April 16th, 2008. Future agreements could include joint powers agreements between the City and Watershed Management Organizations having jurisdiction within its boundaries, agreements between the City and adjoining communities, or agreements with other governmental units or private parties.

The City of Circle Pines is responsible for construction, maintenance, and other projects in or along the City's stormwater management systems (i.e., ponds, pipes, channels) that are not considered part of RCWD's public drainage system. Table 6.1 of this plan addresses the City of Circle Pine's stormwater system maintenance plans.

The City of Circle Pines is the LGU authority for the Wetland Conservation Act (WCA) and RCWD Rule F. The City has also assumed LGU permitting authority for stormwater management, erosion and sediment control, and floodplain alterations from RCWD in 2016. A copy of the MOU is found in Appendix I. Permitting reference documents can be found in Appendix J.

1.3. Executive Summary

- Section 1.0 Executive Summary provides background information and summarizes the plan contents.

- Section 2.0 Land and Water Resource Inventory presents information about the topography, geology, groundwater, soils, land use, public utilities, surface waters, hydrologic system and data, and the drainage system.
- Section 3.0 Agency Cooperation describes the City's ordinances and other governmental controls and programs that affect water resources.
- Section 4.0 Assessment of Problems and Issues presents the City's water management related problems and issues.
- Section 5.0 Goals and Policies outlines the City's goals and policies pertaining to water management.
- Section 6.0 Implementation Program presents the program elements and discusses the responsibilities, priorities and financial considerations associated with the implementation program.

1.3.1. Background

The City of Circle Pines (population 4,918) is located in Anoka County in the seven county Twin Cities metropolitan area (Figure 1). It is about 17 miles north of downtown St. Paul and covers approximately two square miles. Circle Pines is positioned between the City of Blaine to the north, City of Lino Lakes to the east, City of Lexington to the west, and Shoreview to the south. Interstate 35W runs north-south just outside the northwestern boundary of the City.

Circle Pines is located entirely within the Rice Creek Watershed District (RCWD). The RCWD regulates development impacts on water resources. This plan addresses the rules and regulations put forth by the Rice Creek Watershed District.

Water from the northern portion of Circle Pines generally drains westerly to County Ditch 53-62. This County Ditch conveys water southwest into Golden Lake which leads to the Golden Lake Wetland Treatment System. The City has utilized this treatment system to remove phosphorus. Water discharging from Golden Lake moves south to Rice Creek and leaves the City to the southwest. Figure 5 shows the drainage patterns within the City.

Water from the northeast corner of Circle Pines drains to the south into Baldwin Lake and Rice Lake. Baldwin Lake outlets to Rice Creek. The southern portion of Circle Pines drains directly to Rice Creek, which then conveys water to the south leaving the City just north of the County line.

The City of Circle Pines is essentially fully developed (Figure 3- Existing Land Use). The City has land use practices that include residential, commercial and industrial development, as well as designated park and open space areas and public recreational areas.

1.3.2. Summary of Goals, Problems, and Potential Solutions

1.3.2.1 Goals

Section 5 of the Circle Pines plan outlines the City's goals and policies pertaining to water management. The goals are as follows:

- **Water Quantity and Quality.** Limit public capital expenditures that are necessary to control excessive volumes and rates of runoff. Maintain or improve the quality of water in lakes, streams or rivers within or immediately downstream of the City of Circle Pines.
- **Recreation, Fish and Wildlife Resources.** Protect and enhance recreational facilities and fish and wildlife habitat.
- **Enhancement of Public Participation and Education.** Educate and inform the public on pertinent water resource management issues and increase public participation in water management activities.
- **Groundwater.** To manage surface water runoff to the degree necessary to provide groundwater recharge and to prevent groundwater contamination.
- **Wetlands.** The City will protect wetlands in conformance with the requirements of the Wetland Conservation Act of 1991.
- **Erosion and Sediment Control.** To prevent erosion and sedimentation to the maximum reasonable extent.
- **Shoreland Management Requirements.** To protect shoreland areas within the City in accordance with the DNR.
- **Financing.** Minimize public capital expenditures.

1.3.2.2 Summary of Problems and Issues

Section 4 of this plan presents a detailed assessment of the water management related problems and issues in the City of Circle Pines. Some of the problems and issues identified include:

- Methods for funding projects and programs as well as partnering opportunities.
- Water quality in Golden Lake, Baldwin Lake, Rice Creek, Rice Lake, Upper Mississippi River and other public waters that provide recreational opportunities.
- Soil erosion in Ditch 53-62
- Importance of maintaining the City's stormwater management system.
- City's near full development condition makes it difficult for the City to provide additional treatment of stormwater runoff.
- Continued development of community education programs regarding water resource management.



- Importance of Capital Improvement Plan (CIP) and implementation program to adequately address identified problems.
- Importance of future NPDES stormwater permit requirements.

1.3.2.3 Summary of Implementation Section

Section 6 of this plan presents the implementation program for the City of Circle Pines, which includes defining responsibilities, prioritizing, and listing the program elements. Table 6-1 outlines the projects, programs, and studies that have been identified to address the problem areas contained in this Plan

2. LAND AND WATER RESOURCE INVENTORY

2.1 Topography and Geology

The topography of Circle Pines is generally flat with minor undulation. The most significant topographical change is present in the valley that runs through the center of the City that connects Baldwin Lake and Golden Lake. Most of the City's surface water drains southerly through this valley into Ramsey County.

The City of Circle Pines has 2-foot contour interval topographic maps that cover the entire City and are based on 2012 LIDAR (Light Detection and Ranging) data. Additional available mapping includes various Circle Pines development plans and the Minnesota USGS 10-foot contour interval topographic map.

The Anoka County Geologic Atlas, part of the Minnesota Geologic Survey, provides more information on the areas bedrock and surficial geology as well as quaternary and bedrock hydrogeology.

2.2 Climate and Precipitation

The climate within the Minneapolis/St. Paul metropolitan area is described as a humid continental climate with moderate precipitation, wide daily temperature variations, warm humid summers and cold winters. The total average annual precipitation in this area is approximately 30 inches, of which approximately one-third occurs in the months of June, July and August. The annual snowfall average is about 56 inches and is equivalent to approximately 5.6 inches of water.

Rainfall frequency estimates are used as design tools in water resource projects. Rainfall frequencies are summarized in Technical Paper No. 40, Rainfall Frequency Atlas of the United States, published by the U.S. Weather Bureau in 1961. This document was updated in 2013. Atlas 14 is the new document used as reference for rainfall frequencies. It has been adopted by RCWD in their respective stormwater management rules. Table 2.1 lists rainfall frequencies for Circle Pines.

Table 2.1 Atlas 14 Rainfall Frequencies

Recurrence Interval (Years)	24-hr Rainfall Depth (in)	Probability of Occurring Each Year
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1	2.4	99%
2	2.5	50%
5	3.5	20%
10	4.2	10%
25	5.3	4%
50	6.2	2%
100	7.2	1%

This data was derived from the Atlas 14 report produced by the National Oceanic and Atmospheric Administration (NOAA). Additional climatological information for the area can be obtained from the State Climatologist website at <http://climate.umn.edu/>.

2.3 Soils

The Anoka Sandplain dominates the physical geography of the City. This region is known for its flat to slightly undulating topography, sandy soils, and shallow water table. More information about soils can be obtained from the Soil Survey of Anoka County. Figure 2 shows the hydrologic soil groups within Circle Pines.

Infiltration capacities of soils affect the amount of direct runoff resulting from rainfall. The higher the infiltration rate for a given soil, the lower the runoff potential. Conversely, soils with low infiltration rates produce high runoff volumes and high peak discharge rates. According to the soil survey, most of the underlying soils in the City of Circle Pines are classified as A soils with moderate to high infiltration rates. However, there is a significant portion of the City covered in D soils, which are not recommended for infiltration. In addition, the soil survey also shows a significant area where the amount of land alteration has resulted in a soil classification of urban soils. These urban soils have high variability in runoff rates due to the amount of cut and fill that took place during development.

Since the City of Circle Pines is at full development, limited land grading will occur within the City in the future.

2.4 Land Use

The City of Circle Pines designation by the Metropolitan Council is that of a "developed community" meaning that over 85 percent of the community is developed. Circle Pines is almost fully developed with less than one percent of its usable land area still vacant, all of which consists of underutilized small lots and parcels less than one-third of an acre. Residential land uses comprise 39% of all of the city's useable land. Commercial development occupies 2% of the City's land area, and 4% is occupied by institutional uses. Parks and open space occupy 29%, while water occupies 11 % of the City's total land area. The remaining 15% of land in the City of Circle Pines is used for right-of way. The existing and future land uses in Circle Pines are shown on Figure 3 and Figure 4, which are located in Appendix A. Land use data is an important factor for estimating surface water runoff. The hard or impervious surface areas associated with each land use greatly affect the amount of runoff generated from an area. Circle Pines has a vast network of regional open space which covers much of the southeast portion of the City. This regional

open space acts as an important buffer between development and local waterbodies. Future land use projections indicate those areas that may be available for water resource enhancement and where improvements should be a priority. Significant changes in land use can increase runoff due to added impervious surfaces. Circle Pines expects very little change in land use.

Due to the lack of available land, the City of Circle Pines intends to focus its efforts on redevelopment opportunities to maximize land where possible by implementing appropriate densities (5 units plus in developed areas with access to amenities). Redevelopment has taken place in the City of Circle Pines with the Lake and Lexington Redevelopment, Pine Hollow Development, Fire Barn Development, and the Pine Manor Development. These projects collectively served the need for single-family housing, townhomes, mixed-use buildings, and senior apartments.

2.5 Public Utilities

Circle Pines completely within the Metropolitan Urban Service Area. Sanitary sewer and water service is provided throughout the city. The Circle Pines sanitary sewer system consists of approximately 21 miles of sewer mains, 500 manholes, and three lift stations. Circle Pines handles its wastewater on a metropolitan level and is incorporated into the Metro Wastewater Treatment Plant located in St. Paul Minnesota. The Metropolitan Plant is the largest in the state of Minnesota, serving 1.8 million users with a maximum capacity of 251 million gallons per day. Since sanitary sewer is available in the City, the City will not allow installation of new individual sewage treatment systems where public sewer service is already located.

Storm sewers, ditches, curbs, and gutters provide drainage for the City. The individual watershed maps (Figure 5 in Appendix A) show the City's stormwater system of pipes, channels and ponds. Future street maintenance and redevelopment will likely dictate the extension or reconstruction of the storm drainage system

2.6 Surface Waters

Figure 5 and Figure 6 in Appendix A show the major water resources, watersheds, and drainage patterns in the City of Circle Pines. These figures also identify the DNR-protected lakes and wetlands located throughout the City. The following table lists the DNR-protected lakes and wetlands within the City.

Table 2.2 DNR Waterbodies

DNR ID#	Waterbody Name	DNR ID#	Waterbody Name
45P	Golden Lake	13P	Baldwin
41P	Unnamed	592 W	Unnamed

Wetland Conservation Act of 1991 (WCA)-Local Government Units (LGUs) are responsible for administering the rules. The intent of the WCA is to promote no net loss of wetlands. In the past, the Rice Creek Watershed District (RCWD) was the LGU responsible for administering the WCA in the City of Circle Pines. The City has since adopted RCWD Rule F and become the LGU responsible for administering the WCA rules. In 2016, the City was granted LGU permitting authority for Stormwater

Management (Rule C), Erosion and Sediment Control (Rule D), and Floodplain Alteration (Rule E). A copy of the MOU can be found in the Appendices.

2.6.1. Water Quality Data

Water quality data for the City has been obtained from the Minnesota Pollution Control Agency (MPCA) Environmental Data Access site (Figure 9). This database is utilized by participating agencies to compile water quality testing data and is almost entirely used for the storage of water quality parameters. Water quality monitoring information/data and monitoring locations can be found at the MPCA's Environmental Data Access site at <http://www.pca.state.mn.us/index.php/water/water-monitoring-and-reporting/water-monitoring-and-reporting.html>. Figure 9 shows water quality monitoring locations within the City.

2.6.2 Impaired Waters

The MPCA lists the following water bodies located within or near the City as being impaired:

- Golden Lake (ID - 02-0045-00) is listed as impaired by the MPCA due to nutrients/eutrophication and mercury. Golden Lake was added to the impaired waters list by the MPCA in 2010.
- Baldwin Lake (ID - 02-0013-00) is listed as impaired by the MPCA due to nutrients/eutrophication. Baldwin Lake was added to the impaired waters list by the MPCA in 2010.
- Rice Lake (ID -02-0008-00) is listed as impaired by the MPCA due to nutrients/eutrophication. Rice Lake was added to the impaired waters list by the MPCA in 2009.
- Lower Rice Creek (ID -02-0041-00) is listed as impaired by the MPCA due to aquatic macroinvertebrate bioassessments and E. coli. Lower Rice Creek was added to the impaired waters list by the MPCA in 2009.
- Middle Rice Creek (ID - 02-0013-00) is listed as impaired by the MPCA due to aquatic macroinvertebrate bioassessments and fishes bioassessments. Middle Rice Creek was added to the impaired waters list by the MPCA in 2010.
- Upper Mississippi River (ID - 070010206) is listed as impaired for mercury in fish tissue and fecal coliform. The Upper Mississippi River was added to the impaired waters list by the MPCA in 1998. A TMDL for bacteria was approved in 2016.

The locations of these impaired water bodies are shown on the water resource problem areas map, Figure 7, which can be found in Appendix A.

In addition to the water bodies listed above, the City is upstream of Lake Pepin, which is listed as impaired for excess nutrients. The City will be required to implement the TMDL plans for this water body once complete.

2.6.3 Floodplain

The City of Circle Pines has adopted a floodplain management ordinance. A copy of this regulation can be found on the City's website and in Appendix C. This ordinance generally regulates developments, land alterations and uses within each of the floodway, flood fringe, and general floodplain districts. The current ordinance requires that the lowest entry of a house be 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. However, the RCWD requires the lowest entry of the house to be greater than: 2-feet above the 100-year flood elevation and 1-foot above the emergency overflow. Figure 8 in Appendix A shows the FEMA floodplain boundaries for the City.

The City also regulates floodplain development as part of the LGU Permitting Authority granted by RCWD through their Rule E. This permitting process is independent of the FEMA permitting process.

The City also has in place a Stormwater Management Ordinance, which is provided as an appendix to this plan and can be found in Appendix D.

The Federal Emergency Management Agency (FEMA) completed the map modernization process for its Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMS) to identify flood risk within Anoka County in July 2013. FEMA released updated maps for Anoka County in December 2015. A copy of the updated FIS and FIRMS can be obtained online through the FEMA Map Service Center at <https://msc.fema.gov/portal>.

2.6.4 Intercommunity Flows

The RCWD District Wide Modeling Program outlines the existing intercommunity flows in its district wide modeling program summary. The City of Circle Pines is committed to maintaining these flow rates under full buildout and will regulate development to ensure compliance with the CFS discharge rate. The City's adopted ordinances will ensure that these flows will be maintained. Table 2.3 below is an excerpt from the summary report showing these existing flows.

Table 2.3 Intercommunity Flows

Discharging City	Receiving City	Watercourse	Peak Flows (cfs)			
			2-Year 24-Hour Rainfall	10-Year 24-Hour Rainfall	100-Year 24-Hour Rainfall	100-Year 10-Day Snowmelt
Circle Pines	Blaine	Rice Creek	122	305	784	1256

2.7 Groundwater

Various agencies are responsible for groundwater management and protection. The DNR regulates groundwater usage rate and volume as part of its charge to conserve and use the waters of the state. For example, suppliers of domestic water to more than 25 people or applicants proposing a use that exceeds 10,000 gallons per day or 1,000,000 gallons per year must obtain a water appropriation permit from the DNR. Many of the agencies charged with regulating water usage are currently involved in assessing and addressing concerns of water usage. When and where feasible the City of Circle Pines will work with the

associated agencies to be good stewards of water resources. The Minnesota Department of Health (MOH) is the official state agency responsible for addressing all environmental health matters, including groundwater protection. For example, the MOH administers the well abandonment program and regulates installation of new wells. The MPCA administers and enforces laws relating to pollution of the state's waters, including groundwater. The Minnesota Geological Survey provides a complete account of the state's groundwater resources. RCWD serves an advisory capacity with regard to groundwater protection and use. Its role is limited to cooperating and assisting the DNR, MOH and MPCA in their groundwater protection efforts.

The City's municipal well field consists of 2 wells ranging from 270 to 321 feet deep. These wells draw from the Quaternary Buried Artesian and Jordan-St. Lawrence aquifers.

The City of Circle Pines supports efforts to delineate, protect, and manage the recharge areas of the regional groundwater aquifers of the Twin Cities basin and believes this can be best accomplished at the regional/metropolitan level. The City has completed its Wellhead Protection Plan as of April 16th, 2008). Groundwater appropriations are shown in Figure 12. Figure 13 in Appendix A outlines the DWSMA sensitivity areas.

Anoka County has statutory responsibilities for groundwater management. The Current Anoka County Water Resources Management Report was adopted in October of 2014. The City of Circle Pines will work and coordinate with Anoka County to protect and enhance water resources within the City.

For areas of vulnerability, the City will incorporate the guidance developed by the MDH on evaluating proposed stormwater infiltration projects in vulnerable source water protection areas and also the guidance located within the Minnesota Stormwater Manual on designing infiltration

BMPs while protecting groundwater. This will be of a particular concern in areas where infiltration is being considered in soils suitable for rapid infiltration adjacent to municipal and private wells.

Hydrologic System and Data

The City of Circle Pines is entirely within the RCWD watershed district. Figure 5 in Appendix A is an index map showing all of the major drainage areas in the City. The major drainage areas are: Baldwin Lake, County Ditch 53-62, Golden Lake, and Rice Creek. Each area is discussed in more detail below. Stormwater runoff rate and volume controls will be required to be in conformance with Watershed and State requirements.

With the additional precipitation data provided by Atlas 14, the City may choose to complete additional risk assessments for specific problem areas dependent upon funding.

2.8.1 Baldwin Lake Drainage Area

The Baldwin Lake Drainage Area is located in the northeastern portion of the City. Figure 5 in Appendix A shows the specific location of the Baldwin Lake Drainage Area. The Baldwin Lake Drainage Area discharges into Rice Creek and into the City of Blaine. The 235-acre subwatershed is broken up into minor watersheds and includes ponding areas. Rice Creek is the dominant feature of this watershed.

2.8.2 County Ditch 53-62

The 298-acre County Ditch 53-62 Drainage Area is located north of Lake Drive and extends north and west to the city boundaries. Figure 5 in Appendix A shows the specific location of the County Ditch 53-62 Drainage Area. These include lands that drain into Long Lake, downstream of Pike Lake. The Long Lake Drainage Area discharges into the Rice Creek Drainage Area.

2.8.3 Golden Lake Drainage Area

The Golden Lake Drainage Area is located in the west central part of Circle Pines. This 169 acre subwatershed includes the lands that drain into Golden Lake, and is upstream of the Rice Creek Drainage Area. The Golden Lake Drainage Area discharges into the Rice Creek Drainage Area.

2.8.4 Rice Creek Drainage Area

The Rice Creek Drainage Area is located in the southern portion of Circle Pines extending north through the center of the City to Lake Drive. Figure 5 in Appendix A shows the specific location of the 537 acre Rice Creek Drainage Area as well as the Rice Lake Drainage Area in the northeast corner of the City which feeds into Baldwin Lake.

2.9 Natural Communities and Rare Species

The Minnesota DNR produces the Minnesota County Biological Survey (MCBS) identifying natural communities and rare species. Completed in 1994, the Anoka County survey identifies where evidence indicates the presence of rare plants and animals. The survey shows no natural plant communities or rare species within the Circle Pines city limits. However, a rare animal was indicated on an island of Baldwin Lake just outside the city limits. The survey identified the original vegetation of Circle Pines as mostly oak openings and barrens, which consist of scattered trees and groves of oaks of scrubby form with some brush and thickets. The entire City of Circle Pines has been categorized according to the Minnesota Land Cover Classification System (MLCCS). Figure 10 in Appendix A shows a map of the MLCCS as classified.

2.10 NPDES Phase II

The City of Circle Pines is required to have a Municipal Separate Storm Sewer System (MS4) permit through the MPCA's National Pollutant Discharge Elimination System (NPDES) Phase II Program. MS4s designated by rule are urban areas with populations over 10,000 or urban areas with populations greater than 5,000 with the potential to discharge to valuable or polluted waters. Permits for construction sites greater than one acre will also be required as part of Phase II.

As an MS4, the City will, as required implement the following six minimum control measures:

1. Public Education and Outreach
2. Public Participation/Involvement
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control

5. Post-Construction Stormwater Management
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Each of these measures is outlined and described in Section 6: Implementation, under Table 6.1. For more information on the MS4 Permit requirements refer to www.pca.state.mn.us. Refer to Appendix B for a copy of the City's MS4 SWPPP (Storm Water Pollution Prevention Plan).

2.11 Water Resource Problem Areas

Water resource problem areas were identified through information obtained from City Staff, residents, and other agencies. Each site was analyzed and potential solutions to address the problems were developed as detailed in Section 4. Refer to Figure 7 in Appendix A for the location of site-specific problem areas. The following is a list of some of the water resource problem areas within the City:

- Flooding and rate control issues at various locations
- Backyard drainage issues at various locations
- Water levels in landlocked basins
- Erosion and sedimentation of channels and creeks
- Deterioration of old corrugated metal pipe culverts
- Impaired surface waters: Golden Lake, Baldwin Lake

3. AGENCY COOPERATION

There are a number of local, state, and federal agencies that have rules and regulations related to water resource management. The City recognizes the roles of these other agencies and will cooperate, coordinate, and when possible partner with these agencies.

This Plan is in conformance with, but does not restate, all other agency rules that are applicable to water resource management. The following agencies deal with or regulate water resources throughout the City:

- Rice Creek Watershed District www.ricecreek.org
- Anoka Conservation District <http://www.anokaswcd.org/>
- Anoka County <https://www.anokacounty.us/>
- Minnesota Pollution Control Agency www.pca.state.mn.us
- Minnesota Department of Health www.health.state.mn.us
- Board of Water and Soil Resources www.bwsr.state.mn.us and the Wetland Conservation Act www.bwsr.state.mn.us/wetlands/wca/index.html
- Minnesota Department of Natural Resources www.dnr.state.mn.us
- US Army Corps of Engineers <http://www.usace.army.mil/>
- Minnesota Department of Agriculture www.mda.state.mn.us
- US Fish and Wildlife Service www.fws.gov
- Minnesota Environmental Quality Board www.eqb.state.mn.us
- Metropolitan Council www.metrocouncil.org

While these other agencies' rules, policies, and guidelines are not all restated in this Plan, they are applicable to projects, programs, and planning within the City. The MPCA Minnesota Stormwater

Manual, which is a document intended to be frequently updated, is also incorporated by reference into this Plan and can be found at www.pca.state.mn.us/water/stormwater/stormwater-manual.html.

4. ASSESSMENT OF PROBLEMS AND ISSUES

Outlined below is an assessment of existing and potential water resource-related problems that are known at this time. These problems have been identified based on an analysis of the land and water resource data collected during the preparation of this plan and through information provided by the City, its residents, and the watershed organizations. A description of any existing or potential problem within the City has been listed and potential future corrective actions have been incorporated into an implementation plan. Refer to Figure 7 in Appendix A for the location of many of the problem areas discussed below.

Problems & Corrective Actions

4.1 Financing and Partnerships

Problem 4.1.A. The City of Circle Pines is unable to completely fund the implementation of TMDL projects solely from the City's Stormwater Utility Fund.

Corrective Action 4.1.A The City will continue to develop a partnership with the RCWD as well as other state and regional agencies in an effort to secure important grant dollars for TMDL implementation.

Problem 4.1.B The Golden Lake TMDL was adopted by the EPA on September 30, 2009 and received by the MPCA Commissioners Office on October 5, 2009. Currently the RCWD Stormwater CIP, completed in 2010, does not include Golden Lake restoration efforts.

Corrective Action 4.1.B The City of Circle Pines will collaborate with the RCWD as they begin to update their Stormwater CIP to include Golden Lake restoration efforts and levy funds for implementation projects.

4.2 Water Quality Problems

Problem 4.2.A Degradation of water quality in Golden Lake. Additionally, Golden Lake has an approved TMDL for nutrients.

Corrective Action 4.2.A The City will operate and maintain a Golden Lake Wetland Treatment System and a lake aeration system in Golden Lake. The City will participate in the implementation of the TMDL for Golden Lake. The City will also develop and implement a plan to provide treatment for stormwater runoff prior to discharge to Rice Creek, Golden Lake, County Ditch 53-62, and Baldwin Lake where reasonable and practical to do so. The City will work with the Watershed District and/or upstream communities to improve the quality of water resources. The City of Circle Pines is currently partnering with Anoka Conservation District to design and construct an iron-enhanced sand filter for treatment prior to Golden Lake.

Problem 4.2.B RCWD prioritization of Golden Lake TMDL implementation efforts.

Corrective Action 4.2.B The City encourages the RCWD to reprioritize their funding to make the Golden Lake TMDL of the highest priority to allow its completion to take place as soon as possible.

Problem 4.2.C Rice Creek is listed as impaired water for biota.

Corrective Action 4.2.C The City will assist other partners in the implementation of the TMDL. The City will operate and maintain the Golden Lake Wetland Treatment System and lake aeration system. The City will work with RCWD and/or upstream communities to improve the quality of water resources.

Problem 4.2.D A TMDL was recently completed for the Upper Mississippi River to address the water quality standard for E. coli.

Corrective Action 4.2.D The Upper Mississippi River TMDL addresses reducing E. coli loading for different stream reaches in the metro area, including Rice Creek. The City continues to educate its residents on the importance of cleaning up after their pets to reduce pollutants entering the stormwater system. The City also has in place an ordinance requiring adequate disposal of animal waste from on public and private property. BMPs that are constructed will continue to provide some removal of E. coli prior to stormwater discharge into receiving water bodies. The City continues to administer a goose management plan of trapping geese around Golden Lake to reduce goose waste.

Problem 4.2.E The City of Circle Pines was assigned a categorical wasteload allocation (WLA) for Rice Lake and Baldwin Lake as regulated under the NPDES permit. These WLAs were approved as part of the Lino Lakes Chain of Lake Nutrient TMDL.

Corrective Action 4.2.E The City will continue to meet the requirements of the MS4 permit. The City will also continue to enforce RCWD Rules C and D as the LGU permitting authority to ensure that water quality requirements are being met for new and re-development. Areas to maximize stormwater treatment will be identified as development occurs.

4.3 Flooding or Stormwater Rate Control Concerns between the City of Circle Pines and Adjoining Communities

Problem 4.3.A High flow rates and high water levels in Rice Creek, the Rice Creek Chain of Lakes, and County Ditch 53-62 have been noted.

Corrective Action 4.3.A The City will work with the Rice Creek Watershed District to manage flooding and rate control concerns experienced within the City. Mitigation and flood control work will be completed as deemed necessary and feasible by the City of Circle Pines.

4.4 Impacts of Water Quantity or Quality Management Practices on Recreational Opportunities

Problem 4.4.A The City has experienced impacts to recreational opportunities in Golden Lake as the result of either water quantity or quality impacts including sedimentation, excessive algae growth, and variation in water levels.

Corrective Action 4.4.A The City will continue work toward the completion of the Golden Lake TMDL and associated programs. The City will also continue to work with the Watershed District to improve water quality in Ditch 53-62.

4.5 Impacts of Stormwater Quality on Fish and Wildlife Resources

Problem 4.5.A The City has experienced impacts to fish and wildlife resources due to pollution and sediment loading in Golden Lake.

Corrective Action 4.5.A The City will continue to operate and implement the Golden Lake restoration project and will work with the Watershed District to maintain the wetland treatment system for improving the water quality in County Ditch 53-62.

4.6 Impacts of Soil Erosion on Water Quality and Water Quantity

Problem 4.6.A In the past, soil erosion, particularly upstream in the City of Blaine, has degraded the quality of water in Ditch 53-62 with sediment loads which are then transferred to Golden Lake. The City of Blaine has addressed this issue to the extent necessary, and does require new development to meet Watershed District standards.

Corrective Action 4.6.A The City will periodically inspect and remove sediment in the wetland treatment system to improve the water quality in Ditch 53-62 before entering Golden Lake. The Rice Creek Watershed District and upstream communities will be responsible for control of the upstream erosion problem.

4.7 The Adequacy of Programs to Maintain Water Level Control Structures

Problem 4.7.A The City has a program to maintain water level control structures

Corrective Action 4.7.A The City will implement the stormwater system maintenance program outlined in the City's Stormwater Management Plan. This system maintenance includes the annual inspection of the Golden Lake outlet/dam and periodic inspection of debris deposition and cleaning of deposition.

4.8 The Adequacy of Capital Improvement Programs to Correct Problems relating to Water Quality

Management, Fish and Wildlife Habitat, Public Waters and Wetland Management, and Recreational Opportunities

Problem 4.8.A The City currently has limited funding sources available but will also attempt to secure grant funding through available programs to assist in funding some activities.

Corrective Action 4.8.A Stormwater funds and special assessment funding are not adequate to implement the studies, programs and capital improvements outlined in this plan. The City must apply for grants to fund the implementation of capital improvements identified in this management plan. The City may establish a fund for stormwater system maintenance.

Given the amount of fees that Circle Pines' residents have paid in taxes to the RCWD over the past 10 years, the City looks forward to collaborating with RCWD to fund more projects that will have a direct benefit to its residents. The City would be willing to collaborate with RCWD to identify the specific need for additional grant funding from the watershed and to identify feasible projects.

4.9 Impact of Land Use Practices and Development on Water Resource Issues

Problem 4.9.A The City of Circle Pines is near full development and contains varying topography with the presence of many different soil classifications. These conditions can make it difficult for the City to implement stormwater management BMPs to efficiently meet watershed requirements on a site by site basis.

Corrective Action 4.9.A The City will investigate opportunities to implement water quality and volume reduction BMPs during future reconstruction projects. In areas where project specific BMPs will be unfeasible, the City will look into completing regional water quality improvement projects, such as water reuse BMPs, to help meet future stormwater management requirements. The City would be interested in collaborating with RCWD to help identify opportunities for stormwater reuse.

Problem 4.9.B The majority of the City is served by a sanitary sewer collection system that conveys sanitary sewage to a treatment plant. However, there is one subsurface sewage treatment system (SSTS) in operation within the City.

Corrective Action 4.9.B The City will continue to work with the County to ensure that the SSTS remains in compliance and encourage connection to City sewer when feasible.

Problem 4.9.C The City of Circle Pines currently has a volume debit with RCWD of -24,623 cubic feet.

Corrective Action 4.9.C The RCWD Board of Managers took two actions regarding volume bank system debits:

1. Debit or credit could be addressed or utilized in non-public linear projects;
2. Cities could address debit using nonvolume control practices, with water quality treatment volume calculated in accordance with the current rule methodology.

The City will consider potential projects to address this debit as part of future street reconstruction and redeveloping areas, where feasible and cost effective. The City will coordinate with RCWD as potential sites become available for appropriate stormwater BMPs.

4.10 Education Program

Problem 4.1 O.A The City of Circle Pines recognizes the need for water resource education programs to increase public awareness of water resource management and improve the quality of stormwater runoff.

Corrective Action 4.1 O.A The City of Circle Pines will continue to provide educational content and opportunities to residents, businesses, developers, and others. These efforts may include regular notices in

the City's monthly newsletter, articles in the local paper, postings on the City website, and flyers in the utility bill. The City may work with Rice Creek Watershed District to improve the efficiency of educational efforts and reduce duplication. Educational topics may include but are not limited to:

- Wetland buffers
- Yard/Pet waste management
- Illicit discharge to stormwater
- Utility Easements
- Stormwater Basin Function
- Controlling invasive species

4.11 Identification of Potential Problems which are Anticipated in the Next 20 Years.

Problem 4.11.A Inspecting and maintaining existing stormwater infrastructure throughout the City.

Corrective Action 4.11.A The City of Circle Pines is responsible for maintenance of its stormwater system in conformance with the MPCA's MS4 Program. This includes maintenance of pipes, constructed ponds, lakes, wetlands, ditches, swales, and other drainage ways. Proper maintenance will ensure that the stormwater system continues to provide the necessary flood control and water quality treatment. Refer to Appendix B for a copy of the City SWPPP. Other units of government are responsible for maintaining the stormwater systems under their control.

For Example:

- Anoka County is responsible for maintaining storm sewer catch basins and leads in the county roads; however, the City is responsible for maintaining the trunk storm sewer lines.
- RCWD is responsible for maintaining the function of the District's public drainage system.-
- Owners of private stormwater facilities are responsible for maintaining their facilities in proper condition, consistent with the original performance design standards. Responsibilities include removal and proper disposal of all settled materials from ponds, sumps, grit chambers, and other devices, including settled solids. The City/RCWD may inspect private stormwater facilities and notify the owners of needed cleaning and repairs.

Problem 4.11.B Increase in accumulation of debris and material on City Streets.

Corrective Action 4.11.B The City will continue to sweep debris and salt from City streets. More information regarding street sweeping activities can be found in the SWPPP which is located in Appendix B.

Problem 4.11.C Future changes in peak water elevation at storage areas and/or critical road crossings within the City.

Corrective Action 4.11.C At this time, RCWD modeling did not identify specific areas within Circle Pines that are at risk for flooding due to future land use changes. The City will collaborate with RCWD to mitigate any potential flooding identified in future modeling efforts.

4.12 Availability and Adequacy of Existing Technical Information to manage Water Resources

Problem 4.12.A Atlas 14 (updated precipitation probability information) was recently released by NOAA (National Oceanic and Atmospheric Administration).

Corrective Action 4.12.A The City has adopted Atlas 14 to replace TP-40 (existing precipitation probability information). The City will continue to update its policies, codes, ordinances, and other appropriate documents as necessary.

Problem 4.12.B The City has completed a wetland inventory, but has not completed a City-wide wetland classification to assess the quality of all wetlands within the City.

Corrective Action 4.12.B The City will investigate completing a City-wide MnRAM (Minnesota Routine Assessment Method) assessment to determine the functions and values of each wetland. Until this City-wide study is complete, the City will continue to perform a MnRAM assessment on a site by site basis as required by development or construction activity that is impacting wetlands.

Problem 4.12.C The City has mapped the majority of its storm sewer system. As new and redevelopment projects are completed, the storm sewer GIS database needs to continually be updated.

Corrective Action 4.12.C The City will annually update its storm sewer GIS database to incorporate recent projects and associated storm sewer improvements.

Problem 4.12.D. The City needs to utilize the most up-to-date data and hydrologic modeling to ensure plan reviews are completed properly.

Corrective Action 4.12.D The RCWD has completed watershed-wide hydraulic and hydrologic models that includes the City of Circle Pines as part of their District-wide Modeling Program. These models include SWMM models for public drainage systems into Rice Creek, direct drainage into Rice Creek, water quality models, Future Conditions Modeling, and a HEC-RAS model for Rice Creek. The City is responsible for the use of the RCWD's models, and concurs with model assumptions. The City understands that District models are continually evolving, and the City is subject to conditions for use of the model, including accepting the responsibility for model outputs.

The City intends to use the models for assessment of floodplain alterations as part of Rule E, peak rate requirements and intercommunity flows for Rule C, project design and permitting, identification of flood prone areas, and for sizing stormwater infrastructure. When the City requires use of District Models, a license agreement will be signed. When this occurs, the City will regularly coordinate with the RCWD to data-share any updated component of the models.

5. Goals and Policies

5.1 General

The goals and policies in the City of Circle Pine's Local Surface Water Management Plan are consistent with the goals of the Rice Creek Watershed District (RCWD) while meeting the more specific and changing needs of the City. The goals of this plan were established in accordance with the guidelines contained in Minnesota Statutes 1038 and Minnesota Rules 8410. Furthermore, each goal has several

corresponding policies. These goals and policies provide for future development and redevelopment while minimizing surface water problems and enhancing the environment. These goals and policies are subject to conformance with current Watershed District policies and standards.

With the adoption of RCWD Rule C, D, E, and F by reference in 2016, the City of Circle Pines is currently the permitting authority for areas within its jurisdictional boundary within the RCWD. Execution of an MOU between the RCWD and City of Circle Pines was completed to transfer rule authority in 2016. The City currently administers RCWD Rules C, D, E, and F. The City adopts and enforces the most recent RCWD Rules, which can be found at www.ricecreek.org. Additional goals and policies of the City are contained throughout this section.

A general goal of the City is to cooperate, collaborate, and partner with other entities, such as the Watershed District and the MPCA as much as possible as the City implements this plan. Cooperation, collaboration, and partnering results in projects that are less likely to conflict with the goals of the affected entities, are better able to meet long-term goals, and are generally more cost-effective. In addition to the goals and policies outlined below, the City will annually review and update its Storm Water Pollution Prevention Plan (SWPPP) to effectively manage its stormwater system and be in conformance with the NPDES MS4 Program. Refer to Appendix B for the most recent version of the City SWPPP.

The City of Circle Pines had previously designated the Rice Creek Watershed District (RCWD) as the Local Governmental Unit (LGU) responsible for wetland management within its jurisdictional boundaries; however, with the execution of an MOU between the RCWD and the City, the City has obtained the ability to assume LGU responsibilities in conformance with Minnesota Rules Chapter 8420 as developed by the Board of Water and Soil Resources on June 26, 2018.

5.2 Water Quality

5.2.1 Limit public capital expenditures that are necessary to control excessive volumes and rates of runoff.

5.2.2 Policies

1. Circle Pines will develop Comprehensive Stormwater Management Plans (CSMP) for required treatment as an alternative approach to meeting the requirements of RCWD Rule C, sections 6 and 7. The RCWD is required to approve any CSMP.
2. Any development or redevelopment within the City of Circle Pines will be required to manage stormwater in conformance with the policies and content of the City's Comprehensive Stormwater Plan, the Rice Creek Watershed District rules, and all previous agreements the City has entered into for stormwater management.
3. The design of all major stormwater storage facilities shall attempt to accommodate a 100-year critical duration storm event. These facilities include lakes, ponds, and their outlets. New storm sewer systems shall be designed to accommodate a 10-year critical duration event.
4. For new development and redevelopment, future stormwater runoff rates must be less than or equal to the existing runoff rates for the critical 2-year, 10-year, and 100-year events.
5. Any new development or redevelopment within the City will require a minimum building opening of 2-ft above the anticipated 100-year high water elevation. However, if this 2-ft

freeboard requirement is considered a hardship, the standard could be lowered to 1-ft if the developer can demonstrate the following:

- i. That within the 2ft freeboard area, stormwater storage is available which is equal to or exceeds 50% of the stormwater storage currently available in the basin below the 100-year elevation.
- ii. That a 25% obstruction of the basin outlet over a 24-hour period would not result in more than 1-ft of additional bounce in the basin.
- iii. An adequate overflow route from the basin is available that will provide assurance 1-ft of freeboard will be maintained for the proposed low building opening.

Freeboard	Regional Flood Elevations		Detention Basins, Wetlands & Stormwater Ponds		Infiltration and Biofiltration Basins			Rain Gardens
	100-yr	EOF	100-yr	EOF	Bottom	100-yr	EOF	EOF
Low Floor	2.0 ft	1.0 ft	0.0 ft	NA	0.0 ft	NA	NA	NA
Low Entry	NA	NA	2.0 ft	1.0 ft	NA	2.0 ft	1.0 ft	.5 ft
Groundwater	NA	NA	0.0 ft	0.0 ft	3.0 ft	NA	NA	3.0 ft

- 6. The City will require setting minimum basement floor elevations to an elevation that meets the following criteria:
 - i. Basement floor elevations adjacent to landlocked basins will be required to be 2-ft higher than the highest water level of either the 10-day snowmelt event or back-to-back 100 year, 24-hour rainfalls.
 - ii. The basement floor elevation will be 2-ft above the elevation of any known historic high groundwater elevations for the area. Information on historic high groundwater elevations can be derived from any reasonable sources including piezometers, soil borings, percolation tests, etc.
 - iii. The basement floor elevation will be 2-ft above the 100-year high water elevation for the area unless it can be demonstrated that the basement floor will be 1-ft above the highest anticipated groundwater elevation that could result from the high surface water elevations during a 100-year critical duration rainfall event. The impact of high surface water elevation on groundwater elevations in the vicinity of the structure can take into consideration that site's distance from the flood plain area, the soils, the static groundwater table and historic water elevations in the area.
 - v. Certified surveys verifying the permitted low floor elevations are required to issue a certificate of occupancy.

- 7. Wetlands will be protected within the City boundaries to assure that the value of wetlands in relation to their surface water quantity benefits are not significantly impacted by development. As stated in the City's Stormwater Management Ordinance, impacts on wetlands shall be in compliance with the Wetlands Conservation Act, and managed in accordance with RCWD Rule F which the City adopts by reference

8. It is the intention of the City to utilize natural ponding areas such as wetlands for the impoundment and treatment of surface water runoff in accordance with RCWD rules, as well as State and local laws and with policies outlined in the Stormwater Management Plan only if it can be shown that the functions and values of the wetland will not be adversely affected by excavation, substantially increased sediment load, tributary area, or water level fluctuations. These natural ponding areas are preferred over impoundments constructed in upland areas.
9. The City may provide an outlet to landlocked basins, provided that the following can be demonstrated:
 - i. The 10-day, 100-year average runoff rate will not increase
 - ii. The downstream flood profile will not be significantly impacted by increased discharge rates or volumes.
 - iii. Wetlands will not be dewatered (unless exempt as per the Wetland Conservation Act and Watershed District Rules).
 - iv. The stormwater storage volume below the outlet elevation is at least equal to the runoff generated from back-to-back 100 year, 24-hour rainfall events.
10. The City will require compensatory storage equal to the storage losses resulting from floodplain fill. The City will, in accordance with RCWD Rule E, allow for a one-time fill of 10 cubic yards.
11. The City will encourage the use of Best Management Practices (BMP'S) to promote infiltration of precipitation such as the use of grass swales and parking lot size reduction.
12. Infiltration of the first 1.1 inch of runoff is required for all projects, except public linear projects from the new impervious surface area created by the new projects where there are A and B soils and where previous or existing land uses are appropriate for infiltration. Infiltration of the first³/₄ inch of runoff will be required for public linear projects. For Water Quality Treatment Standard infiltration requirement equations see RCWD Rule C.6.
13. Flood fringe encroachment within shoreland areas associated with public waters is not allowed except for in conformance with RCWD Rule E.3, and subsequent DNR regulations.
14. The RCWD requires easements for open channel systems which are a variable width measured perpendicular to the direction of flow, to include the open channel itself and all areas within 16.5 feet from the top of the ditch bank.
15. For compensatory storage in wetland basins not wholly contained within a developer's property, compensatory live storage equal to or greater than the increased volume of runoff resulting from development will be required to protect downstream landowners and prevent the incremental volume and rate increased resulting from wetland fill. As such, the City adopts by reference RCWD Rule F.
16. The City will continue to implement the City of Circle Pines Local Surface Water Management Plan, as well as work with the County, Rice Creek Watershed District, bordering municipalities, DNR, and SWCD to maintain the tangible and intrinsic values of natural storage retention systems within the City.

5.3 Water Quality

5.3.1 Goal

Maintain or improve the quality of water in lakes, streams, and wetlands within or immediately downstream of the City of Circle Pines.

5.3.2 Policies

1. Circle Pine's water quality program seeks to replenish wetlands and lakes with clean water and maintain base flow in streams by letting runoff absorb into the ground.
2. Circle Pines requires that stormwater infiltration facilities include sufficient water quality pretreatment to preserve the function of these facilities.
3. Circle Pines will develop Comprehensive Stormwater Management Plans for required treatment as an alternative to meeting RCWD Rules C.6 and C.7 for individual permits. These plans will be allowed in defined areas, and only as deemed appropriate to meet the intent of providing regional planning within Resource Areas of Concern. The RCWD is required to approve any CSMP.
4. The City incorporates by reference the "Minnesota Stormwater Manual" for the use and design of stormwater management Best Management Practices (BMP's). This manual can be viewed at www.pca.state.mn.us/water/stormwater/stormwater-manual.html
5. The City has developed a stormwater drainage system maintenance plan. This plan was developed to assure that the retention/treatment basin clean out and maintenance was addressed to the extent that is feasible and practical and to meet the requirements of the NPDES permit. The goal of this plan is to assure that the City's retention and treatment basins will have the capability to retain and treat stormwater in future years and includes TMDL requirements for phosphorus.
6. The City will adopt the Minnesota Pollution Control Agency "Individual Wastewater Treatment System Regulations" within three months of Stormwater Management Plan approval to ensure the two individual systems in the City located at 4573 County Road J and 4571 County Road J stay in compliance.
7. The City's preferred method to achieve desired water quality standards, specifically for TMDL requirements for phosphorus, as well as total suspended solids (TSS) reduction is through its volume management policies.
8. The design and construction of all new stormwater conveyance systems, and modifications to existing stormwater conveyance systems, must be designed to meet NURP water quality standards.
9. For stormwater discharged to slightly and least susceptible wetlands, storm water must be treated to remove 75% of the sediment.
10. The City of Circle Pines will sweep the streets at least two (2) times annually. Furthermore, future purchases of street sweeping units will give consideration to street sweepers which have the greatest ability to remove nutrients from the streets within the community.
11. The City will encourage homeowners with properties adjacent to water resources to establish a vegetative buffer strip at the shoreline. This strip should consist of legumes or other perennial grasses to limit erosion and nutrient transport across the buffer strip.
12. The City has completed an MS4 permit which outlines the maintenance requirements of its stormwater system. This plan has been developed to assure that the retention/treatment basin clean out and maintenance will be addressed to the extent that is feasible and practical.
13. The City will develop and implement a water quality monitoring program capable of establishing that the stormwater treatment basins constructed within the City are not only designed to NURP standards, but also meet the anticipated design removal efficiencies based on actual monitoring of the system. This program will be carried out to the extent

- deemed necessary and reasonable by the Circle Pines City Council. The City will keep the RCWD informed of all water quality monitoring program updates.
14. For areas within the City that are redeveloping, projects that create or reconstruct 10,000 square feet or more of impervious surface will require a permit. This does not include public linear projects. For public linear projects, a permit is required to create 10,000 square feet or more of impervious surface through multiple phases or connected actions of a single complete project, as defined by the District, within a Resource of Concern Drainage Area.
 15. Flood fringe encroachment within shoreland areas associated within public waters is not allowed except for in conformance with RCWD Rule E.3, and subsequent DNR regulations.
 16. Any new development or redevelopment shall show sufficient drainage and ponding easements over hydrologic features such as floodplains, storm sewers, ponds, ditches, swales, wetlands, and waterways.
 17. All new and redeveloped stormwater management structures and facilities shall be maintained in perpetuity either through dedication of the facilities to the City through an easement or through a maintenance agreement between the landowner and the City.
 18. The City will partner with the Anoka Conservation District (ACD) to design and construct an iron-enhanced sand filter adjacent to Golden Lake to remove nutrients from runoff prior to entering Golden Lake.
 19. The City will continue to work with the Anoka Conservation District (ACD), Rice Creek Watershed District (RCWD), and MPCA (NPDES program) to implement Best Management Practices.

5.4 Runoff Management and Flood Control

5.4.1 Goal

Limit public capital expenditures that are necessary to control excessive volumes and rates of runoff.

5.4.2 Policies

1. Any development or redevelopment within the City of Circle Pines will be required to control runoff to the extent necessary to be consistent with this plan.
2. Areas located within RCWD's Flood Management Zone one shall provide peak rate control for the 2, 10, and 100 year 24-hour rainfall events beyond the existing condition peak rate by reducing the peak rate to less than 80% of the existing condition. This requirement does not apply if the project is a Public Linear Project.
3. The design of all major stormwater storage facilities shall attempt to accommodate a critical duration event with a 1 % chance of occurrence in any given year. These facilities include lakes, ponds, and their outlets. New storm sewer systems shall be designed to accommodate a critical duration event with a 10% chance of occurrence in any given year.
4. Any new or redevelopment within the City will be required to meet the low floor and low entry freeboard requirements as shown in Table 5.1 of this LSWMP.
5. Wetlands will be protected within the City boundaries to assure that the value of wetlands in relation to their surface water quantity benefits are not significantly impacted by development.

6. The City will be allowed to discharge water from landlocked basins provided that the rates and volumes of water discharged from the area will be limited to the maximum extent reasonable taking into consideration downstream impacts, and complies with RCWD Rule C.5(e).
7. The City will require compensatory storage equal to the storage losses resulting from floodplain fill. All floodplain permitting activities shall be subject to the respective flood sector requirements as assigned by Rice Creek Watershed District.
8. Development that results in the creation of impervious surfaces must explicitly address use of best management practices (BMPs) to first limit the loss of pervious area; and second, to:
 - a. infiltrate runoff which does occur from impervious areas to the extent feasible considering site-specific conditions and/or
 - b. reuse runoff for irrigation and other appropriate uses
9. All new and redeveloped stormwater management structures and facilities shall be

5.8.2 Policies

1. The City will work with and support to the maximum extent practical the efforts of Minnesota Department of Natural Resources, the Army Corps of Engineers, the United States Environmental Protection Agency, the U.S. Fish and Wildlife Service, the Watershed Districts, and other appropriate agencies in promoting public enjoyment and protecting fish, wildlife, and recreational resource values in the City.
2. Preserve wetlands that provide habitat for wildlife and spawning of fish.
3. The City will encourage land owners to maintain wetlands and open space areas for the benefit of wildlife.
4. The City has adopted by reference RCWD Rule F, and enforces its Stormwater Management Ordinance which requires that all impacts on wetlands be in compliance with the Wetland Conservation Act.

5.9 Education and Public Involvement

5.9.1 Goals

Increase public awareness, understanding and involvement in water and natural resource management issues.

5.9.2 Policies

1. The City will prepare and distribute a mailing to city residents a minimum of one time per year that provides information on pertinent water management issues. This mailing will provide an opportunity for residents to participate in watershed management activities.
2. The City will implement the public education requirements of NPDES Phase II. A copy of the description of the program to be implemented by the City is included in the MS4 SWPPP Application for Reauthorization located in Appendix B.
3. Coordinate education efforts with RCWD, ACD, Met Council and other agencies where appropriate.

5.10 Public Ditch Systems

5.10.1 Goal

Continue to work with the public ditch authorities to ensure systems are properly managed and maintained.

5.10.2 Policies

1. Work with the Rice Creek Watershed District to assure they adequately inspect, maintain and repair ACD 53-62 within the City.
2. The City of Circle Pines will maintain ditches in conformance with their MS4 permit, and City ordinances.

6. Implementation Program

6.1 Implementation Program Components

Table 6.1 contains a comprehensive list of the MS4 activities and projects, programs, and studies that make up the City of Circle Pines implementation program for the next 10 years (2018 through 2027). The City developed this program by evaluating the requirements in the MS4 permit (see MS4 SWPPP Application for Reauthorization in Appendix B), reviewing existing information (Section 2), identifying potential and existing problems (Section 4), developing goals and policies (Section 5), and then assessing the need for programs, studies or projects. The City estimated total costs, identified possible funding sources, and developed an approximate schedule to complete the implementation activities. It is anticipated these tables will be updated/revised on a yearly basis.

6.2 Implementation Priorities

The implementation components listed in Table 6.1 were prioritized to make the best use of available local funding, meet MS4 Permit requirements, address existing water management problems, and prevent future water management problems from occurring. Table 6.1 identifies which activities are MS4 Permit Requirements, MS4 Permit Requirements -within 12 months, Annual Requirements, or Capital Projects/Programs/Studies. The City's implementation plan reflects its responsibility to protect the public health, safety and general welfare of its citizens by addressing problems and issues that are specific to the City of Circle Pines.

6.3 Financial Considerations

The City plans to use funds generated from its Stormwater Utility as the primary funding mechanism for its implementation program including; maintenance, repairs, capital projects, studies, etc. If funds from this utility fee do not cover necessary costs, the City will consider adjusting the Stormwater Utility Fee as well as using general funds to cover associated costs. The City will continue to review the stormwater utility fee annually and adjust based on the stormwater related needs of the City and other funding mechanisms.

Although not proposed at this time, the City may consider using plan implementation taxes (MN Statutes 1038.241) in the future if general funds or stormwater utility funds are not sufficient to fund the projects.

SECTION VI

TABLE 6.1

LOCAL WATER MANAGEMENT IMPLEMENTATION PLAN

No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments	
								2015	2016	2017	2018	2019	2020	2021	2022		2023
1	<p>Education Activity Implementation Plan - Complete outline of education activity implementation program and implementation schedule for the upcoming permit year. Education procedures including meet requirements for the following stormwater educational programs:</p> <ul style="list-style-type: none"> -City Web Page -City Newsletter -Environmental Webpage -Support RCWD education and public engagement programs (see SWPPP) -Other 	✓	✓	✓		\$25,000	City of Circle Pines	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	See SWPPP Application for Reauthorization (Appendix B)
2	<p>Annual SWPPP Assessment & Annual Reporting - City staff will conduct an annual SWPPP assessment in preparation of each annual report. Proposed SWPPP modifications are subject to Part II.G of the MS4 permit. The final annual report will be posted on the Water Resources webpage. City staff will submit the annual report to the MPCAs prior to June 30th for the previous calendar year.</p>	✓		✓		\$20,000	City of Circle Pines	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	See SWPPP Application for Reauthorization (Appendix B)
3	<p>Annual Public Meeting/Event - The City will provide notice of a meeting and present the draft MS4 annual report to one public event per year to solicit public input regarding the adequacy of the City's SWPPP. Public input received (oral and written) will be recorded in a record of decision and evaluated by the City's MS4 General Contact. City responses (if relevant) will be made in writing to each commenter. Hold one event per calendar year of the MS4 permit cycle.</p>	✓		✓		\$10,000	City of Circle Pines	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	See SWPPP Application for Reauthorization (Appendix B)
4	<p>Online Availability of the Stormwater Pollution Prevention Plan (SWPPP) Program Document - The City will make the SWPPP and 2013 annual report available on the Water Resources webpage within 12 months from the date the MS4 permit coverage is extended to the City.</p>	✓	✓	✓		\$2,500	City of Circle Pines	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	See SWPPP Application for Reauthorization (Appendix B)
6	<p>Employee Training - Continue to host a minimum of one staff training event per year to discuss illicit discharge recognition and reporting. City staff will develop an annual training schedule, record the employee names, topics covered, and date of each event, annually through the end of the MS4 permit cycle (July 31, 2018).</p>	✓	✓	✓		\$5,000	City of Circle Pines	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	See SWPPP Application for Reauthorization (Appendix B)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments		
								2015	2016	2017	2018	2019	2020	2021	2022		2023	2024
8	IDDE Program - The City will develop and implement a program to detect and reduce non-stormwater discharges, including illegal dumping. Procedures for detection may consist of visual inspections for non-stormwater discharges on City owned land and private property (as requested). Inspection frequency may be conducted concurrent with the outfall inspections and implementation schedule of the public works activities. This will be completed within 12 months from the date of Locations . IDDE Inspections - In Year 1, the City will map out areas that are identified as high-priority outfalls and around high-risk establishments (fast food restaurants, dumpster, car washes, mechanics, and oil changes) in years 2-5, the City will integrate those sites into its annual inspection of MS4 activities. As needed, City staff or a consultant will be used to televise a section of the sewer system, collect and grab samples or perform other effective testing procedures to find illicit connections within the system.	✓	✓	✓		\$2,500	City of Circle Pines	\$2,500										See SWPPP Application for Reauthorization (Appendix B)
9	IDDE Ordinance - The City will review and update (as necessary) the City's ordinance to prohibit illicit and non-stormwater discharges into the City's storm sewer and surface/ground waters. The goal of this BMP will be met by reviewing existing city ordinances and implementing updates related to illicit/non-stormwater discharges (if necessary). Construction Site Erosion and Sediment Control Inspections - City staff will continue to implement and enforce the construction site inspection program for erosion control on construction sites one acre or larger. City staff will document the number of site inspections conducted annually.	✓	✓	✓		\$20,000	City of Circle Pines	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	\$2,000	See SWPPP Application for Reauthorization (Appendix B)
11	IDDE Ordinance - The City will review and update (as necessary) the City's ordinance to prohibit illicit and non-stormwater discharges into the City's storm sewer and surface/ground waters. The goal of this BMP will be met by reviewing existing city ordinances and implementing updates related to illicit/non-stormwater discharges (if necessary). Construction Site Stormwater Runoff Ordinance - The City will annually review and update (as necessary) the City's erosion control ordinance.	✓	✓	✓		\$1,500	City of Circle Pines	\$1,500										See SWPPP Application for Reauthorization (Appendix B)
12	Construction Site Erosion and Sediment Control Inspections - City staff will continue to implement and enforce the construction site inspection program for erosion control on construction sites one acre or larger. City staff will document the number of site inspections conducted annually.	✓	✓	✓		\$1,000	City of Circle Pines	\$500							\$500			See SWPPP Application for Reauthorization (Appendix B)
13	Construction Site Erosion and Sediment Control Inspections - City staff will continue to implement and enforce the construction site inspection program for erosion control on construction sites one acre or larger. City staff will document the number of site inspections conducted annually.	✓	✓	✓		\$1,000	City of Circle Pines	\$500							\$500			See SWPPP Application for Reauthorization (Appendix B)
14	Waste Controls for Construction Site Operators - The City will enforce the NPDES Phase II permit requirements through the City's construction site inspection program.	✓	✓	✓		\$2,500	City of Circle Pines, Developers	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	See SWPPP Application for Reauthorization (Appendix B)
15	Construction Site Plan Review - The City will require every applicant for a building permit, subdivision approval, or grading permit that disturbs one acre or more to submit a project specific stormwater management plan (if applicable).	✓	✓	✓		\$2,500	City of Circle Pines, Developers	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	\$250	See SWPPP Application for Reauthorization (Appendix B)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments		
								2015	2016	2017	2018	2019	2020	2021	2022		2023	2024
16	<p>Project Description Establishment of Procedures for the Receipt and Consideration of Reports of Stormwater Noncompliance</p> <p>The City will establish a phone line and web page links for the public to report potential construction site erosion control and waste disposal infractions.</p>	✓	✓	✓		\$500	City of Circle Pines	\$250					\$250					See SWPPP Application for Reauthorization (Appendix B)
17	<p>Project Description Establishment of Procedures for Site Inspections and Enforcement - The City will inspect construction sites for conformance to NPDES construction permit standards and applicable City standards. This goal will be met by enforcing the City's erosion control and waste disposal standards.</p>	✓	✓	✓		\$5,000	City of Circle Pines	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500		See SWPPP Application for Reauthorization (Appendix B)
18	<p>Project Description Permit Update - The City will update its Grading, Building, and ROW permits and Construction Site Stormwater Runoff ordinance to meet the new permit requirements within 12 months following the date permit coverage is extended.</p>	✓	✓	✓		\$1,000	City of Circle Pines	\$1,000										See SWPPP Application for Reauthorization (Appendix B)
19	<p>Project Description Post-Construction Stormwater Management Mitigation - The City will develop written procedures for documentation of post-construction stormwater management mitigation as described in the Permit (Part III.D.5.c.). Procedures will be in place within 12 months following the date permit coverage is extended.</p>	✓	✓	✓		\$1,000	City of Circle Pines	\$1,000										See SWPPP Application for Reauthorization (Appendix B)
20	<p>Project Description Site Plan Review Program - The City will review and revise (if necessary, during the plan review process) permanent BMP designs and criteria for post-construction stormwater management associated with new development and redevelopment projects of one acre or more. The City will also actively look for non-structural opportunities where prudent and feasible.</p>	✓	✓	✓		\$5,000	City of Circle Pines	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500		See SWPPP Application for Reauthorization (Appendix B)
21	<p>Project Description Surface Water Management Ordinance - Completed ordinance defining standards, review procedures and enforcement response procedures for erosion and sediment control at construction sites, and post-construction runoff from new development and redevelopment in 2007.</p>	✓	✓	✓		\$1,000	City of Circle Pines	\$500					\$500					See SWPPP Application for Reauthorization (Appendix B)
22	<p>Project Description Project Documentation - The City will maintain all related documents pertaining to each new or redevelopment project in more user-friendly filing system for better records management. Implementation within 12 months from the date permit coverage is extended.</p>	✓	✓	✓		\$1,000	City of Circle Pines	\$500					\$500					See SWPPP Application for Reauthorization (Appendix B)
24	<p>Project Description Employee Training - Building or Engineering Department staff (a minimum of one staff member) will maintain valid certification in NPDES Construction Stormwater Permit related training per NPDES-CSW training requirements.</p>	✓	✓	✓		\$1,500	City of Circle Pines	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300		See SWPPP Application for Reauthorization (Appendix B)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments			
								2015	2016	2017	2018	2019	2020	2021	2022		2023	2024	
25	Review Building Dept. Inspection Checklist - The City will update the existing Erosion and sediment control checklist to meet current NPDES Construction Stormwater Permit requirements. This update will occur within 12 months from the date MS4 permit coverage is extended.	✓	✓	✓		\$3,000	City of Circle Pines	\$1,500					\$1,500						See SWPPP Application for Reauthorization (Appendix B)
26	Permit Application System - The City will develop written procedures to improve tracking and archiving all plan review and inspection documents within 12 months following the date permit coverage is extended.	✓		✓		\$3,000	City of Circle Pines	\$1,500					\$1,500						See SWPPP Application for Reauthorization (Appendix B)
27	Updated Cities Construction Site Stormwater Runoff Control Mechanism - Zoning Chapter 13, Section 1350 - The City will update its mechanism to be at least as stringent as the MPCS CSW permit. This effort will be completed within 12 months of the date permit coverage is extended.	✓	✓	✓		\$3,000	City of Circle Pines	\$1,500					\$1,500						See SWPPP Application for Reauthorization (Appendix B)
28	Rice Creek Watershed District Standards - The City will review the RCWD standards as well as its standards and make any necessary changes to city ordinances to be as stringent as RCWD standards. Changes deemed necessary will be completed within 12 months of the date permit coverage is extended.	✓	✓	✓		\$2,000	City of Circle Pines	\$1,000					\$1,000						See SWPPP Application for Reauthorization (Appendix B)
29	Develop Priority Site Inspection Procedures - Develop internal procedures for identifying priority sites for inspections (e.g., near sensitive receiving waters, projects larger than 5 acres).	✓	✓	✓		\$2,000	City of Circle Pines	\$1,000					\$1,000						See SWPPP Application for Reauthorization (Appendix B)
30	City Ordinance Review - The City will complete Ordinance updates for post construction runoff from new development and redevelopment within 12 months of the date permit coverage is extended.	✓	✓	✓		\$1,000	City of Circle Pines	\$500					\$500						See SWPPP Application for Reauthorization (Appendix B)
31	Enforcement Response Procedures (ERP's) - The City will update its Enforcement Response Procedures to meet the requirements of the MS4 permit within 12 months of permit coverage being granted.	✓	✓	✓		\$1,500	City of Circle Pines	\$750					\$750						See SWPPP Application for Reauthorization (Appendix B)
32	Storm Sewer System Map and Inventory - The City will require new developments to provide electronic as-build data in accordance with the GIS Information Requirements located in the City Design Standard. The City's GIS specialist updates and maintains all of the City's GIS information.	✓	✓	✓		\$500	City of Circle Pines, Developer	\$250					\$250						See SWPPP Application for Reauthorization (Appendix B)
33	Storm Sewer Mapping - The City will annually update its storm sewer system map.	✓	✓	✓		\$4,000	City of Circle Pines	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	\$400	See SWPPP Application for Reauthorization (Appendix B)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments
								2015	2016	2017	2018	2019	2020	2021	2022	
34	Street Sweeping - The City will begin to conduct street sweeping operations of all public streets twice annually (record the sweeping route and date per occurrence). Review and revise (as needed) street sweeping operations (including schedule, equipment, and disposal), stormwater quality priority areas, and routes annually through the end of the MS4 permit cycle (July 31, 2018).	✓		✓		\$150,000	City of Circle Pines	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	See SWPPP Application for Reauthorization (Appendix B)
35	Structural Stormwater BMP Inspections - Continue to inspect 100% of all SPCD's each year of the MS4 permit cycle (July 31, 2018)	✓		✓		\$5,000	City of Circle Pines	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	See SWPPP Application for Reauthorization (Appendix B)
36	Inspect MS4 Outfalls and Ponds - Continue to inspect 20% of all MS4 outfalls each year, until 100% of all MS4 Outfalls and Ponds have been inspected within the MS4 permit cycle (until July 31, 2018)	✓				\$3,600	City of Circle Pines	\$1,800								See SWPPP Application for Reauthorization (Appendix B)
37	Review Inspection Reports - Annually, review all pond, outfall, and SPCD inspection records to determine if maintenance, repair, or replacement is needed. Include a description of the findings and any maintenance, repair, or replacement as a result of the inspection findings. Evaluate each SPCD's inspection frequency and adjust as needed per MS4 Permit Part III.D.6.e(1). Evaluate and update inspection records annually through the end of the MS4 permit cycle (July 31, 2018)	✓		✓		\$3,000	City of Circle Pines	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	See SWPPP Application for Reauthorization (Appendix B)
38	Employee Training - Continue to host a minimum of one staff training event per year to discuss stormwater related topics. City staff will develop an annual training schedule, record the employee names, topics covered, and date of each event, annually through the end of the MS4 permit cycle (July 31, 2018).	✓		✓		\$5,000	City of Circle Pines	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	See SWPPP Application for Reauthorization (Appendix B)
39	Park and Open Space Training Program - Training focused on fertilizer application, pesticide/herbicide application, and mowing discharge.	✓		✓		\$3,000	City of Circle Pines	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	See SWPPP Application for Reauthorization (Appendix B)
40	Fleet and Building Maintenance Training Program - Training focused on automotive maintenance program (automotive inspections and washing), spill cleanup training, hazardous materials training, building leak prevention and inspection training.	✓		✓		\$3,000	City of Circle Pines	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	See SWPPP Application for Reauthorization (Appendix B)
41	Stormwater Systems Maintenance Training Program - Training focused on parking lot and street cleaning, storm drain systems cleaning, road salt materials management.	✓		✓		\$3,000	City of Circle Pines	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	See SWPPP Application for Reauthorization (Appendix B)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments	
								2015	2016	2017	2018	2019	2020	2021	2022		2023
42	Spill Prevention & Control Plans for Municipal Facilities - Ensure that plans describing spill prevention and control procedures are consistent among all departments. Conduct annual spill prevention and response training sessions to all municipal employees. Distribute education materials to each municipal facility by the end of year 2.	✓	✓	✓		\$1,400	City of Circle Pines	\$500	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	See SWPPP Application for Reauthorization (Appendix B)
43	Facility Inventory - Develop facilities inventory to include potential pollutants at each site. Create a map of all identified facilities.	✓	✓	✓		\$500	City of Circle Pines	\$250			\$250						See SWPPP Application for Reauthorization (Appendix B)
44	Pond Assessment Procedures & Schedule - In year 1, develop procedures for determining TSS and TP treatment effectiveness of city owned ponds use for treatment of stormwater. Implement schedule in year 2-5.	✓	✓	✓		\$2,000	City of Circle Pines	\$2,000									See SWPPP Application for Reauthorization (Appendix B)
45	Recording, Reporting, and Retention of All Inspections and Responses to the Inspections - The City will retain all records of inspection, maintenance, and corrective actions of the City's stormwater system.	✓	✓	✓		\$1,000	City of Circle Pines	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	See SWPPP Application for Reauthorization (Appendix B)
46	Evaluation of Inspection Frequency - Evaluate inspection records and determine if inspection frequency needs to increase or decrease	✓	✓	✓		\$1,000	City of Circle Pines	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	See SWPPP Application for Reauthorization (Appendix B)
47	Landscaping and Lawn Care Practices Review - The City will continue to annually review its landscaping and lawn care practices and adjust its current methods if necessary.	✓	✓	✓		\$500	City of Circle Pines	\$100	\$100	\$100		\$100		\$100		\$100	See SWPPP Application for Reauthorization (Appendix B)
48	Road Salt Application Review - The City will record the annual activities of the salt distribution program and adjust current practices as necessary.	✓	✓	✓			City of Circle Pines	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	\$100	See SWPPP Application for Reauthorization (Appendix B)
49	Evaluation of Proposed Stormwater Infiltration Projects for Impacts within Source Water Protection Areas - 1. The City will use the MDH document "Evaluating Proposed Storm Water Infiltration Projects in Vulnerable Wellhead Protection Areas" (Draft-July 19, 2008) and other pertinent information as guidance in evaluating all infiltration projects within or adjacent to vulnerable DWSMA's. 2. The City will prohibit the construction of the infiltration area or incorporate specific BMPs to reduce pollutants from infiltration within vulnerable DWSMA's. 3. The City will annually record the evaluation, denial, and implemented BMP's, of all proposed infiltration projects within and/or adjacent to vulnerable DWSMA's. Structural Stormwater BMP Maintenance Program - Based on storm sewer inspection findings determine if repair, replacement, or maintenance measures are necessary to ensure structures function properly and treatment is effective. Document annually number of structures repaired or scheduled for maintenance.	✓	✓	✓		\$3,500	City of Circle Pines	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	\$350	See SWPPP Application for Reauthorization (Appendix B)
50		✓	✓	✓		\$5,000	City of Circle Pines	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	See SWPPP Application for Reauthorization (Appendix B)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments
								2015	2016	2017	2018	2019	2020	2021	2022	
51	Stockpiles, Storage and Material Handling Area Inspections - Conduct quarterly written inspections of all stockpile, storage and material handling areas (per the 2014 facility inventory), through the end of the MS4 permit cycle (July 31, 2018).	✓	✓	✓		\$5,000	City of Circle Pines	\$500	\$500	\$500	\$500	\$500	\$500	\$500	\$500	See SWPPP Application for Reauthorization (Appendix B)
TMDL	In-lake Alum Treatment - Conduct Alum Treatment to remove phosphorus from the lake system so that is binds with the phosphorus creating floc. This eliminates the phosphorus from being available for algae growth. Due to the fact that Golden Lake is a shallow lake, it is unclear how long the floc would remain effective before being covered by resuspended lake bottom sediments.				✓	\$92,000	City of Circle Pines, RCWD	\$46,000		\$46,000						See Golden Lake TMDL (Appendix E)
TMDL	Upstream Alum Treatment - Conduct Alum Treatment to remove phosphorus from the upstream water system so that is binds with the phosphorus creating floc. This eliminates the phosphorus from being available for algae growth.				✓	\$4,000,000	City of Circle Pines, RCWD	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	See Golden Lake TMDL (Appendix E)
TMDL	Scraping Littoral Sediments during Lake Drawdown - During lake draw down this activity would reduce the presence of aquatic seed beds, remove organic sediments, and slightly deepen the littoral areas of the lake.				✓	\$900,000	City of Circle Pines, RCWD	\$900,000								See Golden Lake TMDL (Appendix E)
TMDL	Retention of Flows - alteration of water quantity flow and direction in an effort to improve overall water quality within Golden Lake.				✓	\$350,000	City of Circle Pines, RCWD	\$350,000								See Golden Lake TMDL (Appendix E)
TMDL	Hypolimnetic Withdrawal - An in-lake restoration technique based on the selective discharge of bottom water to enhance the removal of nutrients and electro-chemically reduced substances that build up when the hypolimnion becomes anoxic.				✓	\$1,500,000	City of Circle Pines, RCWD	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	See Golden Lake TMDL (Appendix E)
TMDL	Expand and Enhance Aeration System - improvements made to aeration system to enhance the aeration systems capabilities for having a positive effect on Golden Lakes water quality.				✓	\$200,000	City of Circle Pines, RCWD	\$200,000								See Golden Lake TMDL (Appendix E)
TMDL	Rule M and Rule RMP-1 Implementation - The City will enforce the requirement that new development use water resource BMPs to improve water quality and control runoff volume.				✓	\$25,000	City of Circle Pines, RCWD	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	See Golden Lake TMDL (Appendix E)
TMDL	Shoreline Buffers - Vegetative buffers of native vegetation around the perimeter of Golden Lake would help remove pollutants in runoff from the drainage area before they reach the lake. Native vegetation also discourages geese.				✓	\$100,000	City of Circle Pines, RCWD	\$100,000								See Golden Lake TMDL (Appendix E)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments
								2015	2016	2017	2018	2019	2020	2021	2022	
TMDL	Weed Harvesting and Herbicide treatment of Curly-leaf Pondweed - Utilization of an aquatic weed harvesting program to manage the rooted aquatic macrophyte infestation problem present in Golden Lake.				✓	\$50,000	City of Circle Pines, RCWD	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	See Golden Lake TMDL (Appendix E)
TMDL	Upstream Ferric Chloride Treatment - Utilization of a ferric chloride treatment program to enhance sedimentation and reduce the amount of phosphorus within Golden Lake.				✓	\$2,000,000	RCWD, Metropolitan Council	\$400,000	\$400,000				\$400,000		\$400,000	See Golden Lake TMDL (Appendix E)
TMDL	Lake Level Drawdown in Winter - Lake draw down to four to six feet in the winter to reduce the growth of rooted aquatic plants, enhance the consolidation of lake bottom sediments, and expanding the oxidation of organic bottom sediments in shallow areas.				✓	\$100,000	RCWD, Metropolitan Council			\$100,000						See Golden Lake TMDL (Appendix E)
TMDL	Sediment Delta Removal - Dredging the sediment delta that has been accumulating over the years at the inlet of Golden Lake.				✓	\$300,000	City of Circle Pines				\$300,000					See Golden Lake TMDL (Appendix E)
TMDL	Water Level Fluctuation - alteration in water level as a means of reducing the growth of rooted aquatic plants and consolidation of lake bottom sediments.				✓	\$500,000	City of Circle Pines, RCWD	\$100,000	\$100,000				\$100,000		\$100,000	See Golden Lake TMDL (Appendix E)
TMDL	Fish Stocking - method to alter the status of the golden lake fishery in an effort to improve overall water quality.				✓	\$50,000	MNDNR, RCWD				\$25,000				\$25,000	See Golden Lake TMDL (Appendix E)
TMDL	Rotenone - Treatment applied to the lake in an attempt to alter the status of the water quality within golden lake that will manipulate the status of the lakes fishery in an effort to improve overall water quality.				✓	\$50,000	MNDNR, RCWD				\$50,000					See Golden Lake TMDL (Appendix E)
TMDL	Reverse Aeration - Reduction in dissolved oxygen levels within the lake in an attempt to induce winterkill of undesirable fish.				✓	\$50,000	MNDNR, RCWD				\$50,000					See Golden Lake TMDL (Appendix E)
TMDL	Rough Fish Exclusion - Removal of fish species designated by the MNDNR as undesirable or "rough fish".				✓	\$100,000	City of Circle Pines, MNDNR, RCWD								\$50,000	See Golden Lake TMDL (Appendix E)
TMDL	P-free Fertilizer - Minnesota Statute (Chapter 18C) has been updated to include the Phosphorus Lawn Fertilizer Law (SF 1555). The enforcement of this law is projected to produce a 20% reduction in phosphorus concentrations in residential runoff.				✓	\$25,000	City of Circle Pines, RCWD, MPCA	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	See Golden Lake TMDL (Appendix E)
TMDL	Support Enhancement of Existing Regulations - The City will, where and when feasible, enforce existing regulations that improve water quality.				✓	\$25,000	City of Circle Pines, RCWD, MPCA	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	See Golden Lake TMDL (Appendix E)

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No.	Project Description	MS4 Permit Requirement	Initial 12 Month Requirement	Annual Requirement	Projects, Programs, & Studies	10 Year Cost Estimate ¹	Possible Funding Sources ³	Proposed Cost By Year ^{1,2}								Comments		
								2015	2016	2017	2018	2019	2020	2021	2022		2023	2024
TMDL	Upstream Wetland Enhancement - improvement of wetland vegetation is an integral part of a waterbodies ecosystem and benefits water quality by filtering out incoming nutrients and stabilizing the shoreline and bottom sediments. This habitat should be protected and enhanced in order to keep its function intact and/or improve it.				✓	\$400,000	City of Circle Pines, City of Blaine, RCWD			\$400,000								See Golden Lake TMDL (Appendix E)
TMDL	Protect and Enhance Fringe Wetland Vegetation - Fringe wetland vegetation is an integral part of a shallow lake's ecosystem and benefits water quality by filtering out incoming nutrients and stabilizing the shoreline and bottom sediments. This habitat should be protected and enhanced in order to keep its function intact and/or improve it.				✓	\$100,000	City of Circle Pines, RCWD			\$100,000								See Golden Lake TMDL (Appendix E)
TMDL	Artificial Floating Islands - an experimental alternative that may be pursued in an effort to remove phosphorus from Golden Lake.				✓	\$50,000	Unknown			\$50,000								See Golden Lake TMDL (Appendix E)
TMDL	Solarbee - an experimental alternative that may be pursued in an effort to remove phosphorus from Golden Lake.				✓	\$100,000	Unknown				\$100,000							See Golden Lake TMDL (Appendix E)
TMDL	Barley Straw - an experimental alternative that may be pursued in an effort to remove phosphorus from Golden Lake.				✓	\$75,000	Unknown			\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	See Golden Lake TMDL (Appendix E)
	TOTAL					\$9,542,000		\$653,700	\$986,600	\$1,937,000	\$1,186,600	\$587,000	\$1,044,900	\$587,000	\$986,600	\$587,000	\$986,600	

¹ Cost estimates are preliminary and subject to review and revision as engineer's reports are completed and more information becomes available. Table reflects 2014 costs and do not account for inflation. Costs generally include labor, equipment, materials, and all other costs necessary to complete each activity. For City completed activities, staff time is included in the cost. Some of the costs outlined above may be included in other operational costs budgeted by the City.

² 10 Year cost projections are based upon 2 MS4 Permit Cycles with year 1 program updates occurring again in 2019

³ Funding for stormwater program activities projected to come from following sources - Surface Water Management Fund, Developers Agreements, Grant Funds, General Operating Fund, or Special Assessments

APPENDIX A

Figures

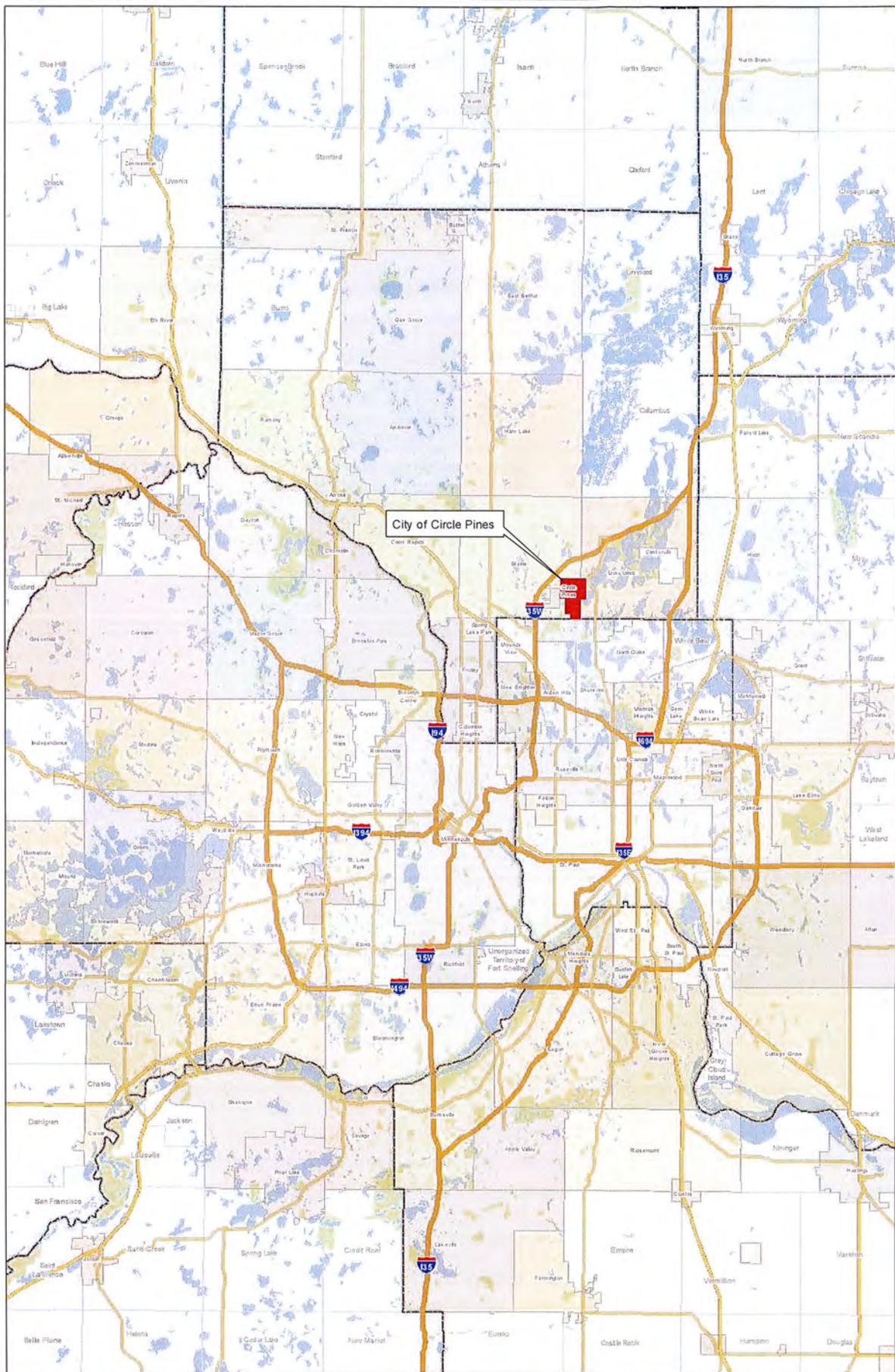
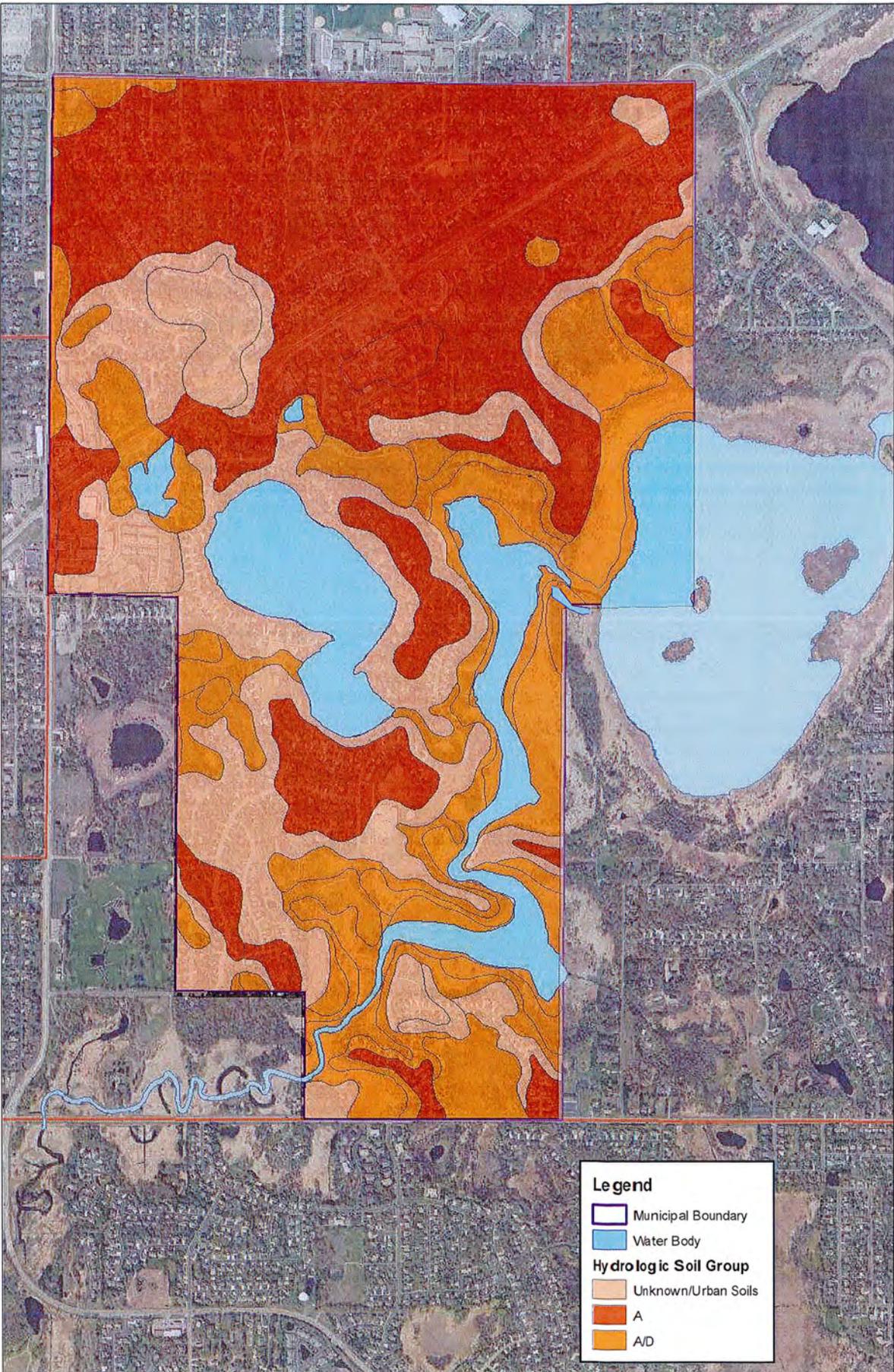


FIGURE 1: Location Map

Local Surface Water Management Plan

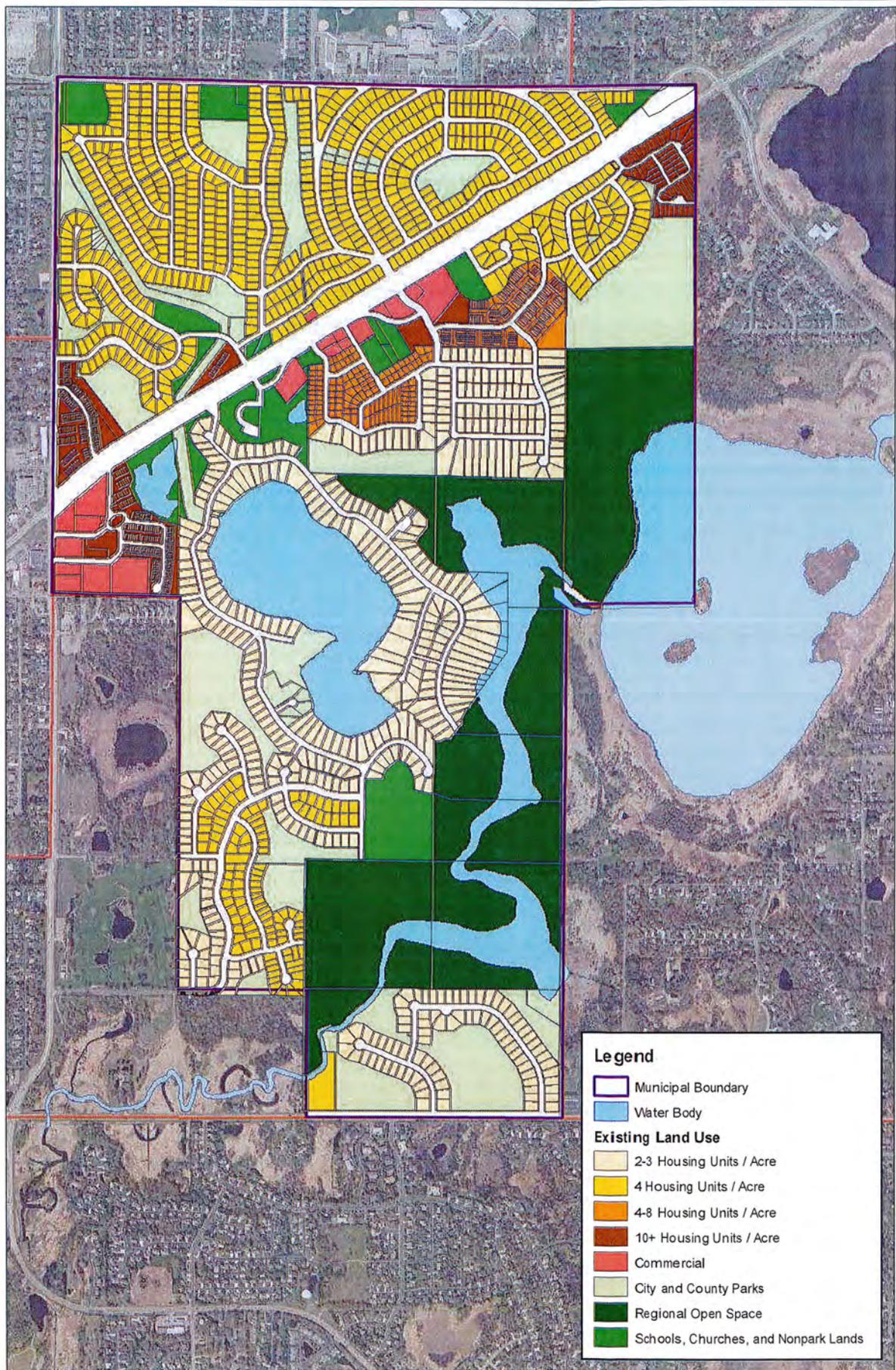


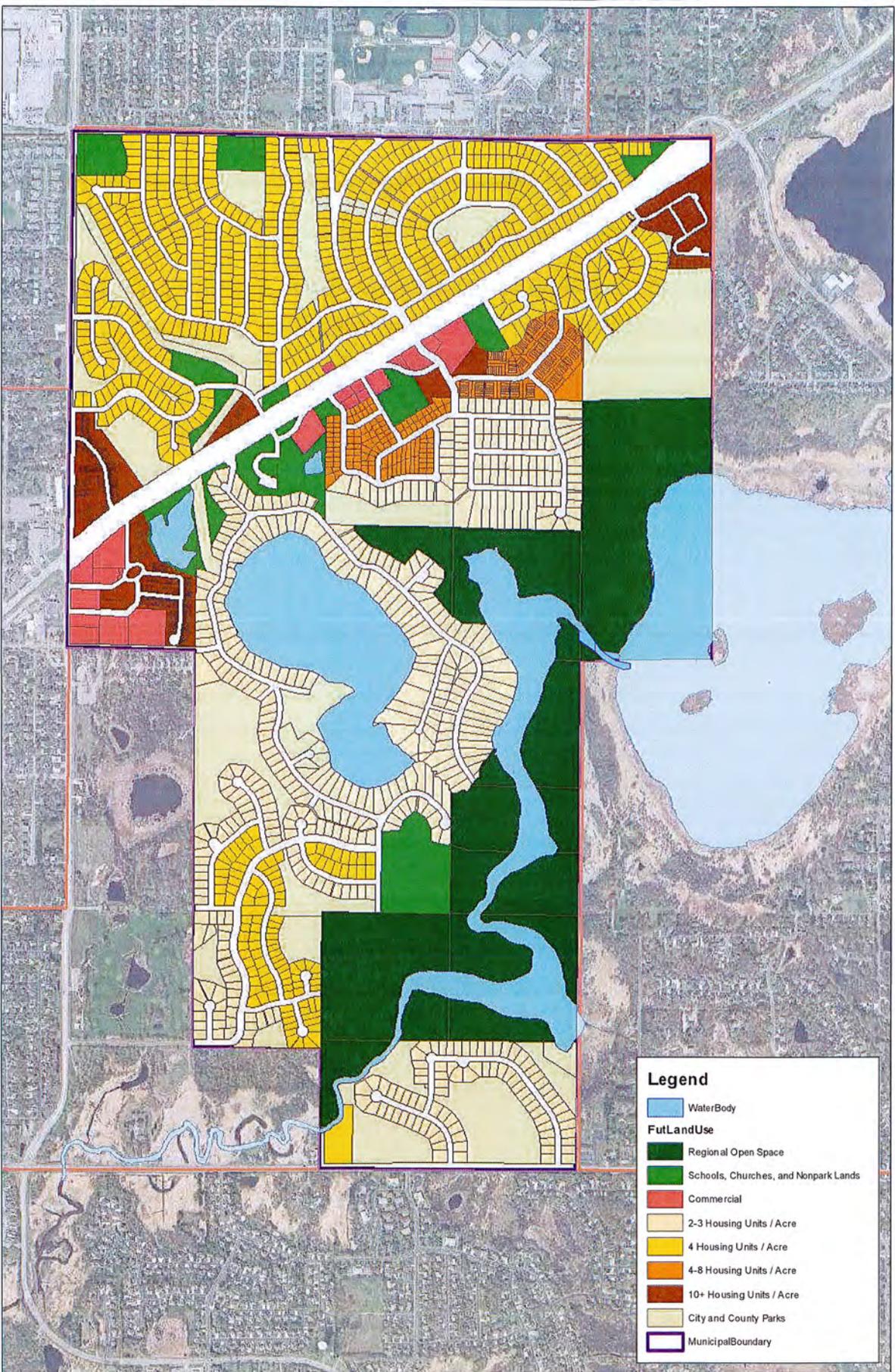
October 2017



Legend

- Municipal Boundary
- Water Body
- Hydrologic Soil Group**
- Unknown/Urban Soils
- A
- A/D







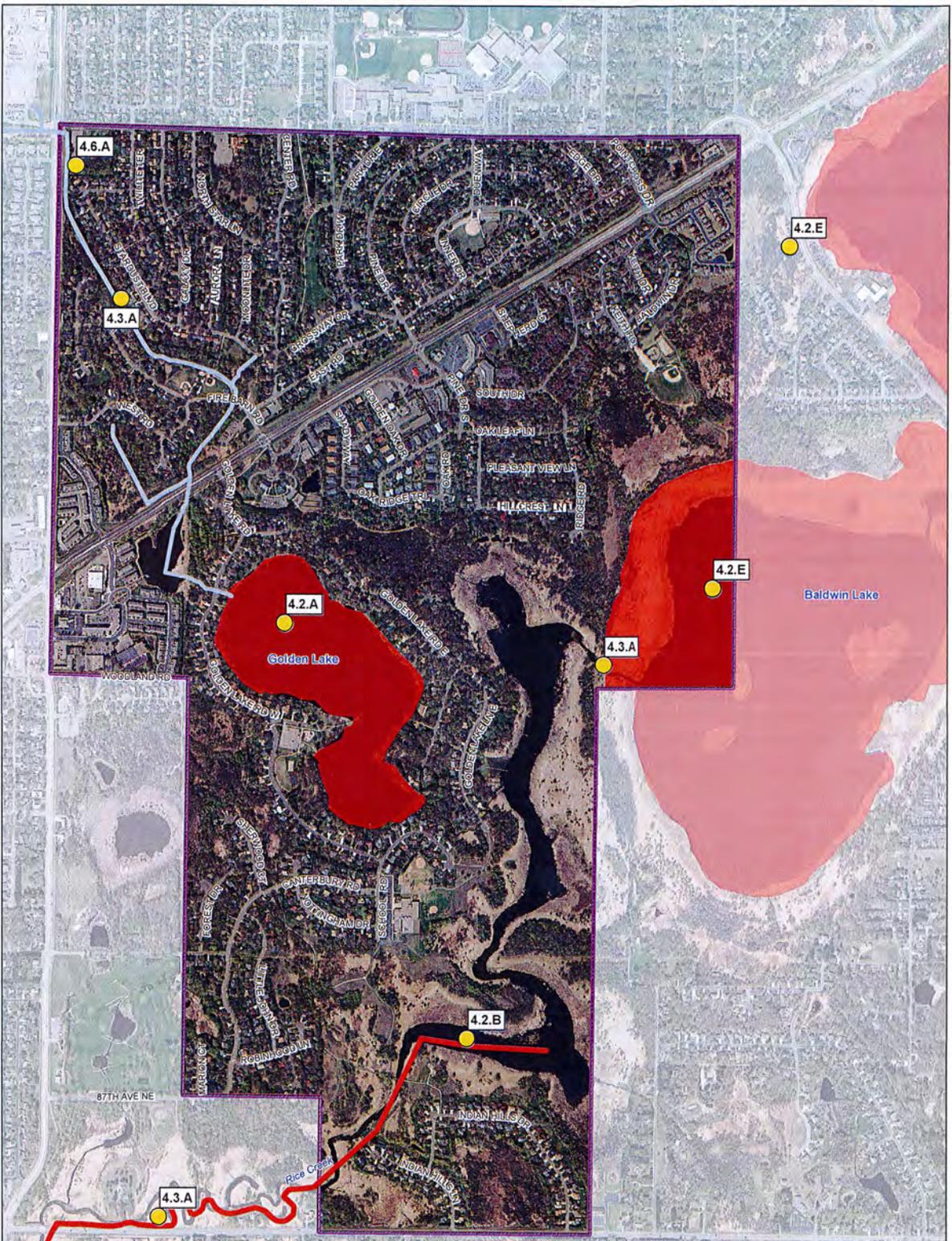
Lake	OHW*
Baldwin	883.1
Golden	NA

*as shown on DNR's LakeFinder

Legend

- National Wetland Inventory (NWI)
- DNR Public Waters

Document Path: \\s:\01\021\100013\Map\Figure6\JMW\DWI and DWR_10/20/17



1 Golden Lake water quality and TMDL	4.2.A
2 Baldwin Lake water quality and TMDL	4.2.E
3 Rice Creek impairment	4.2.B
4 High flow rates and water levels in Ditch 53-62	4.3.A
5 Rice Lake water quality and TMDL	4.2.E
6 High flow rates and water levels in Rice Creek	4.3.A
7 Erosion in Ditch 53-62	4.6.A
8 High flow rates from the Chain of Lakes	4.3.A

Legend

- Problem Area
- ACD 53-62
- 2016 Impaired Streams
- 2016 Impaired Lake



Legend

Flood Hazard Zones

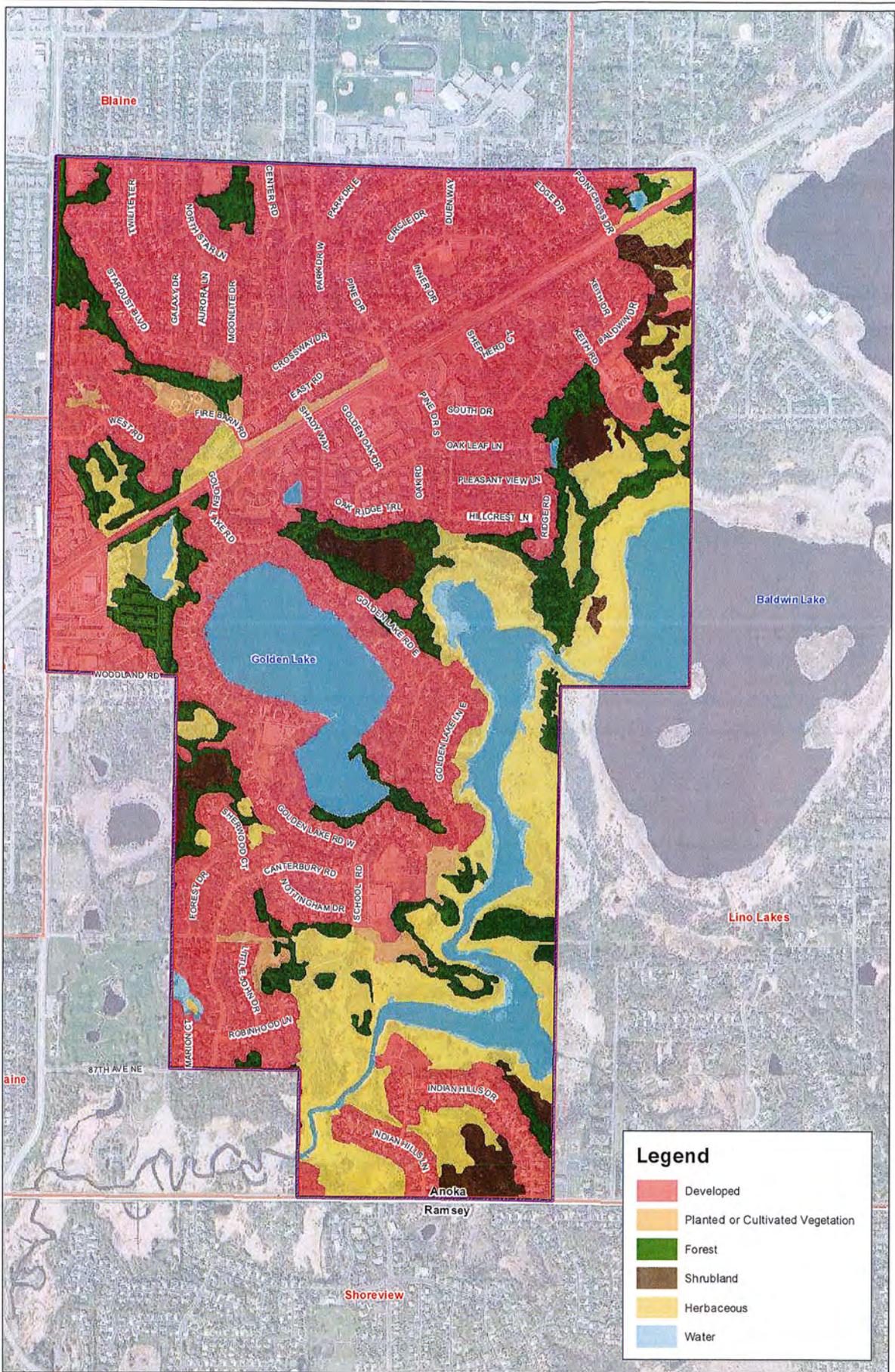
-  Floodway
-  100-Year Floodplain
-  500-Year Floodplain

Note: FEMA Map based on Atlas 14 rainfall probabilities

FIGURE 8: FEMA Floodplain Map



Note: Monitoring sites shown have been used to collect data at some point. Not all sites shown are active monitoring sites.



Legend

- Developed
- Planted or Cultivated Vegetation
- Forest
- Shrubland
- Herbaceous
- Water

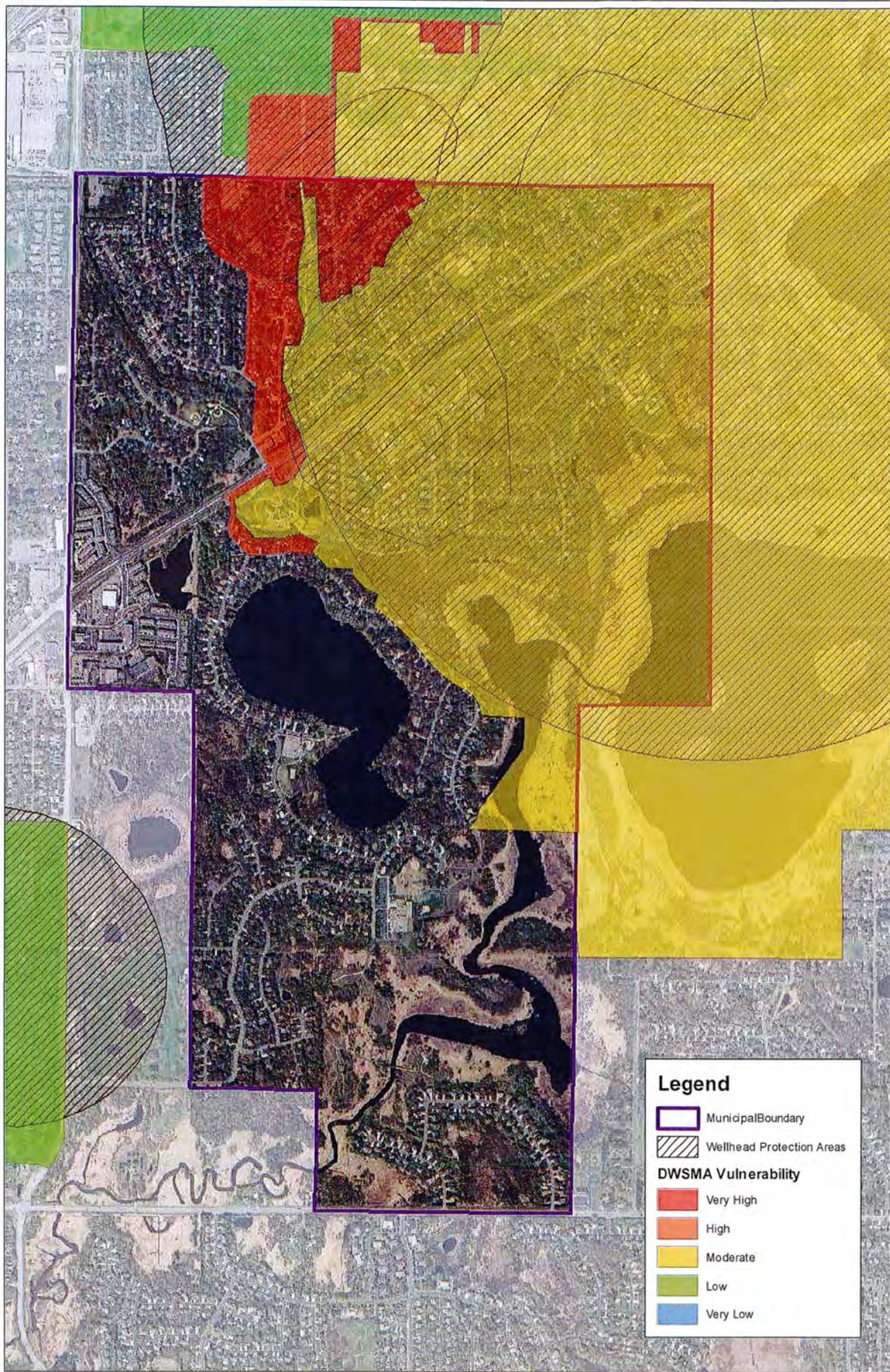
FIGURE 10: Minnesota Land Cover Classification System (MLCCS)



FIGURE 11: Pollutant Sources Map



FIGURE 12: Water Appropriations



Legend

- Municipal Boundary
- Wellhead Protection Areas
- DWSMA Vulnerability**
 - Very High
 - High
 - Moderate
 - Low
 - Very Low

Water Supply Plan

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DEPARTMENT OF NATURAL RESOURCES – DIVISION OF ECOLOGICAL AND WATER RESOURCES AND METROPOLITAN COUNCIL

INTRODUCTION TO WATER SUPPLY PLANS (WSP)

Who needs to complete a Water Supply Plan

Public water suppliers serving more than 1,000 people, and large private water suppliers in designated Groundwater Management Areas, and all water suppliers in the Twin Cities metropolitan area, are required to prepare and submit a water supply plan. The goal of the WSP is to help water suppliers: 1) implement long term water sustainability and conservation measures; and 2) develop critical emergency preparedness measures. Your community needs to know what measures will be implemented in case of a water crisis. A lot of emergencies can be avoided or mitigated if long term sustainability measures are implemented.

Groundwater Management Areas (GWMA)

The DNR has designated three areas of the state as Groundwater Management Areas (GWMAs) to focus groundwater management efforts in specific geographies where there is an added risk of overuse or water quality degradation. A plan directing the DNR's actions within each GWMA has been prepared. Although there are no specific additional requirements with respect to the water supply planning for communities within designated GWMAs, communities should be aware of the issues and actions planned if they are within the boundary of one of the GWMAs. The three GWMAs are the North and East Metro GWMA (Twin Cities Metro), the Bonanza Valley GWMA and the Straight River GWMA (near Park Rapids). Additional information and maps are included in the DNR webpage at <http://www.dnr.state.mn.us/qwmp/areas.html>

Benefits of completing a WSP

Completing a WSP using this template, fulfills a water supplier's statutory obligations under M.S. [M.S.103G.291](#) to complete a water supply plan. For water suppliers in the metropolitan area, the WSP will help local governmental units to fulfill their requirements under M.S. 473.859 to complete a local comprehensive plan. Additional benefits of completing WSP template:

- The standardized format allows for quicker and easier review and approval
- Help water suppliers prepare for droughts and water emergencies.
- Create eligibility for funding requests to the Minnesota Department of Health (MDH) for the Drinking Water Revolving Fund.
- Allow water suppliers to submit requests for new wells or expanded capacity of existing wells.
- Simplify the development of county comprehensive water plans and watershed plans.

- Fulfill the contingency plan provisions required in the MDH wellhead protection and surface water protection plans.
- Fulfill the demand reduction requirements of Minnesota Statutes, section 103G.291 subd 3 and 4.
- Upon implementation, contribute to maintaining aquifer levels, reducing potential well interference and water use conflicts, and reducing the need to drill new wells or expand system capacity.
- Enable DNR to compile and analyze water use and conservation data to help guide decisions.
- Conserve Minnesota's water resources

If your community needs assistance completing the Water Supply Plan, assistance is available from your area hydrologist or groundwater specialist, the MN Rural Waters Association circuit rider program, or in the metropolitan area from Metropolitan Council staff. Many private consultants are also available.

WSP Approval Process

10 Basic Steps for completing a 10-Year Water Supply Plan

1. Download the DNR/Metropolitan Council Water Supply Plan Template www.mndnr.gov/watersupplyplans
2. Save the document with a file name with this naming convention: WSP_cityname_permitnumber_date.doc.
3. The template is a form that should be completed electronically.
4. Compile the required water use data (Part 1) and emergency procedures information (Part 2)
5. The Water Conservation section (Part 3) may need discussion with the water department, council, or planning commission, if your community does not already have an active water conservation program.
6. Communities in the seven-county Twin Cities metropolitan area should complete all the information discussed in Part 4. The Metropolitan Council has additional guidance information on their webpage <http://www.metrocouncil.org/Handbook/Plan-Elements/Water-Resources/Water-Supply.aspx>. All out-state water suppliers do *not* need to complete the content addressed in Part 4.
7. Use the Plan instructions and Checklist document to insure all data is complete and attachments are included. This will allow for a quicker approval process. www.mndnr.gov/watersupplyplans
8. Plans should be submitted electronically – no paper documents are required. <https://webapps11.dnr.state.mn.us/mpars/public/authentication/login>

9. DNR hydrologist will review plans (in cooperation with Metropolitan Council in Metro area) and approve the plan or make recommendations.
10. Once approved, communities should complete a Certification of Adoption form, and send a copy to the DNR.

Complete Table 1 with information about the public water supply system covered by this WSP.

Table 1. General information regarding this WSP

Requested Information	Description
DNR Water Appropriation Permit Number(s)	590782
Ownership	Public
Metropolitan Council Area	Yes - Anoka
Street Address	200 Civic Heights Circle
City, State, Zip	Circle Pines MN 55014
Contact Person Name	Chandra Peterson
Title	Assistant City Administrator
Phone Number	763.231.2611
MDH Supplier Classification	Municipal

PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION

The first step in any water supply analysis is to assess the current status of demand and availability. Information summarized in Part 1 can be used to develop Emergency Preparedness Procedures (Part 2) and the Water Conservation Plan (Part 3). This data is also needed to track progress for water efficiency measures.

A. Analysis of Water Demand

Complete Table 2 showing the past 10 years of water demand data.

- Some of this information may be in your Wellhead Protection Plan.
- If you do not have this information, do your best, call your engineer for assistance or if necessary leave blank.

If your customer categories are different than the ones listed in Table 2, please describe the differences below:

NA

Table 2. Historic water demand (see definitions in the glossary after Part 4 of this template)

Year	Pop. Served	Total Connections	Residential Water Delivered (MG)	C/I Water Delivered (MG)	Water used for non-essential	Wholesale Deliveries (MG)	Total Water Delivered (MG)	Total Water Pumped (MG)	Water Supply Service	Percent Unmetered/Unaccounted	Average Daily Demand (MGD)	Max. Daily Demand (MGD)	Date of Max. Demand	Residential Per Capita Demand (GPCD)	Total per capita Demand (GPCD)
2005	5072	1920	145.9	6.4		0	152.3	157.3		3.3	.431	1.483	7/15	78.8	82.3
2006	5072	1945	155.5	10.7		0	166.2	198.7		16.3	.455	1.271	7/13	83.4	85.4
2007	5250	1891	154.7	11.5		0	166.2	183.7		9.5	.455	1.358	6/26	83.1	87.8
2008	5211	1891	132.5	11.2		0	143.7	166.8		13.8	.393	.999	7/3	71.2	75.9
2009	5270	1891	141.5	15.9		0	157.4	179.2		12.1	.431	1.306	6/4	76.0	83.2
2010	4918	1891	127.5	17.3		0	144.8	156.9		7.7	.396	.883	4/29	68.5	76.5
2011	4922	1891	124.8	16.2		0	141.0	154.3		8.6	.386	.841	7/7	67.0	74.5
2012	5018	1959	139.2	22.1		0	161.3	182.3		11.5	.441	1.0	7/12	74.1	93.0
2013	5014	1959	127.1	20.5		0	147.6	156.7		5.8	.404	1.0	8/27	67.7	79.9
2014	4904	1918	118.7	13.5		0	132.2	142.3		7.0	.361	2.194	7/28	63.3	74.1
2015	4961	1906	106.3	18.5		0	124.9	144.9		13	.642	2.8	5/6	56.7	65.5
Avg. 2010-2015	5056	1915	134.0	14.9			148.9	165.7		9.9	.436	1.376	NA	71.8	79.8

MG – Million Gallons MGD – Million Gallons per Day GPCD – Gallons per Capita per Day

Complete Table 3 by listing the top 10 water users by volume, from largest to smallest. For each user, include information about the category of use (residential, commercial, industrial, institutional, or wholesale), the amount of water used in gallons per year, the percent of total water delivered, and the status of water conservation measures.

Table 3. Large volume users

Customer	Use Category (Residential, Industrial, Commercial, Institutional, Wholesale)	Amount Used (Gallons per Year)	Percent of Total Annual Water Delivered	Implementing Water Conservation Measures? (Yes/No/Unknown)
1 THERE ARE NO LARGE VOLUME USERS. CITY IS ALMOST ENTIRELY RESIDENTIAL				
2				
3				
4				
5				
6				
7				
8				
9				
10				

B. Treatment and Storage Capacity

Complete Table 4 with a description of where water is treated, the year treatment facilities were constructed, water treatment capacity, the treatment methods (i.e. chemical addition, reverse osmosis, coagulation, sedimentation, etc.) and treatment types used (i.e. fluoridation, softening, chlorination, Fe/MN removal, coagulation, etc.). Also describe the annual amount and method of disposal of treatment residuals. Add rows to the table as needed.

Table 4. Water treatment capacity and treatment processes

Treatment Site ID (Plant Name or Well ID)	Year Constructed	Treatment Capacity (GPD)	Treatment Method	Treatment Type	Annual Amount of Residuals	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
Water Filtration	1992	2.16	Pressure sand filter	Chlorine	Unknown	Sanitary Sewer	yes
Total	NA	2.16	NA	NA		NA	

Complete Table 5 with information about storage structures. Describe the type (i.e. elevated, ground, etc.), the storage capacity of each type of structure, the year each structure was constructed, and the primary material for each structure. Add rows to the table as needed.

Table 5. Storage capacity, as of the end of the last calendar year

Structure Name	Type of Storage Structure	Year Constructed	Primary Material	Storage Capacity (Gallons)
1 Water Tower	Elevated storage	1968	steel	500,000
2	Ground storage			
3	Other -			
Total	NA	NA	NA	500,000

Treatment and storage capacity versus demand

It is recommended that total storage equal or exceed the average daily demand.

Discuss the difference between current storage and treatment capacity versus the water supplier’s projected average water demand over the next 10 years (see Table 7 for projected water demand):

The City’s storage capacity of 500,000 gallons exceeds the current and future average daily demand by a significant margin. Treatment also meets the average daily demand.

C. Water Sources

Complete Table 6 by listing all types of water sources that supply water to the system, including groundwater, surface water, interconnections with other water suppliers, or others. Provide the name of each source (aquifer name, river or lake name, name of interconnecting water supplier) and the Minnesota unique well number or intake ID, as appropriate. Report the year the source was installed or established and the current capacity. Provide information about the depth of all wells. Describe the status of the source (active, inactive, emergency only, retail/wholesale interconnection) and if the source facilities have a dedicated emergency power source. Add rows to the table as needed for each installation. Include copies of well records and maintenance summary for each well that has occurred since your last approved plan in **Appendix 1**.

Table 6. Water sources and status

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection)	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Groundwater	Well #2	00208995	1961	1000	321	Normal	yes
Groundwater	Well #3	00208636	1967	1200	270	Normal	yes
Interconnection	Blaine interconnect	NA	1977	12,500	NA	Emergency	NA
Interconnection	Shoreview Interconnect	NA	1987	7,600	NA	Emergency	NA
Interconnection	Lino Lakes Interconnect	NA	1986	4,950	NA	Emergency	NA

Limits on Emergency Interconnections

Discuss any limitations on the use of the water sources (e.g. not to be operated simultaneously, limitations due to blending, aquifer recovery issues etc.) and the use of interconnections, including capacity limits or timing constraints (i.e. only 200 gallons per minute are available from the City of Prior Lake, and it is estimated to take 6 hours to establish the emergency connection). If there are no limitations, list none.

Since water from both wells is pumped through the filtration plant total max capacity is 2.16 MGD. May take up to an hour to open an interconnection

D. Future Demand Projections – Key Metropolitan Council Benchmark

Water Use Trends

Use the data in Table 2 to describe trends in 1) population served; 2) total per capita water demand; 3) average daily demand; 4) maximum daily demand. Then explain the causes for upward or downward trends. For example, over the ten years has the average daily demand trended up or down? Why is this occurring?

Population served is stable as city is fully developed. Total per capita demand is influenced by seasonal residential sprinkling. Average daily demand is reflective of seasonal residential sprinkling. Maximum Daily demand is driven by residential sprinkling. The ten year trend shows a decrease as the Utility has implemented odd even and time of day sprinkling restrictions and implemented increasing tiered rate structure.

Use the water use trend information discussed above to complete Table 7 with projected annual demand for the next ten years. Communities in the seven-county Twin Cities metropolitan area must also include projections for 2030 and 2040 as part of their local comprehensive planning.

Projected demand should be consistent with trends evident in the historical data in Table 2, as discussed above. Projected demand should also reflect state demographer population projections and/or other planning projections.

Table 7. Projected annual water demand

Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD)	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD)
2016	5020	5020	82	.411640	1.4
2017	5025	5025	81	.407025	1.4
2018	5030	5030	80	.402400	1.4
2019	5035	5035	79	.397765	1.4
2020	5000	5000	78	.393510	1.4
2021	5000	5000	77	.389235	1.4
2022	5000	5000	76	.384940	1.4
2023	5000	5000	75	.380625	1.4
2024	5000	5000	74	.377400	1.4
2025	5000	5000	74	.377400	1.4
2030	5200	5200	73	.379600	1.35
2040	5300	5300	72	.378000	1.35

GPCD – Gallons per Capita per Day

MGD – Million Gallons per Day

Projection Method

Describe the method used to project water demand, including assumptions for population and business growth and how water conservation and efficiency programs affect projected water demand:

The assumption used include: That there is minimal population and household growth. That conservation efforts will focus on reduced lawn irrigation. Would also expect some efficiency improvements with normal fixture and appliance replacement.

E. Resource Sustainability

Monitoring – Key DNR Benchmark

Complete Table 8 by inserting information about source water quality monitoring efforts. The list should include all production wells, observation wells, and source water intakes or reservoirs. Additional information on groundwater level monitoring program at:

http://www.dnr.state.mn.us/waters/groundwater_section/obwell/index.html Add rows to the table as needed.

Table 8. Information about source water quality monitoring

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
00208995	X production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	X Routine MDH sampling X Routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly X daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA x <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
00208636	X production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	X Routine MDH sampling X Routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly X daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA x <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
	<input type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> Routine MDH sampling <input type="checkbox"/> Routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
	<input type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> Routine MDH sampling <input type="checkbox"/> Routine water utility sampling <input type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
	<input type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water	<input type="checkbox"/> Routine MDH sampling <input type="checkbox"/> Routine water utility sampling	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly	<input type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
	intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> other	<input type="checkbox"/> quarterly <input type="checkbox"/> annually	

Water Level Data

A water level monitoring plan that includes monitoring locations and a schedule for water level readings must be submitted as **Appendix 2**. If one does not already exist, it needs to be prepared and submitted with the WSP. Ideally, all production and observation wells are monitored at least monthly.

Complete Table 9 to summarize water level data for each well being monitored. Provide the name of the aquifer and a brief description of how much water levels vary over the season (the difference between the highest and lowest water levels measured during the year) and the long-term trends for each well. If water levels are not measured and recorded on a routine basis, then provide the static water level when each well was constructed and the most recent water level measured during the same season the well was constructed. Also include all water level data taken during any well and pump maintenance. Add rows to the table as needed.

Provide water level data graphs for each well in **Appendix 3** for the life of the well, or for as many years as water levels have been measured. See DNR website for Date Time Water Level

http://www.dnr.state.mn.us/waters/groundwater_section/obwell/waterleveldata.html

Table 9. Water level data

Unique Well Number or Well ID	Aquifer Name	Seasonal Variation (Feet)	Long-term Trend in water level data	Water level measured during well/pumping maintenance
00208995	Drift	NA	<input type="checkbox"/> Falling <input type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
00208636	Prairiedu du Chien- Jordan	NA	<input type="checkbox"/> Falling <input type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
			<input type="checkbox"/> Falling <input type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
			<input type="checkbox"/> Falling <input type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
			<input type="checkbox"/> Falling <input type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____

Potential Water Supply Issues & Natural Resource Impacts – Key DNR & Metropolitan Council Benchmark

Complete Table 10 by listing the types of natural resources that are or could be impacted by permitted water withdrawals. If known, provide the name of specific

resources that may be impacted. Identify what the greatest risks to the resource are and how the risks are being assessed. Identify any resource protection thresholds – formal or informal – that have been established to identify when actions should be taken to mitigate impacts. Provide information about the potential mitigation actions that may be taken, if a resource protection threshold is crossed. Add additional rows to the table as needed. See the glossary at the end of the template for definitions.

Some of this baseline data should have been in your earlier water supply plans or county comprehensive water plans. When filling out this table, think of what are the water supply risks, identify the resources, determine the threshold and then determine what your community will do to mitigate the impacts.

Your DNR area hydrologist is available to assist with this table.

For communities in the seven-county Twin Cities metropolitan area, the *Master Water Supply Plan Appendix 1 (Water Supply Profiles)*, provides information about potential water supply issues and natural resource impacts for your community.)

Table 10. Natural resource impacts

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
X River or stream	Rice Creek	X Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other:	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____		<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input checked="" type="checkbox"/> Increase conservation <input type="checkbox"/> Other	

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
<input type="checkbox"/> Calcareous fen	None	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other:	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other:		<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	
X Lake	Golden Lake	X Flow/water level decline X Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other:	<input type="checkbox"/> GIS analysis <input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping X Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other:	Degrading water trends Water level decline TBD	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping X Increase conservation <input type="checkbox"/> Other	
<input type="checkbox"/> Wetland	None	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other:		<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
		species habitat or other natural resource impacts <input type="checkbox"/> Other:				
<input type="checkbox"/> Trout Stream	None	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other:	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____		<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	
X Aquifer	Drift & Prairie du Chien-Jordan	X Flow/water level decline x Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other:	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing x Other: well casing	Water level in well casing drops below 80 feet.	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping X Increase conservation <input type="checkbox"/> Other	Monitor water depth in well casing.
<input type="checkbox"/> Endangered, threatened, or special concern	none					

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
species habitat, other Natural resource impacts						

* Examples of thresholds: a lower limit on acceptable flow in a river or stream; water quality outside of an accepted range; a lower limit on acceptable aquifer level decline at one or more monitoring wells; withdrawals that exceed some percent of the total amount available from a source; or a lower limit on acceptable changes to a protected habitat.

Wellhead Protection (WHP) and Source Water Protection (SWP) Plans

Complete Table 11 to provide status information about WHP and SWP plans. The emergency procedures in this plan are intended to comply with the contingency plan provisions required in the Minnesota Department of Health's (MDH) Wellhead Protection (WHP) Plan and Surface Water Protection (SWP) Plan.

Table 11. Status of Wellhead Protection and Source Water Protection Plans

Plan Type	Status	Date Adopted	Date for Update
WHP	<input checked="" type="checkbox"/> In Process <input type="checkbox"/> Completed <input type="checkbox"/> Not Applicable		
SWP	<input checked="" type="checkbox"/> In Process <input type="checkbox"/> Completed <input type="checkbox"/> Not Applicable		

WHP – Wellhead Protection Plan

SWP – Source Water Protection Plan

F. Capital Improvement Plan (CIP)

Please note that any wells that received approval under a ten-year permit, but that were not built, are now expired and must submit a water appropriations permit.

Adequacy of Water Supply System

Complete Table 12 with information about the adequacy of wells and/or intakes, storage facilities, treatment facilities, and distribution systems to sustain current and projected demands. List planned capital improvements for any system components, in chronological order. Communities in the seven-county Twin Cities metropolitan area should also include information about plans through 2040.

The assessment can be the general status by category; it is not necessary to identify every single well, storage facility, treatment facility, lift station, and mile of pipe.

Please attach your latest Capital Improvement Plan as **Appendix 4**.

Table 12. Adequacy of Water Supply System

System Component	Planned action	Anticipated Construction Year	Notes
Wells/Intakes	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		
Water Storage Facilities	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		
Water Treatment Facilities	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		
Distribution Systems (pipes, valves, etc.)	<input type="checkbox"/> No action planned - adequate <input checked="" type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition	2018,2020	
Pressure Zones	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		
Other:	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		

Proposed Future Water Sources

Complete Table 13 to identify new water source installation planned over the next ten years. Add rows to the table as needed.

Table 13. Proposed future installations/sources

Source	Installation Location (approximate)	Resource Name	Proposed Pumping Capacity (gpm)	Planned Installation Year	Planned Partnerships
Groundwater	None				
Surface Water					
Interconnection to another supplier					

Water Source Alternatives - Key Metropolitan Council Benchmark

Do you anticipate the need for alternative water sources in the next 10 years?

Yes No

For metro communities, will you need alternative water sources by the year 2040? Yes No

If you answered yes for either question, then complete table 14. If no, insert NA.

Complete Table 14 by checking the box next to alternative approaches that your community is considering, including approximate locations (if known), the

estimated amount of future demand that could be met through the approach, the estimated timeframe to implement the approach, potential partnerships, and the major benefits and challenges of the approach. Add rows to the table as needed. For communities in the seven-county Twin Cities metropolitan area, these alternatives should include approaches the community is considering to meet projected 2040 water demand.

Table 14. Alternative water sources

Alternative Source Considered	Source and/or Installation Location (approximate)	Estimated Amount of Future Demand (%)	Timeframe to Implement (YYYY)	Potential Partners	Benefits	Challenges
<input type="checkbox"/> Groundwater	NA					
<input type="checkbox"/> Surface Water	NA					
<input type="checkbox"/> Reclaimed Storm water	NA					
<input type="checkbox"/> Reclaimed Wastewater	NA					
<input type="checkbox"/> Interconnection to another supplier	NA					

Part 2. Emergency Preparedness Procedures

The emergency preparedness procedures outlined in this plan are intended to comply with the contingency plan provisions required by MDH in the WHP and SWP. Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failings, drought, flooding, and other natural disasters. The purpose of emergency planning is to develop emergency response procedures and to identify actions needed to improve emergency preparedness. In the case of a municipality, these procedures should be in support of, and part of, an all-hazard emergency operations plan. Municipalities that already have written procedures dealing with water emergencies should review the following information and update existing procedures to address these water supply protection measures.

A. Federal Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act, (Public Law 107-188, Title IV-Drinking Water Security and Safety) requires community water suppliers serving over 3,300 people to prepare an Emergency Response Plan.

Do you have a federal emergency response plan? Yes No

If yes, what was the date it was certified? 12 22 2004

Complete Table 15 by inserting the noted information regarding your completed Federal Emergency Response Plan.

Table 15. Emergency Preparedness Plan contact information

Emergency Response Plan Role	Contact Person	Contact Phone Number	Contact Email
Emergency Response Lead	ON-CALL UTILITIY PERSONNEL	763-427-1212	RLAVELL@CI.CIRCLE-PINES.MN.US
Alternate Emergency Response Lead	PATRICK ANTONEN	763-784-5898	PANTONEN@CI.CIRCLE-PINES.MN.US

B. Operational Contingency Plan

All utilities should have a written operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance.

Do you have a written operational contingency plan? Yes No

At a minimum, a water supplier should prepare and maintain an emergency contact list of contractors and suppliers.

C. Emergency Response Procedures

Water suppliers must meet the requirements of MN Rules 4720.5280 . Accordingly, the Minnesota Department of Natural Resources (DNR) requires public water suppliers serving more than 1,000 people to submit Emergency and Conservation Plans. Water emergency and conservation plans that have been approved by the DNR, under provisions of Minnesota Statute 186 and Minnesota Rules, part 6115.0770, will be considered equivalent to an approved WHP contingency plan.

Emergency Telephone List

Prepare and attach a list of emergency contacts, including the MN Duty Officer (1-800-422-0798), as **Appendix 5**. A template is available at www.mndnr.gov/watersupplyplans

The list should include key utility and community personnel, contacts in adjacent water suppliers, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list and date it. Thereafter, update on a regular basis (once a year is recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the Emergency Manager for that community. Responsibilities and services for each contact should be defined.

Current Water Sources and Service Area

Quick access to concise and detailed information on water sources, water treatment, and the distribution system may be needed in an emergency. System operation and maintenance records should be maintained in secured central and back-up locations so that the records are accessible for emergency purposes. A detailed map of the system showing the treatment plants, water sources, storage facilities, supply lines, interconnections, and other information that would be useful in an emergency should also be readily available. It is critical that public water supplier representatives and emergency response personnel communicate about the response procedures and be able to easily obtain this kind of information both in electronic and hard copy formats (in case of a power outage).

Do records and maps exist? Yes No

Can staff access records and maps from a central secured location in the event of an emergency?

Yes No

Does the appropriate staff know where the materials are located?

Yes No

Procedure for Augmenting Water Supplies

Complete Tables 16 – 17 by listing all available sources of water that can be used to augment or replace existing sources in an emergency. Add rows to the tables as needed.

In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Municipalities are encouraged to execute. Outstate Communities may consider using nearby high capacity wells (industry, golf course) as emergency water sources.

WSP should include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MDH are required for interconnections or the reuse of water.

Table 16. Interconnections with other water supply systems to supply water in an emergency

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
BLAINE	12,500		
SHOREVIEW	7,600		

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
LINO LAKES	4,950		

GPM – Gallons per minute MGD – million gallons per day

Table 17. Utilizing surface water as an alternative source

Surface Water Source Name	Capacity (GPM)	Capacity (MGD)	Treatment Needs	Note Any Limitations On Use
NONE				

If not covered above, describe additional emergency measures for providing water (obtaining bottled water, or steps to obtain National Guard services, etc.)

Allocation and Demand Reduction Procedures

Complete Table 18 by adding information about how decisions will be made to allocate water and reduce demand during an emergency. Provide information for each customer category, including its priority ranking, average day demand, and demand reduction potential for each customer category. Modify the customer categories as needed, and add additional lines if necessary.

Water use categories should be prioritized in a way that is consistent with Minnesota Statutes 103G.261 (#1 is highest priority) as follows:

1. Water use for human needs such as cooking, cleaning, drinking, washing and waste disposal; use for on-farm livestock watering; and use for power production that meets contingency requirements.
2. Water use involving consumption of less than 10,000 gallons per day (usually from private wells or surface water intakes)
3. Water use for agricultural irrigation and processing of agricultural products involving consumption of more than 10,000 gallons per day (usually from private high-capacity wells or surface water intakes)
4. Water use for power production above the use provided for in the contingency plan.
5. All other water use involving consumption of more than 10,000 gallons per day.
6. Nonessential uses – car washes, golf courses, etc.

Water used for human needs at hospitals, nursing homes and similar types of facilities should be designated as a high priority to be maintained in an emergency. Lower priority uses will need to address water used for human needs

at other types of facilities such as hotels, office buildings, and manufacturing plants. The volume of water and other types of water uses at these facilities must be carefully considered. After reviewing the data, common sense should dictate local allocation priorities to protect domestic requirements over certain types of economic needs. Water use for lawn sprinkling, vehicle washing, golf courses, and recreation are legislatively considered non-essential.

Table 18. Water use priorities

Customer Category	Allocation Priority	Average Daily Demand (GPD)	Short-Term Emergency Demand Reduction Potential (GPD)
Residential	1	393,000	70,000
Commercial	2	17,000	3,000
Non-Essential	3	300,000	150,000

GPD – Gallons per Day

Tip: Calculating Emergency Demand Reduction Potential

The emergency demand reduction potential for all uses will typically equal the difference between maximum use (summer demand) and base use (winter demand). In extreme emergency situations, lower priority water uses must be restricted or eliminated to protect priority domestic water requirements. Emergency demand reduction potential should be based on average day demands for customer categories within each priority class. Use the tables in Part 3 on water conservation to help you determine strategies.

Complete Table 19 by selecting the triggers and actions during water supply disruption conditions.

Table 19. Emergency demand reduction conditions, triggers and actions (Select all that may apply and describe)

Emergency Triggers	Short-term Actions	Long-term Actions
<input checked="" type="checkbox"/> Contamination <input checked="" type="checkbox"/> Loss of production <input checked="" type="checkbox"/> Infrastructure failure <input checked="" type="checkbox"/> Executive order by Governor <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Supply augmentation through INTERCONNECTIONS <input checked="" type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Water allocation through _____ <input type="checkbox"/> Meet with large water users to discuss their contingency plan.	<input type="checkbox"/> Supply augmentation through _____ <input type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Water allocation through _____ <input type="checkbox"/> Meet with large water users to discuss their contingency plan.

Notification Procedures

Complete Table 20 by selecting trigger for informing customers regarding conservation requests, water use restrictions, and suspensions; notification frequencies; and partners that may assist in the notification process. Add rows to the table as needed.

Table 20. Plan to inform customers regarding conservation requests, water use restrictions, and suspensions

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
X Short-term demand reduction declared (< 1 year)	X Website <input type="checkbox"/> Email list serve X Social media (e.g. Twitter, Facebook) X Direct customer mailing, X Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly X Monthly <input type="checkbox"/> Annually	
<input type="checkbox"/> Long-term Ongoing demand reduction declared	X Website <input type="checkbox"/> Email list serve <input type="checkbox"/> Social media (e.g. Twitter, Facebook) X Direct customer mailing, <input type="checkbox"/> Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly X Monthly <input type="checkbox"/> Annually	
<input type="checkbox"/> Governor's Critical water deficiency declared	X Website <input type="checkbox"/> Email list serve X Social media (e.g. Twitter, Facebook) X Direct customer mailing, <input type="checkbox"/> Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily X Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	

Enforcement

Prior to a water emergency, municipal water suppliers must adopt regulations that restrict water use and outline the enforcement response plan. The enforcement response plan must outline how conditions will be monitored to know when enforcement actions are triggered, what enforcement tools will be used, who will be responsible for enforcement, and what timelines for corrective actions will be expected.

Affected operations, communications, and enforcement staff must then be trained to rapidly implement those provisions during emergency conditions.

Important Note:

Disregard of critical water deficiency orders, even though total appropriation remains less than permitted, is adequate grounds for immediate modification of a public water supply authority's water use permit (2013 MN Statutes 103G.291)

Does the city have a critical water deficiency restriction/official control in place that includes provisions to restrict water use and enforce the restrictions? (This restriction may be an ordinance, rule, regulation, policy under a council directive, or other official control) X Yes No

If yes, attach the official control document to this WSP as **Appendix 7**.

If no, the municipality must adopt such an official control within 6 months of submitting this WSP and submit it to the DNR as an amendment to this WSP.
Irrespective of whether a critical water deficiency control is in place, does the public water supply utility, city manager, mayor, or emergency manager have standing authority to implement water restrictions? Yes No
If yes, cite the regulatory authority reference: City Code Section 615 Regulating the Operation of Public Water System
If no, who has authority to implement water use restrictions in an emergency?

PART 3. WATER CONSERVATION PLAN



Minnesotans have historically benefited from the state's abundant water supplies, reducing the need for conservation. There are however, limits to the available supplies of water and increasing threats to the quality of our drinking water. Causes of water supply limitation may include: population increases, economic trends, uneven statewide availability of groundwater, climatic changes, and degraded water quality. Examples of threats to drinking water quality include: the presence of contaminant plumes from past land use activities, exceedances of water quality standards from natural and

human sources, contaminants of emerging concern, and increasing pollutant trends from nonpoint sources.

There are many incentives for conserving water; conservation:

- reduces the potential for pumping-induced transfer of contaminants into the deeper aquifers, which can add treatment costs
- reduces the need for capital projects to expand system capacity
- reduces the likelihood of water use conflicts, like well interference, aquatic habitat loss, and declining lake levels
- conserves energy, because less energy is needed to extract, treat and distribute water (and less energy production also conserves water since water is use to produce energy)
- maintains water supplies that can then be available during times of drought

It is therefore imperative that water suppliers implement water conservation plans. The first step in water conservation is identifying opportunities for behavioral or engineering changes that could be made to reduce water use by conducting a thorough analysis of:

- Water use by customer
- Extraction, treatment, distribution and irrigation system efficiencies
- Industrial processing system efficiencies
- Regulatory and barriers to conservation
- Cultural barriers to conservation
- Water reuse opportunities

Once accurate data is compiled, water suppliers can set achievable goals for reducing water use. A successful water conservation plan follows a logical sequence of events. The plan should address both conservation on the supply side (leak detection and repairs, metering), as well as on the demand side (reductions in usage). Implementation should be conducted in phases, starting with the most obvious and lowest-cost options. In some cases one of the early

steps will be reviewing regulatory constraints to water conservation, such as lawn irrigation requirements. Outside funding and grants may be available for implementation of projects. Engage water system operators and maintenance staff and customers in brainstorming opportunities to reduce water use. Ask the question: "How can I help save water?"

Progress since 2006

Is this your community's first Water Supply Plan? Yes No

If yes, describe conservation practices that you are already implementing, such as: pricing, system improvements, education, regulation, appliance retrofitting, enforcement, etc.

If no, complete Table 21 to summarize conservation actions taken since the adoption of the 2006 water supply plan.

Table 21. Implementation of previous ten-year Conservation Plan

2006 Plan Commitments	Action Taken?
Change Water Rates Structure to provide conservation pricing	X Yes <input type="checkbox"/> No
Water Supply System Improvements (e.g. leak repairs, valve replacements, etc.)	X Yes <input type="checkbox"/> No
Educational Efforts	X Yes <input type="checkbox"/> No
New water conservation ordinances	<input type="checkbox"/> Yes <input type="checkbox"/> No
Rebate or retrofitting Program (e.g. for toilet, faucets, appliances, showerheads, dish washers, washing machines, irrigation systems, rain barrels, water softeners, etc.	<input type="checkbox"/> Yes X No
Enforcement	X Yes <input type="checkbox"/> No
Describe Other	<input type="checkbox"/> Yes <input type="checkbox"/> No

What are the results you have seen from the actions in Table 21 and how were results measured?

Peak water demand for irrigation has been reduced

A. Triggers for Allocation and Demand Reduction Actions

Complete table 22 by checking each trigger below, as appropriate, and the actions to be taken at various levels or stages of severity. Add in additional rows to the table as needed.

Table 22. Short and long-term demand reduction conditions, triggers and actions

Objective	Triggers	Actions
Protect Surface Water Flows	<input type="checkbox"/> Low stream flow conditions <input type="checkbox"/> Reports of declining wetland and lake levels <input type="checkbox"/> Other: _____	<input type="checkbox"/> Increase promotion of conservation measures <input type="checkbox"/> Other: _____

Objective	Triggers	Actions
Short-term demand reduction (less than 1 year)	<input checked="" type="checkbox"/> Extremely high seasonal water demand (more than double winter demand) <input checked="" type="checkbox"/> Loss of treatment capacity <input checked="" type="checkbox"/> Lack of water in storage <input type="checkbox"/> State drought plan <input type="checkbox"/> Well interference <input type="checkbox"/> Other: _____ _____	<input checked="" type="checkbox"/> Adopt (if not already) and enforce the critical water deficiency ordinance to restrict or prohibit lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Supply augmentation through _____ <input type="checkbox"/> Water allocation through _____ <input type="checkbox"/> Meet with large water users to discuss user's contingency plan.
Long-term demand reduction (>1 year)	<input checked="" type="checkbox"/> Per capita demand increasing <input type="checkbox"/> Total demand increase (higher population or more industry) Water level in well(s) below elevation of _____ <input type="checkbox"/> Other: _____ _____	<input type="checkbox"/> Develop a critical water deficiency ordinance that is or can be quickly adopted to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Enact a water waste ordinance that targets overwatering (causing water to flow off the landscape into streets, parking lots, or similar), watering impervious surfaces (streets, driveways or other hardscape areas), and negligence of known leaks, breaks, or malfunctions. <input type="checkbox"/> Meet with large water users to discuss user's contingency plan. <input type="checkbox"/> Enhanced monitoring and reporting: audits, meters, billing, etc.
Governor's "Critical Water Deficiency Order" declared	<input checked="" type="checkbox"/> Declaration by the Governor	<input checked="" type="checkbox"/> City Ordinance 154 allows the city to enforce the declaration. Appendix 12

B. Conservation Objectives and Strategies – Key benchmark for DNR

This section establishes water conservation objectives and strategies for eight major areas of water use.

Objective 1: Reduce Unaccounted (Non-Revenue) Water loss to Less than 10%

The Minnesota Rural Waters Association, the Metropolitan Council and the Department of Natural Resources recommend that all water uses be metered. Metering can help identify high use locations and times, along with leaks within buildings that have multiple meters.

It is difficult to quantify specific unmetered water use such as that associated with firefighting and system flushing or system leaks. Typically, water suppliers subtract metered water use from total water pumped to calculate unaccounted or non-revenue water loss.

Is your ten-year average (2005-2014) unaccounted Water Use in Table 2 higher than 10%?

X Yes No

What is your leak detection monitoring schedule? (e.g. monitor 1/3rd of the city lines per year)

Given the age of the system, since 2008 The City has begun a street reconstruction project every two years that includes replacing all the utilities including water lines.

Water Audits - are intended to identify, quantify and verify water and revenue losses. The volume of unaccounted-for water should be evaluated each billing cycle. The American Water Works Association (AWWA) recommends that ten percent or less of pumped water is unaccounted-for water. Water audit procedures are available from the AWWA and MN Rural Water Association www.mrwa.com. Drinking Water Revolving Loan Funds are available for purchase of new meters when new plants are built.

What is the date of your most recent water audit? December 2015
Frequency of water audits: x yearly other (specify frequency)

Leak detection and survey: every year every other year
 X periodic as needed

Year last leak detection survey completed: NA

If Table 2 shows annual water losses over 10% or an increasing trend over time, describe what actions will be taken to reach the <10% loss objective and within what timeframe

Given the age of the system, since 2008 The City has begun a street reconstruction project every two years that includes replacing all the utilities including water lines.

Metering -AWWA recommends that every water supplier install meters to account for all water taken into its system, along with all water distributed from its system at each customer's point of service. An effective metering program relies upon periodic performance testing, repair, maintenance or replacement of all meters. AWWA also recommends that water suppliers conduct regular water audits to ensure accountability. Some cities install separate meters for interior and exterior water use, but some research suggests that this may not result in water conservation.

Complete Table 23 by adding the requested information regarding the number, types, testing and maintenance of customer meters.

Table 23. Information about customer meters

Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years)
Residential	2,308	2,308			12 / 20
Irrigation meters	8	8			12 / 20_
Institutional	0	0			/
Commercial	118	118			12 / 20

Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years)
Industrial	0	0			/
Public Facilities	0	0			12 / 20
Other	0	0			/
TOTALS	2434	2434		NA	NA

For unmetered systems, describe any plans to install meters or replace current meters with advanced technology meters. Provide an estimate of the cost to implement the plan and the projected water savings from implementing the plan.

Meter Park Irrigation systems \$14,000

Table 24. Water source meters

	Number of Meters	Meter testing schedule (years)	Number of Automated Meter Readers	Average age/meter replacement schedule (years)
Water Source (wells/intakes)	2	5	0	5 / 20
Treatment Plant	2	5	0	10 / 20

Objective 2: Achieve Less than 75 Residential Gallons per Capita Demand (GPCD)

The 2002 average residential per capita demand in the Twin Cities Metropolitan area was 75 gallons per capita per day.

Is your average 2010-2015 residential per capita water demand in Table 2 more than 75? Yes No

What was your 2005 – 2014 ten-year average residential per capita water demand? 73.31 g/person/day

Describe the water use trend over that timeframe:

During 2005 to 2007 some residential customer growth. Also implementation of increasing tiered rate structure. Odd Even and Time of day restrictions in place

Complete Table 25 by checking which strategies you will use to continue reducing residential per capita demand and project a likely timeframe for completing each checked strategy (Select all that apply and add rows for additional strategies):

Table 25. Strategies and timeframe to reduce residential per capita demand

Strategy to reduce residential per capita demand	Timeframe for completing work
<input type="checkbox"/> Revise city ordinances/codes to encourage or require water efficient landscaping.	
<input type="checkbox"/> Revise city ordinance/codes to permit water reuse options, especially for non-potable purposes like irrigation, groundwater recharge, and industrial use.	

Strategy to reduce residential per capita demand	Timeframe for completing work
Check with plumbing authority to see if internal buildings reuse is permitted	
<input type="checkbox"/> Revise ordinances to limit irrigation. Describe the restricted irrigation plan:	
<input type="checkbox"/> Revise outdoor irrigation installations codes to require high efficiency systems (e.g. those with soil moisture sensors or programmable watering areas) in new installations or system replacements.	
<input checked="" type="checkbox"/> Make water system infrastructure improvements	Complete by 2022
<input type="checkbox"/> Offer free or reduced cost water use audits) for residential customers.	
<input type="checkbox"/> Implement a notification system to inform customers when water availability conditions change.	
<input type="checkbox"/> Provide rebates or incentives for installing water efficient appliances and/or fixtures indoors (e.g., low flow toilets, high efficiency dish washers and washing machines, showerhead and faucet aerators, water softeners, etc.)	
<input checked="" type="checkbox"/> Provide rebates or incentives to reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	Complete by 2000
<input type="checkbox"/> Identify supplemental Water Resources	
<input checked="" type="checkbox"/> Conduct audience-appropriate water conservation education and outreach.	ongoing
<input type="checkbox"/> Describe other plans	

Objective 3: Achieve at least a 1.5% per year water reduction for Institutional, Industrial, Commercial, and Agricultural GPCD over the next 10 years or a 15% reduction in ten years.

Complete Table 26 by checking which strategies you will used to continue reducing non-residential customer use demand and project a likely timeframe for completing each checked strategy (add rows for additional strategies).

Where possible, substitute recycled water used in one process for reuse in another. (For example, spent rinse water can often be reused in a cooling tower.) Keep in mind the true cost of water is the amount on the water bill PLUS the expenses to heat, cool, treat, pump, and dispose of/discharge the water. Don't just calculate the initial investment. Many conservation retrofits that appear to be prohibitively expensive are actually very cost-effective when amortized over the life of the equipment. Often reducing water use also saves electrical and other utility costs. Note: as of 2015, water reuse, and is not allowed by the state plumbing code, M.R. 4715 (a variance is needed). However several state agencies are addressing this issue.

Table 26. Strategies and timeframe to reduce institutional, commercial industrial, and agricultural and non-revenue use demand

Strategy to reduce total business, industry, agricultural demand	Timeframe for completing work
<input type="checkbox"/> Conduct a facility water use audit for both indoor	

Strategy to reduce total business, industry, agricultural demand	Timeframe for completing work
and outdoor use, including system components	
<input type="checkbox"/> Install enhanced meters capable of automated readings to detect spikes in consumption	
<input type="checkbox"/> Compare facility water use to related industry benchmarks, if available (e.g., meat processing, dairy, fruit and vegetable, beverage, textiles, paper/pulp, metals, technology, petroleum refining etc.),	
<input type="checkbox"/> Install water conservation fixtures and appliances or change processes to conserve water	
<input type="checkbox"/> Repair leaking system components (e.g., pipes, valves)	
<input type="checkbox"/> Investigate the reuse of reclaimed water (e.g., stormwater, wastewater effluent, process wastewater, etc.)	
X Reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	2022
<input type="checkbox"/> Train employees how to conserve water	
<input type="checkbox"/> Implement a notification system to inform non-residential customers when water availability conditions change.	
<input type="checkbox"/> [Rainwater catchment systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, industrial processes, water features, vehicle washing facilities, cooling tower makeup, and similar uses shall be approved by the commissioner. Proposed plumbing code 4714.1702.1 http://www.dli.mn.gov/PDF/docket/4714rule.pdf	
<input type="checkbox"/> Describe other plans:	

Objective 4: Achieve a Decreasing Trend in Total Per Capita Demand

Include as **Appendix 8** one graph showing total per capita water demand for each customer category (i.e., residential, institutional, commercial, industrial) from 2005-2014 and add the calculated/estimated linear trend for the next 10 years.

Describe the trend for each customer category; explain the reason(s) for the trends, and where trends are increasing.

Residential is expected to show a slowly declining trend as fixture replacement occurs and less water is used by irrigation systems. Commercial is in a similar situation. Industrial and institution are NA

Objective 5: Reduce Peak Day Demand so that the Ratio of Average Maximum day to the Average Day is less than 2.6

Is the ratio of average 2005-2014 maximum day demand to average 2005-2014 average day demand reported in Table 2 more than 2.6? X Yes No

Calculate a ten year average (2005 – 2014) of the ratio of maximum day demand to average day demand: 1.23 Max. Ave. Demand/.480 Ave. Daily Demand

The position of the DNR has been that a peak day/average day ratio that is above 2.6 for in summer indicates that the water being used for irrigation by the residents in a community is too large and that efforts should be made to reduce the peak day use by the community.

It should be noted that by reducing the peak day use, communities can also reduce the amount of infrastructure that is required to meet the peak day use. This infrastructure includes new wells, new water towers which can be costly items.

Objective 6: Implement a Conservation Water Rate Structure and/or a Uniform Rate Structure with a Water Conservation Program

Water Conservation Program

Municipal water suppliers serving over 1,000 people are required to adopt demand reduction measures that include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction. These measures must achieve demand reduction in ways that reduce water demand, water losses, peak water demands, and nonessential water uses. These measures must be approved before a community may request well construction approval from the Department of Health or before requesting an increase in water appropriations permit volume (*Minnesota Statutes*, section 103G.291, subd. 3 and 4). Rates should be adjusted on a regular basis to ensure that revenue of the system is adequate under reduced demand scenarios. If a municipal water supplier intends to use a Uniform Rate Structure, a community-wide Water Conservation Program that will achieve demand reduction must be provided.

Current Water Rates

Include a copy of the actual rate structure in **Appendix 9** or list current water rates including base/service fees and volume charges below.

Volume included in base rate or service charge: _____ gallons or ____ cubic feet ____ other

Frequency of billing: Monthly Bimonthly Quarterly Other:

Water Rate Evaluation Frequency: every year every ____ years no schedule

Date of last rate change: _____ 1/1/2016 _____

Table 27. Rate structures for each customer category (Select all that apply and add additional rows as needed)

Customer Category	Conservation Billing Strategies in Use	Conservation Neutral Billing Strategies in Use	Non-Conserving Billing Strategies in Use
Residential	<input checked="" type="checkbox"/> Monthly Billing <input checked="" type="checkbox"/> Increasing block rates (volume tiered rates) <input type="checkbox"/> Seasonal rates	<input type="checkbox"/> Uniform <input type="checkbox"/> Odd/Even day watering	<input type="checkbox"/> Service charge based on water volume <input type="checkbox"/> Declining block <input type="checkbox"/> Flat

Customer Category	Conservation Billing Strategies in Use	Conservation Neutral Billing Strategies in Use	Non-Conserving Billing Strategies in Use
	<input type="checkbox"/> Time of Use rates <input checked="" type="checkbox"/> Water bills reported in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess Use rates <input type="checkbox"/> Drought surcharge <input type="checkbox"/> Use water bill to provide comparisons <input checked="" type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)		<input type="checkbox"/> Other (describe)
Commercial/ Industrial/ Institutional	<input checked="" type="checkbox"/> Monthly Billing <input checked="" type="checkbox"/> Increasing block rates <input type="checkbox"/> Seasonal rates <input type="checkbox"/> Time of Use rates <input checked="" type="checkbox"/> Bill water use in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess Use rates <input type="checkbox"/> Drought surcharge <input type="checkbox"/> Use water bill to provide comparisons <input checked="" type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)	<input type="checkbox"/> Uniform	<input type="checkbox"/> Service charge based on water volume <input type="checkbox"/> Declining block <input type="checkbox"/> Flat <input type="checkbox"/> Other (describe)
<input type="checkbox"/> Other			

*** Rate Structures components that may promote water conservation:**

- **Monthly billing:** is encouraged to help people see their water usage so they can consider changing behavior.
- **Increasing block rates (also known as a tiered residential rate structure):** Typically, these have at least three tiers: should have at least three tiers.
 - The first tier is for the winter average water use.
 - The second tier is the year-round average use, which is lower than typical summer use. This rate should be set to cover the full cost of service.
 - The third tier should be above the average annual use and should be priced high enough to encourage conservation, as should any higher tiers. For this to be effective, the difference in block rates should be significant.
- **Seasonal rate:** higher rates in summer to reduce peak demands
- **Time of Use rates:** lower rates for off peak water use
- **Bill water use in gallons:** this allows customers to compare their use to average rates
- **Individualized goal rates:** typically used for industry, business or other large water users to promote water conservation if they keep within agreed upon goals. **Excess Use rates:** if water use goes above an agreed upon amount this higher rate is charged
- **Drought surcharge:** an extra fee is charged for guaranteed water use during drought
- **Use water bill to provide comparisons:** simple graphics comparing individual use over time or compare individual use to others.
- **Service charge or base fee that does not include a water volume** – a base charge or fee to cover universal city expenses that are not customer dependent and/or to provide minimal water at a lower rate (e.g., an amount less than the average residential per capita demand for the water supplier for the last 5 years)
- **Emergency rates** -A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These

higher rates can help to protect the city budgets during times of significantly less water usage.

****Conservation Neutral****

- **Uniform rate:** rate per unit used is the same regardless of the volume used
- **Odd/even day watering** –This approach reduces peak demand on a daily basis for system operation, but it does not reduce overall water use.

***** Non-Conserving *****

- **Service charge or base fee with water volume:** an amount of water larger than the average residential per capita demand for the water supplier for the last 5 years
- **Declining block rate:** the rate per unit used decreases as water use increases.
- **Flat rate:** one fee regardless of how much water is used (usually unmetered).

Provide justification for any conservation neutral or non-conserving rate structures. If intending to adopt a conservation rate structure, include the timeframe to do so:

Objective 7: Additional strategies to Reduce Water Use and Support Wellhead Protection Planning

Development and redevelopment projects can provide additional water conservation opportunities, such as the actions listed below. If a Uniform Rate Structure is in place, the water supplier must provide a Water Conservation Program that includes at least two of the actions listed below. Check those actions that you intent to implement within the next 10 years.

Table 28. Additional strategies to Reduce Water Use & Support Wellhead Protection

<input type="checkbox"/>	Participate in the GreenStep Cities Program, including implementation of at least one of the 20 “Best Practices” for water
<input type="checkbox"/>	Prepare a Master Plan for Smart Growth (compact urban growth that avoids sprawl)
<input type="checkbox"/>	Prepare a Comprehensive Open Space Plan (areas for parks, green spaces, natural areas)
<input type="checkbox"/>	Adopt a Water Use Restriction Ordinance (lawn irrigation, car washing, pools, etc.)
<input type="checkbox"/>	Adopt an Outdoor Lawn Irrigation Ordinance
<input type="checkbox"/>	Adopt a Private well Ordinance (private wells in a city must comply with water restrictions)
<input checked="" type="checkbox"/>	Implement a Stormwater Management Program
<input type="checkbox"/>	Adopt Non-Zoning Wetlands Ordinance (can further protect wetlands beyond state/federal laws-for vernal pools, buffer areas, restrictions on filling or alterations)
<input type="checkbox"/>	Adopt a Water Offset Program (primarily for new development or expansion)
<input type="checkbox"/>	Implement a Water Conservation Outreach Program
<input type="checkbox"/>	Hire a Water Conservation Coordinator (part-time)
<input type="checkbox"/>	Implement a Rebate program for water efficient appliances, fixtures, or outdoor water management

Other

Objective 8: Tracking Success: How will you track or measure success through the next ten years?

By Monitoring average GPC

Tip: The process to monitor demand reduction and/or a rate structure includes:

- a) The DNR District Hydrologist or Groundwater Appropriation Hydrologist will call or visit the community the first 1-3 years after the water supply plan is completed.
- b) They will discuss what activities the community is doing to conserve water and if they feel their actions are successful. The Water Supply Plan, Part 3 tables and responses will guide the discussion. For example, they will discuss efforts to reduce unaccounted for water loss if that is a problem, or go through Tables 33, 34 and 35 to discuss new initiatives.
- c) The city representative and the hydrologist will discuss total per capita water use, residential per capita water use, and business/industry use. They will note trends.
- d) They will also discuss options for improvement and/or collect case studies of success stories to share with other communities. One option may be to change the rate structure, but there are many other paths to successful water conservation.
- e) If appropriate, they will cooperatively develop a simple work plan for the next few years, targeting a couple areas where the city might focus efforts.

A. Regulation

Complete Table 29 by selecting which regulations are used to reduce demand and improve water efficiencies. Add additional rows as needed.

Copies of adopted regulations or proposed restrictions or should be included in **Appendix 10** (a list with hyperlinks is acceptable).

Table 29. Regulations for short-term reductions in demand and long-term improvements in water efficiencies

Regulations Utilized	When is it applied (in effect)?
<input type="checkbox"/> Rainfall sensors required on landscape irrigation systems	X Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water efficient plumbing fixtures required	<input type="checkbox"/> New Development <input type="checkbox"/> Replacement <input type="checkbox"/> Rebate Programs
<input type="checkbox"/> Critical/Emergency Water Deficiency ordinance	X Only during declared Emergencies
<input type="checkbox"/> Watering restriction requirements (time of day, allowable days, etc.)	X Odd/Even <input type="checkbox"/> 2 days/week <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water waste prohibited (for example, having a fine for irrigators spraying on the street)	<input type="checkbox"/> -Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Limitations on turf areas (requiring lots to have 10% - 25% of the space in natural areas)	<input type="checkbox"/> New Development <input type="checkbox"/> Shoreland/zoning

Regulations Utilized	When is it applied (in effect)?
<input type="checkbox"/> Soil preparation requirements (after construction, requiring topsoil to be applied to promote good root growth)	<input type="checkbox"/> Other <input type="checkbox"/> New Development <input type="checkbox"/> Construction Projects <input type="checkbox"/> Other
<input type="checkbox"/> Tree ratios (requiring a certain number of trees per square foot of lawn)	<input type="checkbox"/> New development <input type="checkbox"/> Shoreland/zoning <input type="checkbox"/> Other
<input type="checkbox"/> Permit to fill swimming pool and/or requiring pools to be covered (to prevent evaporation)	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Ordinances that permit stormwater irrigation, reuse of water, or other alternative water use (Note: be sure to check current plumbing codes for updates)	<input type="checkbox"/> Describe

B. Retrofitting Programs

Education and incentive programs aimed at replacing inefficient plumbing fixtures and appliances can help reduce per capita water use, as well as energy costs. It is recommended that municipal water suppliers develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and appliances. Some water suppliers have developed partnerships with organizations having similar conservation goals, such as electric or gas suppliers, to develop cooperative rebate and retrofit programs.

A study by the AWWA Research Foundation (Residential End Uses of Water, 1999) found that the average indoor water use for a non-conserving home is 69.3 gallons per capita per day (gpcd). The average indoor water use in a conserving home is 45.2 gpcd and most of the decrease in water use is related to water efficient plumbing fixtures and appliances that can reduce water, sewer and energy costs. In Minnesota, certain electric and gas providers are required (Minnesota Statute 216B.241) to fund programs that will conserve energy resources and some utilities have distributed water efficient showerheads to customers to help reduce energy demands required to supply hot water.

Retrofitting Programs

Complete Table 30 by checking which water uses are targeted, the outreach methods used, the measures used to identify success, and any participating partners.

Table 30. Retrofitting programs (Select all that apply)

Water Use Targets	Outreach Methods	Partners
X low flush toilets, <input type="checkbox"/> toilet leak tablets, X low flow showerheads, <input type="checkbox"/> faucet aerators;	X Education about <input type="checkbox"/> free distribution of <input type="checkbox"/> rebate for <input type="checkbox"/> other	X Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization
<input type="checkbox"/> X water conserving washing machines, <input type="checkbox"/> dish washers, <input type="checkbox"/> water softeners;	X Education about <input type="checkbox"/> free distribution of <input type="checkbox"/> rebate for <input type="checkbox"/> other	X Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization

Water Use Targets	Outreach Methods	Partners
<input type="checkbox"/> rain gardens, <input type="checkbox"/> rain barrels, <input type="checkbox"/> Native/drought tolerant landscaping, etc.	<input type="checkbox"/> Education about <input type="checkbox"/> free distribution of <input type="checkbox"/> rebate for <input type="checkbox"/> other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization

Briefly discuss measures of success from the above table (e.g. number of items distributed, dollar value of rebates, gallons of water conserved, etc.):

Reduced gallons per customer per day

C. Education and Information Programs

Customer education should take place in three different circumstances. First, customers should be provided information on how to conserve water and improve water use efficiencies. Second, information should be provided at appropriate times to address peak demands. Third, emergency notices and educational materials about how to reduce water use should be available for quick distribution during an emergency.

Proposed Education Programs

Complete Table 31 by selecting which methods are used to provide water conservation and information, including the frequency of program components. Select all that apply and add additional lines as needed.

Table 31. Current and Proposed Education Programs

Education Methods	General summary of topics	#/Year	Frequency
Billing inserts or tips printed on the actual bill	Ordinance irrigation requirements		<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Consumer Confidence Reports	Yearly as required		<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)	Irrigation restrictions		<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared Emergencies
Social media distribution (e.g., emails, Facebook, Twitter)	conservation		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Presentations to community groups			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Staff training			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Facility tours			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Displays and exhibits			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies

Education Methods	General summary of topics	#/Year	Frequency
Community news letters	Conservation		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Direct mailings (water audit/retrofit kits, showerheads, brochures)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Information kiosk at utility and public buildings			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Public Service Announcements			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Cable TV Programs	Conservation		<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Demonstration projects (landscaping or plumbing)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
K-12 Education programs (Project Wet, Drinking Water Institute, presentations)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Community Events (children's water festivals, environmental fairs)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Community education classes			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Water Week promotions			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Website (include address:)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during

Education Methods	General summary of topics	#/Year	Frequency
			declared Emergencies
Targeted efforts (large volume users, users with large increases)	Know the flow website Part of Anoka County permit training		<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Notices of ordinances			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
Emergency conservation notices	Irrigation limitations		<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared Emergencies
Other: Tiered rate increases	Increased irrigation cost		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies

Briefly discuss what future education and information activities your community is considering in the future:

We will contact customers with high water consumption variances by phone to alert them to potential problems



Part 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES

Minnesota Statute 473.859 requires WSPs to be completed for all local units of government in the seven-county Metropolitan Area as part of the local comprehensive planning process.

Much of the information in Parts 1-3 addresses water demand for the next 10 years. However, additional information is needed to address water demand through 2040, which will make the WSP consistent with the Metropolitan Land Use Planning Act, upon which the local comprehensive plans are based. This Part 4 provides guidance to complete the WSP in a way that addresses plans for water supply through 2040.

A. Water Demand Projections through 2040

Complete Table 7 in Part 1D by filling in information about long-term water demand projections through 2040. Total Community Population projections should be consistent with the community's system statement, which can be found on the Metropolitan Council's website and which was sent to the community in September 2015.

Projected Average Day, Maximum Day, and Annual Water Demands may either be calculated using the method outlined in *Appendix 2 of the 2015 Master Water Supply Plan* or by a method developed by the individual water supplier.

B. Potential Water Supply Issues

Complete Table 10 in Part 1E by providing information about the potential water supply issues in your community, including those that might occur due to 2040 projected water use.

The *Master Water Supply Plan* provides information about potential issues for your community in *Appendix 1 (Water Supply Profiles)*. This resource may be useful in completing Table 10.

You may document results of local work done to evaluate impact of planned uses by attaching a feasibility assessment or providing a citation and link to where the plan is available electronically.

C. Proposed Alternative Approaches to Meet Extended Water Demand Projections

Complete Table 12 in Part 1F with information about potential water supply infrastructure impacts (such as replacements, expansions or additions to wells/intakes, water storage and treatment capacity, distribution systems, and emergency interconnections) of extended plans for development and redevelopment, in 10-year increments through 2040. It may be useful to refer to information in the community's local Land Use Plan, if available.

Complete Table 14 in Part 1F by checking each approach your community is considering to meet future demand. For each approach your community is considering, provide information about the amount of future water demand to be met using that approach, the timeframe to implement the approach, potential

partners, and current understanding of the key benefits and challenges of the approach.

As challenges are being discussed, consider the need for: evaluation of geologic conditions (mapping, aquifer tests, modeling), identification of areas where domestic wells could be impacted, measurement and analysis of water levels & pumping rates, triggers & associated actions to protect water levels, etc.

D. Value-Added Water Supply Planning Efforts (Optional)

The following information is not required to be completed as part of the local water supply plan, but completing this can help strengthen source water protection throughout the region and help Metropolitan Council and partners in the region to better support local efforts.

Source Water Protection Strategies

Does a Drinking Water Supply Management Area for a neighboring public water supplier overlap your community? Yes No

If you answered no, skip this section. If you answered yes, please complete Table 32 with information about new water demand or land use planning-related local controls that are being considered to provide additional protection in this area.

Table 32. Local controls and schedule to protect Drinking Water Supply Management Areas

Local Control	Schedule to Implement	Potential Partners
<input type="checkbox"/> None at this time		
<input type="checkbox"/> Comprehensive planning that guides development in vulnerable drinking water supply management areas		
<input type="checkbox"/> Zoning overlay		
<input type="checkbox"/> Other:		

Technical assistance

From your community's perspective, what are the most important topics for the Metropolitan Council to address, guided by the region's Metropolitan Area Water Supply Advisory Committee and Technical Advisory Committee, as part of its ongoing water supply planning role?

- Coordination of state, regional and local water supply planning roles
- Regional water use goals
- Water use reporting standards
- Regional and sub-regional partnership opportunities

X Identifying and prioritizing data gaps and input for regional and sub-regional analyses

Others:

GLOSSARY

Agricultural/Irrigation Water Use - Water used for crop and non-crop irrigation, livestock watering, chemigation, golf course irrigation, landscape and athletic field irrigation.

Average Daily Demand - The total water pumped during the year divided by 365 days.

Calcareous Fen - Calcareous fens are rare and distinctive wetlands dependent on a constant supply of cold groundwater. Because they are dependent on groundwater and are one of the rarest natural communities in the United States, they are a protected resource in MN. Approximately 200 have been located in Minnesota. They may not be filled, drained or otherwise degraded.

Commercial/Institutional Water Use - Water used by motels, hotels, restaurants, office buildings, commercial facilities and institutions (both civilian and military). Consider maintaining separate institutional water use records for emergency planning and allocation purposes. Water used by multi-family dwellings, apartment buildings, senior housing complexes, and mobile home parks should be reported as Residential Water Use.

Commercial/Institutional/Industrial (C/I/I) Water Sold - The sum of water delivered for commercial/institutional or industrial purposes.

Conservation Rate Structure - A rate structure that encourages conservation and may include increasing block rates, seasonal rates, time of use rates, individualized goal rates, or excess use rates. If a conservation rate is applied to multifamily dwellings, the rate structure must consider each residential unit as an individual user. A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

Date of Maximum Daily Demand - The date of the maximum (highest) water demand. Typically this is a day in July or August.

Declining Rate Structure - Under a declining block rate structure, a consumer pays less per additional unit of water as usage increases. This rate structure does not promote water conservation.

Distribution System - Water distribution systems consist of an interconnected series of pipes, valves, storage facilities (water tanks, water towers, reservoirs), water purification facilities, pumping stations, flushing hydrants, and components that convey drinking water and meeting fire protection needs for cities, homes, schools, hospitals, businesses, industries and other facilities.

Flat Rate Structure - Flat fee rates do not vary by customer characteristics or water usage. This rate structure does not promote water conservation.

Industrial Water Use - Water used for thermonuclear power (electric utility generation) and other industrial use such as steel, chemical and allied products, paper and allied products, mining, and petroleum refining.

Low Flow Fixtures/Appliances - Plumbing fixtures and appliances that significantly reduce the amount of water released per use are labeled "low

flow”. These fixtures and appliances use just enough water to be effective, saving excess, clean drinking water that usually goes down the drain.

Maximum Daily Demand - The maximum (highest) amount of water used in one day.

Metered Residential Connections - The number of residential connections to the water system that have meters. For multifamily dwellings, report each residential unit as an individual user.

Percent Unmetered/Unaccounted For - Unaccounted for water use is the volume of water withdrawn from all sources minus the volume of water delivered. This value represents water “lost” by miscalculated water use due to inaccurate meters, water lost through leaks, or water that is used but unmetered or otherwise undocumented. Water used for public services such as hydrant flushing, ice skating rinks, and public swimming pools should be reported under the category “Water Supplier Services”.

Population Served - The number of people who are served by the community’s public water supply system. This includes the number of people in the community who are connected to the public water supply system, as well as people in neighboring communities who use water supplied by the community’s public water supply system. It should not include residents in the community who have private wells or get their water from neighboring water supply.

Residential Connections - The total number of residential connections to the water system. For multifamily dwellings, report each residential unit as an individual user.

Residential Per Capita Demand - The total residential water delivered during the year divided by the population served divided by 365 days.

Residential Water Use - Water used for normal household purposes such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Should include all water delivered to single family private residences, multi-family dwellings, apartment buildings, senior housing complexes, mobile home parks, etc.

Smart Meter - Smart meters can be used by municipalities or by individual homeowners. Smart metering generally indicates the presence of one or more of the following:

- Smart irrigation water meters are controllers that look at factors such as weather, soil, slope, etc. and adjust watering time up or down based on data. Smart controllers in a typical summer will reduce water use by 30%-50%. Just changing the spray nozzle to new efficient models can reduce water use by 40%.
- Smart Meters on customer premises that measure consumption during specific time periods and communicate it to the utility, often on a daily basis.
- A communication channel that permits the utility, at a minimum, to obtain meter reads on demand, to ascertain whether water has recently been flowing through the meter and onto the premises, and

to issue commands to the meter to perform specific tasks such as disconnecting or restricting water flow.

Total Connections - The number of connections to the public water supply system.

Total Per Capita Demand - The total amount of water withdrawn from all water supply sources during the year divided by the population served divided by 365 days.

Total Water Pumped - The cumulative amount of water withdrawn from all water supply sources during the year.

Total Water Delivered - The sum of residential, commercial, industrial, institutional, water supplier services, wholesale and other water delivered.

Ultimate (Full Build-Out) - Time period representing the community's estimated total amount and location of potential development, or when the community is fully built out at the final planned density.

Unaccounted (Non-revenue) Loss - See definitions for "percent unmetered/unaccounted for loss".

Uniform Rate Structure - A uniform rate structure charges the same price-per-unit for water usage beyond the fixed customer charge, which covers some fixed costs. The rate sends a price signal to the customer because the water bill will vary by usage. Uniform rates by class charge the same price-per-unit for all customers within a customer class (e.g. residential or non-residential). This price structure is generally considered less effective in encouraging water conservation.

Water Supplier Services - Water used for public services such as hydrant flushing, ice skating rinks, public swimming pools, city park irrigation, back-flushing at water treatment facilities, and/or other uses.

Water Used for Nonessential Purposes - Water used for lawn irrigation, golf course and park irrigation, car washes, ornamental fountains, and other non-essential uses.

Wholesale Deliveries - The amount of water delivered in bulk to other public water suppliers.

Acronyms and Initialisms

AWWA – American Water Works Association

C/I/I – Commercial/Institutional/Industrial

CIP – Capital Improvement Plan

GIS – Geographic Information System

GPCD – Gallons per capita per day

GWMA – Groundwater Management Area – North and East Metro, Straight River, Bonanza,

MDH – Minnesota Department of Health

MGD – Million gallons per day

MG – Million gallons

MGL – Maximum Contaminant Level

MnTAP – Minnesota Technical Assistance Program (University of Minnesota)

MPARS – MN/DNR Permitting and Reporting System (new electronic permitting system)

MRWA – Minnesota Rural Waters Association
SWP – Source Water Protection
WHP – Wellhead Protection

APPENDICES TO BE SUBMITTED BY THE WATER SUPPLIER

- Appendix 1: Well records and maintenance summaries – see Part 1C
- Appendix 2: Water level monitoring plan – see Part 1E
- Appendix 3: Water level graphs for each water supply well - see Part 1E
- Appendix 4: Capital Improvement Plan - see Part 1E
- Appendix 5: Emergency Telephone List – see Part 2C
- Appendix 6: Cooperative Agreements for Emergency Services – see Part 2C
- Appendix 7: Municipal Critical Water Deficiency Ordinance – see Part 2C
- Appendix 8: Graph showing annual per capita water demand for each customer category during the last ten-years – see Part 3 Objective 4
- Appendix 9: Water Rate Structure – see Part 3 Objective 6
- Appendix 10: Adopted or proposed regulations to reduce demand or improve water efficiency – see Part 3 Objective 7
- Appendix 11: Implementation Checklist – summary of all the actions that a community is doing, or proposes to do, including estimated implementation dates – see www.mndnr.gov/watersupplyplans
- Appendix 12: City of Circle Pines Ordinance 154 Regulating nonessential water usage upon critical water deficiency as authorized by Minn. Stat. §103G.291, subd. 1 and 2

APPENDIX A
Internal Notification List

Internal Notification List

City Administration

James Keinath, City Admin.
Chandra Peterson, Asst. City
Administrator

Day

763-231-2605
763-231-2611

Night

763-786-4414
651-765-6091

Cell

763-238-1218

City Shop Personnel

Rich Lavell
Tim Thompson
Alan Hammill
Jim Sorenson
Dave Corder

Day

763-784-6751
763-784-6751
763-784-6751
763-784-6751
763-784-6751

Night

763-792-0341
763-780-4525
651-674-4267
651-481-4925
952-926-2404

Cell

612-723-9623
612-723-4686
612-741-6964
612-716-6782
612-723-1733

Pager

612-534-2790

APPENDIX B
External Contact List

Agency Contact List

<u>Agency Name</u>	<u>Agency Service</u>	<u>Phone Number #1</u>	<u>Phone Number #2</u>
MN Duty Officer	Point of Contact	651-649-5451	1-800-422-0798
FBI-Mpls. Office		612-376-3200	
Environmental Protection Agency		1-800-424-8802	
Nat'l Capital Poison Control Center		1-800-222-1222	
Nat'l Weather Center- Hutchinson		952-361-6708	
Anoka County Civil Defense		911	763-427-1212

Local Emergency Response Contact List

<u>Agency Name</u>	<u>Agency Service</u>	<u>Phone Number #1</u>	<u>Phone Number #2</u>
Centennial Lakes Police		911	
Centennial Fire Dept.		911	
Qwest	Telephone		
Connexus	Power	763-323-2660	763-323-2600
Xcel Energy	Power	800-895-1999	
United Hospital	Medical	651-241-8755	651-241-8000
Mercy Hospital	Medical	763-236-7144	763-236-6000
City of Blaine	Interconnect Water	763-785-6165	763-785-6700
City of Lino Lakes	Interconnect Water	651-982-2440	651-982-2400
City of Shoreview	Interconnect Water	651-490-4660	651-784-3629
City of Lexington	Interconnect Water	763-784-6849	763-784-2792

APPENDIX C

Example Notification Forms

Example Boil Water Notice

WARNING BOIL YOUR WATER BEFORE USING

The City of Circle Pines water is contaminated with [fecal coliform/E. coli]

[Fecal coliform or E. coli] bacteria were found in the water supply on [November 5]. These bacteria can make you sick and are a particular concern for people with weakened immune systems.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a boil, let it boil for ten minutes, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and preparing food until further notice. Boiling kills bacteria and other organisms in the water.
- Fecal coliform and E. coli are bacteria whose presence indicates that the water may be contaminated with organisms that can cause illness in humans. These organisms can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.
- Organisms in drinking water are not the only cause of the symptoms above. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers.

What happened? What is being done?

The water distribution system was contaminated with fecal coliform. We are working with law enforcement and the public health department to investigate/resolve this issue. We are currently increasing the chlorination levels at the treatment plant as well as at the chlorine booster stations throughout the system. In addition, we are evaluating all available information and conducting tests to confirm the extent of the contamination of the system. We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within the next 48 hours.

For more information, please contact [Joseph Smith] at [555-555-6789]. General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1-800-426-4794 and [the Public Health Department Hotline at 1-800-123-4567].

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand.

Example Do Not Drink Notice

WARNING

DO NOT DRINK THE WATER

[Cyanide] found in the City of Circle Pines water supply on [October 10th]

Bottled water can be obtained at [Islington Station High School and Penn Road High School 24 hours per day].

What should I do?

- Do NOT drink the water.
- Symptoms associated with cyanide include dry mouth, itchy throat, headache, sweating, flushed skin, muscle rigidity, fever, confusion, lethargy, seizures, loss of consciousness, coma, and death.
- If you or someone you know exhibits any of these symptoms, immediately contact your health care provider. In addition, please notify the public health department at 1-800-123-4567.

What happened? What is being done?

On October 10th, the water distribution system was contaminated with cyanide. We are working with law enforcement and the public health department to investigate/resolve this issue. We have tested the water in various parts of the distribution system to verify the extent of the cyanide contamination. Based on these tests, we have isolated the portion of the system located north of Aspen Street and east of River Road. Everyone in this portion of the system **should not drink the water**. We have implemented additional security procedures to protect the system against further contamination. Additional information will be provided 24 hours/day on Channel 57- the local government television channel.

For more information, please contact [Joseph Smith] at [555-555-6789]. More information is also available from the EPA Safe Drinking Water Hotline at 1-800-426-4794 and [the Public Health Department Hotline at 1-800-123-4567].

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand.

This notice is being sent to you by [City of Rolling Brook Water System]. State Water System ID#[50005]. Date distributed: [October 10, 2003]

Example Do Not Use Notice

WARNING

DO NOT USE THE WATER

[Lyonelle Water System] water is contaminated with [parathion]

Bottled water can be obtained at [Murray High School and
Central High School 24 hours per day].

Parathion was found in the water supply on [November 14]. This chemical can make you sick and may result in death.

What should I do?

- **DO NOT USE THE WATER.** You should *not* use the water for drinking, making ice, brushing teeth, washing dishes, washing clothes, bathing, food preparation, or watering lawns. Bottled water should be used for all of the above necessities until further notice.
- Parathion is a chemical usually used to kill insects. It can cause constriction of the pupils, blurred vision, muscle and abdominal cramps, excessive salivation, sweating, nausea, vomiting, dizziness, headaches, convulsions, diarrhea, weakness, labored breathing, wheezing, and unconsciousness. Exposure can even lead to death.
- If you or someone you know exhibits any of these symptoms, immediately contact your health care provider. In addition, please notify the public health department at 1-800-123-4567.

What happened? What is being done?

The water distribution system was contaminated with parathion. We are working with law enforcement and the public health department to investigate/resolve this issue. We have tested the water in various parts of the distribution system to verify the extent of the parathion contamination. Based on these tests, we have isolated the portion of the system located north of Lincoln Avenue and east of Maple Road. Everyone in this portion of the system **should not use the water**. We have implemented additional security procedures to protect the system against further contamination. Additional information will be provided 24 hours/day on Channel 57- the local government television channel.

For more information, please contact [Joseph Smith] at [555-555-6789]. More information is also available from the EPA Safe Drinking Water Hotline at 1-800-426-4794 and [the Public Health Department Hotline at 1-800-321-4567].

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand.

This notice is being sent to you by [Lyonelle Water System]. State Water System ID# [90008]. Date distributed: [November 14, 2003]

APPENDIX D

Action Plans

Water System Contamination*

Threat Warning Stage

Threat Warning Received	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Notify appropriate supervisor • Record and document all information pertaining to the threat warning • Do not disturb site if the threat warning could be a possible crime scene • Return to normal operations if no further action is required (i.e., the threat warning can be explained) • Begin the "Threat Decision Process" if the threat warning cannot be explained
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Threat Decision Process Stage

Is the Threat Possible? (Stage 1)	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Notify local law enforcement • Notify State Drinking Water Primacy Agency • Evaluate threat warning and make decisions in consultation with State Drinking Water Primacy Agency and local law enforcement • Initiate basic precautionary measures: <ol style="list-style-type: none"> 1. Alert staff and personnel about threat warning 2. Prepare additional notification lists if the situation escalates to the "Is the Threat Credible?" stage
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If the threat is not possible, then return to normal operations. Otherwise, proceed to "Is the Threat Credible" stage.

Is the Threat Credible? (Stage 2)	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Activate notification and personnel safety portions of ERP • Evaluate whether the threat is credible in consultation with assisting agencies • Visually inspect physical evidence and determine whether there is a change in normal system operating parameters (i.e., chlorine residuals, turbidity, odor, color, pH, etc.) • Conduct actions and testing as recommended by monitoring and sampling experts
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If the threat is not credible, then return to normal operations. Otherwise, proceed to "Has the Threat been Confirmed" stage.

Has the Incident Been Confirmed? (Stage 3)	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Initiate full ERP activation • Follow State Incident Command System • Isolate portion of system or backflush • Shut down system if obvious or confirmed contamination warrants • Issue public notice and issue follow-up media press releases • Continue sampling and water monitoring • Assess need to remediate storage tanks, filters, sediment basins, solids handling, etc.
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Structural Damage/Physical Attack to Water System or Facility(ies)*

Threat Warning Stage

Threat Warning Received	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Notify appropriate supervisor • Record and document all information pertaining to the threat warning • Do not disturb site if the threat warning could be a possible crime scene • Return to normal operations if no further action is required (i.e., the threat warning can be explained) • Begin the "Threat Decision Process" if the threat warning cannot be explained
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Threat Decision Process Stage

Is the Threat Possible? (Stage 1)	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Notify local law enforcement • Notify State Drinking Water Primacy Agency • Evaluate threat warning and make decisions in consultation with State Drinking Water Primacy Agency and local law enforcement • Initiate basic precautionary measures: <ol style="list-style-type: none"> 1. Alert staff and personnel about threat warning 2. Heighten security at critical facilities 3. Prepare additional notification lists if the situation escalates to the "Is the Threat Credible?" stage
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If the threat is not possible, then return to normal operations. Otherwise, proceed to "Is the Threat Credible" stage.

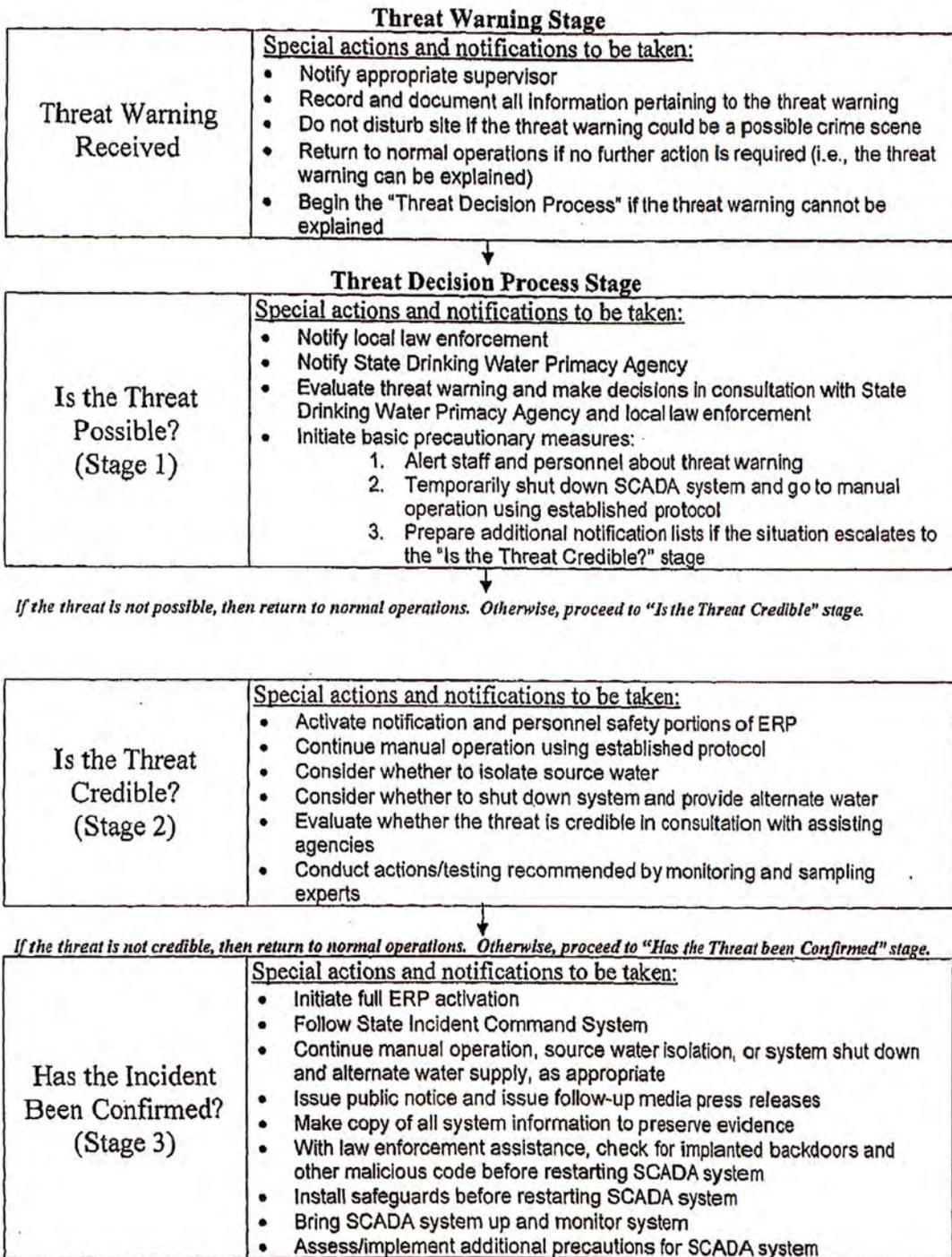
Is the Threat Credible? (Stage 2)	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Activate notification and personnel safety portions of ERP • Physically secure water system facilities • Evaluate whether the threat is credible in consultation with assisting agencies
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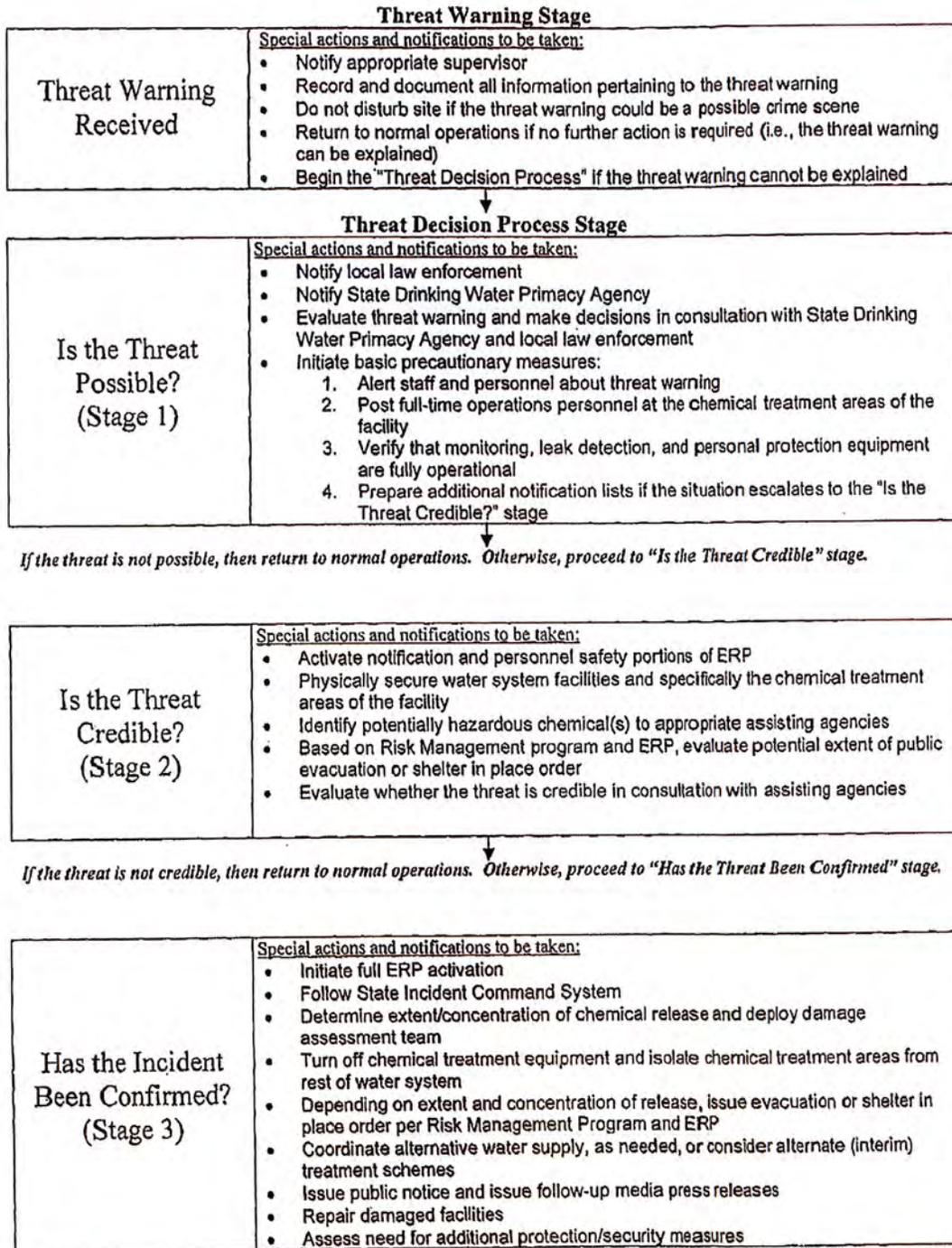
If the threat is not credible, then return to normal operations. Otherwise, proceed to "Has the Threat been Confirmed" stage.

Has the Incident Been Confirmed? (Stage 3)	<p><u>Special actions and notifications to be taken:</u></p> <ul style="list-style-type: none"> • Initiate full ERP activation • Follow State Incident Command System • Deploy damage assessment team • Isolate damaged facility from rest of water system • Coordinate alternative water supply, as needed, or consider alternate (interim) treatment schemes • Issue public notice and issue follow-up media press releases • Repair damaged facilities • Assess need for additional protection/security measures
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Cyber Attack on SCADA or Operational Computer System*



*Hazardous Chemical Release from Water System Facility(ies)**

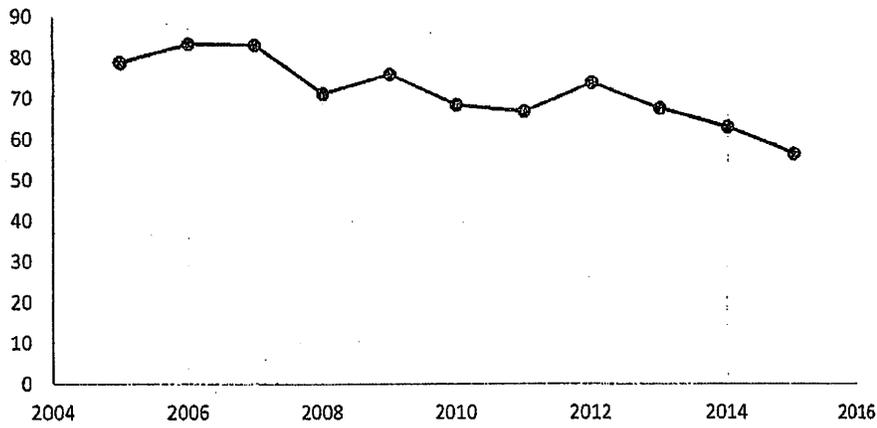


Appendix 8: Graph Annual per Capita Water Demand

Annual Per Capita Water Demand

Year	Residential Per Capita Demand (GPCD)
2005	78.8
2006	83.4
2007	83.1
2008	71.2
2009	76
2010	68.5
2011	67
2012	74.1
2013	67.7
2014	63.3
2015	56.7
Avg. 2010-2015	71.80

Residential Per Capita Demand (GPCD)



Appendix 9: Water Rate Structure

Centennial Utilities Rate & Fee Schedule

Water Rates and Fees

Residential Meter Size	Monthly Flat Rate	Effective Date
Less than 1.5" Without AMR	\$7.50 \$30.00	1/1/10 9/1/12
1.5 Meter	\$8.50	1/1/10
2" Meter	\$12.50	1/1/10
3" Meter	\$13.00	1/1/10
4" Meter	\$18.00	1/1/10
6" Meter	\$21.00	1/1/10

Volumetric Water Rates Based on Monthly Usage

RESIDENTIAL (with 1 meter)			APARTMENT/COMMERCIAL / TH 4+		
Tier	Rate per 1,000	Effective Date	Tier	Rate per 1,000	Effective Date
0 – 6,000	\$1.90	1/1/16	0 – 6,000	\$1.90	1/1/16
6,001 – 12,000	\$2.20	1/1/16	6,001 – 12,000	\$2.20	1/1/16
12,001 – 24,000	\$2.55	1/1/16	12,001 – 24,000	\$2.55	1/1/16
24,001+	\$3.45	1/1/16	24,001 +	\$3.45	1/1/16

Commercial Bulk Water Sales

\$800 deposit +\$25 per month fee+
\$2.00/1,000 Gallons

Water Reconnection Fee

Standard labor rates apply

Water Access Charge

\$1800 per residential equivalency (REC)

Water Access Charge-Filtration Plant

\$1450 per residential equivalency (REC)

New Residential Water Connection Charge

\$100 + 5.00 surcharge +WAC

New Commercial Water Connection Charge

\$100 + 5.00 surcharge +WAC

Connection to Residential Repair

\$100 + 5.00 surcharge

Connection to Commercial Repair

\$100 + 5.00 surcharge

Sewer Rates and Fees

RESIDENTIAL					APARTMENT/COMMERCIAL				
Tier	Monthly Flat Fee	Effective Date	Rate per 1,000	Effective Date	Tier	Per REC Monthly Fee	Effective Date	Rate Per 1,000	Effective Date
0 – 6,000	\$11.00	1/1/16	\$3.80	1/1/15	0 – 6,000	\$20.00	1/1/16	\$3.80	1/1/15
6,001 – 12,000	\$11.00	1/1/16	\$4.09	1/1/15	6,001 – 12,000	\$20.00	1/1/16	\$4.09	1/1/15
12,001 – 24,000	\$11.00	1/1/16	\$4.48	1/1/15	12,001 – 24,000	\$20.00	1/1/16	\$4.48	1/1/15
24,001 +	\$11.00	1/1/16	\$4.80	1/1/16	24,001 +	\$20.00	1/1/16	\$4.80	1/1/16

Local Sewer Access Charge (SAC)	\$1,500 per residential equivalency (REC)
New Residential Sewer Connection Charge	\$100 + 5.00 surcharge +SAC
New Commercial Sewer Connection Charge	\$100 + 5.00 surcharge +SAC
Connection to Residential Repair	\$100 + 5.00 surcharge
Connection to Commercial Repair	\$100 + 5.00 surcharge

Storm Sewer Rates and Fees

Rate Class	Monthly Flat Fee	Effective Date
Residential/Commercial	\$6.50/residential equivalency (REC)	1/1/15

Natural Gas Rates and Fees

Type of Service	Distribution Rates	Effective Date
Residential	.285/ccf*	1/1/13
Commercial/No Service	.255/ccf*	1/1/13
Commercial/Service	.285/ccf*	1/1/13
Small Volume Interruptible	Set Monthly	
Large Volume Interruptible	Set Monthly	
Municipal/State	.225/ccf	1/1/13

Meter Fees	Monthly Fee	Effective Date
Residential	\$10.50	1/1/16
Commercial		
Less than 800/ccf	\$20.00	1/1/13
800 up to 2,000/ccf	\$45.00	1/1/13
2,000 up to 5,000/ccf	\$75.00	1/1/13
5,000/ccf plus	\$100.00	1/1/13
BPI per unit	\$50.00	1/1/13
Small Volume Interruptible	\$125.00	1/1/13
Large Volume Interruptible	\$200.00	1/1/13
Municipal/State	\$18.00	1/1/13

*Customers who did not pay the per foot installation charge for a natural gas service line will pay \$4.285 for the first ccf and the listed rate for every ccf thereafter.

Natural gas operating funds in a deficit cash position on December 31 will have added to their distribution rate a surcharge of \$0.03/ccf for residential customers and \$0.01/ccf for all other customer types.

Franchise fees will be shown as a separate line item on the gas portion of the bill. The amount collected will be a direct pass through of the amount charged by the customers' city.

Purchased gas costs will be billed as a pass through cost, which rate is to be set monthly.

The rates listed for the above services are not designed to guarantee continuous service.

Installation Fees

Circle Pines - \$450 first 40 feet plastic lines, \$8 per foot over 40 feet
 Franchise Areas – Recovered in rates
 Frost Charges - \$10 per foot all areas

Labor Rate .5 Hour \$53.00 1 Hour 106.00
 There is a one-half hour minimum and charges will be billed to the nearest one-quarter hour.
 After hours: \$154.50/hour with a two-hour minimum (\$309.00) After hours rates apply from 9 p.m. to 7 a.m. Monday – Thursday, and after 3:30 p.m. Friday until 7 a.m. Monday.

Reconnection/Non-Delinquent .5 Hour Labor Charge

Disconnect/Reconnection Charge 10% of the balance that is due. After normal working hours (8 a.m. to 4:30 p.m.) 1 hour labor charge at above rates plus 10% of the balance that is due.

Garbage Rates – Effective January 1, 2016

Container Size	Monthly Rate	Senior Rate/Income Driven
35 Gallon	\$8.80	\$7.90
64 Gallon	\$12.45	\$11.20
96 Gallon	\$17.45	\$15.70

Garbage Disconnection fee \$15 see policy 17

Recycling Rate – Effective January 1, 2016

Monthly Rate \$3.25

Senior Monthly Rate \$2.90

Yard Waste

Seasonal Weekly Pickup \$85.00

Miscellaneous Charges

NSF Charge \$30

Revision: 01-2016
Effective: January 1, 2016

Appendix 10: Section 615 Regulating the Operation of Public Water System

610.20 Additional Connection Charge. Any person that does not connect to the municipal sanitary sewer system within 12 months after said sanitary sewer service is deemed available by action of the Utilities Commission, may be required to pay, in addition to all other charges enumerated above or by resolution of the Utilities Commission, the service connection charge imposed on the City by the Metropolitan Waste Control Commission, plus any additional charges set by the Utilities Commission.

SECTION 615 - REGULATING THE OPERATION OF PUBLIC WATER SYSTEM

615.01 Lawn Sprinkling Restrictions. The use of the municipal water system for lawn sprinkling and/or gardens shall be regulated as provided in this section. The sprinkling of lawns will be restricted to odd/even each year from June 1 through August 31. All properties with addresses that end with an odd number may be sprinkled only on odd numbered days, and properties with addresses that end with an even number may be sprinkled only on even numbered days. No sprinkling shall occur on any day between the hours of 10:00 AM and 7:00 PM. This section applies only to those individuals drawing water for sprinkling from the city supply.

615.02 Additional Restrictions. In the case of a severe shortage the City Administrator, subject to review of the Utilities Commission, is authorized to impose additional restrictions to provide for the safe operation of the municipal water supply.

615.03 Violation. No person shall cause water to be used in violation of the provisions of this Section.

SECTION 620 - SEWERS AND DRAINS

620.01 Definitions. Unless the context otherwise indicates, the following terms have the meanings stated:

Subd. 1 Sewage Works. All facilities for collecting, pumping, treating and disposing of sewage.

Subd. 2 Sewage. A combination of the water carried wastes from residences, business buildings, institutions, and industrial establishments, together with such ground, surface and storm waters as may be present.

Subd. 3 Sewer. A pipe or conduit for carrying sewage.

Subd. 4 Public Sewer. A sewer owned or controlled by public authority, and available for public use.

Subd. 5 Combined Sewer. A sewer receiving both surface runoff and sewage.

Subd. 6 Sanitary Sewer. A sewer which carries sewage and to which storm, surface and ground waters are excluded and not intentionally admitted.

Subd. 7 Industrial Wastes. Liquid wastes from industrial processes as distinct from sanitary sewage.

Subd. 8 Building Drain. The piping of a drainage system inside the walls of a building and within five (5) feet outside the inner face of the building wall which receives the discharge from soil, waste, and other drainage pipes inside the walls and conveys such discharge to the building sewer outside.

Subd. 9 Building Sewer. The extension of the building drain to the public sewer or other place of disposal.

Subd. 10 District. North Suburban Sanitary Sewer District, or where appropriate its Board of Trustees or an authorized representative or employee of the District.

Subd. 11 Municipality. Any city, village, town, district, or other governmental unit having powers of a municipality under law.

Subd. 12 Street. Highway, road, alley, or other public thoroughfare.

620.02 Use of Public Sewers Required.

Subd. 1 Sewage and Industrial Waste. It is unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner upon any public or private property within the District, or in any area under and

Appendix 11: Implementation Checklist

Implementation Checklist

Continue to enforce lawn sprinkling restrictions. City Code Section 615	Ongoing
Continue to replace water main as street construction projects continue	Ongoing, Every two years
Continue ongoing maintenance on wells, treatment plant and hydrants	Ongoing
Continue providing "know the flow" education program	Ongoing

Appendix 12: City of Circle Pines Ordinance 154 Regulating nonessential water usage upon critical water deficiency as authorized by Minn. Stat. §103G.291, subd. 1 and 2

CITY OF CIRCLE PINES
COUNTY OF ANOKA
STATE OF MINNESOTA

ORDINANCE NO. 154
(Second Series)

The City Council of the City of Circle Pines ordains:

SECTION 1. The City Council of Circle Pines hereby adds Section 616 Regulating Nonessential Water Usage Upon Critical Water Deficiency to the City Code, to read as follows:

Section 616-AN ORDINANCE regulating nonessential water usage upon critical water deficiency as authorized by Minn. Stat. § 103G.291, subd. 1 and 2.

616.01 Purpose.

This ordinance establishes water conservation restrictions; and the plan will be in effect at any time the governor declares by executive order a critical water deficiency, pursuant to Minnesota Statutes section 103G.291.

616.02 Definitions.

City Administrator means the person assigned duties pursuant pursuant to Minn. Stat. § 412.601 - 412.751

Department means the city water department.

Emergency means the declaration of a critical water deficiency by the governor.

Irrigation means the watering of shrubs, trees, sod, seeded areas, gardens, lawns, or any other outdoor vegetation, except outdoor vegetation utilized for agricultural purposes.

Notification to public means notification through local media, including interviews and issuance of news releases.

Public water supplier means the city or other entity that owns, manages, or operates a public water supply, as defined in Minn. Stat. § 144.382, subdivision 4.

Reclaimed water means water collected from rooftops, paved surfaces, or other collection devices and all water utilized more than once before re-entering the natural water cycle.

Water recirculation system means any system which enables a user to reuse water at least once prior to returning the water to the natural water cycle.

616.03 Application.

(a) This ordinance applies to all customers of public water suppliers who own or control water use on any premises.

(b) No person shall make, cause, use, or permit the use of water received from a public water supply for residential, commercial, industrial, governmental, or any other purpose in any manner contrary to any provision in this ordinance.

(c) Mandatory emergency conservation measures shall be implemented based upon the declaration of a critical water emergency by the governor.

616.04 Declaration of critical water deficiency.

Upon the declaration of a critical water deficiency by the governor, the public water supplier shall immediately post notice of the emergency declaration at the usual meeting place of the city council, or the official city bulletin board. The city shall provide notification to the public as quickly as possible or through established water supply plans emergency response plans or procedures.

616.05 Mandatory emergency water conservation measures.

Upon declaration of a water emergency and notification to the public, the following mandatory restrictions upon nonessential water use shall be enforced:

(1) Outdoor irrigation of yards, gardens, golf courses, parklands, and other non-agricultural land, except for those areas irrigated with reclaimed water, is prohibited.

(2) Washing or spraying of sidewalks, driveways, parking areas, tennis courts, patios, or other paved areas with water from any pressurized source, including garden hoses, except to alleviate immediate health or safety hazards, is prohibited.

(3) The outdoor use of any water-based play apparatus connected to a pressurized source is prohibited.

(4) Restaurants and other food service establishments are prohibited from serving water to their customers, unless water is specifically requested by the customer.

(5) Operation of outdoor misting systems used to cool public areas is prohibited.

(6) The filling of swimming pools, fountains, spas, or other exterior water features is prohibited.

(7) The washing of automobiles, trucks, trailers, and other types of mobile equipment is prohibited, except at facilities

equipped with wash water recirculation systems, and for vehicles requiring frequent washing to protect public health, safety, and welfare.

616.06 Variances.

The City Administrator or their designee, is authorized to grant variances to this ordinance where strict application of its provisions would result in serious hardship to a customer. A variance may be granted only for reasons involving health or safety. An applicant may appeal the denial of a variance within five (5) days of the decision by submitting a written appeal to the City Administrator. The City Council shall hear the appeal at the next City Council meeting. The decision of the City Council is final.

616.07 Violation.

(a) Violations shall be determined and cited by the City Administrator or his/her designee. A violator may appeal the citation within five (5) days of its issuance by submitting a written appeal to the City. The City Council shall hear the appeal at the next City Council meeting. The decision of the City Council is final. Violators may be granted an administrative waiver if evidence is provided that equipment failure was the cause of the violation. A letter from a qualified vendor or equipment invoice will be required to show proof of equipment failure.

(b) Upon discovery of a first violation, the violator shall be issued, either personally or by mail, a warning letter that sets forth the violation and which shall describe the remedy and fines for future violations.

(c) Upon subsequent violations at the same location, the violator shall be issued, either personally or by mail, a citation that sets forth the violation and shall describe the remedy.

Fines shall be added to the monthly water bill of the owner or current occupant of the premises where the violation occurred. The imposition of the fine shall in no way limit the right of the City to pursue other legal remedies.

616.08 Enforcement.

The City Administrator or his/her designee is authorized to designate city employees or law enforcement personnel to enforce the provisions of this ordinance.

616.09 Severability.

If any provision of this ordinance or the application of any provision to a particular situation is held to be invalid by a

Chapter 5: Parks & Trails

Introduction

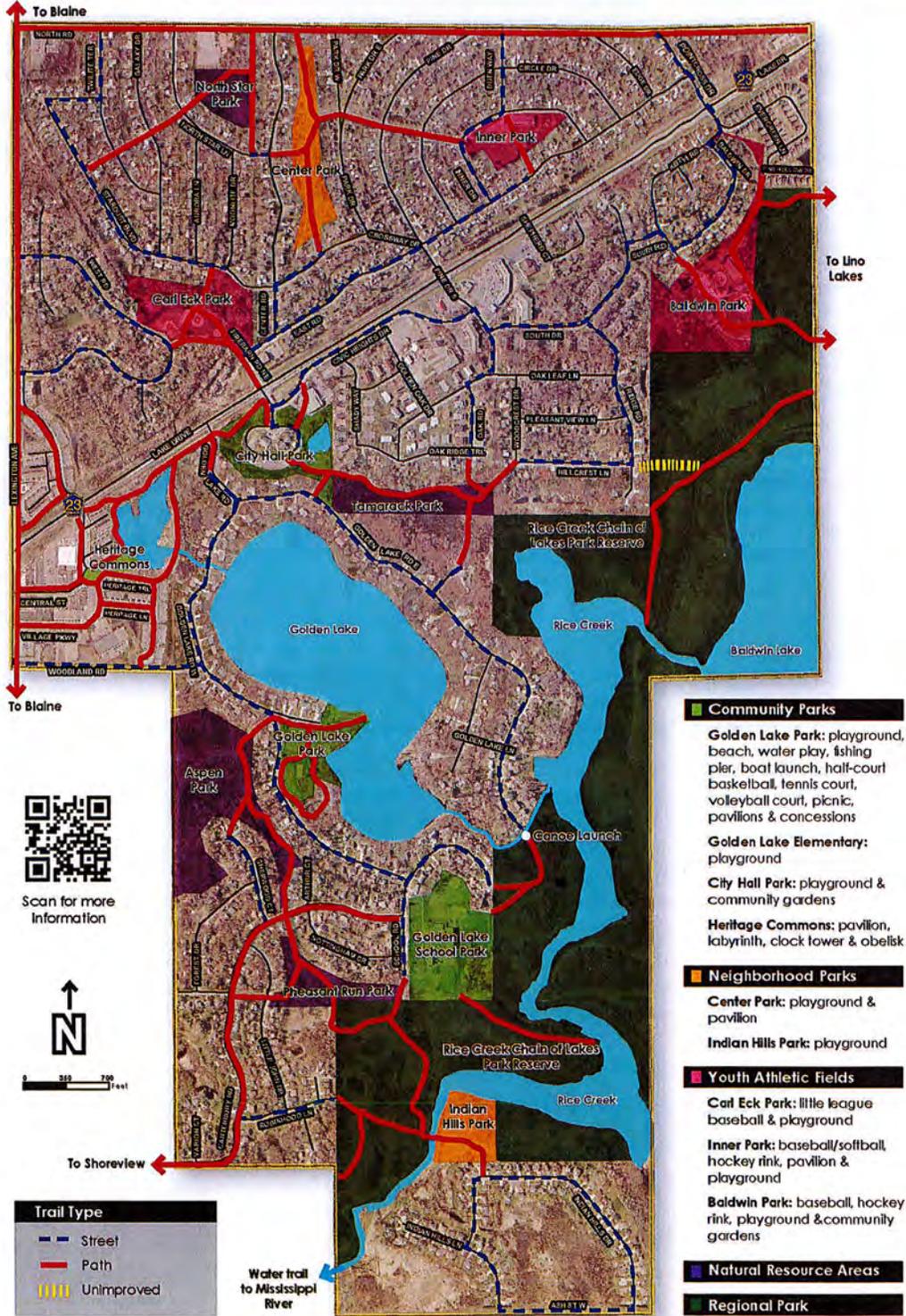
City of Circle Pines Park and Trail System

The City of Circle Pines anticipates very little population growth in the next 10-20 years. Circle Pines currently has a high number of parks located in the city. The city plans to continue our focus on updating and maintaining the existing parks and trails in the city.

The Circle Pines Parks and Trails map contained in this chapter illustrates the number of parks and trails in the city and the connections to the regional system.



PARKS & TRAILS MAP



The Parks & Trails Plan includes the following information:

1. Park Classifications
2. Park Inventory
3. Park & Trail Goals
4. Park Plans
 - a. Carl Eck Park
 - b. Inner Park
 - c. Center Park
 - d. Baldwin
 - e. Heritage Commons
 - f. City Hall Park
 - g. Indian Hill Park
 - h. Golden Lake Park
 - i. Aspen Park
 - j. Pheasant Run
 - k. North Star
 - l. Tamarack

1. Park Classifications

Neighborhood Park- remains the basic unit of the park system and serves as the recreational and social focus of the neighborhood. Focus is on informal active and passive recreation.

Community Park- Serve broader purpose than neighborhood parks. Focus is on meeting community-based recreational needs, as well as preserving unique landscapes and open spaces.

Natural- Lands set aside for preservation of significant natural resources, remnant landscapes, open spaces, and visual aesthetics/buffering.

Youth Athletic- Contains programmed athletic fields and associated facilities.

2. Park Inventory

	Center	Inner	Carl Eck	Indian Hills	Golden Lake	North Star	Baldwin	City Hall	Tamarack	Aspen	Heritage Commons	E Golden Lake	Golden Lake School
Basketball		■			■								
Playground	■	■	■	■	■		■	■					■
Tennis					■								
Volleyball					■								
Baseball		■	■				■						
Hockey		■					■						
Pavilion	■	■	■		■		■				■		
Trails	■	■	■	■	■	■	■	■	■	■	■	■	■
Fishing Pier					■								
Concessions			■		■								
Canoe Launch												■	
Pickleball		■											
Programmed Athletics		■	■				■						
Community Gardens							■	■					
Restrooms			■		■								
Natural Spaces	■	■	■	■	■	■	■	■	■	■	■	■	■

3. Park and Trail Goals

To provide city residents with parks, trails and natural areas for recreation uses. To encourage outdoor play, visual/physical diversion from the hard surfacing of urban development and to maintain the character, ambience, appearance, and history of the community.

Policy Statements

Parks, natural resource areas, and related recreation facilities may be acquired and developed by Circle Pines in accordance with the plan for the purpose of shaping community development and establishing an image of balance between urbanization, parks, trail corridors, and natural areas.

Acquisition of specific parcels of land for park uses shall generally be based on the following criteria:

- 1 Quality of the land
2. Natural resources
3. Suitability for desired uses as determined by the Park Board, City Council and Planning Commission.
4. Location

The City shall reserve the right to acquire land within all development areas for park and trail purposes. This includes land acquired through dedication and land acquired through direct purchase by the City.

Park development standards shall be based on the principle of providing and maintaining quality parks and facilities. The principles of universal access/barrier-free design shall generally be applied to all parks and trails.

A reasonable and ongoing effort shall be made to eliminate all physical barriers that deter individuals from using existing or future parks and recreations facilities. Barrier-free design shall generally be applied to all parks and trails.

Design and maintenance procedures shall be consistent with accepted industry standards and be clearly defined and adopted. Design and maintenance of all parks and recreation facilities shall emphasize high quality, user safety, and cost accountability.

The Park Board and staff shall review and comment on all planned development matters that impact park land and trail corridor dedication, acquisition, and development.

4. Park Plans

Carl Eck Park

Classification: Youth Athletic

Location: 2 Fire Bard Road (Fire Barn Road and West Road)

Approximate Size: 15.7 acres

Existing Site Features

1. (2) Little League fields with dugouts
2. Concession/restroom building
3. Children's play area with playground equipment
4. Access drive
5. Warm-up area/general use space
6. Parking area/Parking Lot
7. Wooded area along drainage ditch
8. Bridge across drainage ditch
9. Batting cage
10. Open space with scattered trees

Existing Conditions/Characteristics

The existing Little League fields are in good shape. The building is an aging structure but was built of durable materials. Improvements continue to be made around the playing fields. Concrete walks have also been added in recent years.

Basis for Park Need

As defined by the user groups, the demand for youth sports facilities is already high and continuing to grow. The existing fields are heavily programmed during the season of use, which runs from spring through mid-August. Carl Eck Park will continue to play a major role in providing much needed youth athletic facilities with the community. The concession building/restrooms are aging and is heavily used. Updating or replacement will be needed in the next 10 years.

Interrelationship with Other Parks

Carl Eck is viewed as a youth athletic complex that services the needs of the larger community.

Other development items include improving the:

Site aesthetics (landscaping, opening up vegetation along ditch, etc.) Continue to work to upgrade trail surfaces

Inner Park

Park Classification: Youth athletic

Location: 6 A Inner Drive (Inner Drive and Duen Way)

Approximate Size: 6 acres

Existing Site Features

1. Youth Baseball Field
2. Concessions/restroom building
3. Hockey rink
4. Basketball Court
5. Pickleball Courts
6. Children's play area with play equipment
7. Parking area
8. Open play space
9. Access trail (from Center Park)
10. Access trail (from neighborhood)
11. Small Pavilion

Existing Conditions/Characteristics

The existing ballfield is in good shape. The hockey rink/basketball/pickleball surface was built in 2016 and is in good shape. The building is aging but built of durable materials. Improvements have been made around the building (walks and paving) and within the park (picnic tables and benches). The play equipment is new and appears to meet current standards. The parking lot is paved. Site landscaping is limited.

Basis for Park Need

Inner Park serves an important function by providing:

- Open space within a developed residential area
- Facilities for youth activities
- Facilities for neighborhood use

The existing athletic facilities are heavily programmed during the season of use. These facilities, along with the others listed, also provide for neighborhood needs. The mix of facilities in conjunction with its location will continue to make this park a valuable component of the park system.

Interrelationship with Other Parks

Inner Park should be viewed as one component of an interrelated system of parks that service community needs, as well as offering limited community-wide athletic needs. Its primary use focus is active recreation.

Development Program

Since much of the available space has already been developed, future development should concentrate on enhancing what is already there and improving the aesthetic quality of the park. Continue to work to upgrade trail surfaces

Center Park

Park Classification: Neighborhood Park (with active recreation and social focus)

Location: Center Road and Crossway Drive

Approximate Size: 7.25 acres

Existing Site Features

1. Playground Structure
2. Internal trail system (hard surfaced)
3. General Use Turf Area
4. Residential properties surrounding park
5. Trail access point from neighborhood
6. Picnic shelter
7. Baseball/Kickball Backstop

Existing Conditions/Characteristics

Beyond the play equipment, the park offers a picnic shelter. Although the site is relatively level, the grade is often uneven and therefore difficult to use for even informal games. The landscaping is limited with little overall design character.

Basis for Park Need

The location of Center Park makes it of vital importance to servicing neighborhood needs. This park has the potential to provide:

- Neighborhood recreation facilities focused on non-structured individual and family activities
- A social center for neighborhood gatherings
- Open space for informal group play (with limited use for organized or programmed activities)

Interrelationship with Other Parks

Center Park should be viewed as the central focus of the interrelated system of parks that service community needs. Its primary function will be to service the neighborhood level recreation needs and the local social gatherings of the area.

Development Program

One or more of the following facilities/amenities would be appropriate for the future development of Center Park (in no particular order):

- Enhance landscaping
- Hardcourt area (basketball and hard surface outdoor games)
- Lawn games area and volleyball court (grass or sand)
- General amenities (benches, picnic tables, grills, bike rack, drinking fountain, etc.)
- Continue to work to upgrade trail surfaces

Baldwin Park

Park Classification: Youth athletic/neighborhood park

Location: Baldwin Drive and Keith Road

Approximate Size: 28.4 acres

Existing Site Features

1. Baseball field (275')
2. Concessions/restroom building
3. Hockey rink with lights
4. Children's play area with play equipment
5. Access drive
6. Parking area
7. Wetland
8. Lowland forested communities
9. Upland hardwoods
10. Community Gardens
11. Paved trails

Existing Conditions/Characteristics

The existing baseball field is in good shape. The building is a older structure and built of durable materials. Improvements continue to be made in the park, namely a new play structure and pavement around the building. The extensive wetlands provide an opportunity for natural resource preservation and passive recreation (although they preclude the development of additional active recreation facilities).

Basis for Park need

As defined by the user groups, the demand for youth sports facilities is already high and continuing to grow. The existing field is heavily programmed for Centennial Baseball use during the season, which runs from spring through mid-August. The hockey rink, skating area, play equipment and building serve both the adjacent neighborhood and general park users. The surrounding wetlands provide open space. The paved trails in the park connect the neighborhood and park users to the Anoka County Trail System providing miles of hard surface trails.

Interrelationship with Other Parks

Given its unique setting and past development, Baldwin Park serves a cross-section of community needs that cannot be categorized under only one classification. Although the primary land uses are already set, ample opportunity exists to improve the park's function within the park system. Since the park services are in the eastern half of the interrelated park system every effort should be made to maximize its potential.

Development Program

One or more of the following facilities/amenities would be appropriate for future development in Baldwin Park:

- Picnic areas with shelter
- Improved site aesthetics
- Continue to work to upgrade trail surfaces

Heritage Commons

Park Classification: Neighborhood Park

Location: Village Parkway

Approximate Size: Less than 1 acre

Existing Site Features

1. Pavilion
2. Clock Tower
3. Obelisk
4. Benches
5. History Walk
6. Mayor's Walk
7. Labyrinth
8. Pier

Existing Condition/Characteristic

Heritage Commons was built in the early 2000's. Most of the elements in the park are in good condition.

Basis for Park Need

Heritage Commons provides a community gathering space in a multifamily/business area. The park was built in the early 2000's and is beginning to show its age. Items of need

- Vegetation management program
- Enhanced landscaping
- Trail restoration

Development Programs.

- Continue to work to upgrade trail surfaces
- Improving the site aesthetics such as the landscape

Interrelationship with Other Parks

Heritage Commons role is to provide a historical connection to the community as well as a gathering place for residents in the service area.

City Hall Park

Park Classification: Community Park

Location: Civic Heights Circle

Approximate Size 14 acres

Existing Site Features

1. City Hall

2. Area Food Shelf
3. Library
4. Post Office
5. Community Garden
6. Parking
7. Entrance circle with ornamental garden feature
8. Drainage pond
9. Sidewalks
10. Playground structure
11. Integrated trail system

Existing Conditions/Characteristics

City Hall, other municipal buildings, and associated parking/drives consume much of the available site. The drainage pond serves as a storm water control basin, but offers ornamental possibilities. With the exception of the community vegetable garden, most of the remainder of the site is covered with turf grasses. Some high quality mature trees add to the overall appeal of the site. The ornamental character of the turn-around in front of the building begins to establish an ornamental character for the site which could be carried throughout more of the site.

Basis for Park Need

The park serves primarily as a community park that provides an outdoor space to compliment and enhance the current civic buildings. It also serves an important neighborhood park function for the west-central portion of this area. Adding ornamental landscape elements will also add to the general appearance of the central civic feature of the community.

Interrelationship with Other Parks

As a community park City Hall Park provides an outdoor space that aids in creating a positive community image and character. As a neighborhood park, it functions in conjunction with Baldwin Park to service the neighborhood-level recreation needs of this area. It also offsets the neighborhood park amenities removed from Tamarack Park.

Development Program

The development program focuses on two primary components:

- Fostering the “city center” concept by enhancing the outdoor spaces surrounding the existing buildings
- Providing recreation amenities to service the needs of the surrounding neighborhood

Some of the facilities/amenities that are in the plan for the future development of City Hall Park:

- Enhanced landscaping
- A small gathering space with the picnic shelter/structure for small community groups and neighborhood gatherings
- General amenities

- New play structure
- Asphalt trail

Indian Hills Park

Park Classification: Neighborhood Park

Location: Indian Hills Drive

Approximate Size: 5.4 acres

Existing Conditions/ Characteristics

The playground equipment is in good condition. The turf areas are in fair conditions. Natural vegetation surrounds the developed area. A gravel trail provides access to the park and to the regional trail system (which connects the park with other parks in the area).

Basis for Park Need

Indian Hills Park services the neighborhood park needs in an area of the community not readily serviced by other parks. It also provides access from the neighborhood to the regional trail system that runs through the Rice Creek Regional Park Reserve.

Interrelationship with Other Parks

The primary role of Indian Hills Park is to provide neighborhood level recreation facilities for this fairly isolated area of the city. It functions in conjunction with Golden Lake School and Golden Lake Park to ensure that neighborhood level recreation needs are met.

Development Program

In addition to the existing facilities, one or more of the following facilities/amenities would be appropriate for the future development of Indian Hills Park:

- Vegetation management program
- Enhanced landscaping
- Lawn games
- Sitting areas/overlooks
- General amenities

Golden Lake Park

Park Classification: Community Park

Location: West Golden Lake Road

Approximate Size: 6.8 acres

Existing Site Features

1. Parking lot
2. Canoe/boat landing
3. Picnic area
4. 2 Pavilions

5. 2 Playground structures
6. Water play structure
7. Swimming/beach area
8. Fishing dock
9. Tennis court
10. Sand volleyball
11. Half-court basketball
12. Concession building with restrooms
13. Wooded area
14. Fitness Station
15. Trails and sidewalks

Existing Conditions/Characteristics

The park is in good condition and was renovated in 2001.

Basis for Park Need

- Additional programming in the park.
- Outdoor shower
- Additional amenities
- Enhanced landscape

Interrelationship with Other Parks

As a community park Golden Lake Park serves the broader community by providing important special use facilities. At the neighborhood level, the park works in conjunction with the other parks in this area to provide a full pallet of recreational opportunities for nearby residents.

Aspen Park

Park Classification: Natural resource area

Location: West Golden Lake Road

Approximate size: 19.4 acres

Existing Site Features

1. Lowland/wetland area
2. Internal trail system
3. Upland woodlot
4. Trail connection to neighborhood

Existing Conditions/Characteristics

Aspen Park is largely a natural resource area with past development limited to a trail corridor that links the park with the surrounding neighborhood and park system. The existing woodlot exhibits some nice mature hardwoods. Unfortunately, invasive undergrowth in the woodlot plus elimination of the natural revitalization process (wild fires) is resulting in less diverse ecological systems which threatens the long-term vitality

of this natural resource area. Immediate vegetation management is needed to forestall any deterioration.

Basis for Park Need

Aspen Park provides needed open space as well as a natural resource amenity that enhances the overall character of the city. This park has the potential to provide:

Natural observation and interpretive area

A trail corridor that links the park developed areas with parks and nature areas

Aesthetic amenity that softens the hardscape features of the developed city.

Interrelationship with Other Parks

Aspen Park’s primary role is to preserve the historic natural resources of the city and provide a park trail corridor and a setting for nature interpretation.

Development Program

One or more of the following facilities/amenities would be appropriate for the future development of Aspen Park

- Natural resources management program
- Improved trail system that links the park with other parks and development areas
- Continue to work to upgrade trail surfaces
- Nature interpretive program
- Sitting areas, which could include small deck overlooks

Pheasant Run Park

Park Classification: Greenway with natural resource component

Location: Canterbury Road

Approximate Size: 11.0 acres

Existing Site Features

1. Lowland/wetland area
2. Internal trail system
3. Upland woodlot
4. Trail connection to neighborhood
5. Trail connection to Golden Lake School and regional park

Existing Conditions/Characteristics

The park is a greenway with a trail corridor that links the park with the surrounding neighborhood and park system. The existing woodlot exhibits some nice mature hardwoods. Unfortunately, as with the other parks, invasive undergrowth in the woodlot plus elimination of natural revitalization process is resulting in less diverse ecological systems which threatens the long-term vitality of this natural resource area. Vegetation management is needed to forestall any further deterioration.

Basis for Park Need

Pheasant Run Park provides a greenway open space and natural resource amenity that enhances the overall character of the city. This park has the potential to provide:

Nature observation and interpretive area

A trail corridor that links the park developed areas with parks and nature areas

Aesthetic amenity that softens the hardscape features of a developed city.

Interrelationship with Other Parks

Pheasant Run Park is considered a greenway because its primary function is to provide a park trail corridor. It also preserves the historic natural resources of the city and provides a setting for nature interpretation. It also offers some opportunity for community vegetable gardens.

Development Program

One or more of the following facilities/amenities would be appropriate for the future development of Aspen Park:

- Natural resources management program
- Improved trail system that links the park with other parks and development areas
- Continue to work to upgrade trail surfaces
- Sitting areas, which include small deck overlooks
- General amenities
- Community vegetable garden

North Star Park

Park Classification: Neighborhood Park

Location: North Star Lane and North Road

Approximate Size: 4.2 acres

Existing Site Features

1. Internal trail system (hard surface)
2. Woodlot (with extensive undergrowth)

Existing Conditions/Characteristics

Basis for Park Need

North Star Park provides much needed open space in a densely populated residential area.

This park has the potential to provide:

- Ornamental and natural vegetation

Interrelationship with Other Parks

North Star Park primary role is to augment the amenities provided in Center Park.

Whereas Center Park is a more active space and social gathering area, North Star would

be more passive in character and offer the neighborhood a quiet, less active park area. The trail system provides a route to school.

Development Program

Vegetation management program and enhanced landscaping. Continue to work to upgrade trail surfaces.

Tamarack Park

Park Classifications: Natural resource area

Location: Oak Ridge Trail and Oak Road

Approximate Size: 17.8 acres

Existing Site Features

1. Internal trail system
2. Woodlot (with extensive undergrowth)
3. Wetland/watershed

Existing Conditions/Characteristics

The park is largely a wooded/wetland natural resource area. Although the existing woodlot exhibits some nice mature hardwoods and transitional forests, excessive invasive undergrowth is threatening the long-term vitality of the natural resources in this park.

Basis for Park Need

Tamarack Park provides open space in a populated residential area as well as natural resource amenity that makes the city an appealing place to live.

This park has the potential to provide:

- Nature observation and interpretive area
- A trail corridor that links the park with developed areas and other parks
- Aesthetic amenity that softens the hardscape features of developed city

Interrelationship with Other Parks

Tamarack Park's primary role is to preserve the historic natural resources of the city and provide a park trail corridor and setting for nature interpretations.

Development Program

Implement a natural resource management program to preserve the site's natural vegetation.

One or more of the following facilities/amenities would be appropriate for the future development of Tamarack Park:

- Natural resources management program

- Nature interpretive program (signage, observation points)
- Sitting areas
- Continue to work to upgrade trail surfaces

Capital Improvement Plan

Description	Funding Source	Amount	Year
Baldwin Playground	Playground Equipment Fund	\$80,000	2025
Indian Hills Playground	Playground Equipment Fund	\$30,000	2027
Golden Lake EVO Playground Equipment #2	Playground Equipment Fund	\$75,000	2025
Aspen Park Trail Improvements/Broadwalk	General Fund	\$80,000	2025
Golden Lake Fishing Pier	General Fund	\$75,000	2026
Tamarack Park Trail Improvements	General Fund	\$80,000	2027
Carl Eck Building/Restrooms	General Fund	\$75,000	2030
Pavilion in City Hall Park	Unfunded/Donations	\$100,000	2030
Center Park Playground	Playground Equipment Fund	\$80,000	2032
Carl Eck Park Playground	Playground Equipment Fund	\$40,000	2033
Golden Lake Exercise Equipment	Playground Equipment Fund	\$15,000	2033
Golden Lake Playground Equipment Burke#1 & Water Play	Playground Equipment Fund	\$100,000	2034
City Hall Playground	Playground Equipment Fund	\$100,00	2039

Equipment			
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Rice Creek Chain of Lakes Regional Park Reserve

Circle Pines is in the fortunate position to be bisected by Rice Creek Chain of Lakes Regional Park Reserve, an exceptional regional park amenity that traverses almost the entire eastern municipal boundary. This park has the potential to provide residents with the multitude of recreational opportunities not otherwise available within the city. The park serves as a major natural resource area and recreational amenity to the community and plays a significant role within the city’s overall park and trail system plan.

The 5,500-acre Rice Creek Chain of Lakes Park Reserve is one of the largest in the seven-county metropolitan area and contains some of the most significant native wildlife habitat and water resources in the regional area.

The park offers a wide variety of amenities, including the Wargo Nature Center, Chomonix Golf Course, Rice Creek Campground, and Centerville Lake Beach. Other amenities include picnic areas, boat launch facilities, biking and hiking trails, playgrounds and a fishing pier. A unique partnership with the [YMCA Day Camp Heritage](#) offers another day camp opportunity for the community.

The Anoka County Parks Department is in the process of exploring the addition of single-track mountain bike trails to Rice Creek Chain of Lakes Park Reserve. While still in the planning phase, the proposed trail system would be a total of roughly 7-9 miles of single-track trails in 5 separate nodes within the park. The project would be completed in two phases over the course of a few years. Check out the map of the [proposed trails](#).

The city acknowledges the Council approved master plan boundaries of regional parks, park reserves, and special recreation features by guiding the properties with the land use of “park”.