



# VOLUME 1 EXECUTIVE SUMMARY



## TABLE OF CONTENTS

<b>1</b>	<b>EXECUTIVE SUMMARY</b>	
1.1	INTRODUCTION	14
1.2	MCWD OVERVIEW	16
1.2.1	MCWD PURPOSE	16
1.2.2	DISTRICT BOUNDARIES	18
1.2.3	ORGANIZATIONAL HISTORY	18
1.3	MCWD APPROACH	22
1.3.1	DISTRICT PHILOSOPHY	22
1.3.2	DISTRICT GOALS	23
1.3.3	IMPLEMENTATION MODEL	24
1.4	IMPLEMENTATION PLAN SUMMARY	25
1.4.1	PRIMARY ISSUES	25
1.4.2	IMPLEMENTATION PRIORITIES	26
1.4.3	RESPONSIBILITIES OF LOCAL GOVERNMENTS	30

1 FIGURES AND TABLES

FIGURE 1.1 MINNEHAHA CREEK WATERSHED DISTRICT BOUNDARY MAP 18

TABLE 1.1 MUNICIPALITIES WITHIN THE MCWD 20

## 1.1 INTRODUCTION

This watershed management plan (“Plan”) has been prepared pursuant to Minnesota Statutes §103B.231 and Minnesota Rules 8410. It describes how the Minnehaha Creek Watershed District (“District” or MCWD) will fulfill its responsibilities under the Metropolitan Surface Water Management Act (Minnesota Statutes §§103B.201 to 103B.255) over the ten-year planning period of 2018-2027.

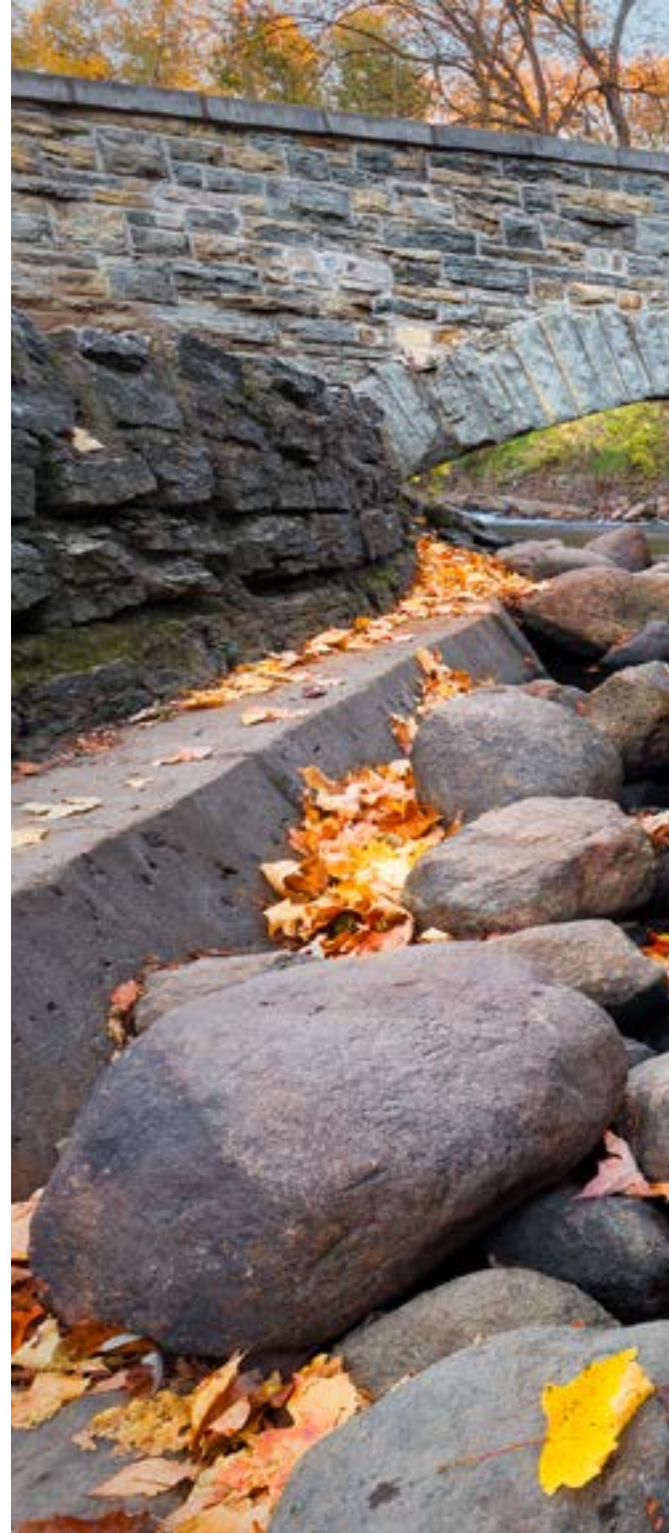
The Plan consists of three volumes:

The first volume is this **Executive Summary**. This volume briefly reviews the purpose, structure, and history of the MCWD; its philosophy and approach to fulfilling its water resource management responsibilities; the primary issues within its eleven subwatersheds; the programs and projects by which it will address these issues; and what it will ask of its cities and townships in order to achieve the water resource goals for the watershed.

The second volume is the **Land and Natural Resources Inventory**. MN Rules 8410 requires the Plan to inventory watershed data on topography, soils, geology, precipitation, surface water resources, water quality and quantity trends, groundwater resources, hydraulic systems to convey stormwater, regulated pollutant sources, habitat, rare and endangered species, recreation areas, existing land uses and trends, and wetland preservation and restoration priority areas. The MCWD has substantial data from many years of careful monitoring and data acquisition. In this volume, the District provides a description of its data, reference to data locations, and a discussion of the data supporting the MCWD’s identified water resource issues, goals, and strategies.


In addition, this volume describes the MCWD’s Ecosystem Evaluation Program, or “E-Grade,” a rubric that uses multiple parameters to characterize the health and function of the watershed. The purpose of E-Grade is to capture the condition of resources within the watershed in a way that is useful to the public and provides a uniform metric to set priorities and make resource investment decisions.

The third volume is the **Implementation Plan**. This volume is the roadmap that guides District action from planning to implementation. More specifically, it describes the planning path from issue identification to identifying the causes of issues, setting objectives and goals and, finally, defining management strategies to achieve identified goals. Objectives and management strategies rest on the MCWD’s Balanced Urban Ecology approach to water resource planning and implementation. This approach



Minnehaha Creek below the falls, Ernesto Ruiz





The MCWD is responsible for 178 square miles that drain into the Minnehaha Creek and ultimately the Mississippi River.

recognizes the environmental, social and economic value created when built and natural systems work in harmony. It is described in this volume. The volume also describes each of the District's programs and the procedures that it will use to identify, fund, and implement them.

Finally, the Implementation Plan features a subsection for each of the MCWD's eleven subwatersheds. Each subwatershed plan follows the same sequence outlined above - from issues to identification of causes, objectives and goals, and management strategies. The implementation program for each subwatershed will identify specific, known projects and initiatives but also provide flexibility for future unknown projects and initiatives to arise through planning, collaborative processes, and opportunities. The MCWD intends subwatershed plans to be largely self-standing so they are useful resources for Local Government Units (LGUs) and other stakeholders within a given subwatershed.

## 1.2 MCWD OVERVIEW

### 1.2.1 MCWD PURPOSE

The MCWD believes that clean water and a healthy natural environment are essential to create and sustain vibrant communities. The lakes, streams, wetlands, and green space that make up our landscape create a sense of place that provides a local identity, adds economic value, and increases well-being.

As a political subdivision created under state law, the MCWD exists to pursue water resource management purposes set forth at Minnesota Statutes §§103B.201 and 103D.201. The listed purposes are many, but may be summarized as "secur[ing] the ... benefits associated with the proper management of surface and ground water." Minn. Stat. §103B.201(8). The MCWD assumes a further mandate for water resource protection as a permittee under the federal National Pollutant Discharge Elimination System (NPDES) program for municipal separate storm sewer systems (MS4s).

Traditionally, the MCWD has pursued its purposes through several standard roles: gathering and assessing data; planning, constructing, and maintaining capital projects; regulating development and other land use disturbances to limit water resource impacts; supporting others' actions through grant or cost-share programs and technical assistance; conducting non-capital programs such as rough fish management and lake treatment for invasive aquatic species; and engaging in public communication and education.

In general, these remain the means by which the MCWD acts. This planning cycle, however, reflects an evolution from an independent program of

The MCWD's approach to water resource planning recognizes the environmental, social, and economic value created when built and natural systems work in harmony."



Minnehaha Falls, Erdahl Aerial Photos

action toward one that derives from a more careful and active consideration of the MCWD's role and the roles of other public and private interests in the realm of water resource protection. As such, the MCWD sees its purposes not only as securing water resource benefits for the public, but also facilitating similar efforts by others.

The MCWD's particular role, then, includes:

- » Acquiring, assessing, and maintaining watershed-wide water resource data.
- » Performing special studies, and developing assessments and metrics, to provide for consistent resource evaluation and priority-setting across the watershed.
- » Linking local units of government to statewide water programs, mandates, and funding.
- » Leading or facilitating multi-partner water resource actions that cross local government boundaries within the watershed.
- » Serving as a conduit of best practices and other specialized knowledge and resources to its general purpose units of government.
- » Coordinating with local units of government to integrate water resource protection at site and regional scales into land use planning, land subdivision and development.
- » Working with public and private partners to integrate water resource goals with other public and private goals in land and infrastructure development.

Clean water and a healthy natural environment are essential to create and sustain vibrant communities. The lakes, streams, wetlands and green space that make up our landscape create a sense of place that provides a local identity, adds economic value and increases well-being.



### 1.2.2 DISTRICT BOUNDARIES

The MCWD’s legal boundary encompasses about 178 square miles within the western Twin Cities metropolitan area. Of this area, about 148 square miles lie within Hennepin County and about 30 square miles lie within Carver County.

The watershed comprises two distinct hydrologic basins. The “Upper Watershed” drains through 104 square miles of rural and suburban land to Lake Minnetonka, a 22 square-mile lake that is the tenth largest, and one of the most heavily recreated, waterbodies in Minnesota. Lake Minnetonka outlets through a dam controlled by the MCWD into Minnehaha Creek, which flows for roughly 23 miles and discharges into the Mississippi River in Minneapolis. About 52 square miles, constituting the “Lower Watershed,” drain into Minnehaha Creek through the Minneapolis Chain of Lakes or directly by means of stormwater conveyances or overland flow.

Twenty-seven cities and two townships lie in whole or part within the watershed as shown in Figure 1.1. Table 1.1 lists the MCWD’s cities and townships. Two regional park authorities exist within the MCWD: the Minneapolis Park and Recreation Board, and the Three Rivers Park District.

### 1.2.3 ORGANIZATIONAL HISTORY

On April 12, 1966, the Hennepin County Board of Commissioners petitioned the Minnesota Water Resources Board under authority of Minnesota Statutes Chapter 112 (now 103D) to establish the MCWD. The cited purposes for the MCWD were to conserve the watershed’s waters and natural resources; improve lakes, marshes, and channels for water storage, drainage, recreation, and other public purposes; reduce flooding; keep silt from streams; control land erosion; reclaim wetlands; control stormwater; and preserve water quality in lakes and streams. The MCWD was established on March 9, 1967.

Since that time, the MCWD has implemented numerous policies, programs, and projects to advance its goals. It first adopted rules to regulate development in 1967. Since that time, it has exercised oversight of development to limit water resource impacts from erosion, stormwater flows, floodplain alteration, wetland disturbance, shoreline and streambank alterations, dredging, and other causes. In 1972, the MCWD accepted authority over eight county and judicial drainage systems located within the watershed. The MCWD developed watershed management plans in 1969, 1997, and 2007. This Plan represents the MCWD’s fourth cycle of water resource planning and implementation.

The MCWD’s 1997 plan featured a traditional emphasis on identified capital projects to address legacy water quality and flooding issues and, separately, regulation of new development to minimize new impacts. The

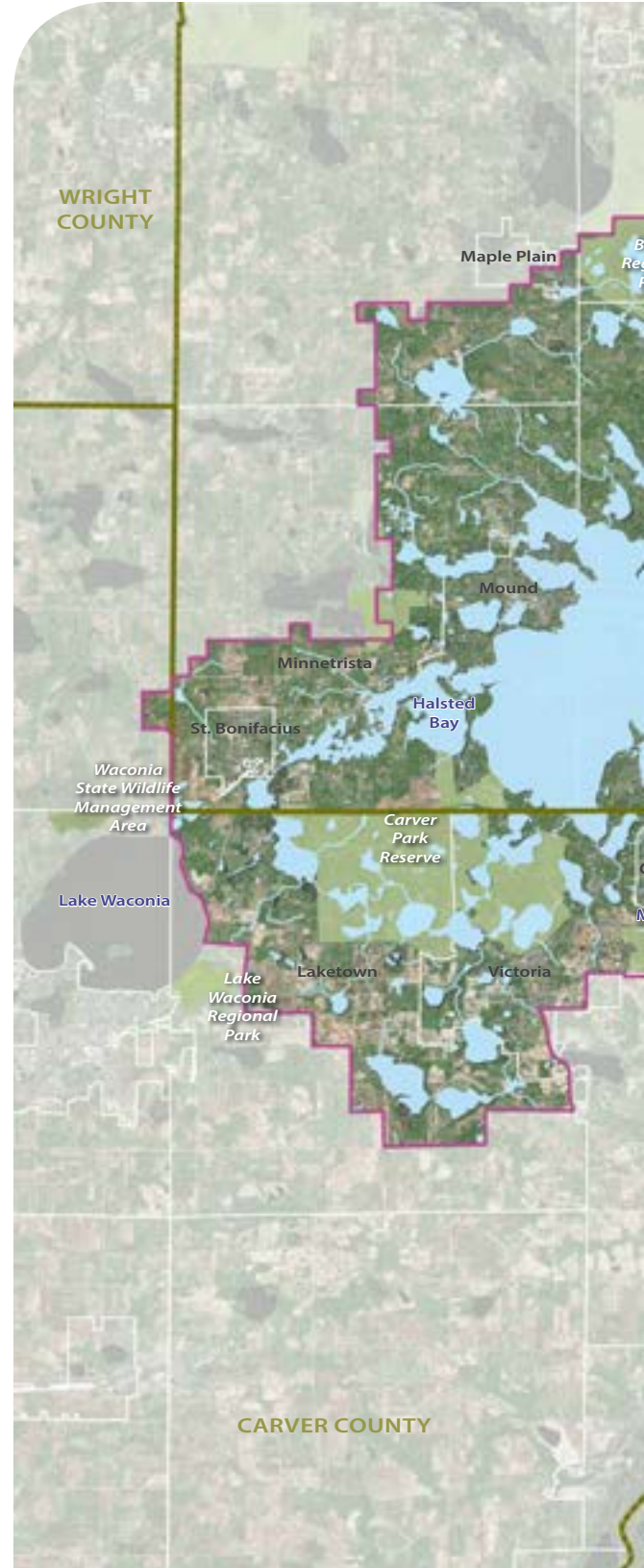


Figure 1.1 Minnehaha Creek Watershed District Boundary Map



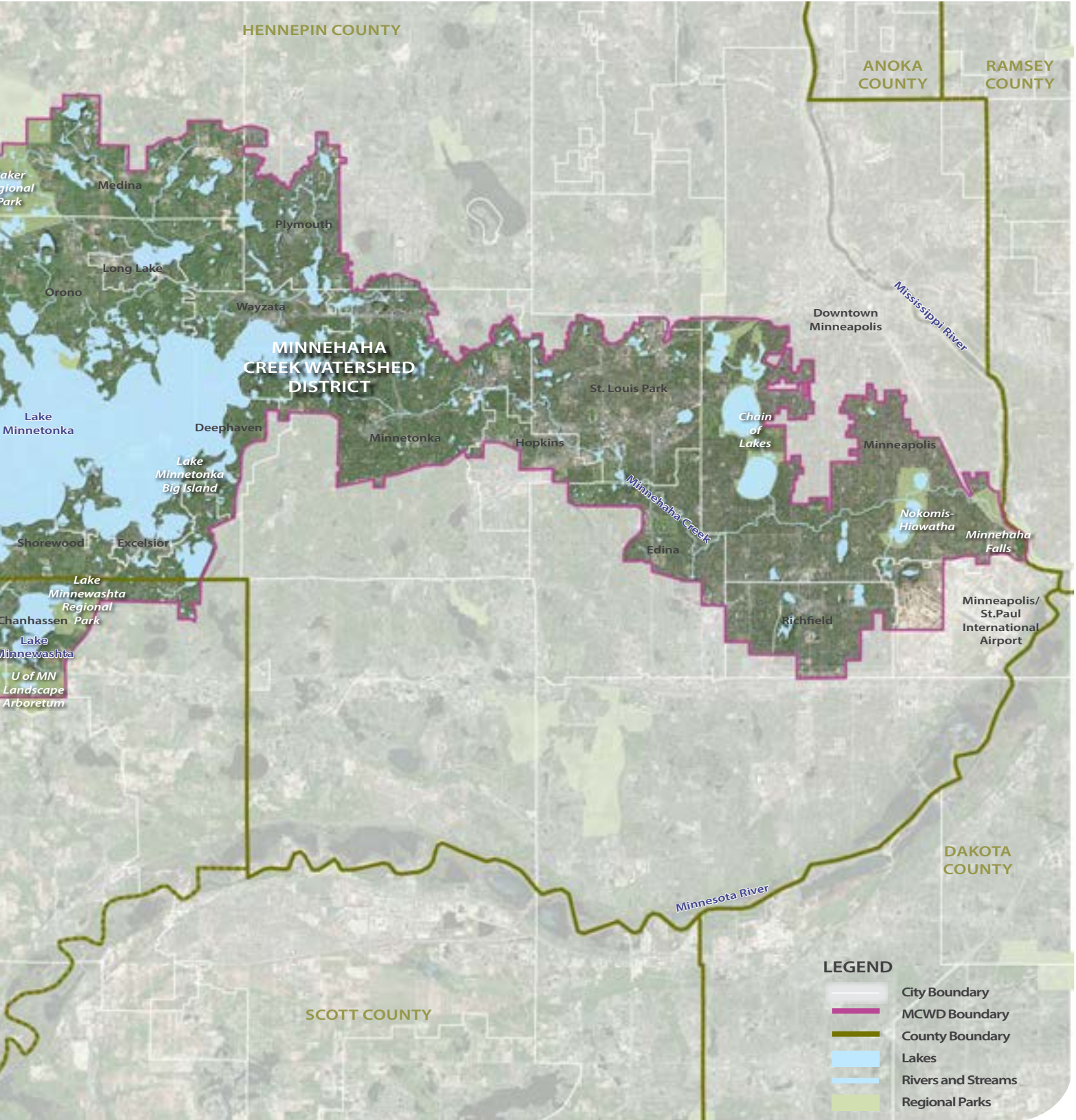


Table 1.1 Municipalities within the MCWD

<b>HENNEPIN COUNTY</b>	
Deephaven	Minnetrista
Edina	Mound*
Excelsior*	Orono*
Golden Valley	Plymouth
Greenwood*	Richfield
Hopkins	St. Bonifacius*
Independence	St. Louis Park
Long Lake*	Shorewood
Maple Plain	Spring Park*
Medina	Tonka Bay*
Minneapolis	Wayzata*
Minnetonka	Woodland*
Minnetonka Beach*	
<b>CARVER COUNTY</b>	
Chanhassen	Victoria*
Laketown Township	Watertown Township

*\*Entirely in District*

2007 plan began to move toward a more flexible framework. It set water quality standards for the MCWD's lakes and streams, and targets to reduce phosphorus loads to identified receiving waters in each of the MCWD's subwatersheds. The MCWD assumed responsibility for a part of these reductions and assigned a portion to its Local Government Units (LGUs), requiring that local water plans identify how the LGUs would achieve their assigned reductions through activities such as managing their properties, performing street sweeping, and implementing capital projects.

The plan, though, was static in several respects. It identified a specific list of MCWD projects, it directed LGUs to independently act, and it separated capital project work from regulation of development. As the MCWD implemented the plan, however, the approach evolved to a more flexible framework in which its LGUs, developers and other public and private parties have become partners in opportunity-based work that serves multiple goals. In 2014, the MCWD Board of Managers articulated and adopted this approach as its Balanced Urban Ecology policy. The policy



*Cottageville Park Expansion*



*Minnehaha Creek re-meander, Erdahl Aerial Photos*



*Meadowbrook golf course flooding*





A boardwalk at the Minnehaha Creek Preserve

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

The Balanced Urban Ecology policy emerged in 2014 as the MCWD reflected on its collaborative work along the urbanized Minnehaha Creek corridor within the Cities of St. Louis Park and Hopkins, now referred to as the Minnehaha Creek Greenway. There, over the course of several years, the MCWD worked with public and private partners - including a hospital, a large industrial employer, property owners, and the Cities of Hopkins and St. Louis Park - in a succession of projects to achieve mutual goals. This concerted effort resulted in an extensive stream restoration achieving both multiple water resource goals and other public and private goals of the many partners.

The hospital created a healing environment through connection with a restored natural setting and gained enhanced flood protection for a sensitive part of its facilities. The industrial employer gained real estate, stormwater management, and local land use approval for a large expansion.

An apartment complex property owner achieved trail access for its residents, while a commercial property owner was connected to city storm sewer improvements to address site flooding. The City of Hopkins turned a hidden, troubled pocket park into an open community space; gained regional stormwater treatment for redevelopment; and positioned a 17-acre industrial site for a shift in use consistent with the area redevelopment plan. The City of St. Louis Park gained natural and recreational amenities, connected residents to transit, and expanded its tax and employment base.

For the MCWD, outcomes of this partnered work included restoration of a substantial length of creek sinuosity, riparian wetland, and floodplain; treatment of runoff from several hundred fully-developed acres of urban land that previously discharged untreated to the creek; and the creation of both passive and active recreational sites connected to the water environment and integrated with public education about the natural environment. Furthermore, the public cost of the stormwater infrastructure work was reduced by working with Metropolitan Council Environmental Services to align public investments and incorporate the water resource improvement into concurrent sanitary sewer construction.

The MCWD realized that if it builds sound relationships with local partners, remains aware of partners' land use activities and goals, is mindful of subwatershed priorities, and is watchful and flexible, opportunities will present themselves to advance water resource goals cost-effectively and

consistent with other local public and private goals. This Plan takes the next step in the evolution of the MCWD's philosophy and approach by adopting the Balanced Urban Ecology policy as its underlying organizational strategy.

## 1.3 MCWD APPROACH

### 1.3.1 DISTRICT PHILOSOPHY

The natural environment is an integral component of vibrant communities. It creates a sense of place, provides vital connections, and enhances social and economic value. The MCWD vision is a landscape of vibrant communities where the natural and built environments in balance create value and enjoyment.

This vision stems from the MCWD's 2014 adoption of the Balanced Urban Ecology policy, which now serves as the MCWD's underlying organizational strategy. It prioritizes partnership with the land use community to integrate policy, planning and implementation. The Balanced Urban Ecology policy developed from a series of policy analyses that identified the governance gap between land use and water resource planning. It responded to state, county, and non-profit assessments calling for increased integration of water resource planning and land use planning to improve the watershed management model in Minnesota and for treating land development and water resource protection as complementary rather than competing interests.

The Balanced Urban Ecology policy states:

*Rather than viewing the natural and built environments as a clash of opposing forces, we recognize the inter-related and inter-dependent character of modern life; communities cannot thrive without healthy natural areas, and healthy natural areas become irrelevant without the interplay of human activity. This is the integrated setting in which we live... Indeed, our quality of life and our economic wellbeing are inextricably linked.*

*Successful, sustainable, livable communities are built on a foundation of integrated planning – planning that recognizes communities as living organisms and takes into consideration all components of the urban ecology.*

*Our work will be strengthened through these collaborative efforts. Not only will they offer greater community impact, they will produce creative public-private funding opportunities that will leverage scarce resources and maximize benefits. Going it alone is no longer the best path forward.*

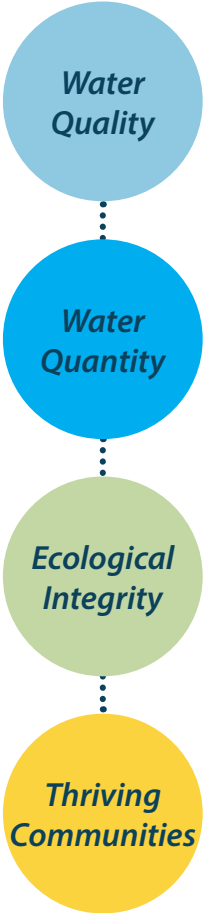




The Balanced Urban Ecology policy rests on the following three principles:

- » Intensifying and maintaining focus on high-priority projects.
- » Partnering with others to pursue watershed management goals.
- » Being flexible and creative in adapting to the needs of partners.

Too often, watershed district ten-year implementation plans have been pursued independent of community planning and, as a result, have not been aligned with land use changes, new public infrastructure, and private development. This has led to isolated public expenditures to address existing systemic problems and an over-reliance on regulation to limit impacts from new development. The opportunity to partner with other public and private actors to achieve better water resource outcomes and increased public value has been missed. By working to understand the goals of others; applying sound science to creative solutions; and aligning investments, technical expertise, streamlined permitting, collaborative planning, and educational resources, the MCWD will seek to bring added value to partner initiatives across the watershed and cost-effectively achieve complementary public and private goals.



1.3.2 DISTRICT GOALS

The District has established four strategic goals to focus and guide its work:

- » **Water Quality** - To preserve and improve the quality of surface and groundwater.
- » **Water Quantity** - To manage the volume and flow of stormwater runoff to minimize the impacts of land use change on surface and groundwater.
- » **Ecological Integrity** - To restore, maintain, and improve the health of ecological systems.
- » **Thriving Communities** - To promote and enhance the value of water resources in creating successful, sustainable communities.

For purposes of Plan organization, all MCWD water resource issues nest within the three strategic goal areas of Water Quality, Water Quantity and Ecological Integrity. Example issues include excess nutrients (water quality), flooding (water quantity), and degraded habitat (ecological integrity). No issues are outlined under the Thriving Communities goal. This goal is an overarching organizing element to guide the MCWD in implementing its

mission: the MCWD will implement its clean water objectives in ways that meaningfully contribute to the development of thriving communities.

### 1.3.3 IMPLEMENTATION MODEL

The Balanced Urban Ecology policy requires awareness, adaptation, and the capacity to pursue opportunities as they arise. The implementation model to support this approach is ongoing and iterative, but can be simplified into four basic steps:

#### *Understanding Resource Needs*

The first element is to understand water resource needs on a subwatershed basis. Each subwatershed plan within this Plan follows an issues, drivers, and strategies sequence. Issues are the specific needs to be addressed - where conditions fall short of strategic goals for the subwatershed. Drivers are the causes of, or factors that contribute to, these issues. Strategies are the means by which the issues may be addressed. Strategies are not defined programs or projects, but rather the different modes of action, approaches, and techniques that the MCWD may use within a described area to achieve a desired water quantity, water quality, or ecological integrity outcome.

#### *Understanding Land Use Plans and Opportunities*

The second element is to understand the land use setting. The MCWD maintains current knowledge of land use and capital planning by its LGUs and of potential land use development and redevelopment activity. Under this Plan, the MCWD will establish with each LGU a coordination protocol so that the MCWD and the LGU are aware of each other's planning activities, of pending development activity, and of applications received for regulatory review.

#### *Integrating and Prioritizing*

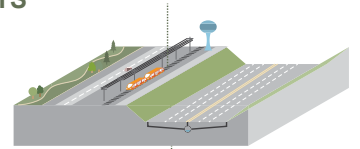
The third element is prioritization. By means of diagnostic data-gathering, the MCWD forms and adjusts implementation priorities to achieve MCWD goals on a subwatershed and watershed-wide basis. At the same time, the MCWD integrates its water resource priorities with the current land use context to look for the intersection of MCWD and partner interests, develop feasible and cost-effective project concepts, and initiate project planning and coordination with public and private partners.

#### *Implementing*

The last element is implementation. This involves formalizing public and private partner agreements that identify project roles and responsibilities, arranging necessary land rights, following required procedures to establish project funding and financing, and moving forward to implement. A project may involve capital construction or may involve one or more other modes

### ALIGNING PLANS & INVESTMENTS

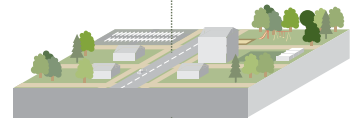
Roads + Infrastructure



Parks + Open Space



Community Development



Natural Resources







Staff and volunteers monitor water quality across the watershed



Heavy rains flooded Lake Hiawatha in 2014

of MCWD action including data collection/diagnosis, technical or planning assistance, permitting assistance, facilitation, and grants. After project completion, the MCWD assesses project performance with respect to desired outcomes of the MCWD and partners. Implementation also includes monitoring and maintenance of MCWD project assets over time to ensure their continued effectiveness.

## 1.4 IMPLEMENTATION PLAN SUMMARY

### 1.4.1 PRIMARY ISSUES

#### *Water Quality*

Within the watershed, pollutant discharge is primarily from non-point sources, carried to lakes, streams and wetlands by snowmelt or rainfall that runs across the landscape. Sediment, nutrient (particularly phosphorus), and other pollutant load in runoff exceeds what lakes, streams and wetlands would receive in an undeveloped watershed.

Within freshwater systems, excess nutrient content promoting eutrophication is the most common problem. Phosphorus affects algal and plant productivity, water clarity, fish habitat and aesthetics. Other pollutants stress freshwater systems, but phosphorus is used as standard indicator of system health.

The U.S. Environmental Protection Agency (EPA) and the Minnesota Pollution Control Agency (MPCA) define acceptable water quality as that which supports the designated use of the waterbody (e.g. fishable, swimmable, drinkable). The Plan defines good water quality as when the physical, chemical, biological and aesthetic characteristics of a waterbody support its designated use. Because water quality largely is regulated by total phosphorus concentration, the water quality emphasis of this Plan is on reducing phosphorus loads to lakes to achieve standards set by the state.

#### *Water Quantity*

As land use alters a watershed, the flow of water across the landscape changes. In an undeveloped watershed, rainfall largely infiltrates into the ground. As the watershed begins to include built components, channels are straightened, wetlands are filled, drainageways are piped, natural vegetation is removed, and hard surface is installed. These alterations reduce water infiltration and storage. As a result, larger volumes of water drain through the system faster.

Flooding occurs when a watershed is overwhelmed with rainfall or snowmelt that cannot infiltrate into the ground or be appropriately stored on the landscape. Flooding can occur across a watershed on major lakes and

streams or more locally in ponds and street systems that cannot adequately store or convey the water being received during and after storm events.

Water quantity can also be an issue when there is not enough water. Water is essential for aquatic life and the health of aquatic systems. In an undeveloped watershed condition, water is stored in wetlands or infiltrated into the ground. It is slowly released to the stream channel, promoting long periods of stable water flow. In urban watersheds with extensive hard surface, water moves through the system quickly after rainfall events. This results in intermittent channel flow and periods where the channel is dry. This “flashy” stream behavior directly affects the ecological health of the stream, stressing fish, macroinvertebrates, plants, and other aquatic life. It also undermines stream channel stability and increases sediment loads through erosion and subsidence.

The Plan focuses on water quantity issues that stress the regional system. The MCWD will work with its partners to plan and implement solutions that return surface flow behavior as much as possible to natural behavior and that create a more resilient system to handle high and low flow behavior.

### *Ecological Integrity*

The three primary elements of an ecological system are its structure, composition, and function. Structure is all of the living and non-living physical components that make up an ecosystem. Composition is the variety of living things within the ecosystem. Function is the assemblage of natural processes that occur within the ecosystem.

Ecological integrity exists when ecosystem composition and function are unimpaired by stress from human activity. It exists when natural ecological processes are intact, naturally evolving, and self-sustaining.

Within this Plan, ecological integrity seeks balance between the built and natural environments, with ecosystems providing the highest possible measure of structure, composition and function relative to the level of human impact within the system. The implementation plan seeks to improve structure, composition, and function at an individual resource level and connectivity between aquatic and terrestrial ecosystems at a regional landscape scale.

### 1.4.2 IMPLEMENTATION PRIORITIES

One of the guiding principles of the District’s Balanced Urban Ecology policy is “intensifying and maintaining focus on high-priority projects.” Through its work in the Minnehaha Creek Greenway, the District has found that it can more effectively achieve its mandate to manage and improve water resources, not when it seeks to apply its resources evenly across



Great Blue Heron

Through sustained focus, the District is able to develop a thorough understanding of a system's issues and drivers, build relationships, identify opportunities, and coordinate plans and investments with its partners for maximum natural resource and community benefit.



Kayaking Minnehaha Creek, Mark Krech

the watershed at all times, but rather when it coordinates its programs and capital investments so as to focus on specific areas of high need and opportunity.

Through sustained focus, the District is able to develop a thorough understanding of a system's issues and drivers, build relationships, identify opportunities, and coordinate plans and investments with its partners for maximum natural resource and community benefit.

This focused approach is best suited in areas where there are significant resource needs and a level of complexity that require sustained effort and coordination across multiple public and private partners. The other factors that drive the District to focus in a particular geography are the opportunities that exist, such as land use changes, partner efforts, or funding sources.

The District has identified three priority subwatersheds in which to focus its implementation efforts for the 2018-2027 plan cycle – Minnehaha Creek, Six Mile Creek-Halsted Bay, and Painter Creek. These three subwatersheds have been prioritized based on a combination of resource needs and opportunities, as summarized in the following sections.

The District's efforts in these priority areas will benefit some of the Twin Cities' most valued resources. The work in the Minnehaha Creek subwatershed will improve both the Creek and Lake Hiawatha of the Minneapolis Chain of Lakes. The focus on the Six Mile Creek and Painter Creek subwatersheds is part of the District's strategy for protecting and improving Lake Minnetonka by addressing its most degraded bays – Halsted and Jennings – through upstream and in-lake efforts.

### *Minnehaha Creek*

As described in Section 1.2.3, the District's focused approach originated in the Minnehaha Creek Greenway and has produced significant natural resource and community benefits.

The Board identified this section of the Creek through Hopkins and St. Louis Park as a priority focus area because of its resource needs – this stretch of creek has been identified as contributing the Highest pollutant loads to Minnehaha Creek and downstream Lake Hiawatha, both classified as impaired; and its opportunities – the area is undergoing significant land use planning and redevelopment due in large part to the planned light rail transit system.

The District will continue its efforts in the Minnehaha Creek subwatershed under this Plan, completing projects that are underway in the Greenway and extending its stream restoration and stormwater management work



downstream through partnerships with the cities of Edina and Minneapolis and the Minneapolis Park and Recreation Board.

**Six Mile Creek-Halsted Bay**

The Six Mile Creek-Halsted Bay focal geography is a complex system that spans four communities, two counties, and a significant portion of Three Rivers Park District land. It is resource-rich with 17 lakes Halsted Bay of Lake Minnetonka, and over 6,000 acres of wetlands. Six of these lakes are classified as impaired under Minnesota Pollution Control Agency standards, and Halsted Bay requires the largest load reduction of any waterbody in the District. The subwatershed is experiencing significant growth and development activity that creates opportunities, and urgency, for integrated land use and water resource planning.

In 2016, the District formed the Six Mile Creek-Halsted Bay Subwatershed Partnership to coordinate implementation activities with the communities and other subwatershed partners. From 2016-2017, the Subwatershed Partnership has established shared priorities for the geography and a framework for ongoing coordination to realize its goals around clean water and abundant natural resources integrated with the built environment.

The principal implementation strategies within the Six Mile Creek-Halsted Bay subwatershed include carp management to restore lake ecology, restoration of degraded wetlands, and the use of aluminum sulfate, or alum, to address internal phosphorus release. Given the geography’s scale and complexity, priority implementation activities will be established in coordination with the Subwatershed Partnership on an ongoing basis based on an individual project’s natural resource benefit, opportunity to leverage external investment, community support, and urgency.

**Painter Creek**

The Painter Creek Subwatershed contains a number of large wetlands, many of which have been ditched or otherwise altered, that are connected by Painter Creek. The system delivers high phosphorus loads to Jennings Bay on Lake Minnetonka, which is listed as impaired and requires the second largest load reduction in the District. Painter Creek is also impaired by excess E. coli bacteria. The subwatershed includes areas of high quality wetland and upland, including several regionally significant ecological areas.

The MCWD has previously established a partnership with the United States Army Corps of Engineers (USACE), which identified the potential restoration of four of the major wetland marsh systems under the Federal Section 206 Program, a program of federal-local cost-sharing and collaboration on habitat improvement work. Management strategies within the Painter Creek



Six Mile Creek





subwatershed will focus on restoring wetland and stream systems in ways that reduce nutrient loading downstream to Jennings Bay, while improving ecological integrity and corridor connectivity within the subwatershed. Before this work is advanced, MCWD will develop a specific systems plan for this subwatershed in partnership with local municipalities and landowners.

### Watershed-wide

In addition to these focused implementation efforts, the District’s approach watershed-wide is to remain responsive to opportunities created by land use change or partner initiatives. The Plan creates a coordination framework through which the District will seek to maintain current knowledge of land use and capital planning by its LGUs, and of potential land use development and redevelopment activity.

As opportunities arise, the District will evaluate them against the resource needs and priorities defined in the subwatershed plans in Section 3.9 and determine the appropriate response. The District has a wide range of services it can mobilize to address resource needs and support partner efforts, including data collection and diagnostics, technical and planning assistance, permitting assistance, education and capacity building, grants, and capital projects.

The District anticipates that the most likely capital project opportunities to arise through this approach will be in the area of stormwater management. For this reason, the capital improvement program (CIP) includes stormwater management projects in each subwatershed. Over the course of the 2018-2027 plan cycle, new opportunities and priorities may be identified that are beyond the scope of this CIP. As needed to pursue any such projects, the District first will amend the Plan to ensure a sound programmatic and fiscal basis to do so.

### 1.4.3 RESPONSIBILITIES OF LOCAL GOVERNMENTS

After the Plan is approved or amended, each LGU within the MCWD with land use planning and regulatory responsibility must prepare a local water management plan, capital improvement program, and official controls as prescribed in the Plan. An MCWD-approved local water plan is a required element of the LGU comprehensive land use management plan mandated by Minnesota Statutes §473.864.

This planning framework shows the link that the legislature has recognized between land use and water resource planning. As the regional water resource authority, the MCWD is responsible for understanding hydrologic systems on a watershed basis. In its review of local water plans, the MCWD seeks to engage its LGUs as partners in incorporating this basis of knowledge



Park Nicollet overlooks a restored wetland & boardwalk



Cottageville Park



District staff and partners co-develop plans



and understanding into the exercise of land use planning, regulatory, capital, infrastructure maintenance, and related local authorities.

Although the watershed planning law gives watershed districts the authority to mandate LGU actions toward district-identified water resource goals, the MCWD's approach under this Plan relies to a limited extent on mandates and much more on support for a partnership approach. Since the MCWD's 2007 plan, LGUs have continued to develop water resource program capacity, and the MCWD has advanced its capacity to discern and facilitate projects and initiatives that serve the complementary goals of public and private interests. With these in mind, and with the broader concept of hydrologic function and beneficial public use reflected by the MCWD's development of the E-Grade program for measuring ecosystem health, the MCWD is judging that a collaborative approach will better achieve its water resource goals. The MCWD will gauge local partnership interest by the content of the local water plan: the local data content, the careful assessment of local issues and potential strategies, and the commitment to coordination. Local interest will prompt MCWD interest in collaboration and higher priority access to MCWD technical and financial resources.

Targeted areas of collaboration include:

- » Land use policy development and its implementation through planning activities including long-range land use and infrastructure plans, area-wide plans, and recreation and open-space plans
- » Capital improvement feasibility planning for public infrastructure including roads, sewer, and drinking water supply
- » Capital construction incorporating water resource goals with other public and private development goals
- » Land use and development regulation, from initial development feasibility through ongoing inspection and stormwater facility maintenance functions
- » LGU operations and facility maintenance

A chief element of the local plan is a proposed plan for LGU/MCWD coordination. The goal of the coordination plan is to maintain mutual awareness of needs and opportunities to foster programs and projects that: (i) develop out of coordinated, subwatershed-based planning; (ii) reflect the cooperation of other public and private partners; (iii) align investments; and (iv) secure a combined set of District, LGU and partner goals. The coordination plan provides for ongoing and periodic communications as to land use planning, infrastructure programming, and development regulation.

