SECTION 5: ENVIRONMENTAL RESOURCES/RESILIENCE

5.1 INTRODUCTION

The Environmental Resources component of the Comprehensive Plan is intended to guide the use of the physical environment, protect and enhance environmental quality and promote a greater understanding of the physical environment. Since all human activity takes place in the physical environment, the health of the community is dependent on the health and well-being of the environment.
Natural resources serve as neighborhood enhancements, economic development, image, beautification, parks, recreation and leisure enjoyment. Natural resources include but are not limited to trees, wildlife, wetlands, waterways, ponds, soils, and ground water.

Champlin is fortunate to have two major natural areas that were former wildlife management areas owned by the State, along with four other significant natural resource areas. The Mississippi River and the Three Rivers Park District, Elm Creek Park Reserve property provide the City with unique natural amenities uncommon to many other communities. Further, the Elm Creek, Oxbow Park and Galloway Park have a combination of wild and cultivated Minnesota native plants and pollinator friendly landscapes, established trees used by wildlife and public waters which the City has committed significant resources to improving.

Champlin has existing land uses including agricultural, commercial and residential development throughout the City. As the City develops and redevelops it will
work to improve the natural environment through repair and preservation of natural features. Community growth will be balanced with environmental improvements and protection through development projects that recognize and spotlight environmental features, such as the Mississippi River, Elm Creek, Mill Pond, lakes, wetlands and woodlands through good design. The City will analyze an entire development and the purpose of a resource and allow encroachments when there is minimal damage and overall benefit.

ENVIRONMENTAL SOURCES/RESILIENCE GUIDING PRINCIPLES

Protect and Enhance Open Space and the Natural Environment

- Promote the use of "green" technology and sustainable development
- Protect and improve our water resources and woodlands
- Facilitate open space preservation
- Respect the natural environment while managing growth
- Explore opportunities to connect with the Mississippi River and the Champlin Mill Pond

5.2 NATURAL RESOURCES

Several environmental features make the City of Champlin unique. The development and protection of these environmental characteristics is important for the future of the City.

OPEN SPACE

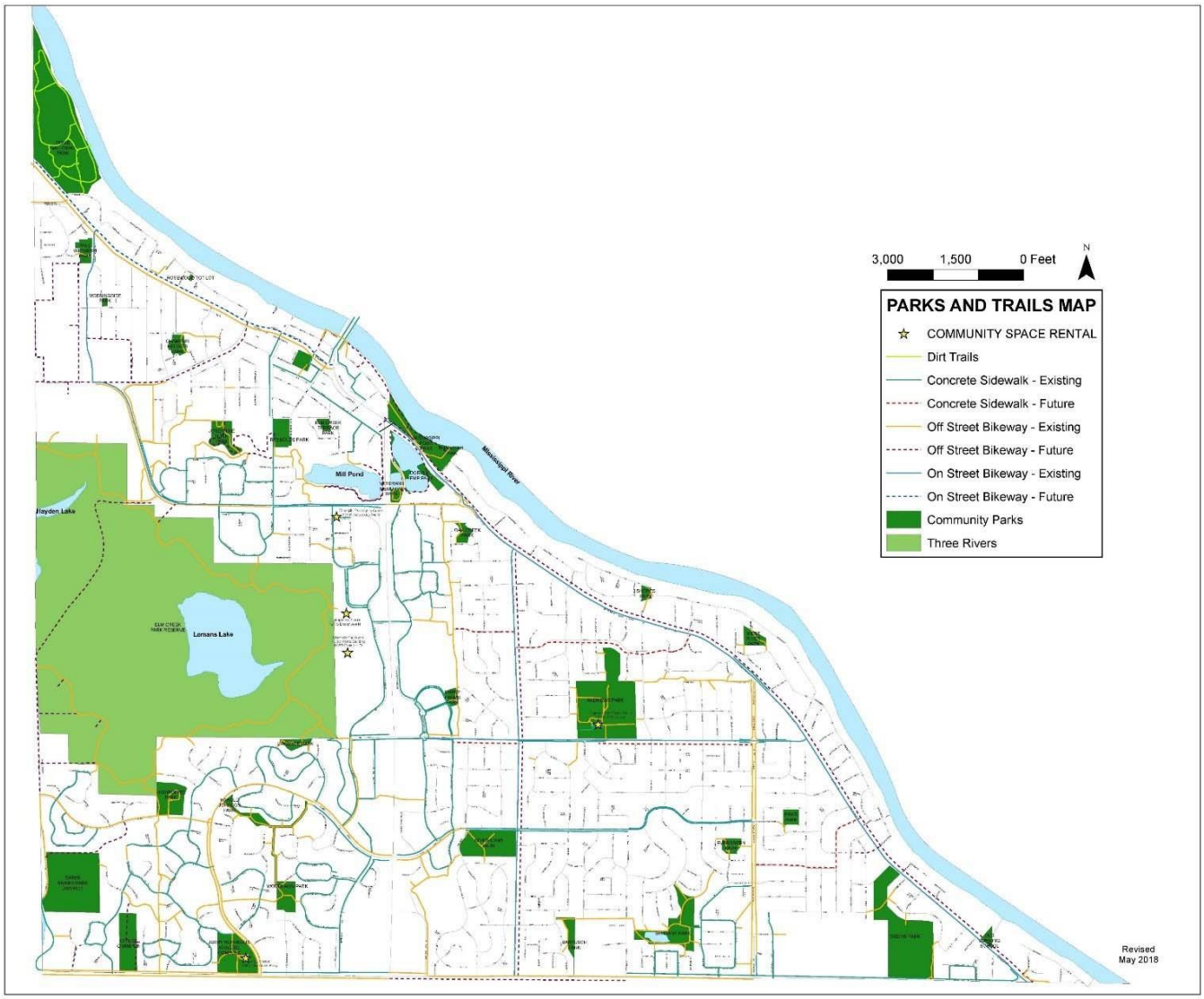
Champlin contains nearly 1,200 acres of parks and open space (23 percent of total land area). These open spaces are well-distributed throughout the City (see Figure 5.1). The preservation of open space areas is important to the diversity of Champlin's environment. The Elm Creek Park Reserve, Oxbow Park, Galloway Park, and numerous sump lots provide natural settings for wildlife and vegetation growth. Natural open spaces provide for passive recreation and aesthetic beauty.

As the City develops open spaces with prairie consideration should be given to planting pollinator friendly plants. The treatment and/or removal of diseased trees and removal of invasive species is also part of the City's open space management objective.

The Three Rivers Park District, managed Elm Creek Park Reserve, in Champlin is a significant community amenity. Three Rivers Park District governs the use of the Park Reserve. It is important for the City to protect the Reserve through the regulation of uses abutting it. Access from Champlin is important for the residents; however, the number of access points is limited to protect the natural features of the Park Reserve.

Oxbow Park and Oxbow Creek are important natural features to Champlin. Combined with the City's prairie restoration program, this area provides a unique educational opportunity for residents of Champlin and students within the Anoka- Hennepin School District. Along with the environmental benefit of the park, the area also serves as the storm water outlet for a large portion of southeastern Champlin and northeastern Brooklyn Park.

Figure 5.1: Parks and Open Space Map



Open Space Management Policies

1. Champlin has adequate and well-distributed parks and open spaces. Per the Parks, Recreation and Trails Plan, no additional open space is needed.
2. Coordinate and collaborate with Three Rivers Park District to allow for the continued use of the Elm Creek Park Reserve by the residents of Champlin.
3. Regulate development of property adjacent to the natural open spaces through the zoning ordinance and via the Planned Unit Development (PUD) process.

4. Monitor the border areas between development and open space to ensure that no dumping of material occurs that may damage the environment of the areas.
5. Enhance open space areas through planting of prairie grass, pollinator plants and natural/native vegetation.
6. Remove and/or treat diseased trees and remove invasive species.

FOREST AND WOODLANDS

Trees conserve energy, clean the air, protect rivers and streams and provide a home for wildlife. The City of Champlin's woodlands line the Mississippi River shore, diminishing as they stretch to the southeast. Champlin's primary woodland areas border the City's other two natural watercourses – Elm Creek and Oxbow Creek – appearing more sporadically in clusters around the south side of Lemans Lake. Figure 4.2 depicts the Minnesota Land Cover Classification for Champlin.

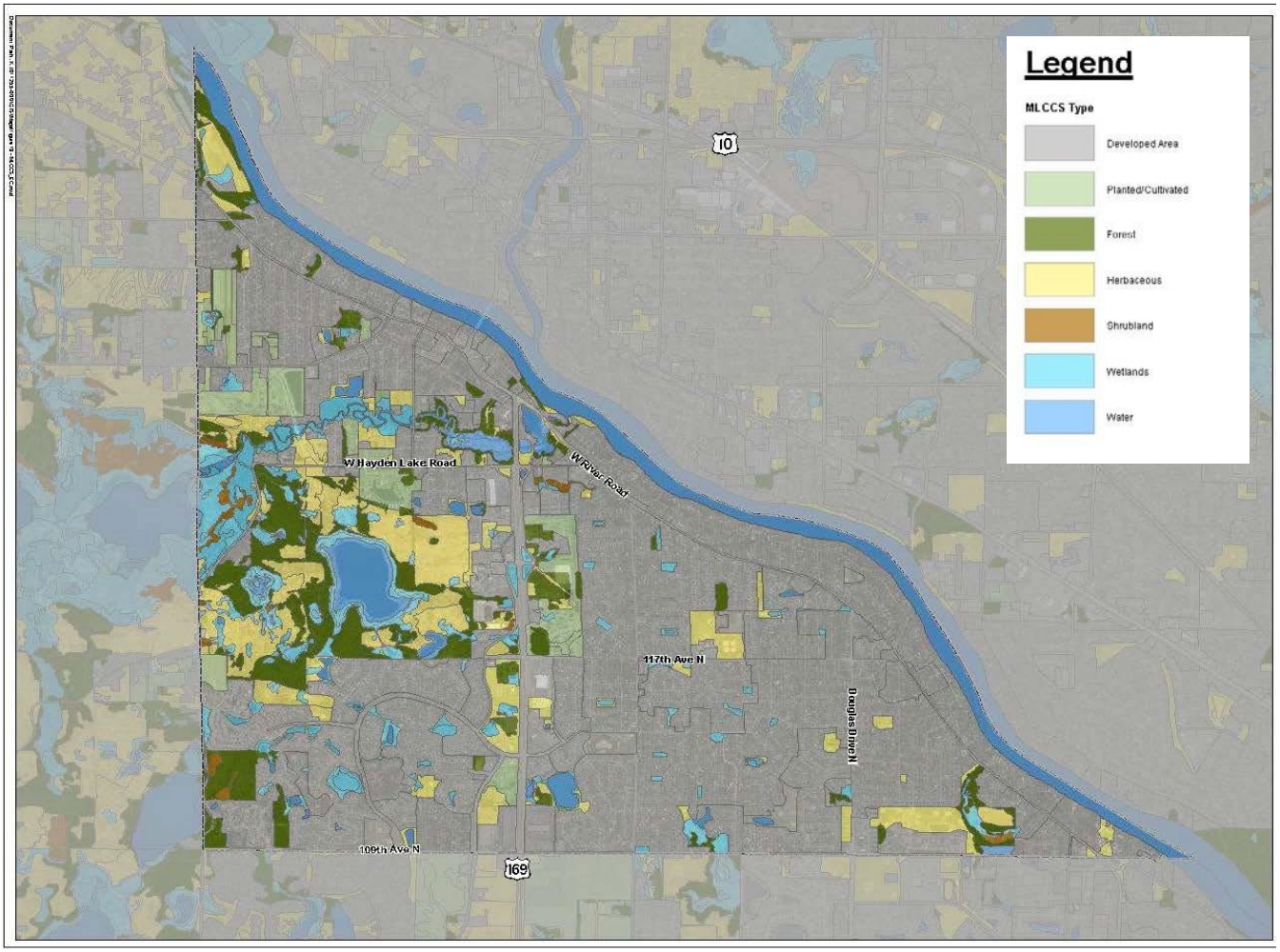
The concern for protecting woodlands extends beyond the recreational and aesthetic benefits. Woodlands moderate climatic conditions, such as high winds and flooding and thereby assist in protecting the watershed from siltation and erosion. In addition, the ground within a woodland area can act as a filter to recharge groundwater reservoirs. The trees act as a natural air filter while moderating temperature extremes.

In some instances, ease of design and reduced construction costs may lead to clear-cutting and leveling sites for home construction. In existing wooded areas, where it is desirable to preserve as much of the woodland ecology as possible, cluster development should be encouraged and plats designed to minimize tree removal.

Although woodlands are subject to the potential threat of urban development, experts have recognized that disease, natural disasters and an aging tree population must be considered as threats to tree loss. With the spread of Emerald Ash Borer, Dutch Elm Disease and Oak Wilt, there is concern of losing natural stands of trees. Buckthorn causes the diminishing of native trees and should be removed. To reduce the effects of tree disease, the City of Champlin will encourage the planting of a wide variety of tree species with a specific focus

on trees native to Champlin.

Figure 5.2: Land Cover Classification Map



Forest and Woodland Management Policies

1. During public and private construction, the removal of trees should be limited with replanting required where tree removal is in excess of established maximums.
2. Subdivision regulations shall require identification of existing trees and trees to be removed with priority on maintaining a variety of trees and trees native to Minnesota. Tree replacement plans should include a variety of types of trees with a focus on trees native to Minnesota.
3. Cluster developments should be encouraged in areas containing forests or woodlands to preserve the maximum number of trees and trees identified as having a high value.
4. Clear cutting of trees shall be prohibited with limited exception granted exclusively by permit.

5. Continued tree planting for residential, commercial and industrial projects shall be required with a focus on planting a variety of trees and trees native to Minnesota.
6. Encourage the replacement of trees lost to disease with the planting of a variety of trees, with an emphasis on trees native to Champlin.
7. Implement the disease and invasive species control plan to minimize the loss of existing trees.
8. Increase the public land and boulevard planting programs.

WATER RESOURCES

Preservation of the water resources within and adjacent to the City of Champlin takes on many dimensions. Champlin's water resources do not end with the actual water surfaces such as the Mississippi River, Elm Creek or Oxbow Creek; it includes the land that surrounds the resources (shorelands), natural low areas that often times contain aquatic vegetation and water (wetlands), non-surface water (groundwater), areas that contain seasonal water or event water (floodplains) and man-made water courses (drainage swales and storm sewers). Because of the interconnection among the variety of water resources, it is important to preserve them all.

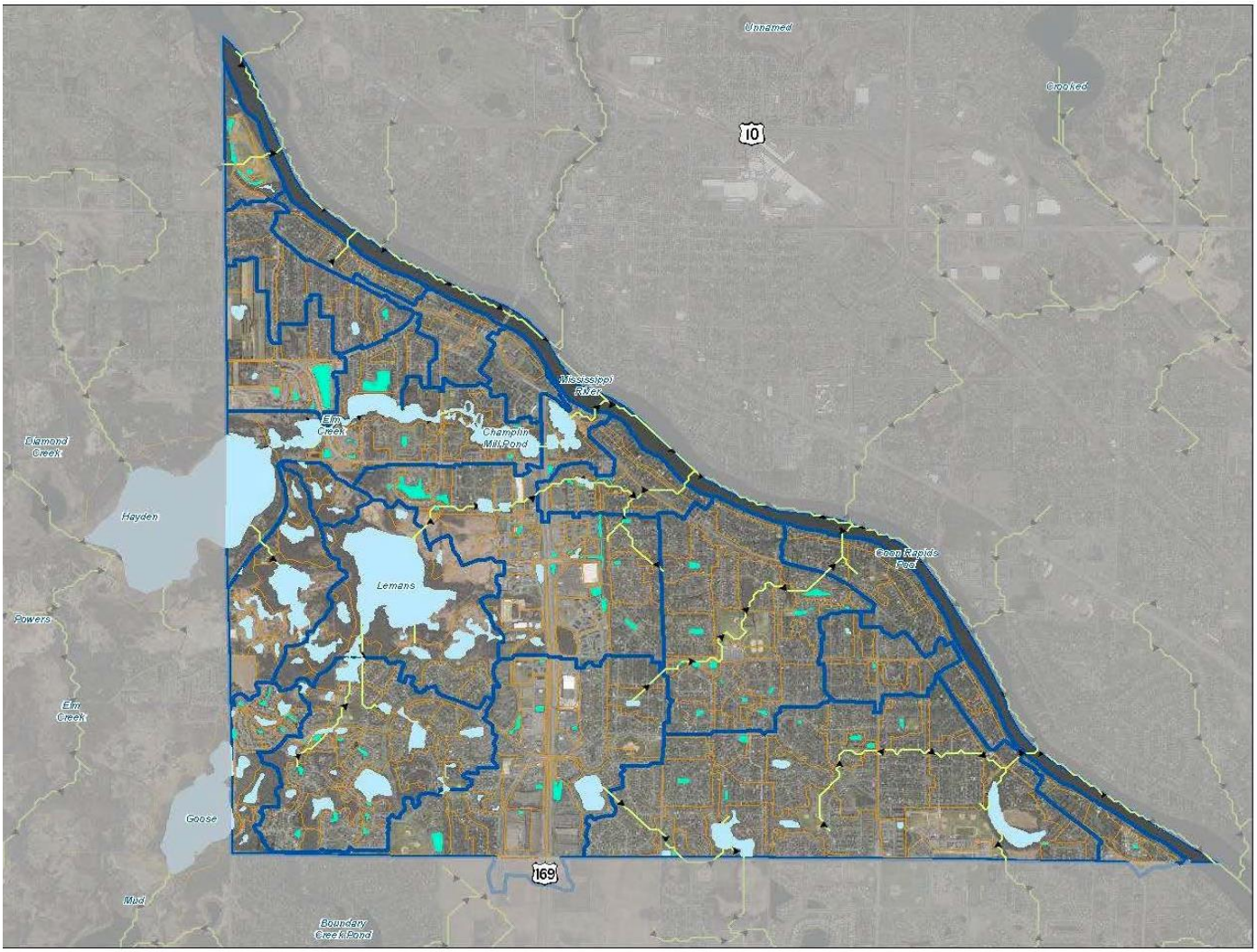
The City has developed a Surface Water Management Plan (attached as **Appendix A**). This Plan protects water resources and is a required plan by regulating agencies including the BWSR Bureau of Water and Soil Resources, Elm Creek Watershed and West Mississippi Watershed.

<u>Natural Watercourse</u>

A natural watercourse is a channel for water movement, such as creeks, streams or rivers. The City of Champlin contains three major natural watercourses that provide natural enhancement to the community, natural preserves and storm

water protection. The primary watercourse is the Mississippi River and the other two are Elm Creek and Oxbow Creek, both of which flow to the Mississippi River.

Figure 5.3: Surface Water Drainage District Map



The Mississippi River is by far the most important natural watercourse in Champlin. Not only does it provide an amenity and recreational feature not found in many metropolitan communities, it is the main water body for all storm water. Both watersheds in Champlin; Elm Creek and West Mississippi, outlet to the Mississippi River. Because of this, it is important to protect and preserve the Mississippi River water flow. In protecting the Mississippi River, it is important to preserve the banks and outlets.

The Elm Creek is located in the northwest part of Champlin and runs from the western boundary to the Mississippi River. It is part of a large watershed including: Champlin, Dayton, Maple Grove, Corcoran, Plymouth and Medina. The Elm Creek travels through the Mill Pond and then into the Mississippi River. Elm Creek is associated with a large amount of open space providing vegetated open space adjacent to the water. The City has invested significant resources in improving the streambank and water quality of the Elm Creek. As development continues to move west, it will be important to protect the Creek with building setbacks, natural open space dedications, housing clusters, National Urban Runoff Program (NURP) ponds and Infiltration Basins.

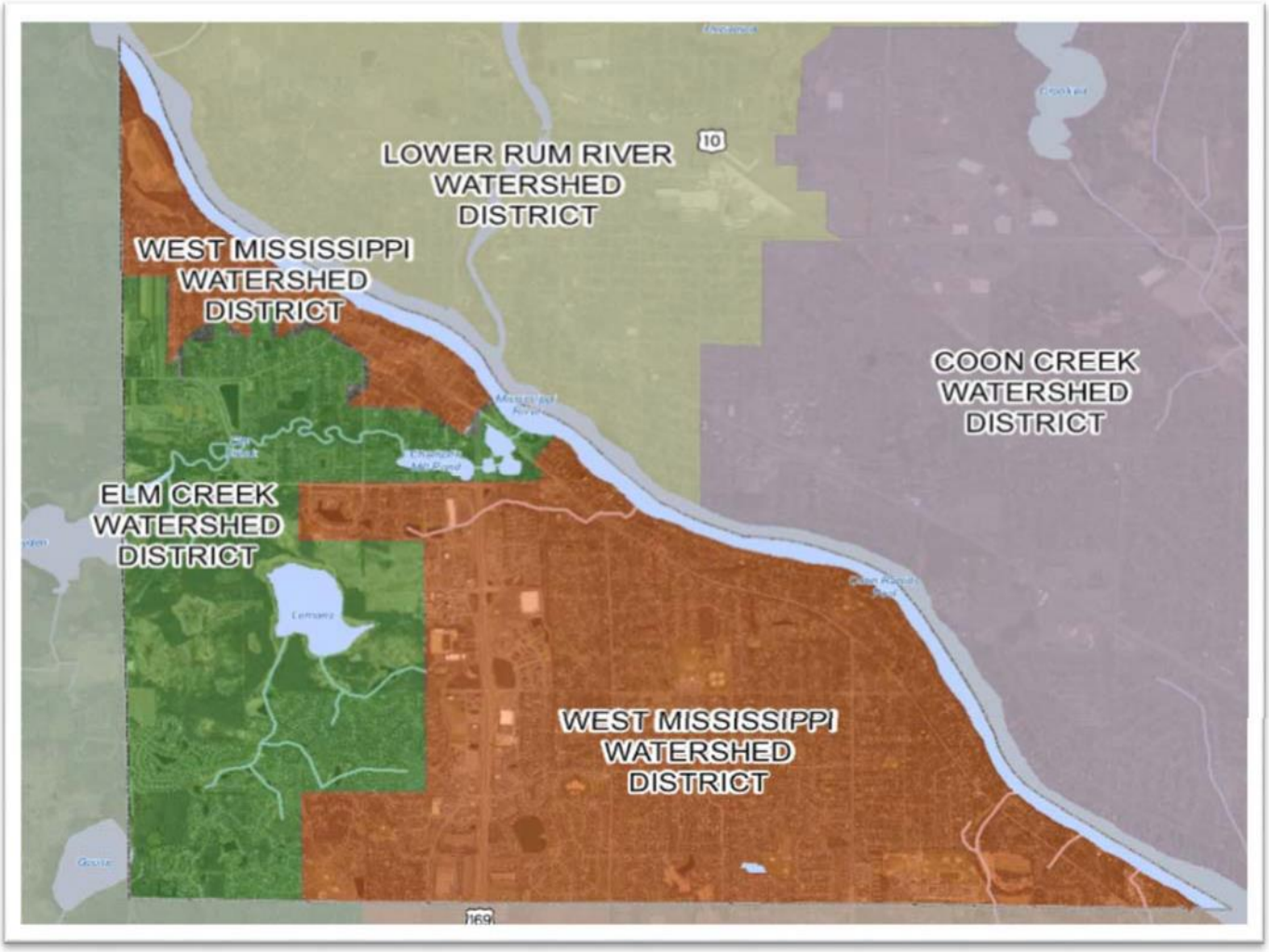
Elm Creek Bridge at Josephine Nunn Park

Oxbow Creek, located in the southeastern part of Champlin, is a natural watercourse that runs from Champlin's southern border to the Mississippi River. A majority of the Creek is located within the Oxbow Nature Park. Oxbow Park provides a natural setting for the Creek. Oxbow Creek is part of Champlin's storm water system creating the need to preserve the entire watercourse in the future to allow for the proper flow to the Mississippi River. With storm water runoff in the area increasing, there may be a need to better define the watercourse to protect the natural environment and development surrounding it.

The Mississippi River, as it flows through the Twin Cities Area, is exciting because of the contrast in both natural and man-made features. From a shallow stream, scattered with sand bars and sandy banks, to a commercially navigable river with rock bluffs; from rural open space to commercial and industrial developments; and from residential subdivisions to heavily wooded natural areas; the varied uses and features dictate the need for the State Critical Area designation of the Mississippi River corridor. The portion of the Mississippi River running through

the Cities of Champlin, Anoka, Dayton and Ramsey represent the northern most reach of the Critical Area.

Figure 5.4: Watershed District Boundaries



The City's Surface Water Management Plan requirements are guided by Champlin's StormWater Management Guidelines/ordinances and Watershed Districts/State Agency rules.

The Surface Water Management Plan addresses:

- Flood Prevention
- Water Quality Improvement
- Promote Ground Water Recharge
- Preservation of Lakes and Streams
- Reduction of Erosion and Sedimentation
- Protect and Enhance Fish and Wildlife Habitat

Water Resources / Water Protection Strategies

- Implementation of Storm Water Guidelines for Water Quality
- Improved Native Buffer Requirements
- Ground Water Recharge through Infiltration
- Improved Monitoring Program
- Capital Improvements for Water Quality
- Education of Public through Projects and ERC initiatives Progress towards meeting goals for Pollutant Load Reduction

Shoreland

The Minnesota Municipal Shoreland Regulations apply to all lands within 300 feet of the ordinary high-water mark of rivers and creeks and 1,000 feet of lakes. The City of Champlin has two areas the Elm Creek and Mill Pond which are subject to these rules. The regulations have created three shoreland categories, each with separate development standards. Shoreland property in Champlin has been designated General Development. The City is committed to working with the DNR and the Elm Creek Watershed District to apply all shoreland regulations that are determined appropriate for the Elm Creek and Mill Pond.

2018 Mill Pond Restoration

Water Quality Projects

1. Mill Pond Shoreline and Aquatic Habitat Restoration 2017
2. Elm Creek Dam 2016
3. Elm Creek Phase I 2012-13 (Jo Nunn Park)
4. Independence Raingarden 2017
5. Storm Water Asset Management Program (SWAMP) 2018

To protect the Mississippi River, the Mississippi River Corridor Critical Area Plan outlines the need for land use controls (lot size, setbacks, density, building heights, public access, re-evaluation of land use and site review standards), including the protection of natural vegetation and river banks.

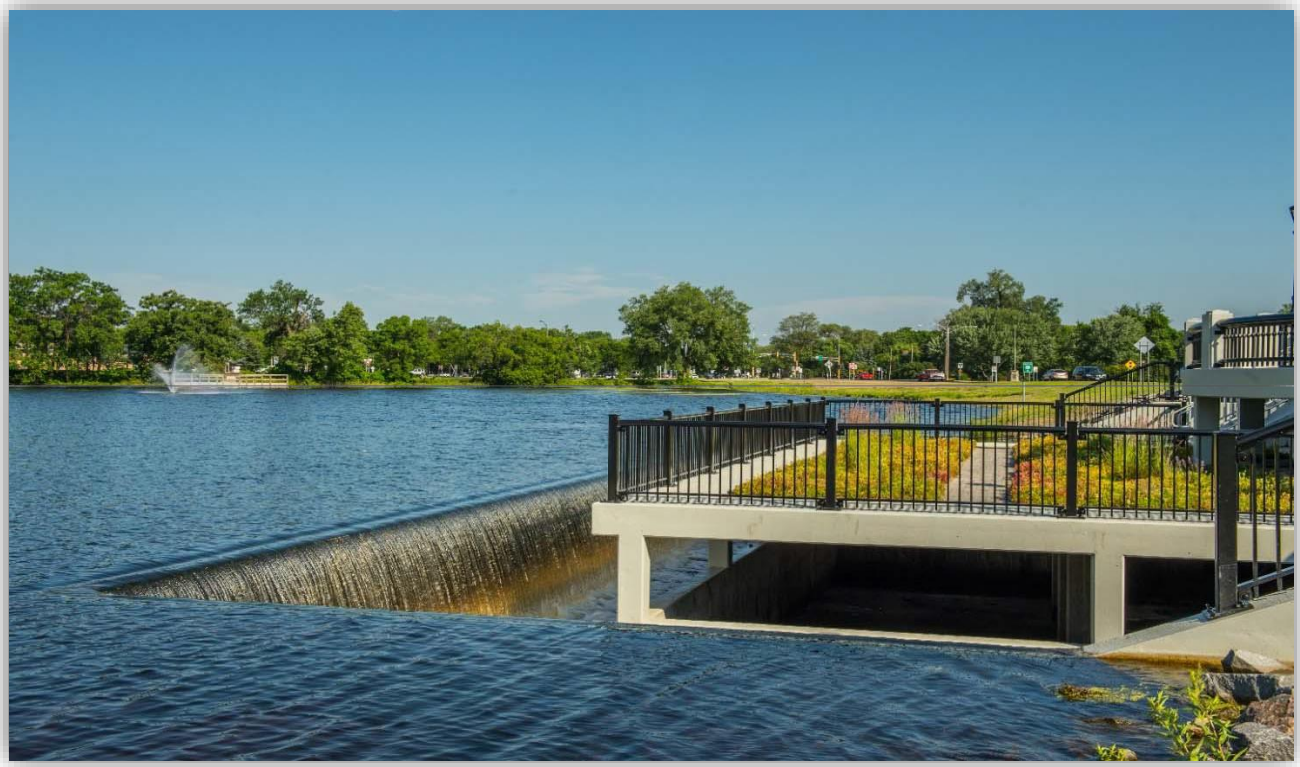
ERC Programs: Earth Day Cleanup - Recycling Programs -Grants - Farmers Market and Special Events - Natural Resource Speakers

Education: Mill Pond Citizen Science Projects - Elm Creek Dam /Mill Pond Information Boards - Raingarden Workshops- City Newsletter Articles

Floodplain

The State of Minnesota adopted the Flood Plain Management Act in 1969. The Act requires all local units of government to adopt, enforce and administer a Flood Plain Ordinance. The Flood Plain Act was in response to the financial and personal losses resulting from floods. In order to stop the continued escalation of public costs related to flooding, the emphasis in Flood Plain Management was shifted from flood controls (dikes, channelization, etc.) to regulatory controls (zoning and subdivision regulations). The regulatory approach establishes guidelines requiring that part of the flood plain, which is more susceptible to flooding (floodway), be left in a natural state or developed under intense restrictions. In the less susceptible parts (flood fringe), a broader range of land use activities can be permitted.

There are two areas subject to flooding in Champlin. Along Elm Creek, there is a floodway and flood fringe extending south of the present creek channel toward the Mississippi River. In February of 2018, FEMA revised the flood plain boundaries removing approximately 60 acres from the flood hazard area. These revisions were made possible by the reconstruction of the Elm Creek Dam constructed in 2016. The Mississippi River also has small areas designated floodway and flood fringe, the most sizable being in the northwest stretch of the River.



Elm Creek Dam

Wetlands

Wetlands are governed by the Wetland Conservation Act of 1991(WCA). Local Governing Units (LGUs) are required to administrate the rules. The intent of the WCA is to promote not net loss of wetlands.

Wetlands are low lying areas dominated by hydrophytic vegetation or covered with shallow or intermittent waters. Swamps, marshes, bogs and other low lying areas are wetlands, and may occur as part of a river, stream, drainage way or as a low area of upland. Wetlands serve as floodwater storage and retention areas, nutrient assimilation, sediment entrapment, ground water recharge, low flow augmentation, aesthetics and recreation, shoreland anchoring and erosion control.

Because of the number of uses of wetlands and the growing concern regarding the loss of wetlands throughout the State, the legislature adopted the 1991 Wetland Conservation Act. The intent of the Act is a net increase in the number of Minnesota wetlands. The implementation strategy is to preserve wetlands

through avoidance or the replacement of wetlands as required by the Wetland Conservation Act.

The City of Champlin contains wetlands that have been published by the US Fish and Wildlife Service. Wetlands and Lakes are shown on the DNR Public Waters/wetland inventory map. Also, in 2009 the City of Champlin completed a Functional Assessment of Wetland with in the City. This assessment was utilized by the by West Mississippi Water Management Commission in developing their Wetland Management Plan.

The City prepared a wetland inventory in 2009. There are two existing wetland inventories on hand including the National Wetland Inventory (NWI) and the Protected Waters Inventory (DNR).

The size and location of wetlands are important in determining the value in maintaining water quality, minimizing flood damage and preserving natural habitat.

- Habitat Restoration
- Water Quality Improvement
- Public Education
- Public Access and Recreation
- Meeting Regulatory Requirements

Groundwater

The City has an active ground water protection plan. The water supply plan is contained in Section 7.

Water Preservation Policies

1. The City adopted Storm Water Management Design Guidelines to meet NPDES II requirements.
2. Prepared an inventory of wetland areas in the City.

3. Encourage the maintenance of the natural environment of the River and encourage uses, which will not be a cause of deterioration of this natural environment.
4. Preserve adequate area for impoundment of flood waters in the flood plain.
5. Consider adopting the DNR's state shoreland regulations.
6. Continue to enforce the floodplain restrictions.
7. Require riverfront land use activity to preserve and enhance the River corridor area.
8. Protect resources through enforcement of existing legislation, new regulations and design guidelines.
9. Create development and improvement design guidelines to achieve the vision articulated in the Plan.
10. Require the extensive use of plant materials on riverfront areas to control erosion.
11. Natural watercourses shall be maintained to handle storm water runoff.
12. Preserve and manage the use of wetlands and major aquifer recharge areas to insure the continued performance of their natural functions.
13. Preserve natural drainage ways and recharge areas to insure the continued performance of their natural functions.
14. Subdivision regulations shall require protection of natural watercourses should meet minimum standards established by the DNR.
15. Comprehensive storm water drainage plans shall be completed prior to urban development.
16. Review developments as to their effects on the groundwater and prohibit development that will adversely affect it.

SOIL PRESERVATION

When land is designated for a particular use, it is essential that consideration be given to the limitations of various soil types. Soils vary greatly in composition, and this variation in soil properties impacts its productive capacity, it ability to support heavy loads and its ability to hold shape after excavation.

The Natural Resources Conservation Service has mapped and classified the soils of Hennepin County. The information is published in the Hennepin County Soil Survey. These soil classifications have been categorized according to suitability for urban development and can provide the following information:

1. Suitability of soils for intensive residential, commercial, industrial, recreation or agricultural land uses; and
2. Suitability of soils for building foundations.

Soil conditions that impact development are classified as slight, moderate and severe. Slight means that the soil conditions are minor and can be easily corrected. Moderate indicates that the soil conditions are limiting; but with proper design and planning limitation can be corrected for the intended use. Severe indicates that soil properties are not suitable for development and corrective measures require soil reclamation, intensive maintenance and/or special design.

Within Champlin, there are several areas containing severe soil limitations for urban development. According to the Hennepin County Soil Survey, the major problems are erosion of slopes with gradients that exceed 18 percent and high ground water levels.

Soil Preservation Policies

1. Developers shall follow the adopted NPDES II Rules and City Storm Water Guidelines.
2. Encourage residential and agricultural soil management practices that minimize siltation and pollution of rivers, lakes and streams.
3. Soil survey information shall be used as a basis for determining appropriate land use and building design.
4. Grading, filling and any topographical alteration shall not be permitted without a permit from the City.

SLOPE PRESERVATION

Regulating development on hillsides has not been a major concern of the northern suburbs of the Metropolitan Area due to the availability of flat land. The slopes, soil, vegetation and underlying geological formation of hillsides determine their susceptibility to erosion. Removal of vegetation from slops alters soil stability and increases erosion and siltation. Erosion is also caused by rain, wave action, and changes in the water elevation.

Champlin contains a few areas that are considered to have steep slopes. The Mississippi River bank, particularly in the north part of the City, and slopes of property in the southwest part of the City. Erosion is of special concern along the Mississippi River bank as some properties are experiencing problems aggravated by periods of high water and motorboat wakes.

It is necessary to identify slopes subject to erosion. Poorly designed or hillside

developments frequently result in a substantial cost to the public. Development standards are necessary to minimize this problem. Slopes prone to severe erosion should be protected by requiring developers to obtain a permit prior to any construction, grading or filling. Property owners planning to develop slopes subject to erosion should provide information demonstrating that proper construction will occur and that vegetative cover will be replaced.

RARE SPECIES

One of the species in Champlin in the Rare Features database is Blanding's Turtles (Emys blandingii). Blanding's turtles use upland areas up to and over a mile distant from wetlands, as well as wetlands. Uplands are used for nesting, basking, periods of dormancy, and traveling between wetlands. Because of the tendency to travel long distances over land, Blanding's turtles regularly travel across roads and are therefore susceptible to collisions with vehicles. Any added mortality can be detrimental to populations of Blanding's turtles, as these turtles have a low reproduction rate that depends upon a high survival rate to maintain population levels. Other factors believed to contribute to the decline of this species include wetland drainage and degradation, and loss of upland habitat to development.

The City shall adhere to recommendations from the DNR's Blanding's Turtle Fact Sheet for avoiding and minimizing impacts of this rare turtle.

5.3 ENERGY CONSERVATION

Most of the nation's and Champlin's energy comes from non-renewable sources such as petroleum, nuclear, coal, and natural gas. These resources are in limited supply as well as having been linked to negative environmental impacts. The City of Anoka Electric Utility, Connexus Energy, and Xcel Energy supply electricity to Champlin and have consistently worked to increase use of renewable-based systems. The City will continue to support those efforts as well as support residents and businesses to implement personal alternative energy systems.

SOLAR ACCESS

The City of Champlin has installed a solar system at its municipal campus. This project provides electricity to the grid. Along with serving as a demonstration project for the

community.

The City is committed to allowing business and resident access to direct sunlight for solar energy systems. Solar energy collectors are permitted uses in all of the City's zoning districts. Residents and businesses are encouraged to include such systems as part of their homes or buildings.

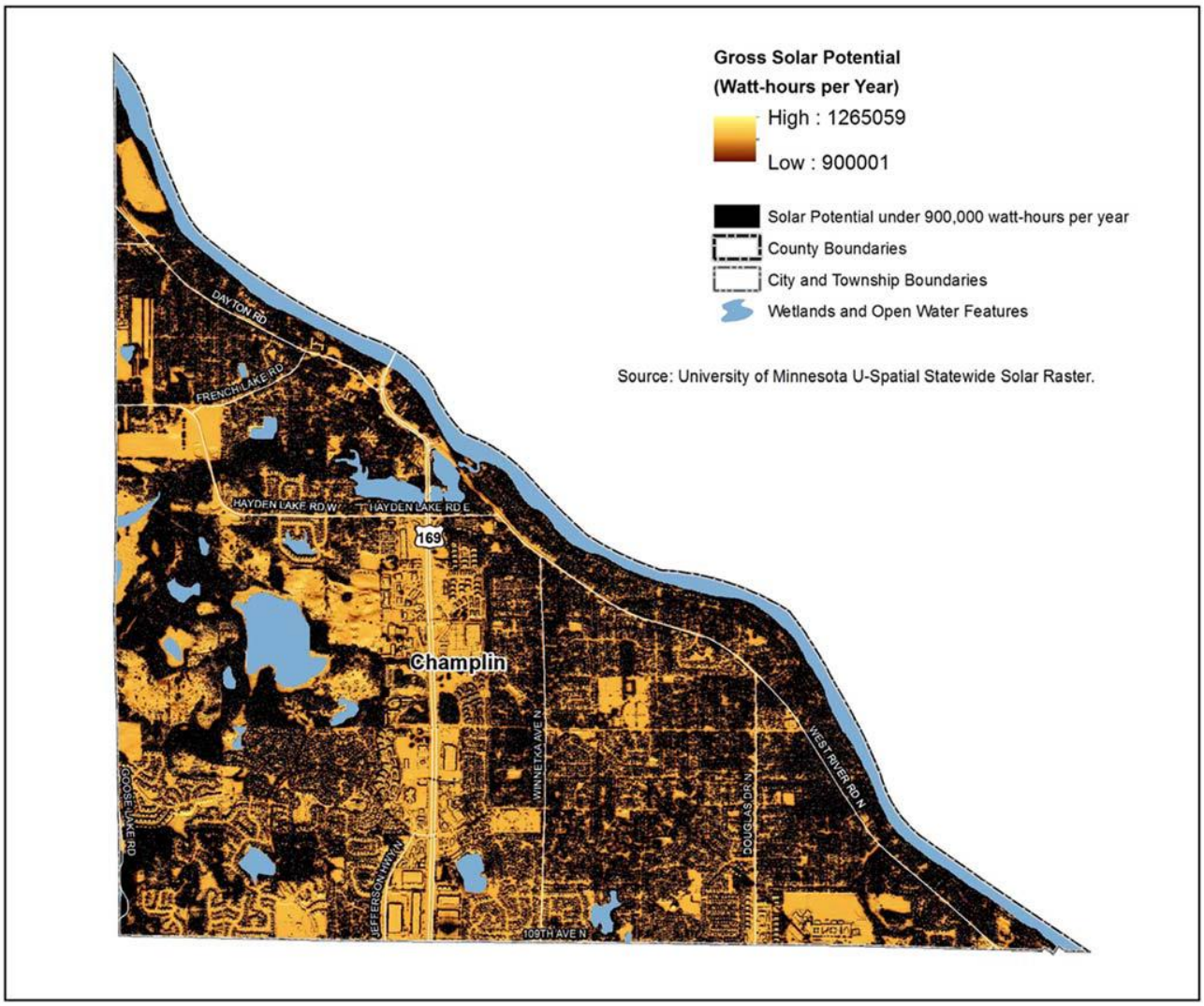
Gross and Rooftop Solar Resource Calculations

The gross solar potential and gross solar rooftop potential are expressed in megawatt hours per year (Mwh/yr), and these estimates are based on the solar map. These values represent gross totals; in other words, they are not intended to demonstrate the amount of solar likely to develop within Champlin. Instead, the calculations estimate the total potential resource before removing areas unsuitable for solar development or factors related to solar energy efficiency.

The gross solar generation potential and the gross solar rooftop generation potential for Champlin are estimates of how much electricity could be generated using existing technology and assumptions on the efficiency of conversion. The conversion efficiency of 10% is based on benchmarking analyses for converting the Solar Suitability Map data to actual production, and solar industry standards used for site level solar assessment. Champlin's community totals are shown in the table below:

	Gross Potential (Mwh/yr)	Rooftop Potential (Mwh/yr)	Gross Generation Potential (Mwh/yr)	Rooftop Generation Potential (Mwh/yr)
Champlin	10,493,166	1,060,416	1,049,316	106,041

Figure 5.5: Champlin Solar Potential Map



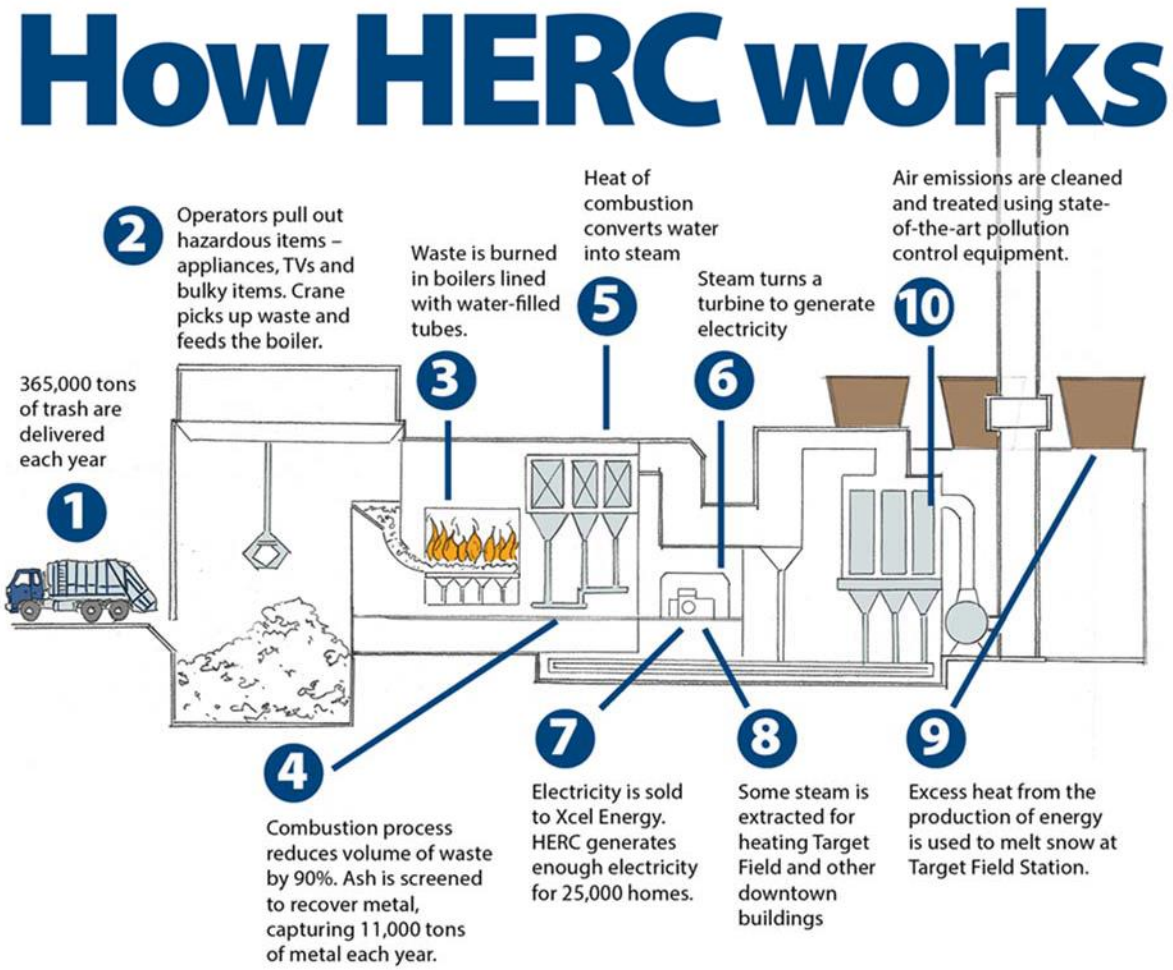
WIND

Wind turbine generated power has been a popular energy choice for utility companies in recent years, albeit in rural areas. As individual wind system technology improves, the City will work with businesses and residents who would like to own and operate such systems on their properties in the suburban environment. City ordinance does limit the height of structures on certain zoning districts.

BIOMASS

Biomass can be used to generate electricity and heat. Resources include solid

waste, landfill gas, wood waste and agricultural byproducts. Champlin contracts for disposal of its solid waste at the Hennepin Energy Recovery Center (HERC).



GREEN BUILDINGS

Many businesses and residents have included environmentally-friendly or sustainable components into constructing or remodeling buildings or homes. These components could include the use of recycled or re-used materials, sustainable or low-impact materials, low-consumption utilities, sky-lights or

properly placed windows, and energy-saving mechanical equipment and appliances. Champlin will continue to encourage residents and businesses to implement the U.S. Green Building Council's design guidelines for sustainability. The following is from the USGBC's website (www.usgbc.org) describing LEED:

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is the nationally accepted benchmark for the design, construction, and operation of high performance green buildings. LEED gives building owners and operators the tools they need to have an immediate and measurable impact on their buildings' performance. LEED promotes a whole-building approach to sustainability by recognizing performance in five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, materials selection, and indoor environmental quality.

The City is committed in including these design guidelines in public facilities owned and operated by the City and encourages our governmental partners (Hennepin County, school districts, state, and federal governments) to do the same on projects within Champlin. Any sustainable design that would yield long-term energy savings is strongly encouraged, provided that it is cost-effective to do so.

LAND USE

As described in the Land Use Plan (Section 2) and the Transportation Plan (Section 5), the City is encouraging land use choices that allow for walking and bicycling short trips, rather than driving. Pedestrian connections (sidewalks and trails) between residential areas and business areas will provide a safe, convenient, environmentally-friendly neighborhood.

Alternative Energy Policies

1. Examine current building heights, lot sizes and setbacks in order to ensure the protection of solar access rights of all residents.
2. Establish a minimum degree of solar access protection by adopting policies and regulations establishing solar access protection.
3. Establish land use regulations for the protection of solar access to rooftops and south building elevations in all new residential developments and to rooftops for commercial and industrial uses.
4. The City of Champlin does not have the authority to require that public utilities offer a off peak electrical program. However, the City is open to the development of charging stations and would support the development of off-peak electrical programs developed by electrical providers.

5.4 IMPLEMENTATION STATEMENTS: NATURAL RESOURCES

1. Adopt ordinances consistent with Minnesota Rules for the Mississippi River Corridor Critical Area. The Ordinance revisions are planned for consideration in late 2020.
2. Explore the need for a Wetland Ordinance. A Wetland Ordinance is

planned for consideration in late 2020.

3. Monitor future development to minimize adverse environmental impact on Champlin's natural amenities. On-going.
4. Encourage the use of alternative energy sources.
5. Review proposed development to reduce pollutants in groundwater and storm water runoff.
6. Promote policies to protect and improve air quality.
7. Increase public awareness of the proper methods to care for hazardous waste materials, methods or solid waste reduction and recycling.
8. Encourage alternative transportation to decrease environmental impact.
9. Preserve historic and archeological sites as required by State and Federal law.
10. The City will incorporate citizen science.
11. The City will continue to sponsor and/or support community events focused on improving water quality (i.e. Earth Day clean-up event).

LOCAL SURFACE WATER MANAGEMENT PLAN

FOR THE

CITY OF CHAMPLIN, MINNESOTA

FINAL DRAFT
January 2019

Prepared By:

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SECTION 1

1. EXECUTIVE SUMMARY

1.1. Local Surface Water Management Plan Purposes

This Local Surface Water Management Plan (Surface Water Management Plan, LSWMP, SWMP) will serve as a comprehensive planning document to guide the City of Champlin in protecting its surface water resources, as well as provide a guide to the City, its residents, and developers on surface water management. This plan has been created to meet the requirements detailed in Minnesota Statutes 103B and Minnesota Rules 8410, administered by the Minnesota Board of Water and Soil Resources. This plan is also consistent with the goals and policies of the Metropolitan Council's *Water Resources Management Policy Plan*, and the watershed districts having jurisdiction within the City: Elm Creek Watershed Management Commission and Shingle Creek/West Mississippi Watershed Management Commission. This plan may be periodically amended to remain current with local practices and policies. The purposes of the water management programs are to:

- Protect, preserve, and use natural surface and groundwater storage and retention systems;
- Improve water quality and address any existing TMDLs;
- 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;
- Prevent erosion of soil into surface water systems;
- To promote groundwater recharge, where beneficial;
- Protect and enhance fish and wildlife habitat and water recreational opportunities; and
- Secure the other benefits associated with the proper management of surface and groundwater.

The Champlin Local Surface Water Management Plan addresses these purposes.

1.2. Executive Summary

The Champlin Surface Water Management Plan is organized as follows:

- ***Section 1.0 Executive Summary*** provides background information and summarizes the plan contents.
- ***Section 2.0 Land and Water Resource Inventory*** the physical setting; the history, natural resources and land uses within the City.
- ***Section 3.0 Agency Cooperation*** outlines other governmental controls and programs that affect stormwater management.
- ***Section 4.0 Assessment of Issues and Corrective Actions*** presents existing and potential water resource related concerns within the City. Corrective actions were identified for each issue.
- ***Section 5.0 Goals and Policies*** outlines the City's goals and policies pertaining to water management.
- ***Section 6.0 Implementation Program*** presents the implementation program for the

City of Champlin, which includes defining responsibilities, prioritizing, and listing the program elements.

- ***Section 7.0 Financial Considerations*** outlines the continued administration of this plan with respect to plan updates and amendments.

- ***Section 8.0 Amendment Procedures*** discusses the procedures to be followed if this plan is amended.

- ***Appendices*** are included in the back of the plan and are summarized below. These documents are included because they provide supporting information to the main body of the plan, are useful information, and/or are required to be included in this plan update. Direct website links to relevant reports or documents are provided throughout the report as appropriate.

    - Appendix A – Figures
    - Appendix B – Relevant City Ordinances
    - Appendix C – NPDES MS4 Documents
    - Appendix D – Stormwater Management Design Guidelines
    - Appendix E: Water Resource Related Agreements
    - Appendix F: Wetland Management Strategies
    - Appendix G: Wetland Seed Mix
    - Appendix H: Stormwater System Modeling Information
    - Appendix I – Elm Creek Watershed Management Commission Rules
    - Appendix J – Shingle Creek/West Mississippi Watershed Management Commission Rules

Website hyperlinks are provided throughout this report as additional material is referenced.

1.3. Personnel Contacts

To implement this plan, a coordinated water resource management approach must be used. This approach utilizes the services of personnel within the City and surrounding communities, as well as personnel associated within Elm Creek Watershed Management Commission and Shingle Creek/West Mississippi Watershed Management Commission.

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

City of Champlin
Todd Tuominen
11955 Champlin Drive
Champlin, MN 55316
(763) 421-8100

Elm Creek Watershed Management Commission
Judie Anderson
3235 Fernbrook Lane N
Plymouth, MN 55447
(763) 553-1144

Shingle Creek and West Mississippi River Watershed Management Commission
Judie Anderson
3235 Fernbrook Lane N
Plymouth, MN 55447
(763) 553-1144

Metropolitan Council
Judy Sventek
390 Robert St. North
St. Paul, MN 55101
(651) 602-1156

Wetland Conservation Act (WCA)
City of Champlin
11955 Champlin Drive
Champlin, MN. 55316
(763) 421-5256

SECTION 2

2. LAND AND WATER RESOURCE INVENTORY

2.1. Location and History

The City of Champlin is located in northeast Hennepin County along the Mississippi River **(Figure 1)**. Total area within the corporate limits is approximately 8.7 square miles. The City is bordered by Dayton, Maple Grove, Brooklyn Park, and Coon Rapids. The major transportation corridors within Champlin are along U.S. Highway 169 and County Road 12.

Champlin is considered a developed community by the Met Council. The majority of the City's land use is low density housing. **Table 2.1** shows the current and projected population through 2040.

Table 2.1 Champlin Population

Year	Population	Households
2010	23,089	8,328
2016	23,343	8,442
2020	23,200	8,800
2030	24,200	9,500
2040	24,000	9,600

Sources: Metropolitan Council Population/Household Estimates

2.2. Physical Setting

2.2.1. Topography and Geology

The southwestern portion of Champlin can be described as gently rolling with large depressions containing wetlands, the largest of which is Lemans Lake. From the northwest to the southeast, the topography is relatively flat, with a notable exception being the bluffs overlooking the Mississippi River. The terrain is characteristic of a glacial outwash plain.

Stormwater runoff from the City is generally directed from higher elevations to depression areas, especially in the southwest portion of the City located in the Elm Creek Watershed. **Figure 2** shows the extent of the watershed district boundaries. Specific drainage patterns are discussed in **Section 2.3.3**.

The dominant geological feature in Champlin is the remnant of the deteriorating Grantsburg sublobe of the Wisconsin glaciation, which stagnated over the area some 16,000 years ago. This feature is referred to as the Emmons-Faribault moraine. This moraine is characterized by a rolling topography with a relief of 20 to 30 feet, and is characteristic of the southwestern part of the city. Postglacial deposits consist of very fine to medium sand and minor silt. The remainder of the City is part of the Mississippi Valley outwash plain. This area is characterized by a nearly level topography that was formed by glacial till deposited by the meltwater from the rapidly receding glacier. Depressions formed by the melting ice became lakes which, through the process of natural eutrophication, have evolved into shallow wetlands.

According to the Bedrock Geologic Map and Bedrock Topographic Map of Hennepin County (Minnesota Geologic Survey, 1992), the uppermost geologic formation of the City is comprised of unconsolidated sediment deposits from the Quaternary Period, which began approximately two million years ago.

The unconsolidated quaternary deposits of glacial and post glacial material conceal the bedrock

within the City. All of the bedrock formations are marine sedimentary rocks of the Early Paleozoic era when shallow seas covered southeastern Minnesota. Large-scale block faulting caused the formation of an elongated, northeast-trending basin beneath what was to become the Twin Cities Metropolitan Area.

The bedrock is comprised of St. Lawrence and Franconia formations and Jordan Sandstone. Depth to the bedrock within the city limits is predominantly 100 to 150 feet, decreasing to 51 to 100 feet near the Mississippi River. Along the eastern border of the City, there lies a deep bedrock valley where the depth to bedrock approaches 300 feet.

Additional geological information can be found in the Hennepin County Geologic Atlas.

2.2.2. Soils

The Soil Conservation Service (SCS) published the most recent *Soil Survey of Hennepin County Minnesota* in 2003. The *Soil Survey* provides mapping and physical properties for soil types found in Champlin. The *Soil Survey* was added to the Soil Survey Geographic (SSURGO) Database in 2005, providing digital access to the information.

Most soils within Champlin are classified as hydrologic soil group (HSG) A or B, having high infiltration rates and are a benefit for stormwater management. However, quick infiltration rates allow for unrestricted water movement through the soils without removing contaminants. This can create an increased susceptibility to ground water contamination. The HSG classification map is shown in **Figure 3**. The four HSG soil classifications are defined as follows:

Group A - These soils have high infiltration rates even when thoroughly wetted. The infiltration rates range from 0.8 to 1.63 inches per hour. These soils consist chiefly of deep, well drained to excessively drained sands and gravel. Group A soils have a high rate of water transmission, therefore resulting in a low runoff potential.

Group B - These soils have moderate infiltration rates ranging from 0.3 to 0.45 inches per hour when thoroughly wetted. Group B soils consist of deep moderately well to well drained soils with moderately fine to moderately coarse textures.

Group C - These soils have slow infiltration rates ranging from 0.2 to 0.3 inches per hour when thoroughly wetted. Group C have moderately fine to fine texture.

Group D - These soils have very slow infiltration rates ranging from 0 to 0.06 inches per hour when thoroughly wetted. Group D soils are typically clay soils with high swelling potential, soils with high permanent water table, soils with a clay layer at or near the surface, or shallow soils over nearly impervious material.

Recommended infiltration rates were taken from the Minnesota Stormwater Manual.

2.2.3. Climate and Precipitation

The climate within the Twin Cities Metropolitan Area is typical of a humid continental climate with moderate precipitation and wide daily temperature variations. Without the buffering influence of large bodies of water, cold winters and hot summers predominate. An area where climate change has been recorded in the Twin Cities is in rainfall intensities and rainfall depths. The Metropolitan Area has seen more intense rainfalls the last two decades and even the average rainfalls are shown to be more intense.

The total average annual precipitation in the Metropolitan Area is approximately 30.6 inches recorded over a 30-year period from 1981-2010. The total average annual snowfall is approximately 54.4 inches. Additional climatological information for the area can be obtained from the Minnesota State Climatology Office at http://www.climate.umn.edu/.

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 the City and watersheds in their respective stormwater management rules. **Table 2.2** lists rainfall frequencies for Champlin.

Table 2.2 Atlas 14 Rainfall Depths and Frequency

Recurrence Interval (yrs)	24-hr Rainfall Depth (in)
1	2.5
2	2.9
5	3.6
10	4.3
25	5.3
50	6.2
100	7.2

The City of Champlin uses the 10-year storm event for storm sewer design and the 100-year storm event for storage/ponding requirements and evaluating freeboard.

Additional precipitation information for the area can be obtained from the National Oceanic and Atmospheric Administration (NOAA) website.

2.2.4.Land Use

The City's existing land use practices include residential, commercial, industrial, and private and public open spaces. The dominating land use is low density residential housing. Parks and open space are the next dominant feature of the City. The western one-third of the city is predominantly park land (Elm Creek Park Preserve) with some remaining agricultural areas. The City is entirely within the MUSA area and most of the residences and businesses in the City are served by public water and sewer systems. **Figure 4** shows the 2016 existing land use for Champlin.

Champlin's proposed land use plan is currently being updated with the 2040 Comprehensive Plan. This is expected to be complete by the end of 2018. The Land Use Plan is central to the Comprehensive Plan. It guides how specific properties might develop. Because the City is 95% developed, redevelopment is also an important component of land use planning. **Figure 5** shows the proposed land use plan.

The proposed land use map projects land use to the year 2040 and becomes the basis of important local and regional planning decisions made by the City and outside agencies such as the Metropolitan Council. According to state law, development proposals must conform to the land use plan or an amendment to the land use plan must be sought. Additional land use information can be found in the City's 2040 Comprehensive Plan on the City's website.

Land use data is an important factor for estimating surface water runoff. The hard or impervious surface areas associated with each land use greatly affects the amount of runoff generated from an area. Future land use development and redevelopment 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. However, changes in land use also allow for the construction of stormwater BMPs.

2.3. Water Resources Data

2.3.1. Wetlands

Wetlands are shown on the National Wetland Inventory Maps published by the US Fish and Wildlife Service. Wetlands and lakes are also shown on the DNR Public Waters/Wetlands inventory map. This information is shown on **Figure 6.**

The Shingle Creek/ West Mississippi Watershed Management Commission (SC/WMWMC) completed an inventory and assessment of high quality reference wetlands to develop a Wetland Management Plan for the area. The reference wetland in Champlin is DNR Public Wetland 249W located along the southern border of the City with Brooklyn Park. The City completed the full wetland functional assessment of the remaining wetlands in 2009.

In 1992, as part of the City's first generation Surface Water Management Plan, water bodies and wetlands were assessed based on their sensitivity to storm water input based on the wetland's type and vegetation. Management categories to address water quality issues were then developed. With the anticipated completion of a function and value assessment of the wetlands, the wetland categories for each wetland may change. The City's wetland management strategies are outlined in **Section 5.**

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. The City acts as the LGU for wetland matters.

2.3.2. Major Water Bodies

There are several major water bodies that convey and store water within and through the City (**Figure 6**). These water bodies include:

- Mississippi River and associated wetlands: The River is the northeastern border of the City. Recreational activities include boating and fishing on the River. The River corridor also provides wildlife habitat for the area.
- Lemans Lake: Lemans Lake is within the Elm Creek Park Reserve owned by Three Rivers Park District. The area provides wildlife habitat. This Lake is classified as a Class III for Wildlife and Interpretation.
- Mill Pond: Mill Pond is associated with Elm Creek, which is listed as an impaired water. Trails are located adjacent to Mill Pond for passive recreation activity. The ECWMC completed a TMDL study for the entire Elm Creek Watershed in December 2016. A multi-phase restoration project was initiated to address the impairments in both Elm Creek and Mill Pond.

- Phase 1: Included Elm Creek stream restoration and Mill Pond dam replacement. This phase completed 900 linear feet of stream bank restoration along Elm Creek to repair stream bank erosion, reduce downstream sedimentation, increase dissolved oxygen, and provide habitat to sensitive species, such as Blandings Turtle. The Mill Pond dam replacement was listed on the MnDNR's Significant Hazard Dam Structures. The reconstructed dam improves flood control, providing safer working conditions for operation, repairs eroding stream banks and provides a more consistent water level for aquatic vegetation and aquatic habitats. The project also reduced the flood hazard area by approximately 60 acres.This phase was completed in 2016
- Phase 2: Includes the Mill Pond shoreland and aquatic restoration. This phase is currently being completed and includes removing sediment in Mill Pond to improve dissolved oxygen and water quality, enhancing the fishery, increasing public access and restoring the upland, riparian and aquatic habitat zones.
- Phase 3: Include Elm Creek Stream Restoration. This project phase is scheduled to be completed in the winter of 2018-2019 and include stabilization of 3,000 linear feet of stream bank upstream of Mill Pond. The project will extend up to termination of the Phase 1 project and will provide a habitat structure that will reduce downstream sedimentation and provide native habitat improvements.
- Phases 4 and 5: Include Elm Creek Stream Restoration. This project include 7,297 linear feet of stream habitat restoration. Riparian areas will be restored with native planting buffers. The City will continue to work with ECWMC and Hennepin County to implement the TMDL and improve the water quality of Mill Pond and downstream waters.

- Elm Creek and associated wetlands: Champlin is the last community that Elm Creek flows through prior to discharging to the Mississippi River. Areas around the creek are publicly and privately owned. This water body is classified as a Class III for Wildlife and Interpretation.
- Oxbow Creek and associated wetlands: Oxbow Creek is within Oxbow Park. The area provides habitat and trails for passive recreation of the Creek. This site also includes restored prairie areas.

2.3.3. Drainage Systems

The primary conveyance for all drainage districts is an extensive system pipe infrastructure. **Figure 7** in Appendix A shows the City's subwatershed drainage areas. The City of Champlin can be divided into nine major subwatersheds and further divided into many smaller watersheds. The subwatershed delineations utilized City topographic mapping, storm sewer as-builts, aerial photos, and field investigations.

Stormwater drains either into Elm Creek or Mill Pond and Oak Creek via Leman's Lake, which then flows into the Mississippi River. Ultimately, all drainage from the City makes its way to the

Mississippi River. The remainder of the City is within the West Mississippi River Watershed and storm water from this portion drains to the Mississippi River via Oxbow Creek, Oak Creek, or via storm sewers.

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

- Elm Creek Watershed Management Plan
- Shingle Creek and West Mississippi Watershed Commissions Management Plan

2.3.4. Hydrologic Modeling (Water Quantity)

The City's hydrologic/hydraulic system consists of ponds, wetlands, and storm sewer pipe systems within multiple subwatersheds that drain towards the Mississippi (**Figure 8**). The City is planning to update the model for Atlas-14 conditions and to account for any land changes. The updated model may be used to identify potential drainage problem areas within the City. The City is divided into numerous subwatershed areas, which are shown on **Figure 7.** The watershed inventory and hydrological modeling information is available in **Appendix H.**

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

- Northwest Area Infrastructure Analysis, 2002
- Northwest Area Feasibility Study, 2005

2.3.5.Landlocked Basins

The City has a number landlocked areas. These include the following ponds or subwatersheds are shown in **Appendix H.**

- 8T-P3.3
- 5T-3
- 4T-29
- 2T-P16
- 2T-P17
- 2T-P21
- 2T-P20
- DNR 22W (8V-P4.1)
- 8V-P3
- 9T-6: The structure at 4.1 has a pumped outlet that needs to be re-designed.
- 1T-P10.

The City will evaluate these areas. If there are no flooding concerns, no outlet is necessarily needed and this area likely provides infiltration of storm water. If the area does flood or causes other problems, the City will study the feasibility of providing an outlet for the area. This process is further described in the implementation portion of this Plan.

2.3.6.Monitored Water Quality and Quantity Data

The City will continue to support monitoring of surface waters within its jurisdictional boundaries and outside these boundaries for waters to which the City discharges. Data will be obtained through cooperation and coordination with other various agencies, including the Minnesota

Pollution Control Agency, cities adjacent to Champlin, the Metropolitan Council, the Minnesota Department of Natural Resources, Shingle Creek/West Mississippi Watershed Management Commissions, Elm Creek Watershed Management Commission, and Three Rivers Park District.

Figure 9 shows monitoring stations located within the City. Other water quality information can be found from ECWMC, WMWMC, Metropolitan Council, and the Minnesota Pollution Control Agency on the following websites:

- Metropolitan Council monitoring information, including the Citizen-Assisted Monitoring Program (CAMP), can be found at their website
- Minnesota Pollution Control Agency's Citizen Lake Monitoring Program (CLMP) information can be found at their website

The City is in the process of developing the WSB Stormwater Asset Management Program (SWAMP). This program uses construction as-builts, pond inventory, drainage areas, field inspections, and storm sewer maps to rank BMPs based on cost/benefit pollutant removal efficiency. Basins are prioritized based on a set of parameters and a schedule can be determined for maintenance needs. The program is continually updated to include new BMPs, updated stormwater infrastructure or changed drainage areas. The City will be able to incorporate SWAMP to include the following:

- Scheduling, tracking, and storing MS4 infrastructure inspections
- Budget stormwater inspection and maintenance activities
- Track TSS and TP load reductions
- Prioritize inspection and maintenance activities through a ranking system
- Provide information to the public on BMP maintenance priorities and schedules
- Compliance for written procedure and treatment effectiveness requirements as part of the MS4 permit

The SWAMP is being done in coordination with the watersheds to remain consistent with their TMDL and WRAPS studies and other water quality reports.

2.3.7. Impaired Waters

The Minnesota Pollution Control Agency (MPCA) is required to publish a list of impaired waters; these are lakes and streams in the state that are not meeting federal water quality standards. For each water body on the list, the MPCA is required to conduct a study to determine the allowable Total Maximum Daily Load (TMDL) for each pollutant that exceeds the standards. Impaired waters in Champlin, or those receiving discharge from Champlin, are summarized in **Table 2.3** and shown in **Figure 16**.

Table 2.3 – Impaired Waters

Impaired Water	Affected Use	Pollutant and Year Added	TMDL Status
Mississippi River (07010206-805)	Aquatic Consumption, Aquatic Recreation, Aquatic Life	Mercury in Fish Tissue (1998), PCB in Fish Tissue (2002), Excess Nutrients (2016), Fecal Coliform (2006)	Mercury: Complete Fecal Coliform and Nutrients: Underway

Elm Creek (07010206-508)	Aquatic Life, Aquatic Recreation	Chloride (2014), Dissolved Oxygen (2004), Escherichia coli (2010), Fishes and Aquatic Macroinvertebrate Bioassessments (2014)	All are complete (Elm Creek WRAPS)
Goose Lake (27-0122-00)	Aquatic Recreation	Excess Nutrients (2018)	Complete (Elm Creek WRAPS)

The 2007 Mercury TMDL is a statewide effort to reduce mercury for fish consumption. In 2016, the Elm Creek Watershed TMDL and WRAPS reports were approved. These reports designate categorical load reductions for Elm Creek and Goose Lake. The City will be required to update this surface water management plan to incorporate the findings of any additional approved TMDL study and will also be required to amend their MS4 permit and Storm Water Pollution Prevention Plan. This must be done within 18 months of the approved TMDL date.

2.3.8. Groundwater

Within the City, groundwater wells serve the City and private water needs. Each of these wells has a ground water appropriation permit from the DNR. There are 8 public water supply wells within the City. **Figure 10** shows the locations of the DNR permitted ground water appropriation sites within the City. Specific information related to each of these permits can be found at the DNR's website.

The City's Wellhead Protection Plan (WHP) Part I was completed and approved by the Minnesota Department of Health (MDH) in 2014 and Part II was approved in 2015. Part I of the WHP delineated the Wellhead Protection Areas, the drinking water supply management areas (DWSMA), and the vulnerability assessments for the system's wells and aquifers within the DWSMA. Part II of the City's WHP includes an inventory of potential contaminant sources within the DWSMA, a discussion of potential contaminant source management strategies, and reviews the City's alternative water supply contingency strategy. Some of the potential contaminant source management strategies identified include properly sealing abandoned or damaged wells, educating owners of storage tanks about the importance of spill prevention, and educating the public on the importance of wellhead protection planning. Both WHP Parts I and II can be found at City Hall.

The City continues to implement this plan and evaluate its water services. Information from the SCWMWMC contains information about groundwater quality within the City of Champlin as follows:

GWMAP Number/ depth (feet)	**Aquifer**	**Aquifer Group**	**Chloride (mg/L)**	**Manganese (mg/L)**	**Nitrate (mg/L)**	**Iron (mg/L)**
Drinking Water Standard			***250.0***	***0.0500***	***10.0***	***0.3000***
01201/ 78.0	Water table	Surficial Quaternary	13.00	0.6165	<0.5	0.9321
01202/ 229.0	Jordan	Cambrian	4.89	0.1283	<0.5	0.4254
01227/ 95.0	Buried artesian	Buried Quaternary	1.32	0.8061	1.6	0.6099

	aquifer					
01212/ 220.0	Franconia	Cambrian	127.35	<0.0005	6.9	0.0510
01211/ 540.0	Mount Simon	Cambrian	4.6	0.0280	<0.5	1.1497

Additional ground water resource data for areas within the City is available by reviewing the content of two reports as outlined below:

- "Hennepin County Comprehensive Ground Water Plan", completed in March 1994, contains information about groundwater within the County. This Plan has not been adopted.
- "Hennepin County Geologic Atlas", completed in 1989 and last updated in 2018, contains information on aquifers, depth to groundwater table, and areas sensitive to groundwater pollution.

The City will be required to incorporate the requirements of the Wellhead Protection Plan into their Stormwater Pollution Prevention Program (SWPPP) for areas located within vulnerable source water protection areas (NPDES MS4 General Permit). Vulnerable Source Water Protection areas are those areas susceptible to contamination of the water supply from activities at the land surface and are based on the following three components: geologic sensitivity, well construction maintenance and use, and water chemistry and isotopic composition.

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.

Figure 11 shows the surface water/groundwater interaction as analyzed by regional screening performed by the Met Council in their report, Evaluation of Groundwater and Surface-Water Interaction: Guidance for Resource Assessment. The Council intends on completing this process again in the future as new information becomes available.

2.3.9. Public Areas for Water Based Recreation and Access

There are a number of water bodies that provide active recreation such as fishing and passive recreation such as walking and wildlife viewing. These recreational resources are outlined below:

Mississippi River: The Mississippi River provides boating, fishing, and hiking opportunities within the City. There is a DNR boat access point to the Mississippi River in Champlin at Mississippi Point Park. The Mississippi River is also a State Canoe Route operated by the DNR Division of Trails and Waterways.

Elm Creek Park Reserve: Elm Creek Park Reserve is partially within the City of Champlin. The park is managed by the Three Rivers Park District and contains many miles of trails and passive water-based recreation opportunities. Lemans Lake is within the Park.

Elm Creek and associated wetlands: Champlin is the last community that Elm Creek flows through prior to discharging to the Mississippi River. Champlin's Mill Pond is located near the end of Elm Creek before discharging into the Mississippi River. Areas around the creek are publicly and privately owned. There are some public trails near the Creek.

Oxbow Creek and associated wetlands: Oxbow Creek is within Oxbow Park. The area provides habitat and trails for passive recreation of the Creek.

Additional information regarding recreational opportunities within the City can be obtained by visiting the City of Champlin's Park and Recreation website.

2.4. Natural Resources Data

2.4.1. Fish and Wildlife Habitat

Champlin provides habitat for a variety of small mammals, reptiles, birds, amphibians, and insects. These natural areas primarily include the areas around Lemans Lake, near the Elm Creek Park Reserve, and the Mississippi River floodplain.

A large-scale restoration project for the Mill Pond was substantially completed in 2018. Goals of this project include creating and restoring habitat for fish and wildlife species, improving the terrestrial, riparian, and aquatic vegetative community, improving aesthetics of the Mill Pond, and improving water quality to address impairments. Specific improvements include excavating portions of the Mill Pond to increase water column depth and provide cold water habitat for gamefish. Root wads, fish stick structures, and cobble substrate were also added to provide habitat complexity, young of year refugia, and increase the forage base for gamefish and panfish species.

Since 2008 the Mill Pond has been stocked by MN DNR six (6) times with adult bluegill and black crappie as part of the Fishing in the Neighborhood (FiN) program in an effort to bolster fish populations and provide fishing opportunities.

Electrofishing and netting surveys between 1978 and 2017 show that the fish assemblage in Mill Pond consists of a variety of species. These species include black bullhead, black crappie, bluegill, common carp, northern pike, pumpkinseed, white crappie, white sucker, yellow bullhead, golden redhorse, golden shiner, silver redhorse, yellow perch, bowfin, green sunfish, hybrid sunfish, largemouth bass, and white crappie. Telemetry surveys in 2017 and 2018 showed a significant nexus between Hayden Lake, Elm Creek, and the Mill Pond.

The City adopted the Mississippi River Corridor Plan in 1981. In 1999, it was updated to respond to Mississippi National River and Recreational Area (MNRAA). Therefore, the Mississippi River Corridor Plan includes updates from MNRAA.

2.4.2. Mississippi River Critical Area Corridor

The Minnesota State Legislature enacted the Critical Areas Act in 1973 and an executive order (79-19) was signed in 1976 declaring the Mississippi River corridor a Critical Area (MRCCA). New rules for the MRCCA were published in December 2016 which replaces the previous executive order. The new rules will be implemented through local government MRCCA plans and ordnances.

The executive order states the following purposes for the Critical Area designation:

- To protect and preserve a unique and valuable state and regional resource for the benefit of the health, safety and welfare of the citizens for the state, region, and nation;
- To prevent and mitigate irreversible damage to this state, regional and national resource;
- To preserve and enhance its natural, aesthetic, cultural, and historical value for the public use;
- To protect and preserve the river as an essential element in the national, state and

regional transportation, sewer and water and recreational systems; and
- To protect and preserve the biological and ecological functions of the corridor.

In 1976, four corridor districts were established, corresponding to the following different types of land use along the Mississippi River: rural open space district, urban developed district, urban open space district, and urban diversified district. Each district has its own set of guidelines. The Critical Area Act requires that each city having jurisdiction over land within the Critical Area develop a Critical Area Plan. The new MRCCA rules from 2016 include the regulations and guidelines that each city must incorporate in its Critical Area Plan.

The City of Champlin has developed a Mississippi River Corridor Area Overlay District as part of City ordinances. This can be found in **Appendix B**. Additional information can be found on the DNR website.

The City of Champlin' MRCCA Rulemaking Districts are shown in **Figure 12**. This data was developed by the Minnesota Department of Natural Resources. Additional information on the City's Critical Area Plan can be found in the City's 2040 Comprehensive Plan.

2.4.3.MLCCS

The Minnesota Land Cover Classification System, or MLCCS, categorizes urban and built up areas in terms of land cover rather than land use. MLCCS serves as a tool for City staff to integrate natural area preservation into land planning, land use, and zoning decisions. The City is dominated primarily by developed area with herbaceous areas as the next majority land classification. The remaining areas are planted/cultivated land and forested areas north of the City and along the Mississippi River and various creeks. **Figure 13** provides MLCCS coverage for Champlin.

2.4.4.Unique Features and Scenic Areas

Unique features and scenic areas include State designated Scientific and Natural Areas, designated scenic areas, areas containing rare and endangered species, and historic areas. The City contains no Scientific and Natural areas or designated scenic areas. Information from the DNR Natural Heritage Database shows that Blandings turtles have been noted near the Mill Pond area, Lehmans Lake, and Goose Lake. Information from the County Biological Survey shows areas of Oak Forest, mixed hardwood swamps, and wet meadow. These areas are primarily associated with the Elm Creek Park Reserve. Additionally, the City contains the Schmidt Wildlife Management Area. The Mississippi River is also part of the Mississippi National River Recreation Area (MNRAA) and the Mississippi River Critical Area. **Figure 14** shows areas of the City that are ranked for their biodiversity, along with the Metro Conservation Corridor, identified by the Met Council.

2.5. Floodplain Management

FEMA completed the map modernization process for its Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) to identify flood risk within Hennepin County in 2016. Any Letter of Map Amendment (LOMA) and Letter of Map Revision (LOMR) can be located on the mapping function of FEMA's website.

The first phase of the three-phase Mill Pond restoration project included the dam and bridge reconstruction project in 2016 which helped to reduce the floodplain in the area by 60 acres. This reduction in the floodplain improved flood protection along West River Road and for 110 residents and businesses along Elm Creek. A LOMR was accepted by FEMA for this area in

February of 2018.

The City of Champlin has developed Floodplain Management Regulations. A copy of these regulations can be found in **Appendix B**. These regulations generally prohibit uses or activities within the floodplain that include structures or fill or that obstruct flood flows or cause increased flood elevations.

Figure 15 illustrates the FEMA floodplain boundaries for the City of Champlin.

SECTION 3

3. AGENCY COOPERATION

There are a number of local, State, and Federal agencies that have rules and regulations related to local water management. The City recognizes the roles of these other agencies and will cooperate, coordinate, and when possible partner with these agencies. This section describes the City's current surface water management program and practices and identifies the agencies and organizations having roles in the City's management of these resources.

Current regulations and policies that govern surface water management within Champlin include the engineering design standards document, which is consistent with MIDS, and previous surface water management plans. **Table 3.1** summarizes the City's regulatory controls regarding surface water.

Table 3.1 – Regulatory Control

Official Control	Responsibility	Mechanism
Stormwater Management	City, Watershed District (WD)	City Ordinance Chapter 110, Article II – Grading and Sedimentation Control; City of Champlin Stormwater Management Design Guidelines
Erosion and Sediment Control	City, WD, PCA	City Ordinance Chapter 110, Article II – Grading and Sedimentation Control
Shoreland	City, WD, MnDNR	City Ordinance Chapter 114 – Floodplain Regulations
Floodplain	City, WD, MnDNR, FEMA, USACE	City Ordinance Chapter 114 – Floodplain Regulations
Wetlands	WD as LGU, MnDNR, USACE, BWSR	City Ordinance Chapter 126, Article III, Division 6 – Conservancy Districts
Illicit Discharge	City, WD	City Ordinance Chapter 35 – Stormwater System
Grading and Drainage	City Grading Permit, WD	City Ordinance Chapter 110, Article II – Grading and Sedimentation Control
**Acronyms are defined in the sections below*		

Additional City ordinances relevant to surface water management include:

- Sec. 126-348 Mississippi River Corridor

3.1. Support 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.

- Hennepin County
- West Mississippi Watershed Management Commission
- Elm Creek Watershed Management Commission
- Minnesota Department of Health (MDH)
- Minnesota Pollution Control Agency (MPCA)
- Board of Water and Soil Resources (BWSR) and the Wetland Conservation Act (WCA)
- Minnesota Department of Natural Resources (MnDNR)

- US Army Corps of Engineers (USACE)
- Minnesota Department of Agriculture
- US Fish and Wildlife Service
- Minnesota Environmental Quality Board
- Metropolitan Council
- Minnesota Department of Transportation (MnDOT)
- U.S. Environmental Protection Agency (EPA)
- Federal Emergency Management Agency (FEMA)
- Natural Resources Conservation Service (NRCS)
- U.S. Geological Survey (USGS)

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.

3.2. NPDES Permitting Process

The MPCA has designated the City of Champlin as an NPDES Phase II MS4 community (MN Rules Chapter 7090). Champlin's application for permit coverage was extended in 2013 and again in 2018. The permit outlines Champlin's Stormwater Pollution Prevention Plan (SWPPP) to address six minimum control measures:

- Public education
- Construction site runoff control
- Public involvement
- Post-construction runoff control
- Illicit discharge detection and elimination
- Pollution prevention in municipal operations

The City's SWPPP contains several best management practices within each of the listed control measures. Some of these best management practices include:

- Inspection of outfalls
- Street sweeping
- Inspection of post-construction BMPs
- Storm sewer system mapping
- Resident education

Many of the goals and policies discussed in this local surface water management plan are directly related to requirements listed in the NPDES program. As a result, the implementation section of this plan repeatedly references items listed in the City's SWPPP (**Appendix C**).

3.3. Comparison of Regulatory Standards

Applicable developing and redeveloping property within Champlin is subject to review and approval from Elm Creek WMC and West Mississippi WMC. Each watershed has established rules governing stormwater management and protection of natural resources. Currently, these rules are fairly consistent with the City design standards.

3.3.1.City of Champlin

In 2015, Champlin developed their Stormwater Management Design Guidelines. This document was written to meet the City's goals outlined in the SWPPP and to be consistent with watershed rules. A copy of these design standards can be found in **Appendix D.**

3.3.2. Elm Creek Watershed Management Commission

Elm Creek Watershed Rules and Regulations and Watershed Management Plan were last updated in 2015. The City will continue to coordinate with Elm Creek WMC for review and permitting of the stormwater management aspect of developments. A copy of the Elm Creek WMC District Rules can be found in **Appendix I.**

3.3.3. West Mississippi Watershed Management Commission

The West Mississippi WMC Watershed Plan was jointly adopted in 2013 with Shingle Creek WMC. Their rules and standards were also adopted in 2013. A copy of the West Mississippi WMC District Rules can be found in **Appendix J.**

3.3.4. Wetland Management

The watershed management commissions are currently the Local Government Unit (LGU) for the Wetland Conservation Act. The City will take over this role by 2019 and will begin to administer WCA permits. WCA regulations generally focus on the prevention or mitigation of wetland fill, while watershed standards focus on wetland buffers and stormwater impacts.

3.4. Water Resources Related Agreements

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

a. **Agreement to establish the Shingle Creek and West Mississippi Watershed Management Commissions**: This Joint Powers Agreement (JPA) outlines the purpose and responsibilities of the Commissions

b. **Agreement to establish the Elm Creek Watershed Management Commission:** This JPA outlines the purpose and responsibilities of the Commission.

c. **Maintenance Agreement for Stormwater and Infiltration Maintenance for Goose Lake Road**: The agreement between the cities of Champlin and Dayton. This agreement states that the cities agree to maintain the infiltration basin and storm water management system associated with the Goose Lake Road project.

4. AREAS OF CONCERN AND CORRECTIVE ACTIONS

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 as part of this plan preparation and through information from the City. A description of any existing or potential problem within the topic area has been listed and future corrective actions have been incorporated into an implementation plan. **Figure 16** shows locations of specific areas of concern listed below.

A. Lake and stream water quality

1. The City discharges storm water to the following water bodies that have been listed as impaired by the Minnesota Pollution Control Agency (MPCA):
   - Elm Creek – dissolved oxygen, chloride, fecal coliform **(Map Label #5)**
   - Mississippi River – mercury, PCB's, nutrients, fecal coliform **(Map Label #6)**
   - Lake Pepin –Turbidity, eutrophication
   - Goose Lake – Excess nutrients, TP **(Map Label #7)**

   Corrective Actions: The Elm Creek TMDL and WRAPS reports were released in 2015 to address the impairments for Elm Creek and Goose Lake. The City will collaborate with the Elm Creek Watershed Management Commission (ECWMC) to implement projects identified in the WRAPS report to address these TMDLs. Specific projects are listed in **Table 6-1**. Stormwater BMPs will be continually added during street improvement projects where feasible to limit nutrient discharge to Elm Creek and the Mississippi River. Specific projects to address nutrient impairments are identified in **Table 6.1**.

   To address the fecal coliform impairment for Elm Creek and the Mississippi River, the City will continue to educate its residents on the importance of cleaning up after their pets to reduce pollutants entering the stormwater system. The City will also continue to enforce its pet waste ordinance. BMPs that are constructed will continue to provide some removal of fecal coliform prior to stormwater discharge into receiving water bodies.

   The City shall work with the Watershed Management Commission(s) and the Pollution Control Agency (PCA) to develop a Total Maximum Daily Load (TMDL) for additional impaired waters within their boundaries. Once the TMDL report is complete for each water body and impairment, the City will complete a feasibility study to identify actions to be undertaken to address the TMDL.

2. The ECWMC has identified water quality concerns at Mill Pond (**Map Label #3)** and Lehmans Lake (**Map Label #4**).

   Corrective Actions: The City will continue to require storm water treatment as part of development and redevelopment to address water quality concerns in Mill Pond and Lehmans Lake.

   If funding becomes available, the City will work with the ECWMC to implement upstream water quality projects for Mill Pond. The City is currently completing a water quality restoration and treatment project for Mill Pond.

   The Mill Pond is associated with Elm Creek, which is listed as an impaired water. The City of Champlin supports the ECWMC in its efforts to implement the WLA's identified in the TMDL and WRAPS Studies. The results of the studies and implementation of corrective measures is for areas upstream of the Mill Pond are vital to the City's goals of returning the Mill Pond to a quality swimmable recreational water body. The City's goals are to improve water quality within the Elm Creek as a primary objective. Without the Watershed Commission and member MS4 Cities implementing strategies and meeting WLA requirements to improve water quality of the Elm

Creek upstream of the Mill Pond, there are few options for the City to construct projects that would meaningfully address the ultimate objective. However, the City's goal will be dependent in some respects on the achievement of the ECWMC's goals to improve the water quality in the tributary drainage area entering the Mill Pond.

The City will work with the Three Rivers Park District if funding becomes available to implement upstream water quality improvements for Lehmans Lake. The City has recently completed improvements to Beaver Pond upstream and continues to perform periodic monitoring of the water quality in the lake.

3. The stormwater wetland located near Trillium Court N is in need of maintenance to remove deposited sediment. **(Map Label #12)**

   Corrective Action: The City will perform a pond survey to determine the extent of the cleanout and if the pond contains any contaminated materials. A project will be completed to clean out deposited sediment to the pond can perform as designed.

B. Flooding and storm water rate control concerns

1. Stabilization issues along the Mississippi River have occurred along the trail near Donie Galloway Park within subwatershed 4P-2. (**Map Label #1)**

   Corrective Actions: The City has implemented various streambank protection measures and will continue to investigate the feasibility of future stabilization options if this issue continues.

2. The storm sewer outlet for subwatershed 9T-6 will continue to be a pumped outlet that does not always meet the needs of the subwatershed. The outlet drains into the MnDOT shared storm sewer system. (**Map Label #2)**

   Corrective Actions: The City will complete an analysis to address the pump capacity and subwatershed runoff for this outlet structure. It is anticipated reconstruction of this outlet structure is needed to upgrade the system.

3. The City has a number of landlocked basins or subwatersheds as follows:

8T-P3.3	5T-3	4T-29
2T-P16	2T-P17	2T-P21
2T-P20	8V-P4.1	8V-P3
9T-6	1T-P10	

   Corrective Actions: The City will evaluate each area. If there are no flooding concerns, no outlet would be necessary. If the area does flood or causes other problems, the City will study the feasibility of providing an outlet for this area.

4. The stormwater pond located near 4366 Perry Ave occasionally backs up into neighboring properties and streets. The existing outlet is unable to discharge water at a quick enough rate through the downstream wetland. This pond and wetland area was recently tested and shown to contain contaminated material as well. **(Map Label #10)**

   Corrective Action: The City will identify options for outlet improvements and a pond/wetland dredging project to provide the needed drainage through the area and limit pond backups.

5. Stormwater runoff has formed a drainage ditch along Woodlawn Trail near Overlook Court N. During rain events, runoff backs up into backyards and Woodlawn Park. **(Map Label #11)**

Corrective Action: The City will identify options to improve drainage through this area.

6. Storm sewer located along Parkside Tail is under capacity and frequently floods the adjacent roadway. **(Map Label #14)**

   Corrective Action: The City will assess the needed storm sewer capacity for this area and will look to upgrade the system during a street reconstruction project.

7. The stormwater pond located near Goose Lake Parkway is in need of outlet improvements and occasionally backs up into adjacent lots. **(Map Label #15)**

   Corrective Action: The City will look to install an outlet control structure to prevent any future pond backups; possibly a submerged outlet.

8. 7T-P4 overtops the low point on Tanglewood Lane and causes street flooding.

   Corrective Action: The City will identify options to improve the street drainage and provide a better functioning emergency overflow for the pond.

D. Impacts of storm water quality on fish and wildlife resources

1. Stormwater quality can have an impact on fish and wildlife resources.

   Corrective Actions: The City has completed a wetland function and values assessment to assess the impacts of storm water quality on wetland resources and the TMDL studies will evaluate the impact of storm water on impaired waters.

E. Impacts of erosion and sedimentation on water resources

1. Erosion at the Oak Creek outlet/West River Road has been noted as a concern in the past.

   Corrective Actions: The City undertook a channel stabilization project to add riprap near the outlet Oak Creek outlet. The City will continue to monitor additional erosion issues along West River Road and will address as needed.

2. There are old storm sewer outlets to the Mississippi River in various locations that are in need of maintenance or replacement.

   Corrective Actions: The City will review each outlet and conduct maintenance or upgrades as needed.

3. The Oak Creek outlet beneath Pribble Street N accumulates sediment from continuous erosion occurring upstream. Due to the surrounding properties, there is a lack of access to maintain this area. **(Map Label #9)**

   Corrective Action: The City will identify causes of the upstream erosion and will address as necessary. The City will also consider installing upstream sumps during street reconstruction projects to catch sediment from the roads prior to discharging into Oak Creek.

4. The stormwater pond located near Highview Court N has a sediment delta that has formed near the inlet. **(Map Label #13)**

   Corrective Action: The City will schedule a pond maintenance project to clean out the deposited sediment and will identify any upstream erosion issues that could be contributing to the excess sediment.

F. Impact of land use practices and development on water resource issues

1. Most of the subwatersheds in the City are fully developed. These areas developed prior to the requirement to incorporate storm water management BMP's into the design and storm water runoff enters the river without treatment.

   Corrective Actions: West Mississippi Watershed Management Commission completed a watershed assessment for three developed subwatershed within Champlin. Various stormwater management measures were identified to incorporate additional water quality treatment. Specific projects are listed in Table 6-1. The City has also completed the installation of numerous rain gardens within the 1-V subwatershed. When street reconstruction or redevelopment projects are proposed, the City will investigate additional BMP's that can be incorporated to provide pretreatment for storm water prior to discharge to the Mississippi River.

2. The ECWMC is concerned about protecting the Mississippi River corridor.

   Corrective Actions: The City will work with the ECWMC to adopt and implement rules regarding the River corridor.

G. Adequacy of existing regulations to address adverse impacts on water resources

1. The City has adopted ordinances related to floodplain regulation, illicit discharge, surface water management, native vegetation planting, wetland management and erosion control. These ordinances need to be kept up to date as requirements change. A copy of the ordinances can be found in **Appendix B**.

   Corrective Action: The City will continually evaluate these ordinances and will update them as needed. The City will continue to enforce all ordinances as necessary.

2. The City currently has limited funding sources available to complete projects related to water resources.

   Corrective Action: Stormwater funds and special assessment funding are not adequate to implement the studies, programs, and capital improvements outlined in this plan. The City will continue to apply for grants to fund the implementation of capital improvements identified in this management plan. The City will consider increasing the current stormwater utility rate to fund future implementation items.

H. Identification of potential problems which are anticipated to occur in the next 20 years

1. Inspecting and maintaining existing stormwater infrastructure throughout the City.

   Corrective Actions: The City of Champlin is responsible for maintenance of its stormwater system in conformance with the MCPA's MS4 Program. This includes maintenance of pipes, outlets, 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. The City will look to develop and refine the inspection program to make better use of existing asset management technology. Refer to **Appendix C** for a copy of the City SWPPP. Other units of government are responsible for maintaining the stormwater systems under their control.

2. Increasing prevalence of polycyclic aromatic hydrocarbons (PAHs) in stormwater ponds from runoff of roadways and other surfaces.

Corrective Action: As stormwater ponds are inspected and maintained, the City will identify any ponds that are contaminated and follow protocol for disposal of dredged material. The City also bans the use of materials for paved surfaces that contain PAHs for future development and redevelopment.

3. Accumulation of debris and material on City streets.

   Corrective Action: The City will continue to sweep debris and salt from streets twice annually and more frequently for those areas along lakes and streams. More information regarding street sweeping activities can be found in the SWPPP which is located in **Appendix C.**

4. Elevated levels of chloride concentrations have been found in stormwater ponds, surface water bodies, and groundwater throughout the Twin Cities Metro Area. At levels exceeding the water quality standards, chloride can be toxic to aquatic life and can make drinking water sources not economically feasible to treat.

   Corrective Action: The City will continue to implement chloride best management practices such as reducing salt use on roadways, education to private business owners about correct salt application, and improve policies designating salt usage. The City will continue to track and implement ways to reduce road salt usage based on its MPCA Level 1 and 2 Smart Salt Certifications.

5. Prioritizing inspection and maintenance of stormwater ponds as well as determining the performance of existing stormwater ponds throughout the City.

   Corrective Action: The City of Champlin will implement the Stormwater Asset Management Program (SWAMP) that identifies and prioritizes pond maintenance activities and BMP inspections. This program will need to be updated regularly to result in an updated prioritization of pond inspection and maintenance activities. In addition, the program will estimate the current treatment provided by each pond to determine if the desired amount of treatment is being achieved. This program will help meet the MS4 permit requirements related to the management of stormwater ponds.

I. Availability and adequacy of existing technical information to manage water resources

1. The development of this Comprehensive Surface Water Management Plan has provided additional technical information to the City related to storm water management.

   Corrective Actions: The City will continue to update the hydrologic/hydraulic model and GIS database as new development and redevelopment occur.

2. The City's current hydrologic/hydraulic model does not incorporate Atlas 14 (updated precipitation probability information) rainfall data. This data was recently released by NOAA in 2013.

   Corrective Actions: The City will consider updating their current models with the newest Atlas 14 rainfall data in the next 5 years. The City will also continue to implement Atlas 14 in the review and approval of new or redevelopment projects.

5. ESTABLISHMENT OF GOALS AND POLICIES

The City has developed a number of goals, strategies, and policies for the management of stormwater within the City. These goals and policies have been developed to complement county, regional, and state goals and policies and to assist the City in protecting valuable water resources. The goals of the City are as follows:

Goals

1. To prevent flooding.

2. To reduce to the greatest practical extent the public capital expenditures needed to correct flooding and water quality problems.

3. To improve water quality.

4. To reduce erosion and sedimentation from surface flows.

5. To preserve wetlands, lakes, and streams.

6. To promote groundwater recharge.

7. To protect and enhance fish and wildlife habitat and water recreational opportunities.

8. To secure the other benefits associated with the proper management of surface water.

In order to achieve the City's goals for managing stormwater, four strategies were developed. These strategies will assist the City in targeting its main audiences for the purposes of stormwater management as follows:

Strategies

Cooperation with other agencies: This strategy recognizes that the City is not alone in managing stormwater within its boundaries. There are a number of other local, state, and federal agencies that also have rules and regulations related to stormwater management. Through this strategy, the City has recognized these other agencies' role in this endeavor and will cooperate and coordinate with these agencies as necessary.

Education: This strategy includes educating various groups within the City about proper stormwater management. Education of residents, City Staff, City Council, business owners, and developers is included in this strategy to assist in meeting the City's goals. The City is also active with the Citizen Science Program is partnership with local schools.

Regulation: Much of stormwater management comes in the form of regulations put on new or redevelopment within the City. These regulations will also assist the City in achieving their water management goals. Policies related to the management of stormwater are included in the regulation strategy.

Internal operations: The final strategy relates to the internal operations of the City. By outlining policies related to how the City's operations will treat and manage stormwater, the City can work to achieve its stormwater management goals.

The City has identified target audiences for the policies outlined in each strategy. The target audiences and strategies are as follows:

AUDIENCE	STRATEGY
Public – Residents and Business Owners	Education, Regulation
City Staff and City Council	Cooperation, Education, Operation
Developers	Education, Regulation
Review Agencies	Cooperation

Based on the target audience and the strategy, the City has developed a number of policies. These policies are outlined below.

Additionally, projects within the City will require review and permits from the Elm Creek Watershed Management Commission (ECWMC) or the Shingle Creek/West Mississippi Watershed Management Commission (SCWMWMC). Projects will be required to meet each WMC's requirements. The rules for these WMC's are contained in **Appendix I and Appendix J** and on each WMC's web-site.

B. EDUCATION

The purpose of the education strategy in meeting the City's goals is to foster responsible water quality management practices by educating residents, business owners, City Staff, City Council, and developers about proper stormwater management. If these targeted audiences recognize their role in responsible stormwater management in their homes, businesses, and practices, it is another means for the City to meet its goals. This education strategy has also been designed to be in conformance with the NPDES requirements.

STRATEGY: EDUCATION	
Policy No.	***Policy***
1	The City will continue to implement its public education as part of the NPDES Phase II program.
2	The City will develop and update its website for stormwater management information, volunteer opportunities, public meeting notices related to stormwater management, the City's SWPPP, and contact information for stormwater issues.
3	The City will develop and distribute a quarterly newsletter and include information in other City mailings aimed at fostering responsible water quality management practices. Topics may include, but not be limited to: ● Wetland buffers ● Groundwater quality and protection ● Controlling invasive species ● Water conservation and the water cycle ● Proper hazardous waste disposal ● Yard waste management ● Pet waste disposal ● Illicit discharge
4	The City will collaborate with ECWMC, SCWMWMC, and other entities to implement stormwater management education efforts.
5	The City will provide annual training opportunities to City Staff regarding housekeeping and construction BMPs and the NPDES permit requirements.

6	The City will conduct pre-construction meetings with contractors to review erosion control methods and inspections for projects that disturb one acre or more for City projects.

7	The City will submit a public notice 30 days in advance and hold an annual public meeting to review the SWPPP, Surface Water Management Plan, and BMPs.
8	The City will maintain a phone line and website link to report construction site erosion control concerns and waste disposal infractions. The phone number is 763-421-8100 and a link is on the City's website.

C. REGULATION

The policies developed in this strategy outline specific stormwater management elements that are required to be implemented through the development and/or permitting process. The regulation strategy is targeted at the public, developers, City Staff, and City Council.

Additionally, projects within the City will require review and permits from the Elm Creek Watershed Management Commission (ECWMC) or the Shingle Creek/West Mississippi Watershed Management Commission (SCWMWMC). Projects will be required to meet each WMC's requirements. The rules for these WMC's are contained in **Appendix I and Appendix J** and on each WMC's web-site. The trigger for permit review/permit by the WMC's is outlined below:

SCWMWMC	Projects with 1 acre or more of detached single-family residential development o Review for projects between 1 and 15 acres may be reviewed by the City. Projects greater than 15 acres are required to be reviewed by the Commission. Projects with 0.5 acres or more of other development projects excluding detached single-family residential development o Review for projects between 0.5 and 5 acres may be reviewed by the City. Projects greater than 5 acres are required to be reviewed by the Commission. Linear projects creating or acre or more of new impervious Plans of any land development adjacent to or within a DNR Public Water/Wetland/ Watercourse Plans for any land development or site work within a 100-year floodplain Review is requested by City Single family developments with more than 15 acres that drain to more than one watershed
ECWMC	Plans of any land development that disturb more than one acre of land Road projects that increase impervious surface by one acre or more Plans of any land development adjacent to or within a DNR Public Water/Wetland/ Watercourse Any culvert installation or replacement, bridge construction, stream cross-section alteration or activity requiring a DNR Waters Permit Projects with the 100-year floodplain

- Review is requested by the City
- Land disturbing activities that drain to more than one watershed

STRATEGY: REGULATION	
No.	***Policy***
Rate Control	
1	Future discharge rates from new development and redevelopment will not exceed existing discharge rates for the 2-year, 10-year, and 100-year critical storm events for the project location as set forth in NOAA Atlas 14 Volume 8 or its successor.
2	Design calculations for the 2-, 10-, and 100-year critical storm event must be submitted to the City for review and approval.
3	The design of major stormwater storage facilities shall accommodate a 100-year critical duration event.
4	The design of new local storm sewer systems shall be based on a 10-year critical duration rainfall event.
5	For collection systems not designed to meet rate control standards (i.e. catch basins) a clogging factor of 50% will be utilized in sizing intake structures.
6	An emergency spillway (emergency outlet) from ponding areas shall be installed a minimum of 1 foot below the lowest building opening and shall be designed to have a capacity to overflow water at an elevation below the lowest building opening at a rate not less than 3 times the 100-year peak discharge rate from the basin or the anticipated 100-year peak inflow rate to the basin, whichever is higher.
Flood Control	
7	For new development, the basement floor elevation will be two feet above the elevation of any known historic high groundwater elevations for the area and the 100-year high surface water elevation in the area. Information on historic high groundwater elevations can be derived from any reasonable sources including piezometer data, soil boring data, percolation testing logs, etc.

8	Any new development or redevelopment building construction within the City will maintain a minimum building opening elevation 3 feet above the projected 100-year high water elevation for the area. If this 3 foot building opening freeboard requirement is considered a hardship, the standard could be lowered to 2 feet if the following can be demonstrated: ● That, within the 2-foot freeboard area, stormwater storage is available which is equal to or exceeds 50% of the stormwater storage currently available in the basin below the 100-year elevation. ● That a 25% obstruction of the basin outlet over a 24 hour period would not result in more than 1 foot of additional bounce in the basin. ● An adequate overflow route from the basin is available that will provide assurance that one foot of freeboard will be maintained for the proposed low building opening.
9	For areas with landlocked basin, the area shall be modeled to accommodate a back-to-back 100-year, 24-hour rainfall event; and the 100-year, 10-day runoff event. The highest water elevation in the basin from this analysis shall be the 100-year high-water level.
10	The City prohibits filling activities within the 100-year floodplain that will cause an increase in the stage of the 100-year or regional flood or cause an increase in the flood damages in the reach affected unless floodplain mitigation at a 1:1 ratio is provided. Additional detail is provided in the City's floodplain ordinance on the City's website.
11	A plan review and permit is required for any project that is within the 100-year floodplain, upland flood storage area, or changes the timing, storage, or carrying capacity of any tributaries in the 100-year floodplain.
12	Any 100-year floodplain area on private property will be covered by a drainage and utility easement or outlot dedicated to the City upon development or redevelopment.
Water Quality Treatment	
13	Stormwater must be treated prior to discharge to remove 60% of phosphorus and 85% of total suspended solids. Treatment can be provided in on-site or regional systems and through permanent ponding or a combination of BMP's that will meet these requirements.

14	If a permanent water quality pond is used to meet water quality requirements, the pond is required to meet the following requirements: - Water quality features consistent with NURP criteria and best management practices - A permanent wet pool with dead storage of at least the runoff from a 2.5-inch storm event - Permanent pool depth of 4 to 10 feet - 3:1 pool length to width ratio or greater with an irregularly shaped shoreline - 10:1 side slopes for a 10-foot bench at the normal water elevation - 3:1 to 20:1 side slopes for the remainder of the pond - Skimming device designed to prevent migration of floatables and oils for at least the 2-year event - Maintenance areas allowing access to remove sediment - Permanent pool volume greater than or equal to 2.5-inch rainfall over the watershed assuming full development - A 10-foot buffer comprised of mainly native plant species is required around storm ponds to provide additional water quality, minimize encroachment into the ponds, and reduce geese populations from access adjacent lawn areas. Seeding information for these buffers is contained in **Appendix G.**
15	New stormwater management ponds, infiltration areas, and treatment devices shall be covered by drainage and utility easements or outlots that are dedicated to the City. Rain gardens and other alternative BMP's may or may not be placed into easements, depending on the entity responsible for maintenance.
Infiltration/ Volume Control	
16	Stormwater runoff abstraction via infiltration, evapotranspiration, capture, and/or reuse of stormwater runoff is required in the amount equivalent to 1.1 inches of runoff generated by the new impervious surface. Runoff must be infiltrated within 48 hours.
17	Pretreatment of stormwater is required prior to discharge to an infiltration system.
18	Infiltration will not be allowed in areas where the existing or past land uses have the potential to contaminate the stormwater runoff, where the soils are not suitable for infiltration, or in areas where there is less than three feet of separation between the bottom of the infiltration system and the groundwater.
19	The City will encourage Low Impact Development (LID) techniques for new development and redevelopment by working with project proposers. New development and redevelopment shall consider and incorporate to the extent practical and feasible LID techniques that have been reviewed and approved by the City. A maintenance plan for these features will be submitted to the City for review and approval.
20	A post-construction percolation test must be performed on each infiltration practice and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate prior to the project acceptance by the City.
21	Areas of permanent pools tend to lose infiltration capacity over time and will not be accepted as an infiltration practice.

22	Where infiltration is not advisable or infeasible due to site conditions, biofiltration must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron fillings or other material to reduce soluble phosphorus must be provided.
Wetlands	
23	The City acts as the Local Government Unity (LGU) for the Wetland Conservation Act (WCA).
24	For new development or redevelopment projects, a minimum 20-foot/ average 30-foot buffer of native vegetation is required around wetlands and DNR Public Waters and Watercourses, excluding the Mississippi River.
25	A 50-foot buffer with native vegetation is required around Elm Creek for any new development. Redevelopment is required to attempt to accommodate this buffer as reasonable and practical.
26	Maintenance is allowed of an unimproved access strip through the buffer that is not more than 20 feet in width for recreational access to the wetland or water body.
27	Public trails are allowed within the buffer provided the total buffer width is maintained around the trail.
28	Management of noxious weeds or invasive species is allowed within the buffer. Planting of gardens or non-native species is not allowed within the buffer.
29	The City anticipates completing a wetland functions and values assessment using the most recent version of the Minnesota Routine Assessment Method (MnRAM). Based on the results of this assessment, the wetland management policies in **Appendix F** will apply.
Groundwater	
30	The City will cooperate with the Department of Health to ensure that all unsealed or improperly abandoned wells within the City are properly sealed.
31	Infiltration areas will not be allowed within 400 feet of a community water well or within 100 feet of a private well or within a 1-year time of travel zone in a wellhead protection area. The City will continue to implement its Wellhead Protection Plan.
32	The City will continue to comply with Hennepin County's 1994 Groundwater Management Plan.
Erosion and Sediment Control	
33	The City has an adopted erosion control ordinance that requires a permit for any land disturbing activity, including new home construction. Exemptions are outlined within the ordinance and include activities that result in less than 50 cubic yards of disturbance or filling. The City ordinance is included in **Appendix B** and on the City's website.

34	The City will conduct erosion control inspections in conformance with the NPDES permit for all projects that require an NPDES construction permit.

D. INTERNAL OPERATIONS

The City's internal operations can have a significant impact on stormwater management. This strategy is targeted primarily at the City with some areas targeted at the public and/or another agency. These policies are aimed at operation and maintenance activities associated with water resource management within the City.

STRATEGY: INTERNAL OPERATIONS	
No.	***Policy***
1	The City will sweep the streets at least twice annually and record the results. Areas that need more frequent sweeping will be swept as needed.
2	The City will inspect 20% of its stormwater treatment basins, structural pollution control devices, outfalls, and ponds every year on a rotating basis. Maintenance will be conducted as necessary.
3	Stormwater runoff to a landlocked area that cannot handle the increased runoff must maintain runoff volumes to the existing conditions.
4	Outlets for landlocked areas will be allowed provided the outlet complies with wetland and floodplain regulations; the basin provides storage below the outlet for the back-to-back 100-year, 24-hour event; and that there are no downstream impacts.
5	The City prefers to use regional detention and treatment areas rather than site specific detention areas where feasible. The City recognizes that development of these areas will likely be incorporated into development activity and may not be initiated independently by the City. If no regional system is available, development and redevelopment will be required to provide on-site systems.
6	The City requires as-builts of all ponding areas and designated emergency overflows.
7	The City will review its erosion control ordinance and make revisions as needed to address the SWPPP and other regulations as needed. Ordinances can be found in **Appendix B** and on the City's website.
8	The City will review and update its stormwater management ordinance and floodplain ordinance as needed. Ordinances can be found in **Appendix B** and on the City's website.
9	The City will continue to enforce its illicit discharge ordinance. This illicit discharge ordinance can be found in **Appendix B** and on the City's website.

10	The City will maintain and update its storm sewer map, including storm sewer pipes, outfalls, ponds, conveyances, water bodies on an annual basis.
11	The City will annually conduct visual inspections of stormwater discharges on City-owned land and record results of inspections in conformance with the City's MS4 SWPPP.
12	The City will contact the MPCA State Duty Officer to report any hazardous material spills or discharges in conformance with the City's MS4 SWPPP.
13	The City will quarterly inspect and maintain any exposed stockpiles and storage areas on City property to prevent erosion and discharge into the storm sewer system or water body in conformance with the City's MS4 SWPPP.
14	The City will maintain and submit annual inspection reports, maintenance reports, and other needed documentation in conformance with the NPDES permit.
15	The City Staff will annually review and adjust as necessary mowing, fertilizing, and herbicide application practices to reduce organic and pollutant discharges to the storm sewer and water bodies.
16	The City will review road salt application practices and consider alternative products as they become available.
17	The City will cooperate with the MPCA and other outside organizations to develop Total Maximum Daily Load (TMDL) plans for the listed impaired waters that receive stormwater from the City. The City will implement TMDL studies that affect land use within its borders as these studies are completed.
18	The City will work with the ECWMC, SCWMWMC, and adjoining communities to address intercommunity drainage issues if and when they occur.
19	The City will work with ECWMC to remove deadfall in Elm Creek if the ECWMC undertakes a cooperative project with the upstream cities.
20	The City will protect threatened and endangered species in conformance with State and Federal laws.
21	The City has adopted the Mississippi River Corridor Plan in 1981. In 1999, it was updated to respond to Mississippi National River and Recreational Area (MNRAA). These guidelines are included in the City's Comprehensive Plan.
22	The City will implement SWAMP to track and report inspection and maintenance activities of the City's BMPs and to schedule MS4 infrastructure inspections.

6. IMPLEMENTATION PROGRAM

6.1. Overview

Champlin has developed its implementation program to address issues identified earlier in this Surface Water Management Plan (SWMP). This program reflects the needs and concerns of many stakeholders including the City Council, City Staff, citizens, and watersheds. The program also considers Champlin's ability to fund these items through its general levy and stormwater utility. The implementation program consists of the following components:

- Capital Improvement Projects (CIP)
- Operation and Maintenance
- Official Controls
- Monitor and Study

Capital Improvements consist of "on-the-ground" projects intended to remedy issues identified as current problems and to continually provide storm system improvements, new/redevelopment, street reconstructions, parks projects and more. The capital projects focus on phosphorus reduction within the TMDL subwatersheds and any additional areas identified in the City's Non-Degradation Report. Projects within the TMDL subwatersheds are the highest priority for the City. Flood protection is also a high priority for capital improvement projects.

Operation and Maintenance items consist primarily of the general maintenance of Champlin' drainage system including ponds, storm sewer, creeks, and culverts. Operation and maintenance also includes activities related to NPDES MS4 Permit compliance such as BMP maintenance and inspections, annual meetings, SWPPP updates, and SWPPP implementation.

Official Controls include ordinance and policy revisions intended to achieve water quality and quantity benefits. Each proposed implementation item has a specific driver, which are identified in the tabulated implementation program later in this section. Over time, codes must be updated to remain consistent with goals, policies and practices. City ordinances are revised as needed to stay current with the MS4 permit requirements and revisions to the watershed district rules.

Monitor and Study items consist primarily of projects designed to collect water resource data such as water quality monitoring projects, and projects to evaluate cost benefits for various stormwater treatments or planning opportunities. These types of projects also include relevant partnerships and collaborations with the City.

6.2. 10-Year Implementation Plan Priorities

Table 6.1 presents Champlin's Implementation Program. More importantly, the Implementation Program aligns with the City's goals and policies presented in this SWMP. **Table 6.1** presents implementation items in each of the four functional areas of Capital Improvements (CIP), Operation and Maintenance, Official Controls and Monitor and Study. The implementation program incorporates Champlin' Storm Water Pollution Prevention Plan (SWPPP) through direct reference of items that have a financial impact. The City will update the implementation program in conjunction with its annual MS4 public meeting. As the City's CIP is reevaluated, **Table 6.1** may be updated, which does not require an amendment to this SWMP.

A three-tiered approach has been adopted that priorities projects as "High", "Medium", or "Low". This method is based on the following criteria:

High Priority:

- Flood problem area that has structures inundated during events having intensities less than that associated with a 1% chance storm.
- Projects with the highest Benefit relative to Project Cost.
- Projects that should be completed soon to meet regulatory or permit requirements.
- Projects that are needed to address significant public safety concerns.
- Projects that are needed to finish or upgrade the construction of the City's storm water infrastructure system to meet long-term improvement plans.
- Projects that should be constructed now so as to be in conjunction with other projects that will result in a reduction in cost or impact to the public.
- Projects for which funding is now available or will be available in the next few years.

Medium Priority:

- Flood problem areas with structures that do not flood but have limited freeboard in less than 1% rainfall events and high potential for increased water elevations if system obstructions occur during the rainfall event.
- Projects with a high Benefit relative to Project Cost.
- Projects that must be completed soon, but not immediately to meet regulatory or permit requirements.
- Projects that are needed to address public safety concerns.
- Projects that are needed to finish or upgrade the construction of the City's storm water infrastructure system to meet long term improvement plans, but timing for construction should be delayed to accommodate other planning or project work.
- Projects that should be constructed soon and/or scheduled so as to be in conjunction with other projects that will result in a reduction in cost or impact to the public.

Low Priority: These projects meet the criteria listed above, but are not urgent, have lower Benefit to Cost Ratios, can be delayed until other work can be done at the same time, or must be delayed until funds become available.

TABLE 6.1

SURFACE WATER MANAGEMENT IMPLEMENTATION PLAN

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Capital Improvement Projects (CIP)														
1	Drainage regrading and system modification along Wood Lawn Park Trail	$200,000	Stormwater Utility, Grants, Watershed Partnerships								$200,000			Identified in the 2004 SWMP
2	Implement upstream water quality BMP's to address water quality concerns in Mill Pond	$115,000	Stormwater Utility, Grants, Watershed Partnerships			$35,000			$35,000			$45,000		Identified in the 2004 SWMP
3	Construct storm water management and water quality improvements with Douglas Drive Reconstruction	$121,600	Stormwater Utility, Grants, Watershed Partnerships				$121,600							Identified in the 2004 SWMP
4	Implement upstream water quality BMP's to address water quality concerns in Elm Creek	$180,000	Stormwater Utility, Grants, Watershed Partnerships		$40,000			$40,000			$50,000		$50,000	Identified in the 2004 SWMP, STM SWR-35
5	Implement upstream water quality BMP's to address water quality concerns in Lehmans Lake	$130,000	Stormwater Utility, Grants, Watershed Partnerships			$40,000			$40,000			$50,000		Identified in the 2004 SWMP, STM SWR-36
6	Provide BMP for French Lake Road	$145,000	Stormwater Utility, Grants, Watershed Partnerships									$145,000		Identified in the 2004 SWMP, STM SWR-18
7	Repair and replace the storm sewer south of West River Road on Oak Creek.	$100,000	Stormwater Utility, Grants, Watershed Partnerships							$100,000				Stm Sewer - 23 City's 2018-2027 CIP
8	Reconstruct the storm sewer lift station near 123rd and Champlin Drive	$100,000	Stormwater Utility, Grants, Watershed Partnerships		$100,000									Stm Sewer - 30 City's 2018-2027 CIP
9	Stormwater BMPs as part of the City's regular street improvement projects.	$600,000	Stormwater Utility, Grants, Watershed Partnerships	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	$60,000	Stm Sewer - 37 City's 2018-2027 CIP

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
10	Elm Creek upstream TMDL project - Phase III. Includes stabilization of 3000 linear feet of stream banks upstream of Mill Pond. To be completed in partnership with MnDNR, ECWMC, and Hennepin County.	$280,000	Stormwater Utility, Grants, Watershed Partnerships		$280,000									Stm Sewer - 39 City's 2018-2027 CIP
11	Elm Creek Strem Restoration Phase IV - Includes 4600 linear feet of stream habitat restoration located upstream of Mill Pond. To be completed in partnership with MnDNR, ECWMC, and Hennepin County.	$350,000	Stormwater Utility, Grants, Watershed Partnerships			$350,000								
12	Elm Creek Strem Restoration Phases V - Includes repairing stream habitat restoration located upstream of Mill Pond. To be completed in partnership with MnDNR, ECWMC, and Hennepin County.	$300,000	Stormwater Utility, Grants, Watershed Partnerships					$300,000						
13	Mississippi Crossings installation of a rain garden	$6,750	Stormwater Utility, Grants, Watershed Partnerships		$6,750									Stm Sewer - 40 City's 2018-2027 CIP
14	Infiltration tree trenches to be installed along the Mississippi Crossings	$100,000	Stormwater Utility, Grants, Watershed Partnerships		$100,000									Stm Sewer - 41 City's 2018-2027 CIP
15	Galloway Park river bank stabilization	$51,000	Stormwater Utility, Grants, Watershed Partnerships				$51,000							Stm Sewer - 44 City's 2018-2027 CIP
16	Mississippi Crossings stormwater pond, Phase III	$67,000	Stormwater Utility, Grants, Watershed Partnerships		$67,000									Stm Sewer - 45 City's 2018-2027 CIP
17	Implement Stormwater Control Measures identified in the 7V subwatershed identified in hthe Champlin Watershed Assessment report. The City will look into partnering with WMWMC to complete these projects.	$1,156,000	Stormwater Utility, Grants, Watershed Partnerships		$160,000		$65,000		$600,000		$52,000	$9,000	$270,000	Champlin Watershed Assessment, 2014
18	Implement Stormwater Control Measures identified in the 4V subwatershed identified in hthe Champlin Watershed Assessment report. The City will look into partnering with WMWMC to complete these projects.	$341,000	Stormwater Utility, Grants, Watershed Partnerships			$195,000		$6,000		$140,000				Champlin Watershed Assessment, 2015

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
19	Implement Stormwater Control Measures identified in the 2T subwatershed identified in hthe Champlin Watershed Assessment report. The City will look into partnering with WMWMC to complete these projects.	$314,250	Stormwater Utility, Grants, Watershed Partnerships		$30,000	$30,000	$76,500	$30,000	$30,000	$9,000	$30,000	$48,750	$30,000	Champlin Watershed Assessment, 2016
20	Trillium Court stormwater wetland maintenance. The City will perform a pond survey and clean out sediment of the pond.	$123,500	Stormwater Utility					$3,500	$120,000					Section 4, Area of Concern #12
21	Perry Ave stormwater pond improvements. The City will identify options for outlet improvements and a pond/wetland dredging project to provide the needed drainage through the area and limit pond backups.	$25,000	Stormwater Utility		$25,000									Section 4, Area of Concern #10
22	Goose Lake Parkway outlet improvements. The City will look to install an outlet control structure to prevent any future pond backups.	$10,000	Stormwater Utility			$10,000								Section 4, Area of Concern #15
23	Tanglewood outlet improvements. The City will look at catch basin capacity and EOF functionality.	$5,000	Stormwater Utility		$5,000									

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Operation and Maintenance														
24	City Website - Update and maintain the City's website with stormwater management information.	$60,000	Stormwater Utility	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	$6,000	
25	Education Program: The City will provide stormwater education and outreach programs for residents within the City as part of the NPDES MS4 permit. The City or its designee will raise awareness to the audience involved by providing information on stormwater pollution prevention, effects of illicit discharges, best management practices, components of the SWPPP and outside entity resources available to City residents and business owners. Includes distribution of a quarterly newsletter.	$90,000	Stormwater Utility	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	
26	Annual Meeting - Hold annual public meeting combined with City Council Meeting or other public participation/involvement event to solicit public input on the SWPPP, discuss its effectiveness, or amendments. Explore new venues and enhance meeting effectiveness and participation. Effectiveness will be evaluated based upon the amount of resident feedback received.	$8,000	Stormwater Utility	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	
27	Storm Sewer System Mapping - Update storm sewer map and GIS database to meet the requirements of Part II.D.4. of the MS4 General Permit. Identify outfalls, including unique identification (ID) number assigned by the permittee, and an associated geographic coordinate. Update pond inventory and submit to MPCA.	$150,000	Stormwater Utility	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	
28	Illicit Discharge Inspections - Identify areas that are high-priority outfalls and around high-risk establishments (fast food restaurants, dumpsters, car washes, mechanics, and oil changes). The City will integrate those sites into its annual MS4 inspection activities.	$50,000	Stormwater Utility	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	
29	Parking Lots & Street Cleaning - Sweep City maintained streets 2 times per year	$825,000	Stormwater Utility	$80,000	$80,000	$80,000	$80,000	$80,000	$85,000	$85,000	$85,000	$85,000	$85,000	
30	Storm Sewer Inspection Program - Conduct one inspection of all City-owned ponds and outfalls prior to expiration date of the MS4 General Permit. Annually inspect of 100% of structural pollution control devices. Annually inspect 20% of known public outfalls, sediment basins and ponds each year on a rotating basis.	$90,000	Stormwater Utility	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	$9,000	

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
31	TMDL Review & Implementation - Champlin will work cooperatively with the Minnesota Pollution Control Agency and other outside organizations to develop and implement all future TMDL implementation plan(s) for impaired waters designated under Section 303(d), receiving MS4 discharges from within or adjacent to the City.	$10,000	Stormwater Utility	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	
32	Mississippi River Outlet Maintenance - Review and conduct frequent maintenance on older storm sewer outlets to the Mississippi River.	$120,000	Stormwater Utility			$40,000			$40,000			$40,000		
33	Model Updates - Continue to update and maintain the City's hydrologic/hydraulic model. Includes any data sharing with the watersheds on updates to their models.	$40,000	Stormwater Utility	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	
34	Stormwater Systems Maintenance Training Program - Training focused on parking lot and street cleaning, storm drain systems cleaning, road salt materials management.	$8,000	Stormwater Utility	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	
35	Road Salt Application Review - The City will record the annual activities of the salt distribution program and adjust current practices as necessary.	$12,000	Stormwater Utility	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	
36	Select Priority Areas - Evaluate the City's existing program and select 3 priority areas to provide focused outreach (e.g., specific TMDL reduction targets, promoting residential BMPs, etc.)	$10,000	Stormwater Utility	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	
37	Storm Sewer Upgrades - Includes yearly maintenance and upgrades to the City's existing storm sewer system.	$500,000	Stormwater Utility	$45,000	$45,000	$45,000	$45,000	$45,000	$55,000	$55,000	$55,000	$55,000	$55,000	
38	Critical Lake Watersheds - The City will perform additional street sweeping in those areas that drain directly to the lakes.	$150,000	Stormwater Utility	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	$15,000	
39	Pond Surveys - The City will annually complete pond surveys to schedule and prioritize the necessary maintenance projects. This effort will be assisted by the SWAMP Application.	$31,500	Stormwater Utility		$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
40	Annual Pond Cleanout - The City will perform yearly cleanout of ponds identified for maintenance with the SWAMP program.	$1,475,000	Stormwater Utility		$150,000	$150,000	$150,000	$150,000	$175,000	$175,000	$175,000	$175,000	$175,000	
41	Stormwater Asset Management Program (SWAMP) - Annual Maintenance of the City's Program	$27,000	Stormwater Utility		$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	$3,000	
42	Chloride Management - The City will promote and adopt strategies included in the TCMA Chloride Management Plan.	$20,000	Stormwater Utility	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	$2,000	
Official Controls														
43	Stormwater Compliance Inspections - Implement written procedures, checklist and responsible persons to ensure that at least 10% of inspections conducted annually are performed at deemed high priority inspection sites (e.g., near sensitive receiving waters, projects larger than 5 acres)	$10,000	Stormwater Utility	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	
44	Ordinance Updates - The City will continually review their ordinances related to stormwater, illicit discharge, erosion and sediment control, wetlands, and floodplains for consistency with state and watershed requirements. Updates will be made as needed.	$50,000	Stormwater Utility	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	
45	Policy and Procedure Review - Ongoing review of policy and procedures designed to meet wasteload allocation requirements. Identified in the Elm Creek WRAPS report.	$15,000	Stormwater Utility	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	
46	Improve Riparian Vegetation - The City will look to increase riparian buffers and enforce DNR buffer rules on 100% of streams and tributaries.	$16,000	Stormwater Utility			$8,000				$8,000				
47	Update Stormwater Utility Fee - The City will review the implementation of proposed programs and improvements identified in this plan and will determine the potential need to revise the existing stormwater utility fee.	$7,500	Stormwater Utility		$2,500			$2,500			$2,500			
48	Ordinance Enforcement - Enforce stormwater related ordinances, including the erosion control ordinance and conduct pre-con meetings with contractors to ensure compliance.	$80,000	Stormwater Utility	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
49	Construction Site Implementation of Stormwater and Erosion and Sediment Control BMPs - Review and evaluate the efficacy of construction site stormwater and erosion control plans through regular (weekly to monthly) inspections for construction sites to ensure compliance with City ordinances. Document all inspections and enforcement actions (public and private) and keep on file at City.	$100,000	Stormwater Utility	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	
Monitor and Study														
50	Complete a feasibility study for Donie Galloway Park stabilization and flooding concerns if identified as an issue.	$35,000	Stormwater Utility, Grants, Watershed Partnerships										$35,000	Section 4, Area of Concern #1
51	Complete landlocked subwatershed analysis for the existing landlocked areas to determine the need for an outlet	$50,000	Stormwater Utility, Grants, Watershed Partnerships						$50,000					
52	Groundwater Monitoring - Maintain water quality sampling requirements mandated by MDH and analyze trends in water chemistry, looking for any possible degradation of quality or changes in aquifer hydraulics. Evaluate the water quality monitoring strategy and results to ensure that they are consistent with federal and state requirements yet also take into account local conditions.	$35,000	Stormwater Utility, Grants, Watershed Partnerships	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	$3,500	Identified in the City's Wellhead Protection Plan
53	Perform an analysis to address the pump capacity and the storm sewer outlet for the 9T-6 subwatershed and determine if a reconstrction of the outlet structure is needed.	$40,000	Stormwater Utility, Grants, Watershed Partnerships			$40,000								Section 4, Area of Concern #2
54	Subwatershed Assessment Studies - Partner with ECWMC to complete urban BMP subwatershed assessments and identify feasible retrofit projects. These studies will be used to help identify projects to meet TMDL goals for waterbodies within Elm Creek Watershed.	$80,000	Stormwater Utility, Grants, Watershed Partnerships				$35,000						$45,000	Identified in the Elm Creek WRAPS report

SECTION VI

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
	Hydrologic/hydraulic model update - Update the City's current models with Atlas 14 rainfall data.	$50,000	Stormwater Utility				$50,000							
55	Complete a feasibility study to improve drainage through a drainage ditch along Woodlawn Trail near Overlook Court N. During rain events, runoff backs up into backyards and Woodlawn Park.	$15,000	Stormwater Utility, Grants, Watershed Partnerships								$15,000			Section 4, Area of Concern #11
	TOTAL	$9,016,100		$283,800	$1,256,550	$1,188,300	$839,400	$822,300	$1,395,300	$737,300	$829,800	$818,050	$910,300	

[1] Cost estimates are preliminary and subject to review and revision as engineer's reports are completed and more information becomes available. Table reflects 2017 costs and does not account for inflation. Costs generally include labor, equipment, materials, and all other costs necessary to complete each activity. Some of the costs outlined above may be included in other operational costs budgeted by the City.

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

[3] Staff time is not included in the cost shown.

7. FINANCIAL CONSIDERATIONS

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

For 2018-2027, the projects, programs, and studies outlined in **Table 6.1** are estimated to cost about $9,016,100. Potential funding sources are listed below:

- City's Stormwater Utility Fund
- Special assessments for local improvements made under the authority granted by Minnesota Statutes Chapter 429.
- Revenue generated by Watershed Management Special Tax Districts provided for under Minnesota Statutes Chapter 473.882.
- Watershed District Levies from cooperation and partnership on projects with the watershed management commissions
- Grant monies that may be secured from various local, regional, County, State, or Federal agencies. This would include MnDOT, MPCA, Metropolitan Council, MnDNR and others.
- Tax abatement
- Developer funds
- Neighboring cities
- Other sources could include tax increment financing, state aid, etc.

The City will use funds generated from its Stormwater Utility as the primary funding mechanism for its implementation program including; maintenance, repairs, capital projects, studies, etc. The City will continue to review the stormwater utility fee annually and adjust based on the stormwater related needs of the City and other available funding mechanisms. The City will explore additional revenue sources as they become available and from those options listed above to cover additional funding needs.

8. AMENDMENT PROCEDURES

8.1. Review and Adoption Process

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

> 'After consideration but before adoption by the governing body, each local government unit shall submit its water management plan to the watershed management organization[s] for review for consistency with the watershed plan. The organization[s] shall have 60 days to complete its review.'
>
> 'Concurrently with its submission of its local water management plan to the watershed management organization, each local government unit shall submit its water management plan to the Metropolitan Council for review and comment. The council shall have 45 days to review and comment upon the local plan. The council's 45-day review period shall run concurrently with the 60-day review period by the watershed management organization. The Metropolitan Council shall submit its comments to the watershed management organization and shall send a copy of its comments to the local government unit.'
>
> 'After approval of the local plan by the watershed management organization[s], the local government unit shall adopt and implement its plan within 120 days, and shall amend its official controls accordingly within 180 days.'

8.2. Plan Amendments and Future Updates

This Local Surface Water Management Plan will be incorporated into the City's 2040 Comprehensive Plan update in 2018. The Plan is intended to be in effect for 10 years, at which time an updated plan will be required. Following review by the watershed management commissions and the formal adoption process outlined above, the Champlin SWMP will be current.

The City of Champlin may revise/amend the plan in response to City-identified needs or any future amendments to the watershed plans. Minor changes to the plan will not require a re-submittal for agency review. Minor changes to the Plan shall be defined as changes that do not modify the goals, policies, or commitments expressly defined in this plan by the City. Adjustment to subwatershed boundaries will be considered minor changes provided that the change will have no significant impact on the rate or quality in which storm water runoff is discharged from the City boundaries.

Major plan amendments shall be made known to the following parties and will proceed according to the process set forth in Section 8.1.

1. City Administrator and City Engineer
2. Affected Watershed Management Commissions within the City
3. Metropolitan Council
4. Public within the City through a public hearing process

Appendix B

City of Champlin, MN

Mississippi River Corridor Critical Area Plan

TABLE OF CONTENTS

SECTION I: INTRODUCTION

The Mississippi River Corridor Critical Area (MRCCA) is a joint state, regional and local program providing coordinated planning and management for a 72 mile stretch of the Mississippi River through the seven-county metropolitan area and 54,000 acres of surrounding land across 30 local jurisdictions.

The MRCCA is home to a full range of residential neighborhoods and parks, as well as river-related commerce, industry, and transportation. Though the river corridor has been extensively developed, many intact and remnant natural areas remain, including bluffs, islands, floodplains, wetlands, riparian zones, and native aquatic and terrestrial flora and fauna. These resources and values are protected through development standards and criteria implemented via local land use plans and zoning ordinances.

History of the MRCCA and Rulemaking

The MRCCA encompasses many of the Twin Cities metropolitan area's most significant natural and cultural resources, including: water, navigational capabilities, scenic views, geology and soils, vegetation, minerals, flora and fauna, cultural and historic resources and land and water-based recreational resources. The MRCCA is home to a full range of residential neighborhoods, as well as river-related commerce, industry, and transportation. Though the river corridor has been extensively developed, many intact and remnant natural areas remain, including geomorphological features such as bluffs, islands, floodplains, wetlands, riparian zones, and native aquatic and terrestrial flora and fauna.

To manage and protect these vital resources, in 1976 Governor Wendell Anderson designated the MRCCA by Executive Order 130 under authority of the Critical Areas Act of 1973. The designation was renewed by Governor Albert Quie in 1979 by Executive Order 79-19, and made permanent that same year by resolution of the Metropolitan Council. The MRCCA covers a 72-mile stretch of the Mississippi River through the Twin Cities Metropolitan Area, extending from the townships of Dayton and Ramsey in Hennepin and Anoka counties to the north and extending downstream to Ravenna Township, just south of Hastings in Dakota County. The legal boundary of the MRCCA is established in Executive Order 79-19.

Land use in the MRCCA is currently regulated by local governments through local MRCCA plans and ordinances as directed by Executive Order 79-19. Executive Order 79- 19 established four land use districts within the MRCCA and set standards and guidelines to be used by local governments when preparing plans and regulations. By the early 1980s, all local governments within the MRCCA had adopted MRCCA plans, and all but a few had adopted MRCCA ordinances.

In 1988, Congress established the Mississippi National River and Recreation Area (MNRRA), a unit of the National Park System. MNRRA shares the same boundaries as the MRCCA. In establishing MNRRA Congress found that "the Mississippi River Corridor within the Saint Paul-Minneapolis Metropolitan Area represents a nationally significant historical, recreational, scenic, cultural, natural, economic, and scientific resource" and that there was a national interest in the "preservation, protection and enhancement of those resources for the benefit of the people of the United States. The National Park Service, in its 1995 Comprehensive Management Plan for the MNRRA, determined it would not acquire significant land holdings or establish land use regulations for the MNRRA but would instead rely on state and local administration of Executive Order 79-19 to protect the resources. In 1991, the Minnesota Legislature reaffirmed its commitment to a permanent MRCCA designation by recognizing the MNRRA as a state-designated critical area.

In 1995, Governor Arne Carlson issued Reorganization Order 170 transferring administrative responsibility for the MRCCA from the Environmental Quality Board (EQB) to the DNR. This order transferred rulemaking authority for the management of the MRCCA to the DNR. In 2009, the Legislature directed the DNR to establish rules for the MRCCA. Based on input throughout an extensive public involvement process, the DNR completed draft rules in 2011. However, the rulemaking process was put on hold that same year before a notice of intent to adopt rules was issued. The DNR was unable to publish a notice of intent to adopt rules within 18 months of the date of the legislative directive, and its authority to complete the rulemaking lapsed. In 2013, the Legislature revised State Statute and directed the DNR to resume rulemaking, The DNR launched this new rulemaking effort in 2013 shortly after the close of the legislative session. Based on input received during this period, the DNR made additional revisions to the working draft rules and produced a final draft of the proposed MRCCA rules.

Summary of MRCCA Designation & Rulemaking:

- **1973** - Minnesota passes Critical Areas Act of 1973.
- **1976** - Governor Wendell Anderson designates 72-mile stretch of the Mississippi River through the metro area and its adjacent corridor a Critical Area. Executive Order 130.
- **1979** - Governor Albert Quie continues the designation. Executive Order 79-19 and the Metropolitan Council acts to make designation permanent.
- **1988** - Congress establishes the Mississippi National River and Recreational Area (MNRRA) as unit of NPS (MNRRA shares same boundary as MRCCA).
- **1991** - MNRRA designated a state critical area per Critical Areas Act.
- **1995** - Governor Arne Carlson shifts administrative responsibility for the MRCCA from EQB to DNR.
- **2009** - Legislature amends MN Statutes, § 116G.15 and directs DNR to conduct rulemaking for the MRCCA, but rulemaking authority lapses
- **2011** - DNR develops draft rule after participatory stakeholder process, but rulemaking authority lapses 2013 Legislature directs DNR to resume rulemaking process in consultation with local governments.
- **2013** - Legislature directs DNR to resume rulemaking process in consultation with local governments.
- **2017** – MRCCA Rules become effective January 4.

Designated Goals of the MRCCA Rules include:

1. Protect and preserve the Mississippi River and adjacent lands that the legislature finds to be unique and valuable state and regional resources for the benefit of the health, safety, and welfare of the citizens of the state, region, and nation;
2. Prevent and mitigate irreversible damages to these state, regional, and natural resources;
3. Preserve and enhance the natural, aesthetic, cultural, and historical values of the Mississippi River and adjacent lands for public use and benefit;
4. Protect and preserve the Mississippi River as an essential element in the national, state, and regional transportation, sewer and water, and recreational systems; and
5. Protect and preserve the biological and ecological functions of the Mississippi River corridor.

Previous MRCCA Planning Efforts

Champlin first adopted an MRCCA plan, then called the Mississippi River Critical Area Plan, in 1980 in collaboration with the cities of Anoka and Ramsey to meet the requirements of Executive Order 79-19. The plan was updated during Champlin's 2003 Comprehensive Planning process and again as part of the 2008 Comprehensive Plan. Since 1980, many of the first plan's recommendations have been implemented and regulations remained relevant in 2008 as well as today. Development has been carefully managed and regulated via the City's Conservancy District Ordinance, Floodplain Ordinance and other land use/zoning controls.

The following summarizes these programs:

Conservancy District Ordinance

Champlin's primary tool for regulating corridor development is the Conservancy District Ordinance. It is the purpose and intent of the ordinance to prevent damage to natural resources and to preserve and enhance their values to the public. This ordinance is a product of the 1980 Critical Area Plan and in general met the intent of the Critical Area Executive Order, with some modifications to fit the local situation.

Floodplain Ordinance

The Floodplain Management Act was passed in 1969 as a tool to minimize damages due to flooding. Using standards established by the DNR, the City put in place a Floodplain Ordinance that regulates development within floodplain areas. Maps prepared by the Federal Insurance Administration in 1977 were first used to delineate floodplain areas. The maps were updated in 2004 and in 2016. With the map updates followed an update of the City's Floodplain Ordinance.

Land Use Plan

The land use plan for Champlin takes into consideration all the environmental constraints, state and metropolitan requirements, as well as local concerns such as:

established or emerging development patterns; physical characteristics of the site and setting; accessibility, availability or timing of essential public services; impact on or compatibility with adjoining properties, neighborhoods and communities; economics of developer and public bodies; ability to positively alter present undesirable development and growth patterns; and expansion of open space.

The riverfront in Champlin is almost entirely developed. The shoreline development has been almost exclusively single-family homes with some apartments in the older developed areas. Most of the shoreline within the developed area is privately owned, with the exception of Galloway Park, Mississippi Point Park and Chandler Park. All homes in the Critical Area are served by public sewer. Although the developed neighborhoods along the river do not have the planning flexibility available in the undeveloped areas, some important issues such as building heights, existing river access, existing land uses, utilities, and site plan review procedures need consideration.

Surface Water Management Plan

The Mississippi River Corridor is managed in accordance with state regulations for clean water, including surface water. The City of Champlin is divided into two distinct watersheds for the purpose of classifying trunk conveyance systems that hydraulically connect retention basins and manage the flow of stormwater. The two watersheds are the Elm Creek Watershed and the West Mississippi Watershed.

Currently all surface water is managed by the Champlin Surface Water Management Plan. The plan includes a layout of the storm sewer trunk system and ponding areas with major and minor drainage districts defined. The general objectives of the Champlin Surface Water Management Plan are as follows:

1. To prevent flooding;
2. To reduce to the greatest practical extent the public capital expenditures necessary to control excessive volumes and rates of runoff;
3. To improve water quality;
4. To reduce erosion and sedimentation from surface flows;
5. To preserve wetlands, lakes, and streams;
6. To promote groundwater recharge;
7. To protect and enhance fish and wildlife habitat;
8. To provide water recreational opportunities;
9. To enhance the natural beauty of the landscape; and
10. To secure benefits associated with the proper management of surface water.

The Plan specifically addresses concerns for wetland preservation and enhancement through a set of goals and policies that are in compliance with the local, state, and federal wetland regulations. Under the guidance of staff, an inventory and classification of a significant number of wetlands and water bodies within the City was accomplished. The incorporation of wetlands into the storm sewer system includes recommendations to improve water quality, such as regional ponding and localized infiltration, while maintaining adequate protection against the 100-year flood.

MRCCA Plan Update

The following MRCCA plan documents existing conditions in the Mississippi River Corridor and develops strategies to preserve and enhance the environmental, scenic, historical, cultural, biological and scientific values, to enhance public outdoor recreation opportunities and communicate the significance of the Mississippi River. The plan provides general direction to the decision-makers and staff of the City on how to handle river corridor decisions in an informed manner consistent with corridor goals and policies.

The public input process for this plan was included in the outreach activities for the 2040 Comprehensive Plan. At a 2017 City Council work session, Councilmembers reviewed selected policies and goals, including those that impact the MRCCA. The items reviewed received overall positive responses and, as such, many of the goals and policies are carried forward from the previous MRCCA plan. The plan elements were also discussed in a 2018 joint meeting with the Environmental Resources Commission and City Council.

In addition, in the fall of 2017 the Champlin initiated two resident surveys. The surveys, designed to measure the community's quality of life including residents' thoughts and opinions on community characteristics, city services and community engagement, found that 90 percent of Champlin residents felt that it was very important to improve connections to the Mississippi River. Further, 89 percent of residents supported Mississippi River water quality efforts. Clearly Champlin residents place high value on the MRCCA as both a natural environment and a place to recreate and have meaningful access.

SECTION II: LAND USE DISTRICTS

Executive Order 79-19 established four land use districts within the MRCCA and standards and guidelines to assist local governments when preparing plans and regulations. Because the original four districts became less consistent with development patterns, 2017 rules established six new districts that more accurately represent existing and planned future development. The six districts include: Rural & Open Space District, River Neighborhood District, River Towns & Crossings District, and Separated from River District, Urban Mixed District, and Urban Core District. Each district reflects the character and development along the river and planned and future development. Different dimensional standards (building height, river setback, and bluff setback) are applied to each district. These standards are administered through local zoning ordinances.

Districts are important for managing the MRCCA because they help protect the Mississippi River as a natural and cultural resource. The standards defined in each district take the existing characteristics into account and keep buildings and other development away from sensitive shoreline areas and areas prone to soil erosion and slope failure. Keeping a distance between sensitive shoreline areas and the development helps to maintain the river's water clarity and quality and reduce sediment runoff. Height provisions help preserve scenic views.

The six districts are established based on the natural and built character of different areas of the river corridor. Descriptions of the districts are as follows:

Rural and open space district (CA-ROS).

The rural and open space district (CA-ROS) is characterized by rural and low-density development patterns and land uses, and includes land that is riparian or visible from the river, as well as large, undeveloped tracts of high ecological and scenic value, floodplain, and undeveloped islands. Many primary conservation areas exist in the district.

The CA-ROS district must be managed to sustain and restore the rural and natural character of the corridor and to protect and enhance habitat, parks and open space, public river corridor views, and scenic, natural, and historic areas.

River neighborhood district (CA-RN).

The river neighborhood district (CA-RN) is characterized by primarily residential neighborhoods that are riparian or readily visible from the river or that abut riparian parkland. The district includes parks and open space, limited commercial development, marinas, and related land uses.

The CA-RN district must be managed to maintain the character of the river corridor within the context of existing residential and related neighborhood development, and to protect and enhance habitat, parks and open space, public river corridor views, and scenic, natural, and historic areas. Minimizing erosion and the flow of untreated storm water into the river and enhancing habitat and shoreline vegetation are priorities in the district.

River towns and crossings district (CA-RTC).

The river towns and crossings district (CA-RTC) is characterized by historic downtown areas and limited nodes of intense development at specific river crossings, as well as institutional campuses that predate designation of the Mississippi River Critical Corridor Area and that include taller buildings.

The CA-RTC district must be managed in a manner that allows continued growth and redevelopment in historic downtowns and more intensive redevelopment in limited areas at river crossings to accommodate compact walkable development patterns and connections to the river. Minimizing erosion and the flow of untreated storm water into the river, providing public access to and public views of the river, and restoring natural vegetation in riparian areas and tree canopy are priorities in the district.

Separated from river district (CA-SR).

The separated from river district (CA-SR) is characterized by its physical and visual distance from the Mississippi River. The district includes land separated from the river by distance, topography, development, or a transportation corridor. The land in this district is not readily visible from the Mississippi River.

The CA-SR district provides flexibility in managing development without negatively affecting the key resources and features of the river corridor. Minimizing negative impacts to primary conservation areas and minimizing erosion and flow of untreated storm water into the Mississippi River are priorities in the district.

Urban mixed district (CA-UM).

The urban mixed district (CA-UM) includes large areas of highly urbanized mixed use that are a part of the urban fabric of the river corridor, including institutional, commercial, industrial, and residential areas and parks and open space.

The CA-UM district must be managed in a manner that allows for future growth and potential transition of intensely developed areas that does not negatively affect public river corridor views and that protects bluffs and floodplains. Restoring and enhancing bluff and shoreline habitat, minimizing erosion and flow of untreated storm water into the river, and providing public access to and public views of the river are priorities in the district.

Urban core district (CA-UC).

The urban core district (CA-UC) includes the urban cores of Minneapolis and St. Paul.

The CA-UC district must be managed with the greatest flexibility to protect commercial, industrial, and other high-intensity urban uses, while minimizing negative impacts to primary conservation areas and minimizing erosion and flow of untreated storm water into the river. Providing public access to and public views of the river are priorities in the district.

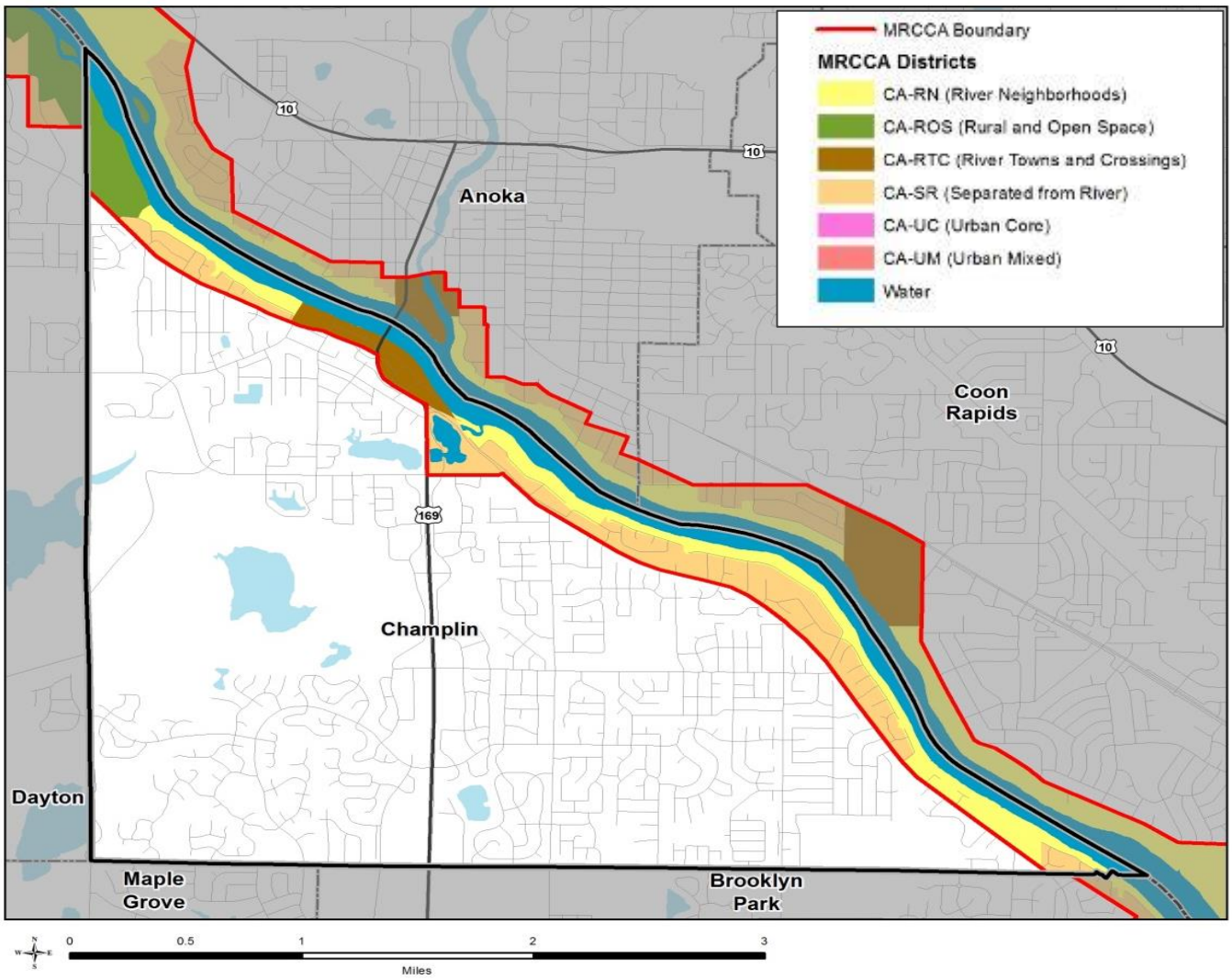
Champlin has 588 acres of land in the MRCCA designated as four different districts: River Neighborhoods (CA-RN), Separated from River (CA-SR), River Towns & Crossings (CA-RTC), and Rural and Open Space (CA-ROS).

CA-RN: Much of the land directly adjacent to the river is designated as CA-RN, which is described as "developed residential lands and existing/planned parkland that are visible from the river, or that abut riparian parkland." In Champlin, this district includes mainly single-family residences that back up on to the river, but also includes Mississippi Pointe Park and Chandler Park. There is a total of 210 acres designated CA-RN.

CA-SR: Inland from the CA-RN District is the CA-SR District, which is described as "land that is separated from and not visible from the river." This district includes mostly single-family homes in the residential areas adjacent to riverfront homes. There is a total of 277 acres designated CA-SR.

CA-RTC: Land designated in the River Towns & Crossings district, which the DNR describes as "historic downtown and river crossing commercial areas" is found directly north and south of the Anoka-Champlin Bridge. Much of the acreage falls in the area known as Mississippi Crossings, which is planned for redevelopment with a mix of high-density residential uses, restaurants, a hotel and event center.

CA-ROS: Rural & Open Space district, which is "rural undeveloped and developed low density residential land that is riparian or visible from the river, often contains tracts of high quality ecological resources." Galloway Park is the only site located in the CA-ROS district.



Land Use Districts in the Mississippi River Critical Area

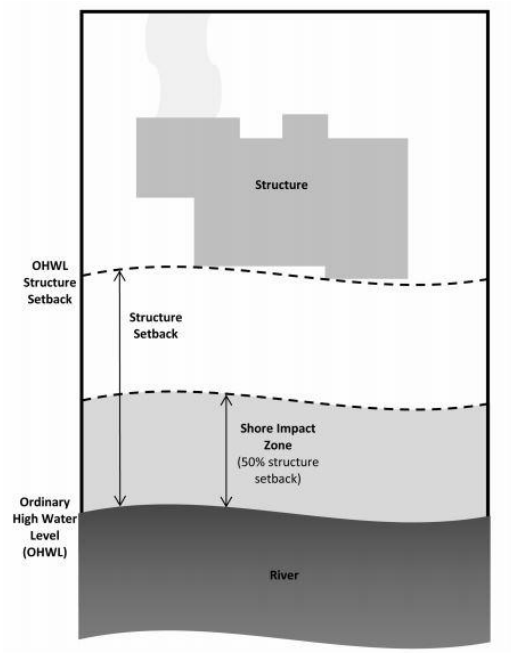
Land Use	Acreage	Percentage	Lineal Footage
Rural Open Space (CA-ROS)	60 acres	10%	3,600 feet
Separated from River (CA-SR)	277 acres	46%	NA
River Neighborhoods (CA-RN)	210 acres	35%	24,700 feet
River Towns and Crossings (CA-RTC)	61 acres	10%	4,400 feet
Total	608 acres	100%	32,700 feet

SECTION III: PRIMARY CONSERVATION AREAS - RESOURCE MANAGEMENT

Primary Conservation Areas (PCAs) are key natural and cultural resources and features that are to be protected through MRCCA plans and ordinances. Examples of these resources and features include shore impacts zones (SIZ), bluff impact zones (BIZ), floodplains, wetlands, natural drainage routes, unstable soils and bedrock, native plant communities, cultural and historic properties, significant vegetative stands, scenic views, publicly owned parks, trails and open spaces, among other resources. PCAs are important as they help ensure that resources and features are given priority consideration for protection.

Shore Impact Zones

A shore impact zone is defined as the land located between the ordinary high-water level (OHW) of Mississippi River and a line parallel to it at a setback of 50 percent of the required structure setback (see diagram below). The shore impact zone in Champlin is predominantly 50 feet wide from the OHW. Though in the CA-RTC district, the shore impact zone is 35 feet wide from the OHW.



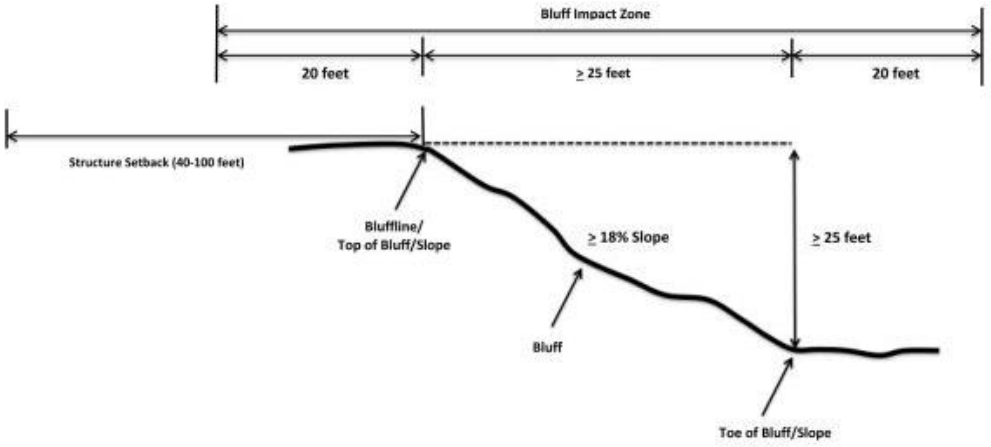
Bluff Impact Zones

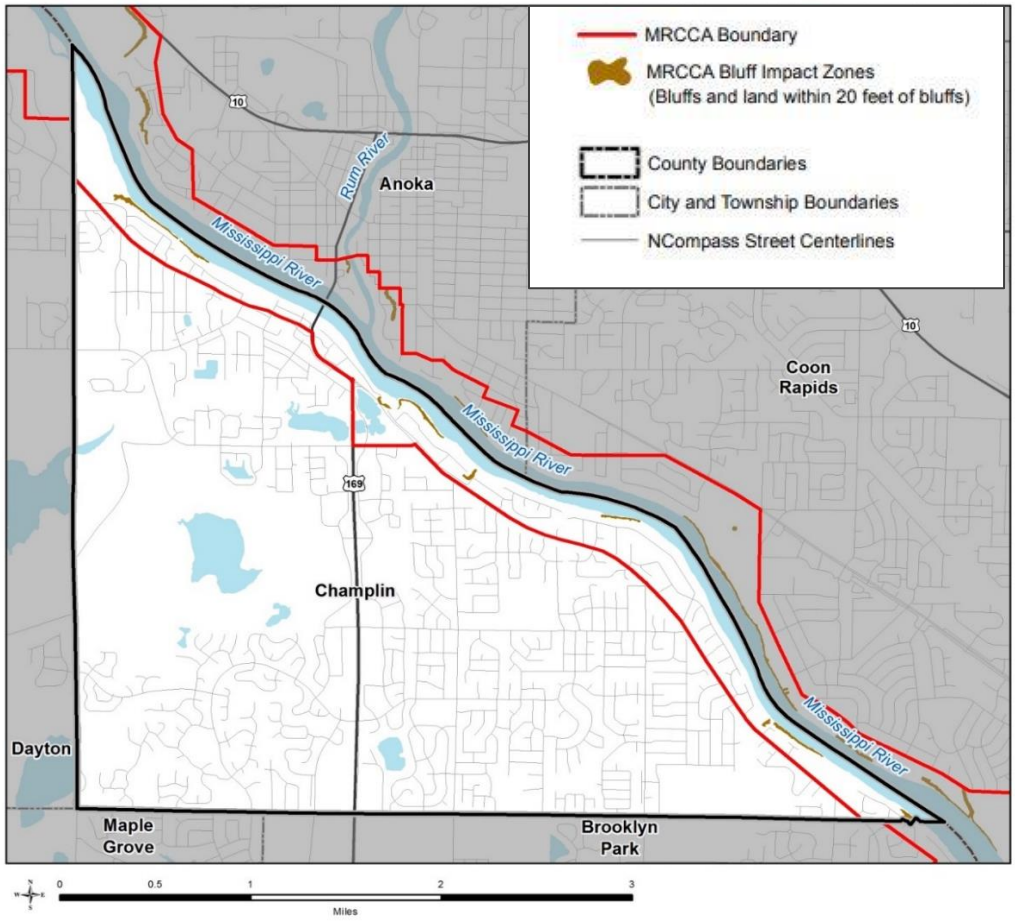
The protection of bluffs in the MRCCA is important to reducing erosion and slope failure, as well as maintaining wildlife habitat, native vegetation and the corridor's scenic character. As a PCA, bluffs and the associated bluff impact zones within 20 feet of the bluffs are regulated by the MRCCA program. Buffs are defined as "a slope that rises at least 25 feet above the ordinary high water level or toe of the slope to the top of the slope and the grade of the slope averages 18 percent or greater, measured over a horizontal distance of 25 feet." (See diagram below)

In Champlin, bluffs are found along the River corridor in three areas: 1) northwest in Galloway Park and adjacent neighborhoods; 2) in and south of Chandler Park; and 3) on

slopes of property in the southwest part of the City. From the top of the bluff inland, the terrain is generally flat or gently sloping.

Regulating development near the bluff is important. Removal of vegetation from the bluff top alters soil stability and increases erosion and siltation. Erosion is of special concern along the Mississippi Riverbank as some properties experience problems aggravated by periods of high water, motorboat wakes and storm water runoff.





Wetlands and Floodplains

Wetlands are low lying areas, which are normally covered with shallow or intermittent waters. Swamps, marshes, bogs, and other low-lying areas are all wetlands, and may occur as part of a river, stream, drainage way, or as a free-standing low area.

Few wetlands are located within the Mississippi River Corridor in the City of Champlin. However, the National Wetland Inventory indicates a small segment of shallow marsh in Galloway Park as well as wooded swamp adjacent to the Mill Pond and at Galloway Park.

In recent years attitudes regarding wetlands have changed a great deal. Wetlands are no longer thought of as wastelands and producers of disease. The reason for this dramatic change in attitudes is the recognition of the important role the wetlands play in our environment. The importance of wetlands can be summarized as follows:

1. Wetlands affect the quality of water by acting as a filter and storing organic materials in the leaves of aquatic plants.
2. Wetland areas are also important for natural ponding. These areas help recharge the water table and reduce peak storm water runoff flows, thereby reducing the flooding potential.
3. Wetlands provide an essential breeding, nesting, and feeding ground for wildlife.
4. Marshes occurring in upland depression areas can reduce soil erosion by dissipating the velocity of the runoff.

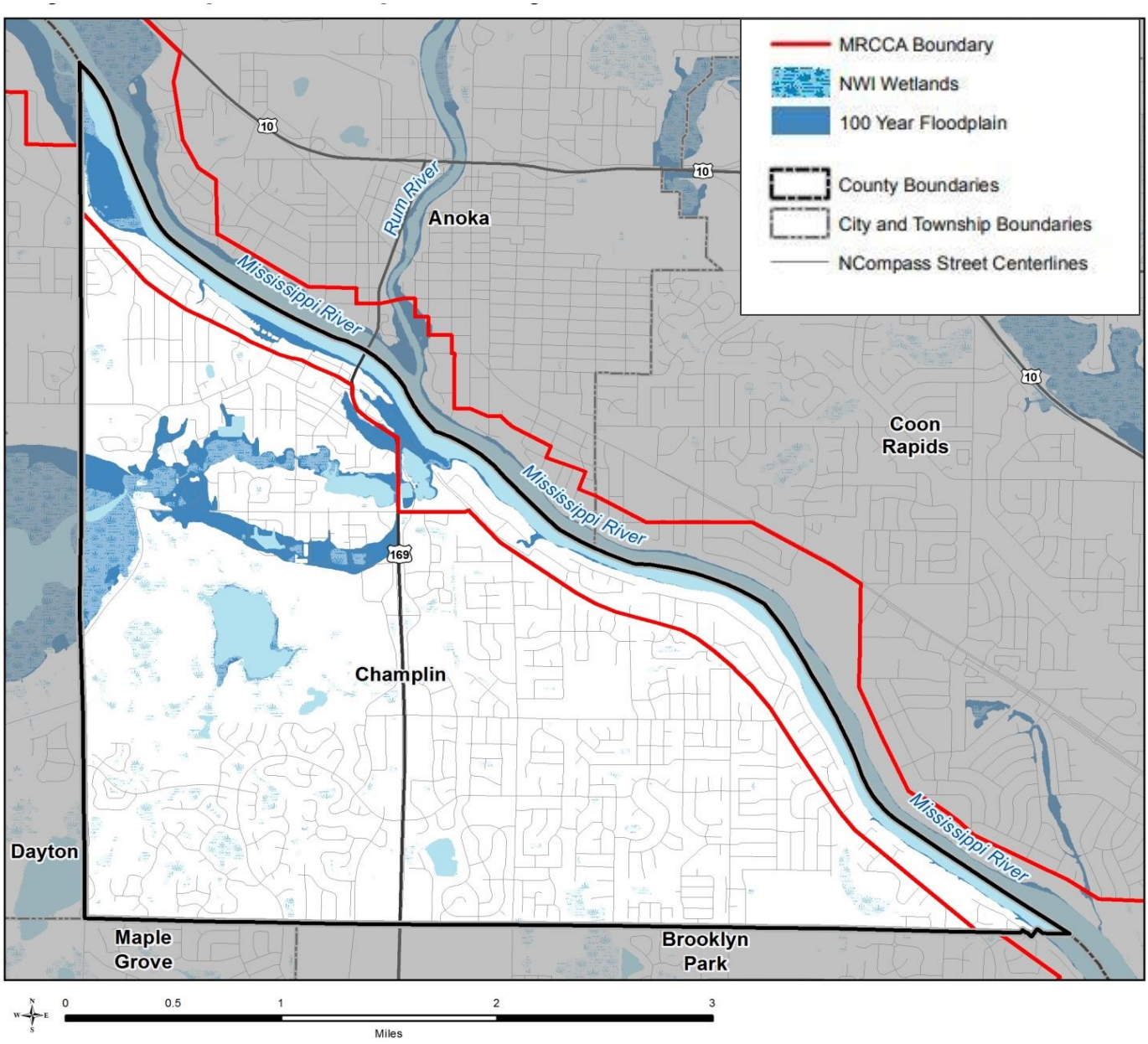
The size and location of wetlands are important in determining the value in maintaining water quality, minimizing flood damage, and preserving wildlife habitat. Champlin adheres to all Federal wetland regulations does not allow the dredging or filling of wetlands without a permit.

The State of Minnesota adopted the Flood Plain Management Act in 1969. The act requires all local units of government to adopt, enforce, and administer a Flood Plain Ordinance. The Flood Plain Act was in response to growing concern over the financial and personal losses resulting from floods.

Flood plains of rivers and streams were originally formed by nature and are a result of flood flows during excessive snowmelt or rainfall. Over a period of time, as more and more development occurs in or along the flood plain, flood heights and velocities increase which result in economic losses.

All people are affected by the problems created by flooding since clean-up costs, flood control costs, and reconstruction of streets and public utilities are all paid with public funds. In order to stop the continued escalation of public cost related to flooding, the emphasis in flood plain management was shifted from flood controls (dikes, channelization, etc.), to regulatory controls (zoning ordinances and subdivision regulations). The regulatory approach establishes guidelines prohibiting development in that part of the flood plain which is most susceptible to flooding (floodway) and in the less susceptible parts (flood fringe) permitting a broader range of land use activities.

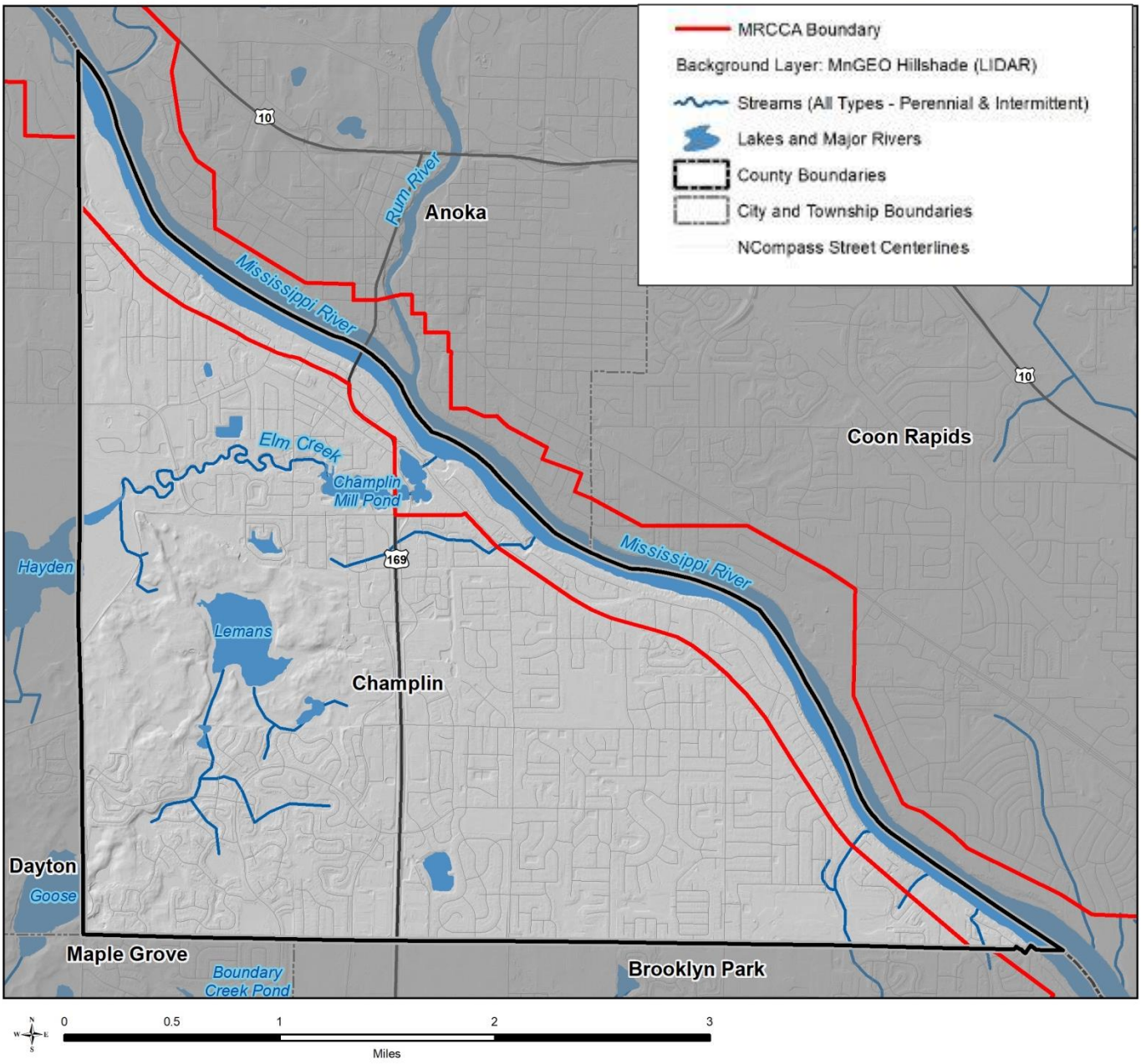
Champlin has fairly high banks along most of the Mississippi River, so a very small percentage of the Critical Area is subject to flooding. Champlin has adopted a Flood Plain Ordinance, which has been approved by the Minnesota Department of Natural Resources.



Natural Watercourses

A natural watercourse is a channel for water movement, such as creeks, streams, or rivers. Champlin's primary watercourse flowing into the Mississippi River is the Mill Pond, which is fed from the Elm Creek. Through preservation of natural watercourses, and with proper management, it is possible to protect the quality and supply of water, as well as reduce the cost associated with sewer construction and other public costs.

Preservation of natural watercourses is an essential part of any program to improve the quality of stormwater runoff, however, the conservation efforts must extend beyond the streams and creeks themselves, and consideration must be given to the entire watershed, including wetlands, lakes, reservoirs, and ground water resources. Particular attention should be paid to the Elm Creek and the Mill Pond due to their direct contribution to the Mississippi River. The City of Champlin shall utilize its Storm Water Management plan as a guide to achieve the best use of its existing water resources.



Soils

When land is designated for a particular use, it is essential that consideration be given to the limitations of the various soil types. Soils vary greatly in composition, and this variation in

soil properties affects its productive capacity, its ability to support heavy loads, its ability to serve as a medium for waste disposal, and to hold its shape and slope after excavation.

Soil limitations for urban development have been classified as slight, moderate, and severe. Slight means that the limitations that exist are minor and can be easily corrected. Moderate indicates that the soil conditions are not favorable, but with proper design and planning, these limitations can be corrected. Severe indicates that soil properties are not suitable for development and corrective measures would require major soil reclamation, intensive maintenance, or special design. This information, when mapped, should be used in determining reasonable land uses.

According to the Hennepin County Soil and Water Conservation District, areas with severe soil limitations are subject to flooding or have a high-water table for at least a part of the year. Most of the areas with severe soil problems are outside the flood plain. Development in the areas must meet established requirements.

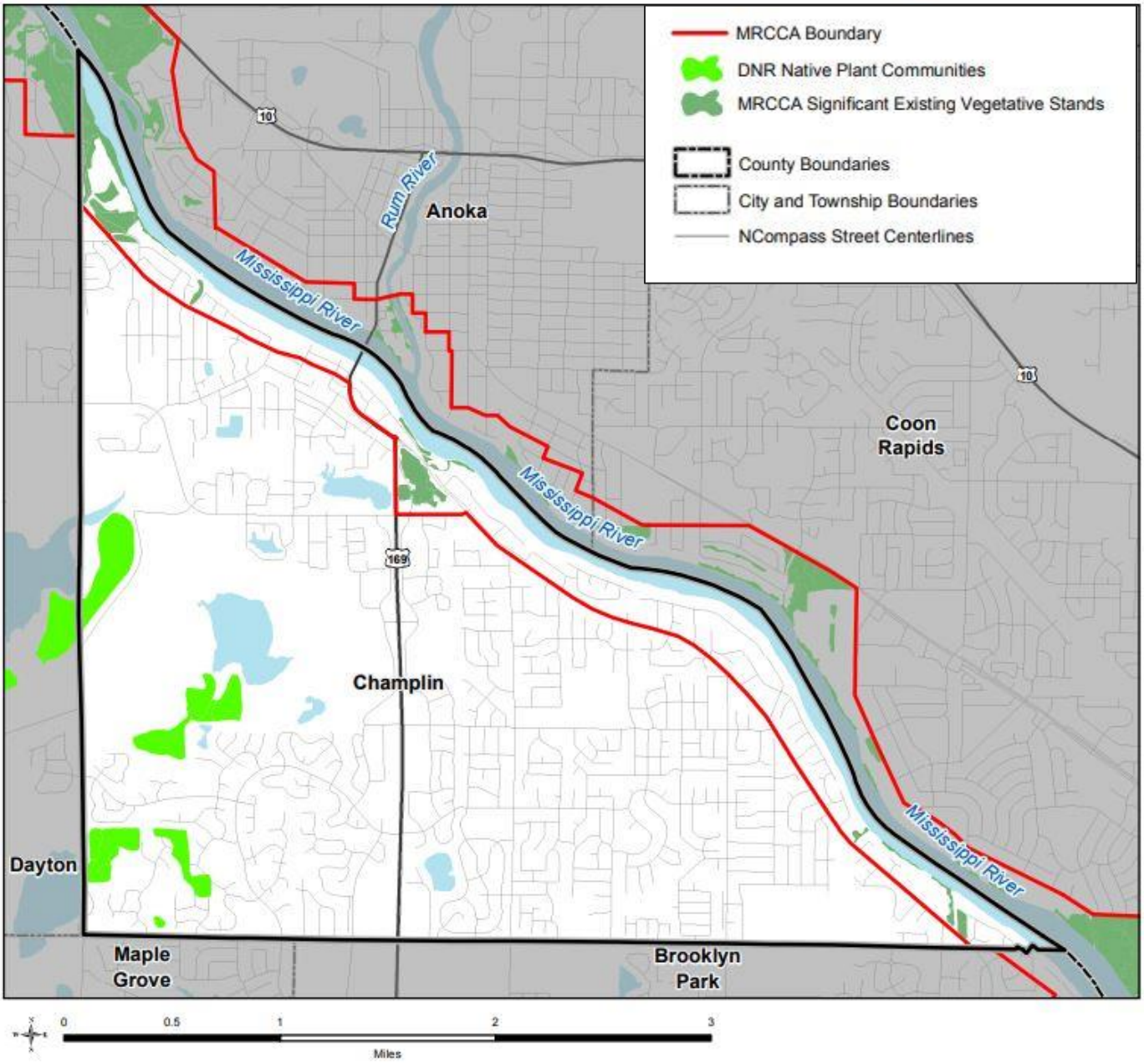
As state previously, sandy soil is a characteristic of Champlin's Critical Area Corridor. Serious erosion problems exist along the river and proper precautions must be taken to minimize the problems.

Native Plant Communities and Significant Vegetation Stands

Champlin has several large native plant communities that exist outside of the MRCCA. These areas are mostly contained in the Elm Creek Park Reserve and are under management of Three Rivers Park District.

There are five significant vegetative stands in the MRCCA. To the north, Galloway Park contains a mix of overstory hardwood trees. Galloway Park is a passive City-owned park and, as such, the existing woodlands are protected. There is also an area around the Mill Pond and Mississippi Pointe Park that is wooded. This area is also under public ownership. The publicly held vegetative stands offer animal habitat and provide for erosion control. Tree resources here have been preserved over the years.

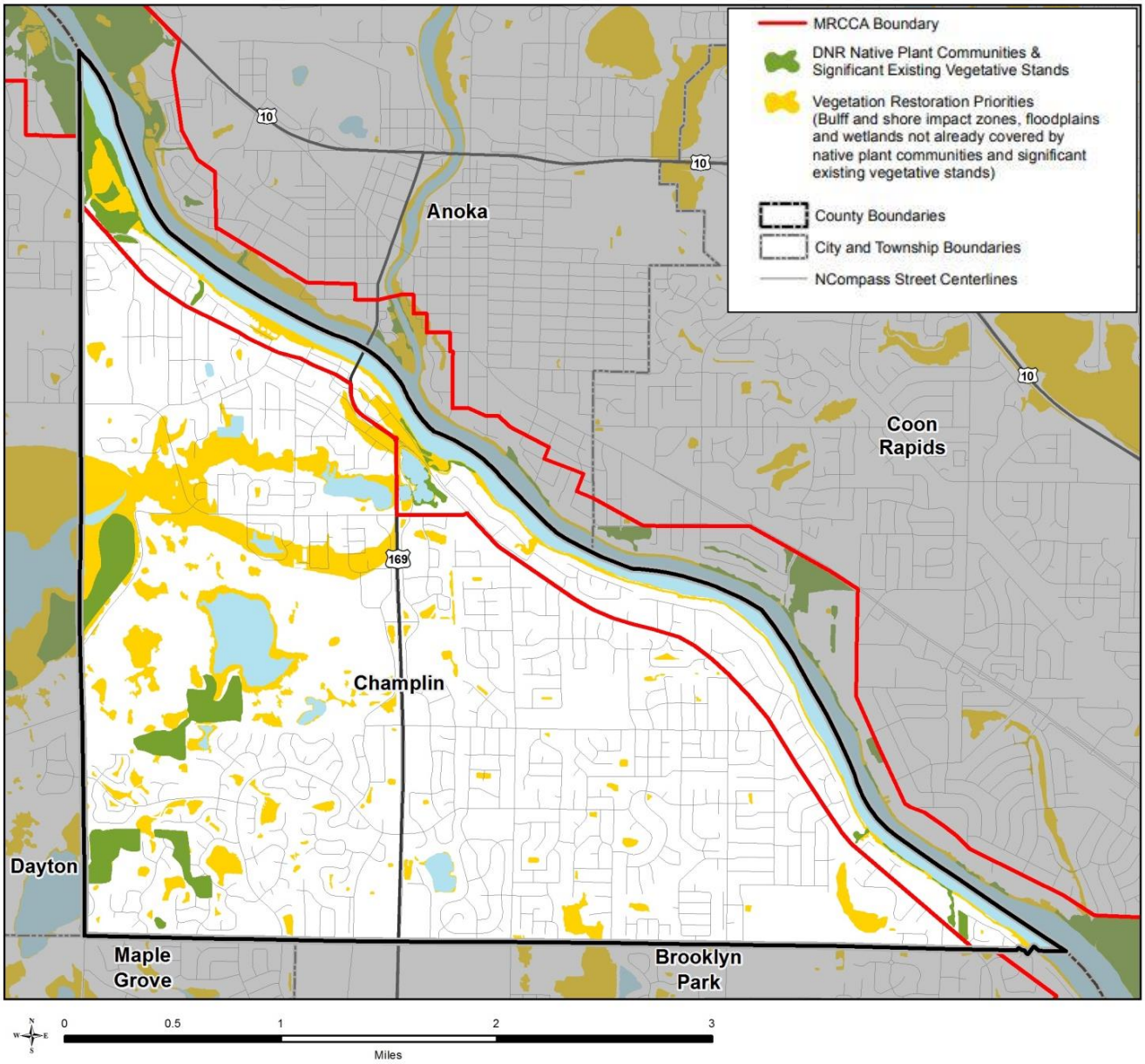
The three other vegetative stands in the MRCCA are wooded natural drainage ways supporting storm water management. These natural drainage ways are protected via the City’s Floodplain Ordinance, Wetland Ordinance and are under drainage and utility easements.



Priorities for Restoration

Restorative measures in the river corridor are often necessary for maintaining water quality and resource integrity. Development and redevelopment present opportunities to prevent erosion, stabilize slopes, and restore natural vegetation. Vegetation plays a large role in slowing stormwater runoff, preventing erosion, filtering nonpoint source pollution, preventing establishment of invasive species, protecting habitat, maintaining stability of bluffs and steep slopes, and maintaining corridor character consistent with each management district. Identifying priorities for natural vegetation restoration is important for maintaining the health of the river and its surrounding land and ensuring that new development or redevelopment does not have negative impact on the corridor.

Even though no formal studies or reports have been completed, priorities for vegetation restoration were identified through a GIS-based process that includes determining the primary conservation areas (PCAs) with no natural vegetation, overlaying native plant communities and significant existing vegetation stands, and reviewing areas where non-vegetative PCAs are still visible. The result is areas with no or limited natural vegetation that are particularly sensitive to vegetation removal or at risk of erosion which serve as a restoration priority area. Restoration priority areas in Champlin include Galloway Park to the north and around the Mill Pond as well as the shore impact zone for residential properties.



Open Space and Recreational Facilities

Municipalities in the MRCCA are required to encourage creation, connection, and maintenance of open space and recreation facilities, and identify potential public access points and trail

locations in their plans. While the majority of the land surrounding the river is single-family homes public access to the Mississippi River in the older neighborhoods is limited. Private property extends up to the river's edge, and as a result it is not practical to consider bike trails or walkways; but it is possible to provide vantage points to the river by maintaining rights-of-way. The existing rights-of-way should not receive intensive recreational improvement but should be maintained for access to the river.

Mississippi Commons
The Mill Pond has been described as the "jewel" of Champlin. Four parks surrounding the Mill Pond are separated by West River Road, cutting off pedestrian access between them. New facilities would be envisioned for Mississippi Commons. Water quality in the Mill Pond would be improved. In addition, the centerpiece of Mississippi Commons might be a facility for arts, history and the river.

The Metropolitan Council's role in meeting park and recreational needs is limited basically to planning. The Metropolitan Council is concerned with regional park needs, regional trails, and special features such as undeveloped river islands. The Council is responsible for prioritizing regional acquisition and improvement programs. Of particular importance to Champlin is the Trail Policy Plan, which has designated trails along the Mississippi River.

Inventory of Existing Parks within the Critical Area

Park	Function	Agency	Size	Activity
Galloway Park	Community	City of Champlin	72 acres	Ball fields, trails, and passive areas.
Mississippi Pointe Park / Chandler Park	Community	City of Champlin	10 acres	Boat launching, canoeing, picnicking, and fishing
Doris Kemp Park	Community	City of Champlin	3 acres	Trails, fishing, and passive viewing
Veteran's Memorial Park	Community	City of Champlin	2 acres	Trails, picnicking, and passive areas
River Shores	Mini	City of Champlin	1 acre	Undeveloped
Public Rights-of-way	Mini	City of Champlin	5 acres	Undeveloped

First, the responsibility of providing additional public lands along the river should not be viewed exclusively as a County or State responsibility. Although it is not necessary to maintain public access or ownership of all undeveloped it is not necessary to maintain public access or ownership of all undeveloped riverfront property, the following standards should be applied in these areas:

Trails are addressed in Champlin's Comprehensive Park and Trail Plan. It is anticipated that trails will be located to provide residents with access routes to recreational, educational and commercial facilities.

Water-Oriented Uses

Water-oriented uses such as recreational marinas, public recreational uses, and other river-dependent uses can provide a community with economic, recreational, and cultural benefits. They can also contribute to external impacts like traffic, hours of operation, noise, and surface water use. Water-oriented uses are important because they provide an opportunity for residents and businesses to take advantage of the river and use it for purposes that require water access. Access to the river for water-oriented uses gives the community a unique advantage over others in the metro area.

In Champlin, the land adjacent to the river is primarily developed low-density residential, institutional, or park and recreational land. Water-oriented use of the river is solely boating made accessible by private docks along riverfront homes and by the public boat launch located in Mississippi Point Park. This public boat launch allows for public recreational use of the river. While the launch is heavily used in the summer, it has little impact on the river corridor and its surrounding land.

With small-scale floating docks, opportunities to publicly access the river and store boats are increased while disruption to the river is minimized. When designed properly, dock construction can be done in a way that protects water quality, minimizes visual impact, and avoids increasing runoff and erosion.

Public River Corridor Views

Public River Corridor Views (PRCVs) is a term defined as "views towards the river from public parkland, historic properties, and public overlooks, as well as views toward bluffs from the opposite shore." Public views of the river corridor are an important scenic resource and the development of the term assists local governments and stakeholders with identifying and protecting these resources. They are important because, as a PCA, they help maintain public viewing access of the river corridor even as communities grow and development occurs. Local governments are required to identify these scenic resources and protect those identified views through ordinance requirements and ordinance administration. The City of Champlin has little public access to the river outside of the Mississippi Pointe/Chandler Park area. Most of the river frontage is privately owned with single-family homes backing up onto the river. PRCVs exist along the corridor where the public is able to access and view the river. The aerial on the next page identifies to the two locations. Photos are also provided.

The first location at Mississippi Pointe Park is particularly notable as you can view a long distance to the north and can see the Champlin-Anoka Bridge. Maintaining shorter vegetation along this shoreline is encouraged.

The second, at Chandler Park, is the highest bluff in Champlin. The bluff is protected by a vegetative buffer and, as such, does not offer overlook opportunity. Its scenic value is likely best realized from across the River in Anoka. Removal of vegetation here is discouraged as it would diminish the view as a natural riverfront edge.

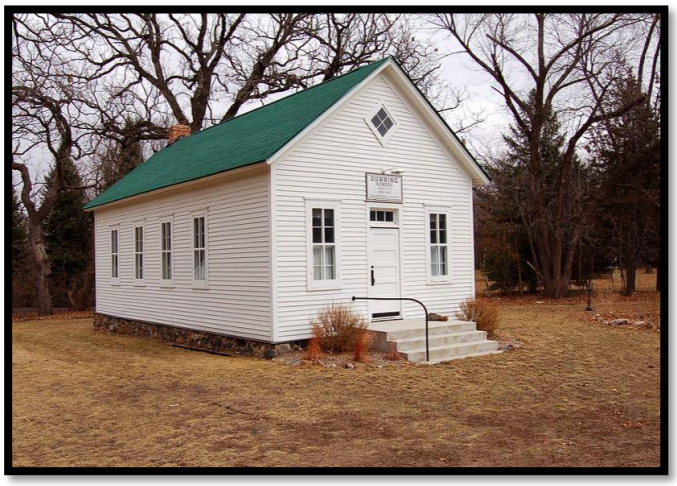
View from Mississippi Pointe Park (late May photo)

View from Chandler Park (late May photo – heavy tree cover)

There are areas along the southern reaches of Champlin that have views of bluffs along the Coon Rapids Dam Regional Park. The view of these bluffs shows a natural riverfront edge that exists in few places along the corridor. The heavily vegetated bluff creates an attractive natural landscape. Removal of vegetation would diminish this view.

Cultural and Historic Properties

The Mississippi River forms the northeastern boundary of Champlin. Originally called "Father of Waters" by Native Americans, the river has significance in United States history. The river has served as a transportation route since the first canoe. By 1000 A.D., Minnesota Native Americans used the river to trade with tribes in the Illinois and Ohio River valleys. In 1690, Father Lewis Hennepin was the first missionary and fur trader to explore the river through Champlin. In 1821, soldiers used the river to float logs from the 200-foot tall white pines growing for the construction of Fort Snelling. From the 1860s to the early 1940s is when much of the construction of single-family homes along the river began. Per the State Historic Preservation Office, the Anoka-Champlin bridge is the only historic site. However, not listed, Champlin is widely known for having been a steamboat landing spot and milling operations. In addition, a culturally significant old one-room schoolhouse is located in the corridor. The schoolhouse, known as Dunning School, has been preserved through many community efforts.



Dunning School Today

Transportation and Utilities

The Mississippi River is primarily used as a recreational means of transportation with the City of Champlin. There are no barge terminals or fleeting areas north of the Coon Rapids Dam. The roadway system is primarily comprised of local streets that connect residential neighborhoods to north/south routes like West River Road and Dayton Road.

Champlin has completed a Transportation Plan in the 2040 Comprehensive Plan. The purpose of a Transportation Plan is to develop a road network allowing for the expedient movement of people and goods from one place to another, either within or through the community. The Plan, in effect, is an implementation tool for the proposed Land Use Plan since the latter determines development intensity, while the former determines the road improvements necessary to accommodate that development. Within the Critical Area, the traffic patterns have essentially been established, and major changes will not be proposed in this report.

The individual streets and highways comprising the transportation system vary widely in their functions. These functions require different standards of design and construction as the intended volumes and speeds of traffic increase or decrease. The function classification system specifies five types of roadways and will not include local streets. The three roadways to be inventoried are U.S. Highway 169 and Hennepin County Road 12 (West River Road and Dayton Road).

U.S. Highway 169 carries both heavy commuter and tourist traffic. The highway has been designated

as an intermediate arterial and provides the only crossing of the Mississippi River north of Interstate 694. The narrow bridge and limited width of Ferry Street in Anoka create traffic congestion problems in Champlin. Intersections and driveways in close proximity to the bridge intensify the congestion.

There are two separate roadways controlled by separate governmental jurisdiction: U.S. Highway 169 and Hennepin County Road 12. Because these roads all parallel the Mississippi River, they have been designated part of the Great River Road system. According to the Metropolitan Council's Functional Classification System County Road 12 is a minor arterial with two lanes and unimproved shoulders. Several sections of the road are hazardous due to inadequate visibility, poor intersection design, encroachment of development, and the numerous accesses.

The City of Champlin provides municipal water and sewer services to all of Champlin located within the Critical Area Corridor.

The major drainage way in Champlin is Elm Creek. Champlin has storm sewer systems, which drain into the Mississippi River. The storm sewer systems also include several ponding basins. There are several utility crossings, but of most concern from an aesthetic standpoint are power line crossings. Northern States Power and City of Anoka Electric provide services to this area. Of the four transmission line crossings, two are submerged cables on the floor of the river.

Within Champlin there are no existing or planned power generating facilities and just one major transmission line crossing the river. As power demands increase, there may be the need for additional crossings. Utility companies should be encouraged to use submarine cables where possible in existing corridors rather than creating new crossings.

The issue of storm water drainage was discussed earlier in the report under the section on natural watercourses. Champlin should utilize its' Comprehensive Surface Water Management Plan prior to any development within a watershed. Identification of wetlands and drainage ways is needed to reduce drainage costs and maintain environmental areas in the community.

Key Issues and Opportunities

The MRCCA will continue to be an important part of Champlin's future. Over the next ten years, few changes are likely to occur as the city as the riverfront is essentially fully developed. The residential neighborhoods along the river will be maintained. The riverfront location presents an opportunity for high value homes. Improvements to existing homes and the development of new homes may occur over the next decade. As the planned park renovations occur, it will be a challenge to preserve the river views, public access, and recreational opportunities.

The main area anticipated for change is identified as Mississippi Crossings.

- The 160-acre Mississippi Crossings area abuts the Mississippi River south of the historic Anoka-Champlin bridge and sits at the north end of the six-mile Mississippi River Recreational Pool.

- In the mid-1800's, the Crossings was a landing area for migrating steamboats and home to the Anoka-Champlin ferry service. In the 1900's, the area blossomed into a vibrant central business district surrounded by growing neighborhoods. More recently, the Crossings has consisted of obsolete commercial structures, dilapidated apartment buildings and vacant lots. Since 1980, the area has seen limited re-investment, declining tax base while city services have grown.
- In 1999, a 26-member citizen task force recommended the City rejuvenate the Mississippi riverfront and old business district. In 2009, the City adopted a Redevelopment Plan that proposed a series of mixed-use and residential and commercial developments along the riverfront. Besides the historic, cultural and geographical significances, the site offers panoramic views of the Twin Cities region.
- While the City has since moved on from the adopted Redevelopment Plan, the Plan did lead to the acquisition and demolition of key properties in the area, including eight apartment buildings. Many of these properties were purchased during a soft real estate market at assessed market values. Eminent domain was not used in the acquisition of properties.
- Recently, there's been a lot of progress in the Mississippi Crossings area. Below are a few projects that have been completed or are in the pipeline:

    - In 2016, the City completed a $6.5 million reconstruction of the Elm Creek Dam. The Dam received The American Council of Engineers Associations (ACEA) Grand Award for quality design and aesthetics. Besides reconstructing an unsound dam, the project removes 60 acres from the floodplain, saving dozens of homeowners and businesses from buying flood insurance.
    - In 2017, United Properties began construction on a $30 million, 5-story, 85-unit senior cooperative community near the Anoka-Champlin bridge. The development is known as Applewood Pointe of Champlin at Mississippi Crossings
    - In 2018, the City and MnDOT completed reconstruction of the T.H. 169 corridor from Hayden Lake Road to the Anoka-Champlin bridge.
    - Also, in 2018, the City completed a $6.3 million clean-up of the Mill Pond. The project, funded by the State of Minnesota, the Legislative-Citizens Commission on Minnesota Resources (LCCMR), the Elm Creek Watershed and the City of Champlin, deepened the fishery and provided shoreland restoration and connection to the water body.
    - Remaining acreage in Mississippi Crossings is planned for a mix of high-density residential uses, restaurants, a hotel and event center. The redevelopment goal is to provide meaningful access to the Mississippi River.

Maintaining environmental quality will continue to be a challenge as new development and changes occur in the MRCCA. Renovations to the area present the issues of managing stormwater, maintaining water quality, and reducing soil erosion. While future natural occurrences that impact the river and riverfront are unknown, area updates present an opportunity to combat these occurrences. With proper planning, ongoing maintenance, and a focus on the restoration of vegetation and the shoreline, actions can be made to protect the health of the river and preserve it as a natural and cultural resource for decades to come.

SECTION IV: GOALS AND POLICIES

Designated goals of the MRCCA program include:

1. Protect and preserve the Mississippi River and adjacent lands that the legislature finds to be unique and valuable state and regional resources for the benefit of the health, safety, and welfare of the citizens of the state, region, and nation;
2. Prevent and mitigate irreversible damages to these state, regional, and natural resources;
3. Preserve and enhance the natural, aesthetic, cultural, and historical values of the Mississippi River and adjacent lands for public use and benefit;
4. Protect and preserve the Mississippi River as an essential element in the national, state, and regional transportation, sewer and water, and recreational systems; and
5. Protect and preserve the biological and ecological functions of the Mississippi River corridor.

General

Policies that recognize the importance of the MRCCA and help to further its goals include:

1. The City will give appropriate attention to water quality and ensure elimination of non-point sources of pollution.
2. Manage surface water drainage to maintain river water quality.
3. Improve quality of surface water runoff received by streets and watercourses through Best Management Practices. Manage the use of chemical fertilizers and application of salt to streets in winter.
4. Minimize direct overland surface water runoff.
5. Encourage and support special events that bring people to the river.
6. Promote tourism in the river corridor.
7. Encourage investments in river corridor improvements.

Districts/Land Use

Policies with the intent of guiding land use and development and redevelopment activities consistent with the management purpose of each district include:

1. The City shall guide land use/development consistent with the management purpose of each district.
2. Minimize site alteration within the corridor.
3. Ensure new development in the river corridor has a relationship to the river, a need for a river location, or the capability of enhancing the river.

Primary Conservation Areas (PCAs)

Policies with the intent of protecting, prioritizing, and minimizing the impact to PCAs are as follows:

General Policies

1. Protect PCA's and minimize impact to PCA's from public and private development and land use activities.
2. Support mitigation of impacts to PCA's through subdivisions, variances, CUPs and other permits.
3. Support alternative design standards that protect PCA's, such as conservation design, transfer of development rights, or other site design techniques.
4. Permanent protection measures (such as public acquisition, conservation easements, deed restrictions, etc.) that protect PCA's shall be a priority

Shore impact zones

1. Enforce the zoning code restricting development within the shore impact zones.
2. Encourage native landscaping and restoration of natural shorelines.
3. Provide an uninterrupted vegetated shoreline where practical by encouraging preservation and replacement of natural plant materials.

Wetlands, floodplains, and areas of confluence with key tributaries

1. Protect wetlands in accordance with Surface Water Management Plan.

Natural drainage routes

1. Maintain the land around natural drainage routes and creeks to reduce river water pollution due to soil erosion.
2. Encourage new development and reconstructions to employ stormwater management practices on site to reduce stormwater runoff into the river.

Bluff and bluff impact zones

1. Restrict development along bluffs and in their associated bluff impact zones.
2. Encourage steep slopes to be used for open space uses.

Significant Existing Vegetative Stands

1. Identify and protect areas of significant vegetation, unique vegetative species and wildlife habitats within the corridor and retain existing vegetation and landscaping.
2. Protect natural resources with preservation areas on public land and work to restore wildlife habitat, particularly for threatened and endangered species, and preserve biological diversity in all areas of the corridor, especially development projects.
3. Removal of natural vegetation shall be discouraged, as development shall be located to preserve the natural features of the site and to preserve significant trees or plant communities (including remnant stands of native trees or prairie grasses or plant communities that are rare to the area or of particular value).

4. Natural vegetation shall be restored to the extent feasible after any construction project is completed to retard surface runoff and soil erosion and to provide screening. Adequate erosion protection measures such as trees and vegetation plantings on slopes shall be used to ensure that soil loss levels do not degrade the protected water body.
5. Restoration of removed Native Plant Communities and natural vegetation in riparian areas shall be a priority during development.

Cultural and historic properties

1. Protect archaeological resources, historic structures, and cultural landscapes in their present condition.
2. An opportunity exists to tell the story of early Champlin. Interpretation pieces should be explored when feasible. Funding sources for these pieces include the National Park Service, City of Champlin, DNR, Champlin Historical Society, non-profit groups or resident/business donations.

Unstable Soils & Bedrock

1. Restrict development within areas of unstable soils and bluff impact zones.

Public River Corridor Views (PRCVs)

Policies with the intent to protect and minimize impacts to PRCVs include:

1. The City will continue to enforce the controls on billboards that exist in the zoning ordinance. Specifically prohibited are off-premises advertising signs and billboards that would be visible from the river.
2. Structure site and location shall be regulated to ensure that riverbanks, bluffs and scenic overlooks remain in their natural state, and to minimize interference with views of and from the river, except for specific uses requiring river access.
3. The City will prevent development that blocks or has a significant negative impact on key scenic views and encourages design which preserves, enhances, or creates key scenic views.
4. Require that riverfront development preserves a natural appearance while minimizing interference with views to and from the river.
5. Protect and minimize impacts to PRCV's from public and private development activities.
6. Protect and minimize impacts to PRCV's from public and private vegetation management activities.
7. Protect PRCV's located within the community and identified by other communities (adjacent or across the river).

Restoration Priorities

Policies with the intent of restoring native and natural vegetation and stabilizing soil include:

1. The City will work with the Metropolitan Council, Department of Natural Resources, Army Corps of Engineers, and neighboring cities to ensure adequate erosion control along the corridor.
2. The City will encourage property owners along the river to replace diseased trees with new plantings and introduce appropriate vegetation on riverbanks and steep slopes to control erosion.
3. Provide an uninterrupted vegetated shoreline where practical by encouraging preservation and replacement of natural plant materials.
4. Protect native and existing vegetation during the development process and require restoration when vegetation is removed. Priorities for restoration shall include stabilization of erodible soils, riparian buffers, and bluffs or steep slopes.
5. Sustain and enhance ecological functions during vegetation restorations.
6. Evaluate development sites for erosion prevention and bank/slope stabilization and require restoration as part of the development process.

Water-Oriented Uses

Policies with the intent to protect water-oriented uses and minimize the conflict between those uses and other land uses include:

1. Require that riverfront development is compatible with riverfront uses and preserves a natural appearance while minimizing interference with views to and from the river.
2. Access to the riverfront shall be incorporated, where appropriate, in new development and redevelopment activities within the MRCCA.

Open Space & Recreational Facilities

Policies with the intent encourage the creation and maintenance of open space and recreational facilities and public access to the river include:

1. Preserve natural areas when designating parks and open space.
2. Maintain existing City, County, and State park lands and trail facilities within the corridor.
3. Encourage connections to the river corridor trail system and existing park land from more inland residential neighborhoods.
4. Provide carefully designed, safe, and accessible public facilities that complement their river corridor context.
5. Provide high quality and sustainable open space, public plazas, historic landscapes, interpretive facilities, and related facilities in the river corridor.
6. Identify and encourage connection of CA-SR district land to existing and planned parks and trails for LGUs with developable land in CA-SR districts.
7. Encourage that land dedication requirements be used to acquire land suitable for public river access.

Transportation & Public Utilities

Policies with the intent to minimize the impact of transportation facilities and public utilities on the MRCCA include:

1. Design new or modified transportation facilities to complement planned land and water uses and to not stimulate development incompatible with the river corridor.
2. Ensure future development emphasizes continuous open space, minimizes utility and infrastructure needs and crossings (including transportation river crossings and concentrates them at existing crossings where possible), and allows for scenic vistas, trails and walkways.
3. Encourage, where practical, the placing of utilities underground. In planning and designing the construction or reconstruction of all public transportation facilities in the river corridor, give consideration to scenic overlooks for motorists, safe pedestrian crossings and facilities along the river corridor, access to the riverfront in public ownership and aesthetically pleasing details, including railings, lighting, paving, and landscaping.
4. Minimize impacts to PCA's and PRCV's from solar and wind generation facilities, public transportation facilities and public utilities.

SECTION V: IMPLEMENTATION ACTIONS

Resident Education

In an effort to encourage residents within the City of Champlin to practice sustainable lawn management practices and disposal of household hazardous waste and to utilize best management practices for shoreland protection, the following programs should be developed:

1. The City will distribute information to residents on responsible practices to protect water resources within the community. The program shall educate residents on the proper use of fertilizer and encourage residents to use fertilizer having no phosphorous content. In addition, the City should encourage the use of alternatives to manicured lawns.
2. The City will develop a program providing information to homeowners on proper disposal and use of yard waste in an environmentally responsible manner. It will also describe proper disposal of household hazardous waste, including waste oil, paints and solvents.
3. The City shall collect information on best management practices for shoreland protection. This information shall be passed on to river corridor homeowners upon request and through public information campaigns.
4. The City will promote and encourage homeowners with properties adjacent to drainage ways, ponds, wetlands and the Mississippi River to establish a vegetative buffer strip at the shoreline. The strip should consist of native plants that limit erosion and nutrient transport across the buffer strip. The success of this program will be directly related to the availability of funding and technical assistance.

Ordinance Updates (MRCAA Overlay)

1. The City shall adopt, administer, and enforce plans and ordinances consistent with Minnesota Rules pertaining the Mississippi River Corridor Critical Area.
2. The City shall amend the zoning map to reflect the new MRCCA districts.

PCA's

1. Develop handouts that easily identify the location of PCA's.
2. Establish a process and procedure for processing applications with potential impacts to PCA's. The procedure shall include identifying the information that must be submitted, determining appropriate mitigation methods, establish evaluation criteria for protecting PCA's and developing administrative procedures for integrating DNR and local permitting of riprap, walls and other hard armoring.

Public River Corridor Views

1. Ensure that information on the location of PRCV's is available to property owners.
2. Establish procedures for processing applications with potential impacts to PRCV's, including: identifying the information that must be submitted and how it will be evaluated; and determine appropriate mitigation procedures/methods for CUP's and variances.
3. Work with adjacent communities to protect views other communities have identified that are valuable.

Restoration Priorities

1. Ensure that information on the location of natural vegetation restoration priorities is readily available to property owners to understand how relevant ordinance requirements apply to their property for project planning and permitting.
2. Establish a vegetation permitting process that includes permit review procedures to ensure consideration of restoration priorities identified in this plan in permit issuance, as well as standard conditions requiring vegetation restoration for those priority areas.
3. Establish process for evaluating priorities for natural vegetation restoration, erosion prevention and bank and slope stabilization, or other restoration priorities identified in this plan in CUP, variances and subdivision/PUD processes.
4. Seek opportunities to restore vegetation to protect and enhance PRCV's identified in this plan.
5. Seek opportunities to restore vegetation in restoration priority areas identified in in this plan through the CUP, variance, vegetation permit and subdivision/PUD process.

Open Space and Recreational Facilities

1. Develop a system for reviewing, tracking, and monitoring open space required as part of the subdivision process.

Transportation and Public Utilities

1. Include transportation facilities in the capital improvement program, if applicable, identify which facilities, or portions of facilities, are in the MRCCA.
2. Incorporate specific design and placement conditions into local permits for solar and wind generation facilities and essential and transmission services (if allowed or within the community's permitting authority) that minimize impacts to PCAs and PRCVs

Capital Improvement Plan

Where appropriate, the City shall utilize the capital improvement plan to accomplish the objectives set forth in the MRCCA Plan. As a planning document, the Capital Improvement Plan provides guidance for city projects and expenditures.