



July 21, 2022

Re: Annual Review of Minnehaha Creek Watershed District Draft Capital Improvement Plan

Dear City and County Partners,

Enclosed is the draft Capital Improvement Plan (CIP) that Minnehaha Creek Watershed District (MCWD) distributes annually for your review and comment. Your input on the draft CIP is valuable in helping to identify new opportunities to work together to improve water resources.

MCWD adopted its Watershed Management Plan (Plan), including its 2018-2027 CIP, in January 2018. The Plan describes MCWD's principal strategy of integrating water resource and land use planning, recognizing the potential for greater public benefit and efficient use of public funds when plans and investments are coordinated and aligned. The Plan outlines the MCWD's two-pronged implementation approach of (1) focusing in areas of high need and opportunity to achieve significant measurable improvement, and (2) responding to resource needs and opportunities watershed-wide through projects, programming, and technical support.

This two-pronged approach is reflected in the 10-year CIP through the identification of specific projects in the current focal subwatersheds of Minnehaha Creek, Six Mile Creek-Halsted Bay, and Painter Creek, as well as the inclusion of "opportunity-based" projects in each subwatershed to allow MCWD to respond to land use change and partnership opportunities that arise during the plan cycle.

MCWD annually reviews and adjusts its 10-year CIP based on feasibility analysis of projects described in the Plan, identification of new project opportunities through coordination with land use planning, shifts in MCWD priorities, and assessment of staff and financial capacity. The Plan has been updated to provide more refined costs, funding sources, and schedule for projects that are currently in development.

The 2023 CIP also reflects the development of two initiatives that are starting to shape the format and content of the CIP – the Land and Water Partnership (LWP) program and the Multi-Year CIP.

#### Land and Water Partnership Program

MCWD is committed to supporting partners across the watershed in pursuit of projects that provide regional natural resource benefit while supporting local goals. The LWP program provides technical and financial support for the development and implementation of qualifying projects and is a pathway for integrating new, opportunity driven projects into MCWD's CIP. The prioritization of these projects is driven by (1) alignment with water resource needs and MCWD goals, (2) project benefits, (3) cost-effectiveness, and (4) early and effective coordination from partners to collaboratively identify and evaluate opportunities. MCWD is currently operating this program in a pilot phase and will be vetting it with a Technical Advisory Committee this fall, with formal adoption anticipated in early 2023. Partners are invited to visit the [MCWD website](#) to learn more about the program and ways that you can participate in its development.

*We collaborate with public and private partners to protect and improve land and water for current and future generations.*

The 2023 CIP integrates two new projects that emerged from the pilot LWP program:

- County Road Six Pond Improvement Project (Orono – Long Lake Creek Subwatershed)
- Maple Creek Pond Improvement Project (Plymouth – Gleason Lake Subwatershed)

#### Multi-Year CIP

MCWD is working to improve how projects are forecasted across multiple years to better predict staff, time, and resource allocation to execute project workplans; to inform the development of the capital budget over multiple years and plan for fundraising needs; and to improve the effectiveness of the CIP as an external communications tool. This year, in addition to the 10-year CIP table, MCWD is circulating two tools that have emerged out of the Multi-Year CIP development process.

- The five-year CIP table, which shows the forecasted project timelines and cost estimates for capital projects from 2023-2027.
- Project summary pages, which provide high level information on each project including its goals, scope, and justification; a summary of its near term workplan; and its schedule and budget.

The draft CIP is enclosed for your review. You are invited to submit comments on the draft CIP as well as suggestions for how MCWD can better integrate its water resource improvement efforts with land use planning in your community. Please submit comments to [abrown@minnehahacreek.org](mailto:abrown@minnehahacreek.org) and [mhayman@minnehahacreek.org](mailto:mhayman@minnehahacreek.org) no later than August 19, 2022. Please contact me with any comments, questions, or ideas, and we welcome feedback on the new materials being provided to facilitate your review.

Sincerely,



Anna Brown  
MCWD Planner-Project Manager

SENT VIA ELECTRONIC MAIL

*We collaborate with public and private partners to protect and improve land and water for current and future generations.*

DRAFT Minnehaha Creek Watershed District 2018-2027 Capital Improvement Plan

Subwatershed	Capital Projects	Estimated Cost	Potential Funding Sources*	Proposed Implementation Year
Minnehaha Creek	Arden Park Stream Restoration and Stormwater Management	\$5,020,272	MCWD levy, City of Edina (\$2,732,870), BWSR grant (\$125,000)	Complete - 2020
	Minnehaha Creek FEMA Flood Damage Repairs	\$900,000	MCWD levy, FEMA grant (\$336,459)	Complete - 2020
	325 Blake Road Regional Stormwater and Greenway	\$5,639,250	MCWD levy, BWSR grants (\$495,000), PFA grants (TBD)	2023-2025
	Cottageville Park Phase II Riparian Restoration	\$1,300,000	MCWD levy, partner contributions	2023-2025
	Greenway to Cedar Trail Connection and Streambank Restoration	\$510,000	MCWD levy, partner contributions, grants	2023-2024
	Minnehaha Parkway Stormwater Management	\$1,500,000	MCWD levy, partner contributions, grants	2025-2027
	Meadowbrook Golf Course Ecological Restoration	\$2,006,730	MCWD levy, partner contributions, grants	2026-2027
	Boone-Aquilla Floodplain	\$500,000	MCWD levy, partner contributions, grants	2027-2029
	Louisiana Trail Greenspace and Stormwater	\$300,000	MCWD levy, partner contributions, grants	Opportunity-based
	West Blake Greenway Enhancement	\$420,000	MCWD levy, partner contributions, grants	Opportunity-based
	Meadowbrook Greenway Expansion	\$950,000	MCWD levy, partner contributions, grants	Opportunity-based
	Hiawatha Golf Course Restoration	\$1,940,000	MCWD levy, partner contributions, grants	Opportunity-based
	Channel/Streambank Restoration	\$3,120,000	MCWD levy, partner contributions, grants	Opportunity-based
	Stormwater Volume and Pollutant Load Reduction	\$2,450,000	MCWD levy, partner contributions, grants	Opportunity-based
Six Mile Creek-Halsted Bay	East Auburn Stormwater Enhancement Project	\$327,500	BWSR grant (\$262,520), City of Victoria (\$64,980)	Complete - 2018
	Wassermann West External Load Reduction and Landscape Restoration	\$2,761,786	City of Victoria (\$2,184,660), BWSR grant (\$93,879), MCWD levy	Complete - 2021
	Wassermann Internal Load Management	\$335,900	MCWD levy, BWSR grant (\$284,720)	2021-2022
	Six Mile Marsh Prairie Restoration (Trail)	\$347,851	MCWD levy	2021-2022
	East Auburn Wetland Restoration	\$550,000	MCWD levy, partner contributions, grants	2024-2025
	Turbid-Lundsten Wetland Restoration	\$3,100,000	MCWD levy, partner contributions, grants	2024-2026
	Halsted Bay Watershed Load Management	\$13,000,000	MCWD levy, partner contributions, grants	2026-2027
	Mud Lake Watershed Load Reductions	\$3,090,000	MCWD levy, partner contributions, grants	2027-2029
	Pierson Lake Headwaters Restoration	\$367,800	MCWD levy, partner contributions, grants	Opportunity-based
	Whole Lake Drawdown	\$770,000	MCWD levy, partner contributions, grants	Opportunity-based
	Internal Load Management	\$980,000	MCWD levy, partner contributions, grants	Opportunity-based
	Stormwater Volume and Pollutant Load Reduction	\$2,000,000	MCWD levy, partner contributions, grants	Opportunity-based
	Stream Restoration	\$870,000	MCWD levy, partner contributions, grants	Opportunity-based
	Wetland Restoration	\$3,000,000	MCWD levy, partner contributions, grants	Opportunity-based
Long Lake Creek	County Road Six Pond Retrofit	\$525,000	MCWD levy, partner contributions, grants	2024-2025
	Stormwater Volume and Pollutant Load Reduction	\$1,320,000	MCWD levy, partner contributions, grants	Opportunity-based
Painter Creek	Potato Marsh Restoration	\$870,000	MCWD levy, USACE Section 206, partner contributions, grants	2027-2029
	Stream Restoration	\$2,990,000	MCWD levy, partner contributions, grants	2027-2029
	Wetland Restoration	\$330,000	MCWD levy, partner contributions, grants	2027-2029
	South Katrina Marsh Restoration	\$1,270,000	MCWD levy, USACE Section 206, partner contributions, grants	2027-2029
	SOBI Marsh Restoration	\$240,000	MCWD levy, USACE Section 206, partner contributions, grants	2027-2029
	Upper and Lower Painter Marsh Restoration	\$2,800,000	MCWD levy, USACE Section 206, partner contributions, grants	2027-2029
	Stormwater Volume and Pollutant Load Reduction	\$980,000	MCWD levy, partner contributions, grants	Opportunity-based
Christmas Lake	Stormwater Volume and Pollutant Load Reduction	\$200,000	MCWD levy, partner contributions, grants	Opportunity-based
Dutch Lake	Stormwater Volume and Pollutant Load Reduction	\$780,000	MCWD levy, partner contributions, grants	Opportunity-based
Gleason Lake	Maple Creek Pond Improvement Project	\$100,000	MCWD levy, partner contributions, grants	2023
	Stormwater Volume and Pollutant Load Reduction	\$600,000	MCWD levy, partner contributions, grants	Opportunity-based
Lake Minnetonka	Halsted Bay Internal Phosphorus Load Reduction	\$1,400,000	MCWD levy, partner contributions, grants	2026-2027
	Stormwater Volume and Pollutant Load Reduction	\$1,000,000	MCWD levy, partner contributions, grants	Opportunity-based
Lake Virginia	Stormwater Volume and Pollutant Load Reduction	\$650,000	MCWD levy, partner contributions, grants	Opportunity-based
Langdon Lake	Stormwater Volume and Pollutant Load Reduction	\$230,000	MCWD levy, partner contributions, grants	Opportunity-based
Schutz Lake	Stormwater Volume and Pollutant Load Reduction	\$250,000	MCWD levy, partner contributions, grants	Opportunity-based

## MCWD 5-Year CIP Projection

	2023			2024		2025		2026		2027	
	Estimated Cost*	Est. Budget	Category	Est. Budget	Category	Est. Budget	Category	Est. Budget	Category	Est. Budget	Category
MINNEHAHA CREEK SUBWATERSHED											
Arden Park Stream Restoration and Stormwater Management	<del>\$5,020,272</del>	Complete									
Minnehaha Creek FEMA Flood Damage Repairs	<del>\$900,000</del>	Complete									
325 Blake Road Regional Stormwater and Greenway	\$5,639,250	\$1,632,285	Construction	\$1,305,828	Construction	\$326,457	Construction	[Carryover]	Warranty	--	--
Cottageville Park Phase II Riparian Restoration	\$1,300,000	\$650,000	Construction	\$520,000	Construction	\$130,000	Construction	[Carryover]	Warranty	--	--
Greenway to Cedar Trail Connection and Streambank Restoration	\$510,000	\$65,000	Design	\$445,000	Construction	[Carryover]	Warranty	--	--	--	--
Minnehaha Parkway Stormwater Management	\$1,500,000	\$100,000	Planning	\$250,000	Design	[Carryover]	Design	\$1,250,000	Construction	[Carryover]	Warranty
Meadowbrook Golf Course Ecological Restoration	\$2,006,730	--	--	\$50,000	Planning	\$200,000	Design	\$1,806,730	Construction	[Carryover]	Warranty
Boone-Aquilla Floodplain	\$500,000	--	--	\$25,000	Planning	\$25,000	Planning	\$50,000	Design	\$450,000	Construction
Meadowbrook Greenway Expansion	\$950,000	Opportunity Driven									
West Blake Greenway Enhancement	\$420,000	Opportunity Driven									
Louisiana Trail Greenspace and Stormwater	\$300,000	Opportunity Driven									
Hiawatha Golf Course Restoration	\$1,940,000	Opportunity Driven									
Channel/Streambank Restoration	\$3,120,000	Opportunity Driven									
Stormwater Volume and Pollutant Load Reduction	\$2,450,000	Opportunity Driven									
SIX MILE CREEK HALSTED BAY SUBWATERSHED											
East Auburn Stormwater Enhancement Project	<del>\$327,500</del>	Complete									
Wassermann Internal Load Management	<del>\$335,900</del>	Complete									
Six Mile Marsh Prairie Restoration (Trail)	<del>\$347,851</del>	Complete									
Wassermann Lake Preserve	\$2,761,786	\$10,737	Warranty	\$10,737	Warranty	--	--	--	--	--	--
East Auburn Wetland Restoration	\$550,000	\$68,000	Design	[Carryover]	Design	\$482,000	Construction	[Carryover]	Construction	[Carryover]	Warranty
Turbid-Lundsten Wetland Restoration	\$3,100,000	\$45,000	Planning	[Carryover]	Design	\$2,800,000	Construction	[Carryover]	Construction	[Carryover]	Warranty
		\$250,000	Design								
Halsted Bay Watershed Load Management	\$13,000,000	\$80,000	Planning	\$25,000	Planning	\$500,000	Design	[Carryover]	Design	\$12,500,000	Construction
Mud Lake Watershed Load Reductions	\$3,090,000	--	--	\$50,000	Planning	\$25,000	Planning	\$150,000	Design	[Carryover]	Design
Pierson Lake Headwaters Restoration	\$367,800	Opportunity Driven									
Whole Lake Drawdown	\$770,000	Opportunity Driven									
Internal Load Management	\$980,000	Opportunity Driven									
Stormwater Volume and Pollutant Load Reduction	\$2,000,000	Opportunity Driven									
Stream Restoration	\$870,000	Opportunity Driven									
Wetland Restoration	\$3,000,000	Opportunity Driven									
LONG LAKE CREEK SUBWATERSHED											
County Road Six Stormwater Pond Retrofit		\$110,000	Design	\$415,000	Construction	[Carryover]	Warranty	--	--	--	--
Stormwater Volume and Pollutant Load Reduction	\$1,320,000	Opportunity Driven									
PAINTER CREEK SUBWATERSHED											
Potato Marsh Restoration	\$870,000	--	--	--	--	TBD	Planning	TBD	Planning		
South Katrina Marsh Restoration	\$1,270,000	--	--	--	--	TBD	Planning	TBD	Planning		
SOBI Marsh Restoration	\$240,000	--	--	--	--	TBD	Planning	TBD	Planning		
Upper and Lower Painter Marsh Restoration	\$2,800,000	--	--	--	--	TBD	Planning	TBD	Planning		
Stream Restoration	\$2,990,000	Opportunity Driven									
Wetland Restoration	\$330,000	Opportunity Driven									
Stormwater Volume and Pollutant Load Reduction	\$980,000	Opportunity Driven									



CHRISTMAS LAKE						
Stormwater Volume and Pollutant Load Reduction	\$200,000 <i>Opportunity Driven</i>					
DUTCH LAKE						
Stormwater Volume and Pollutant Load Reduction	\$780,000 <i>Opportunity Driven</i>					
GLEASON LAKE						
Maple Creek Pond Improvement Project	\$100,000	\$100,000 Construction				
Stormwater Volume and Pollutant Load Reduction	\$600,000 <i>Opportunity Driven</i>					
LAKE MINNETONKA						
Halsted Bay Internal Phosphorus Load Reduction	\$1,400,000	Planning Phase to run concurrent with Halsted Alum Facility		\$140,000	Design	[Carryover] Design \$1,400,000 Construction
Stormwater Volume and Pollutant Load Reduction	\$1,000,000 <i>Opportunity Driven</i>					
LAKE VIRGINIA						
Stormwater Volume and Pollutant Load Reduction	\$650,000 <i>Opportunity Driven</i>					
LANGDON LAKE						
Stormwater Volume and Pollutant Load Reduction	\$230,000 <i>Opportunity Driven</i>					
SCHUTZ LAKE						
Stormwater Volume and Pollutant Load Reduction	\$250,000 <i>Opportunity Driven</i>					
BUDGET SUMMARY	2023	2024	2025	2026	2027	
Planning Budget	\$225,000	\$150,000	\$50,000	\$0	\$0	
Capital Budget	\$2,886,022	\$2,946,565	\$4,578,457	\$3,256,730	\$14,350,000	
Total	\$3,111,022	\$3,096,565	\$4,628,457	\$3,256,730	\$14,350,000	

**KEY**  
**Opportunity Driven:** projects in the CIP that are dependent on factors external to MCWD, including projects that would be identified through the Land and Water Partnership  
**[Carryover]:** Funds for design and construction are typically levied in the year that project phase is initiated. If the activity spans multiple years, it will use carryover from the previous year and not impact the follow years' levy.

# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

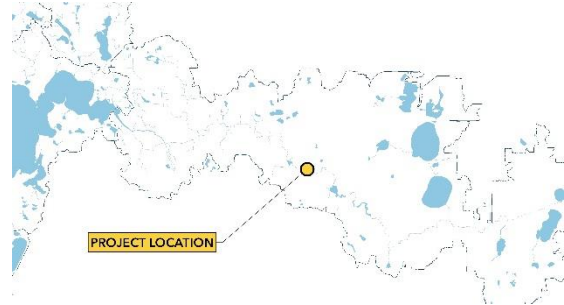
Greenway to Cedar Trail Connection and Streambank Restoration

#### LOCATION

St. Louis Park (Minnehaha Creek)

#### TARGET WATERBODY

Minnehaha Creek



### DESCRIPTION

#### SCOPE

Planned streambank stabilization, riparian restoration, and construction of a trail connection along Minnehaha Creek from the Minnehaha Creek Preserve to the Cedar Lake LRT Regional Trail. This link in the Minnehaha Creek Greenway will be planned in partnership with the City of St. Louis Park and Metropolitan Council and timed to coincide with Southwest LRT (SWLRT) construction completion.

#### GOALS

Provide a key connection between existing and future MCWD projects upstream and downstream of the rail corridor, increasing pedestrian and bicyclist safety and improving recreation and transportation access to the Cedar Lake LRT Regional Trail and future SWLRT stations at Blake Road and Louisiana Avenue. The overall ecological integrity of the stream corridor will be improved through approximately 1,500 lineal feet of streambank stabilization and riparian restoration.

#### JUSTIFICATION

Upstream and downstream Minnehaha Creek Greenway projects are currently separated by freight rail and the future Southwest LRT line, and there is no direct pedestrian or bicycle connection between these investments or the Cedar Lake LRT Regional Trail. The bridge crossing at Minnehaha Creek is the site of past creek manipulation, and Minnehaha Creek is currently impaired for fecal coliform bacteria, chloride, low dissolved oxygen, and fish and macroinvertebrate communities. Lake Hiawatha, Minnehaha Creek's receiving waterbody, is impaired for nutrients due to sediment and nutrient loads transported by Minnehaha Creek and both waterbodies have TMDLs.

#### WORKPLAN SUMMARY

In 2022, MCWD will compile existing and newly collected data to complete a feasibility assessment and develop a scope for project design. MCWD will pursue partnership agreements, including a design and construction agreement with St. Louis Park, and target 2023 to initiate design. Construction will be coordinated between MCWD and the other agencies who own or operate the SWLRT right-of-way.

### SCHEDULE + BUDGET





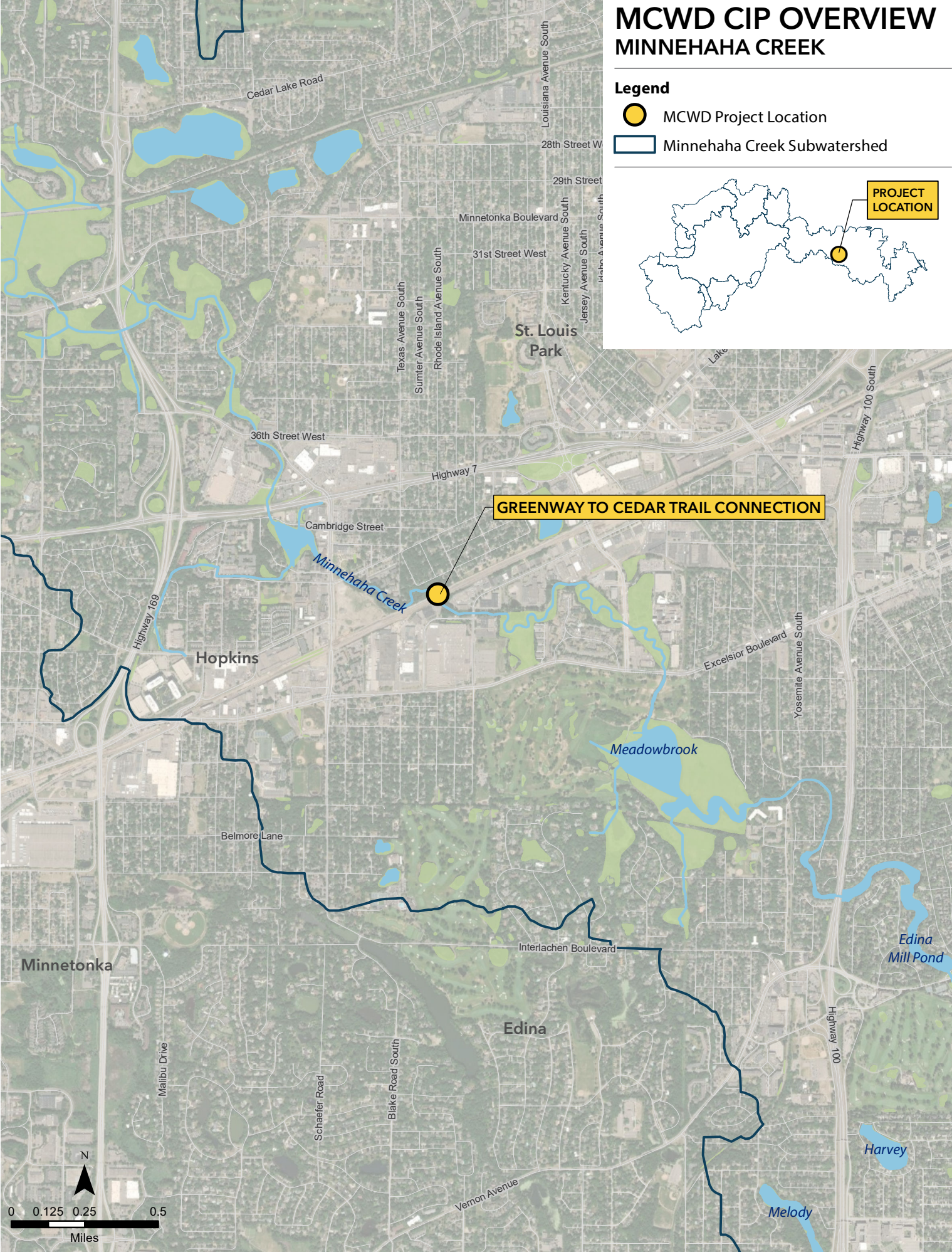
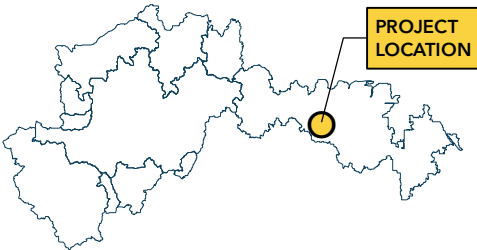


# MCWD CIP OVERVIEW

## MINNEHAHA CREEK

**Legend**

-  MCWD Project Location
-  Minnehaha Creek Subwatershed





# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

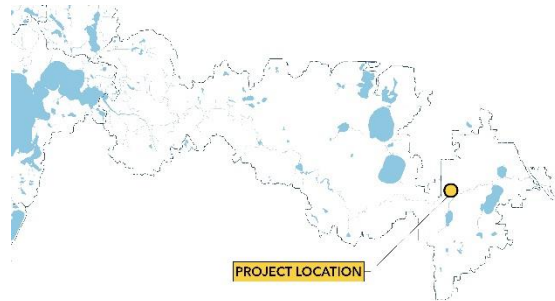
Minnehaha Parkway Stormwater Management

#### LOCATION

Minneapolis (Minnehaha Creek)

#### TARGET WATERBODY

Minnehaha Creek, Lake Hiawatha



### DESCRIPTION

#### SCOPE

Proposed partnership with the City of Minneapolis and Minneapolis Park and Recreation Board (MPRB) to create a shared implementation framework for the Minnehaha Parkway Regional Trail Master Plan, a 30 year vision to enhance recreation, improve ecological function of the creek corridor, improve public safety, address flooding, and improve water quality in the Minneapolis segment of the Minnehaha Creek corridor.

#### GOALS

The Minnehaha Parkway Regional Trail Master Plan includes 35 water resource projects, which together would remeandor 2.65 miles of creek, restore 51.8 acres of upland landscape, reduce annual phsophorus loading to lake Hiawatha by 434 lbs/year; increase floodplain storage by 56 acre-feet; and create six new creek access points.

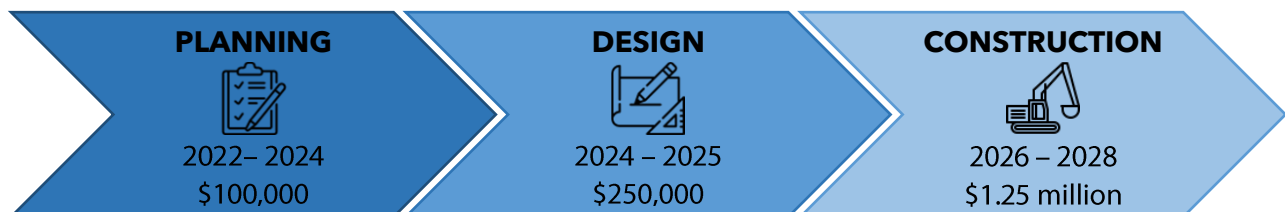
#### JUSTIFICATION

Minnehaha Creek is an iconic regional and cultural natural resource. It is an impaired water body for multiple parameters, including fecal coliform bacteria, chloride, low dissolved oxygen, and fish and macroinvertebrate communities. Further, the MPCA has listed downstream receiving water body Lake Hiawatha as impaired for excess nutrients. Minnehaha Creek is further impacted by rapidly fluctuating water flows that contribute to bank erosion and impair the biotic integrity of the stream.

#### WORKPLAN SUMMARY

The focus for 2023 will be on developing a shared implementation framework between MCWD, MPRB, and Minneapolis to identify and implement priority capital improvements in the Minnehaha Parkway. Successful partnership development will lead to future advancement of specific capital projects through the planning, design, and construction cycle. The below timeline is illustrative of a potential first phase project for implementation.

### SCHEDULE + BUDGET





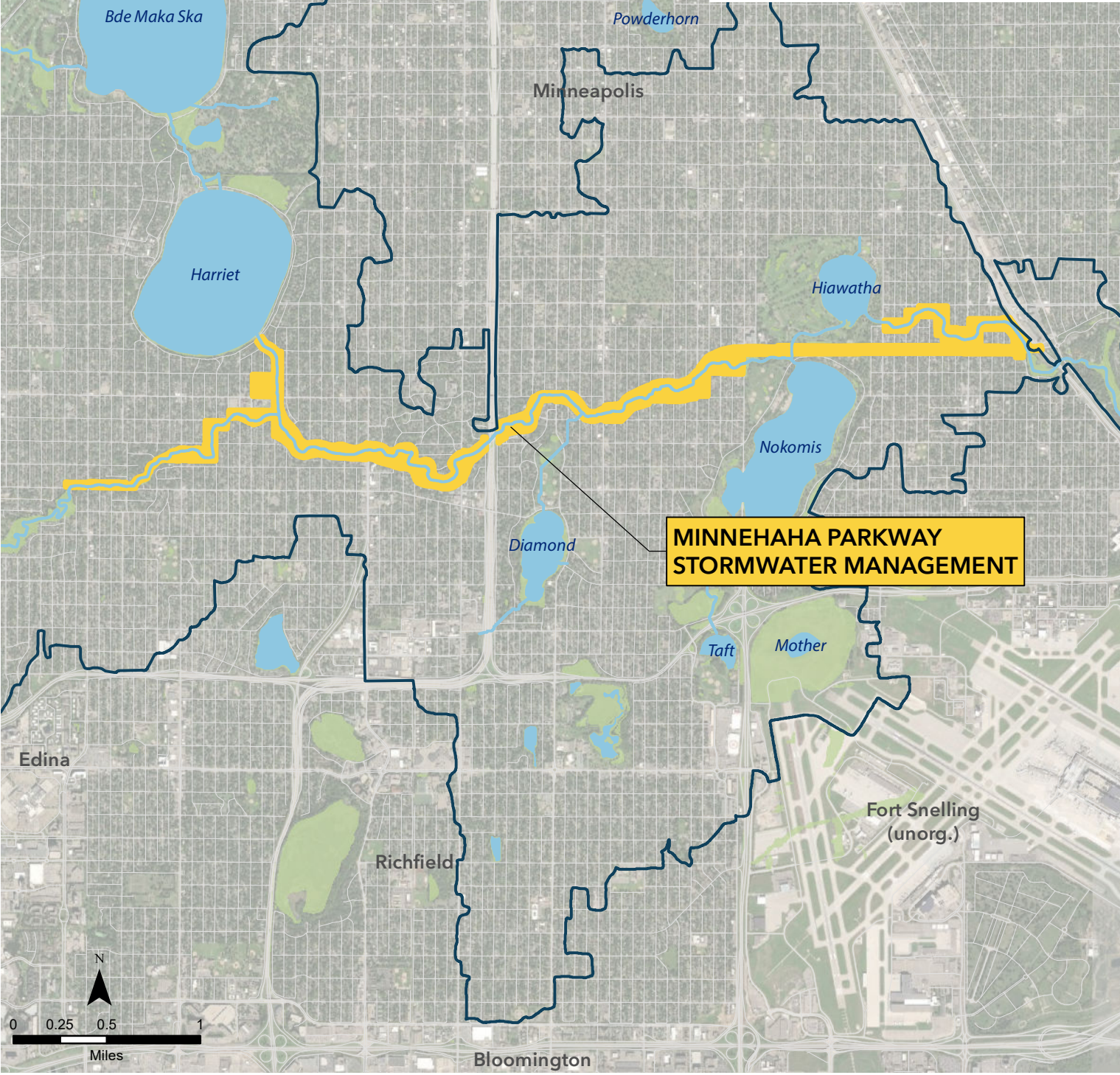
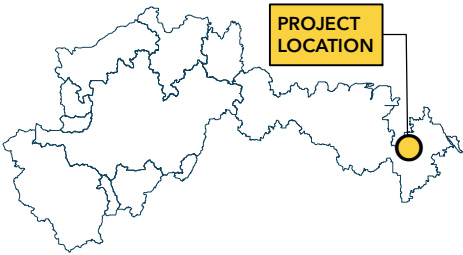


# MCWD CIP OVERVIEW

## MINNEHAHA CREEK

### Legend

-  MCWD Project Location
-  Minnehaha Creek Subwatershed





# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

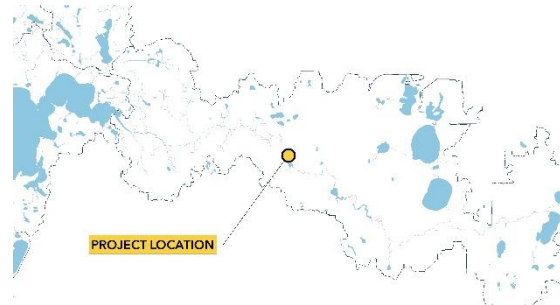
Meadowbrook Golf Course Ecological Restoration and Greenway Expansion

#### LOCATION

St. Louis Park, Hopkins, and Edina (Minnehaha Creek)

#### TARGET WATERBODY

Minnehaha Creek



### DESCRIPTION

#### SCOPE

Reevaluate plan to reconfigure and enhance Meadowbrook Golf Course to restore and improve the ecological integrity of the Minnehaha Creek stream corridor, enhance on-site flood storage and resilience, and connect the Minnehaha Creek Greenway through Minneapolis Parks and Recreation Board land to the City of Edina parks and trails system.

#### GOALS

The project would improve the ecological integrity and upland areas of the golf course along a 1,200-foot stretch of the Minnehaha Creek corridor, improve water quality in Minnehaha Creek and Lake Hiawatha through buffers and improved stormwater management, and restore wetland function. It may explore the potential to reduce flooding impacts to Meadowbrook Golf Course and surrounding neighborhoods via the creation of additional storage, and connect the Minnehaha Creek Greenway to the City of Edina parks and trails system.

#### JUSTIFICATION

The project is within the most degraded section of the Minnehaha Creek corridor, which historically experienced ditching, wetland loss, and habitat fragmentation. Minnehaha Creek is currently impaired for fecal coliform bacteria, chloride, low dissolved oxygen, and fish and macroinvertebrate communities. Lake Hiawatha, Minnehaha Creek's receiving waterbody, is impaired for nutrients due to sediment and nutrient loads transported by Minnehaha Creek and both waterbodies have TMDLs. This project would connect to the upstream Minnehaha Creek Corridor, supporting both recreation access and ecological integrity through this contiguous stretch of restored greenway.

#### WORKPLAN SUMMARY

The Meadowbrook Golf Course Project underwent feasibility and design in 2015-2016. MCWD has identified 2024 as a possible target to reinitiate project planning and partnership development. Advancing the project, either as designed or of a modified scope, is contingent on developing partnership agreements with MPRB. The timeline below is reliant on partnership alignment, and therefore illustrative only.

### SCHEDULE + BUDGET





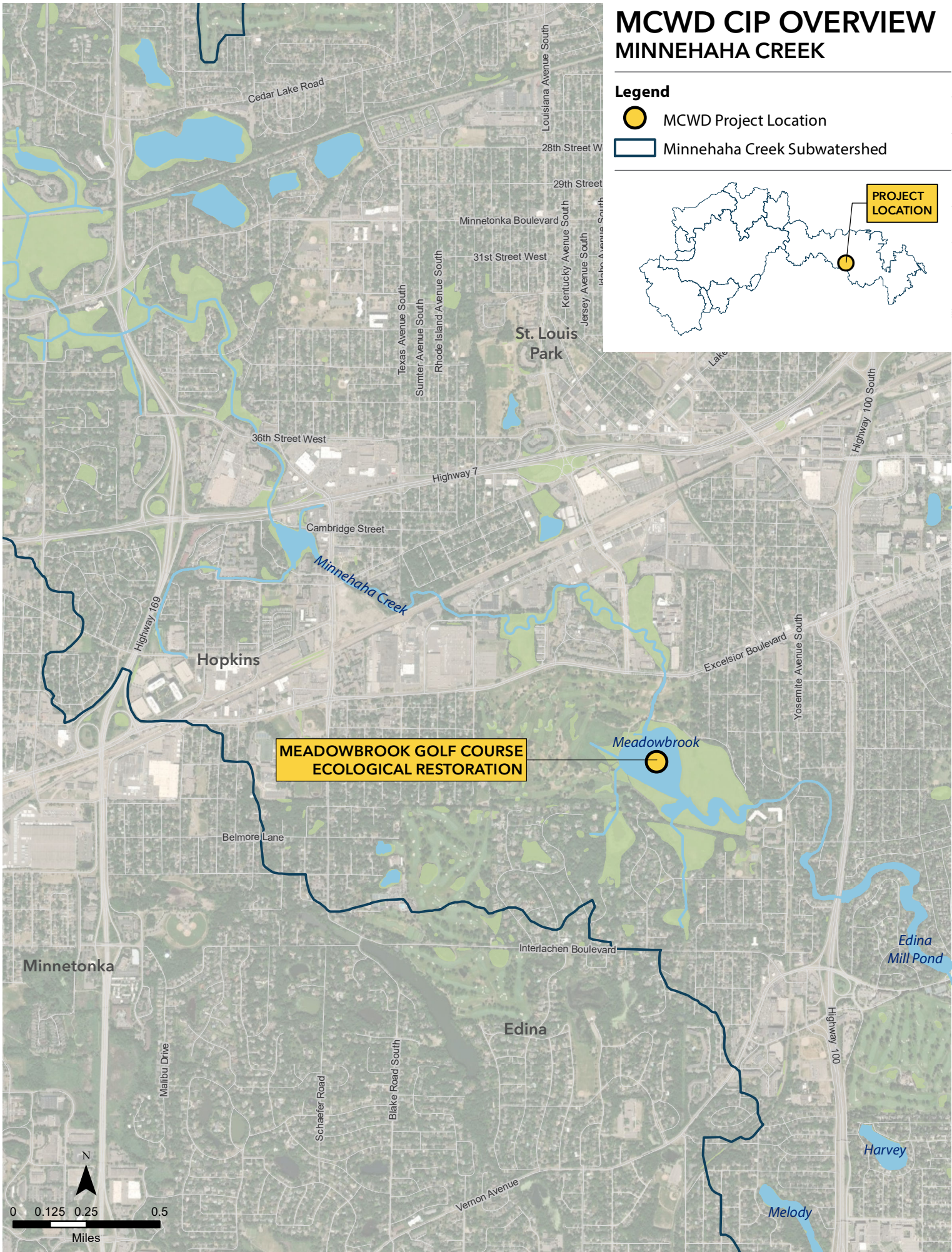
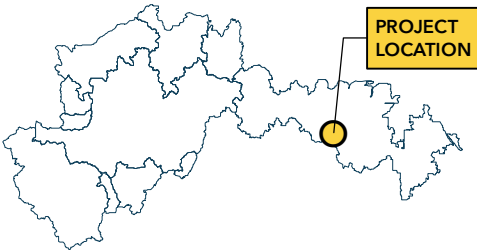


# MCWD CIP OVERVIEW

## MINNEHAHA CREEK

**Legend**

-  MCWD Project Location
-  Minnehaha Creek Subwatershed





# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

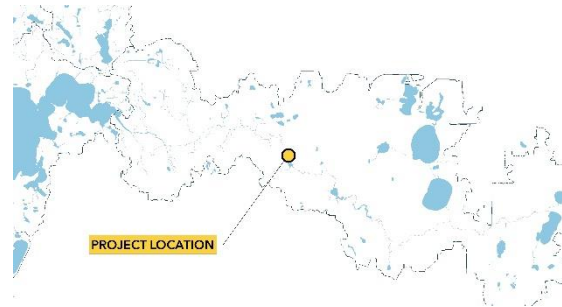
Boone-Aquila Floodplain Restoration

#### LOCATION

St. Louis Park (Minnehaha Creek)

#### TARGET WATERBODY

Minnehaha Creek



### DESCRIPTION

#### SCOPE

Evaluate opportunity for floodplain restoration, stormwater management, and enhanced recreational access along Minnehaha Creek in the Aquila neighborhood of St. Louis Park near Target-Knollwood.

#### GOALS

This project may improve the ecological integrity along approximately 1,000-feet of an urbanized stretch of Minnehaha Creek, explore expansion of floodplain storage over a three-acre area, enhance riparian habitats, and provide safe recreational access to Minnehaha Creek and connections to the Minnehaha Creek Greenway.

#### JUSTIFICATION

Historic development of this urban stretch of Minnehaha Creek resulted in filling large areas of floodplain, localized flooding, and impervious surfaces within the floodplain. Minnehaha Creek is currently impaired for fecal coliform bacteria, chloride, low dissolved oxygen, and fish and macroinvertebrate communities. Lake Hiawatha, Minnehaha Creek's receiving waterbody, is impaired for nutrients due to sediment and nutrient loads transported by Minnehaha Creek and both waterbodies have TMDLs.

#### WORKPLAN SUMMARY

The ability to design and execute a project is dependent on landowner interest in either integrating a project on their property through redevelopment or conveying property to MCWD. MCWD will consider 2024 to reinitiate project planning, which may include technical review and data collection to better evaluate potential project developments, evaluation of partnership and land acquisition opportunities, and developing conceptual design and implementation scenarios. The timeline below is illustrative only based on the hypothetical advancement of a project out of the planning phase.

### SCHEDULE + BUDGET





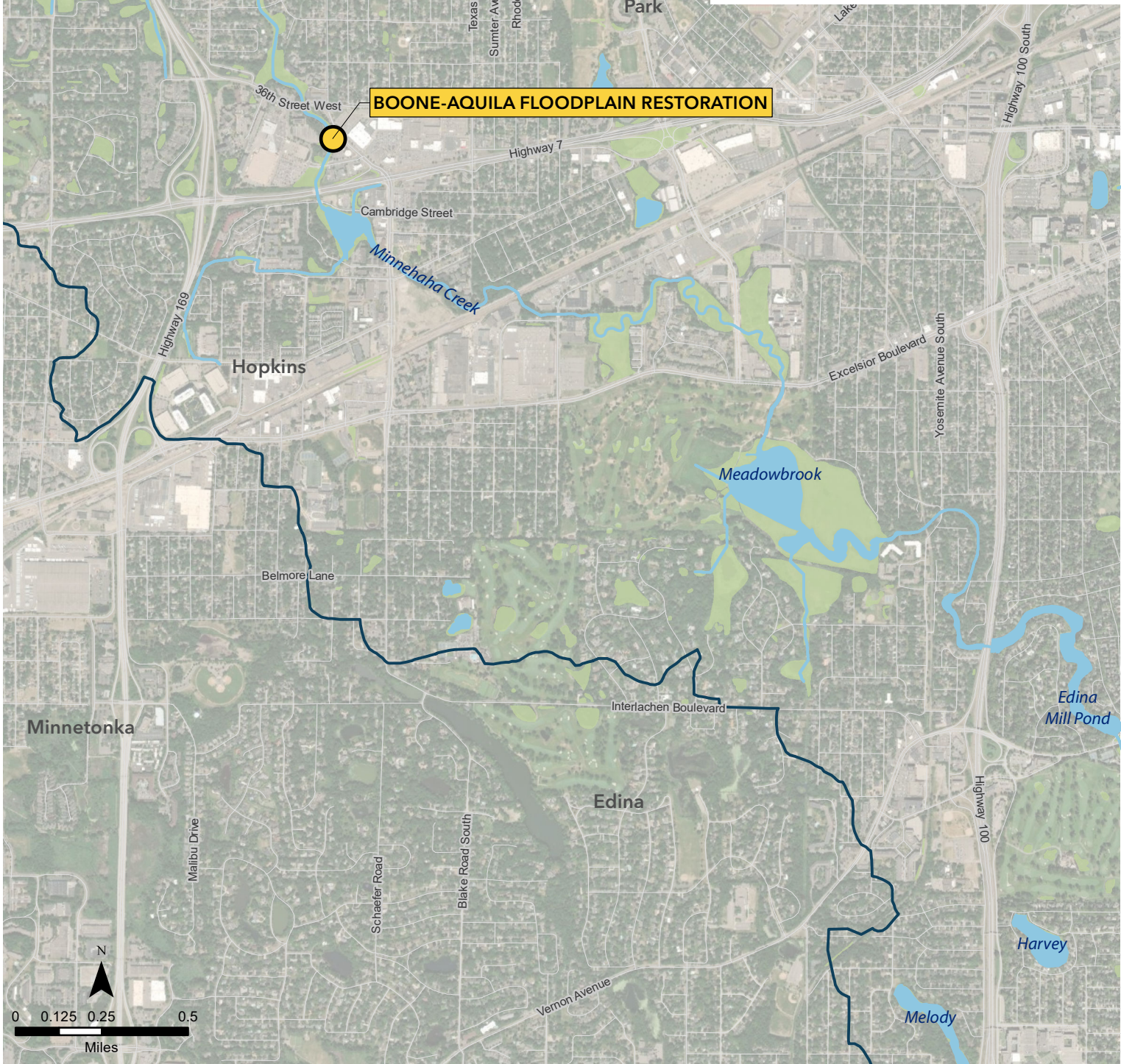
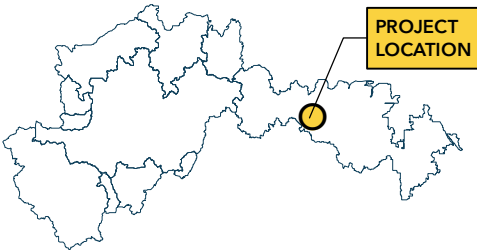


# MCWD CIP OVERVIEW

## MINNEHAHA CREEK

### Legend

-  MCWD Project Location
-  Minnehaha Creek Subwatershed





# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

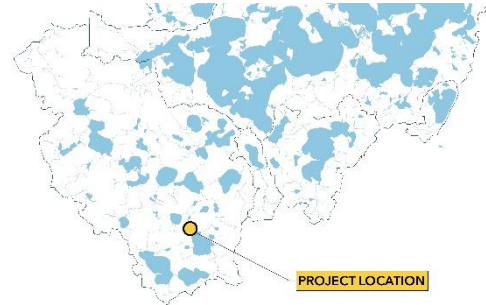
East Auburn Wetland Restoration

#### LOCATION

Victoria (Six Mile Creek-Halsted Bay)

#### TARGET WATERBODY

East Auburn Lake



### DESCRIPTION

#### SCOPE

This project will target phosphorus export from a degraded wetland at the outlet of Wassermann Lake. MCWD will conduct monitoring and feasibility to develop a project approach that will likely include an innovative solution, depending on observed wetland conditions.

#### GOALS

The project will target a phosphorus reduction of 135 lbs/yr. Secondary benefits including habitat restoration and increased water storage will be explored through feasibility.

#### JUSTIFICATION

East Auburn is an impaired waterbody requiring a total nutrient reduction of 626 lbs/yr, with 410 lbs/yr designated from the upstream watershed. This project will target a specific wetland segment at the outlet of Wassermann Lake that represents the highest identified concentration of nutrient export to East Auburn Lake. Management methods for reducing nutrient output from degraded wetlands are not well established, and successful implementation may support the implementation of projects in similar wetland systems in the future.

#### WORKPLAN SUMMARY

In 2022, MCWD will seek to complete a feasibility assessment to identify the project scope to address nutrient export from the subject wetland. 2023 anticipated work includes refining the project approach, developing partnership agreements, and commencing project design, pending Board consideration.

### SCHEDULE + BUDGET






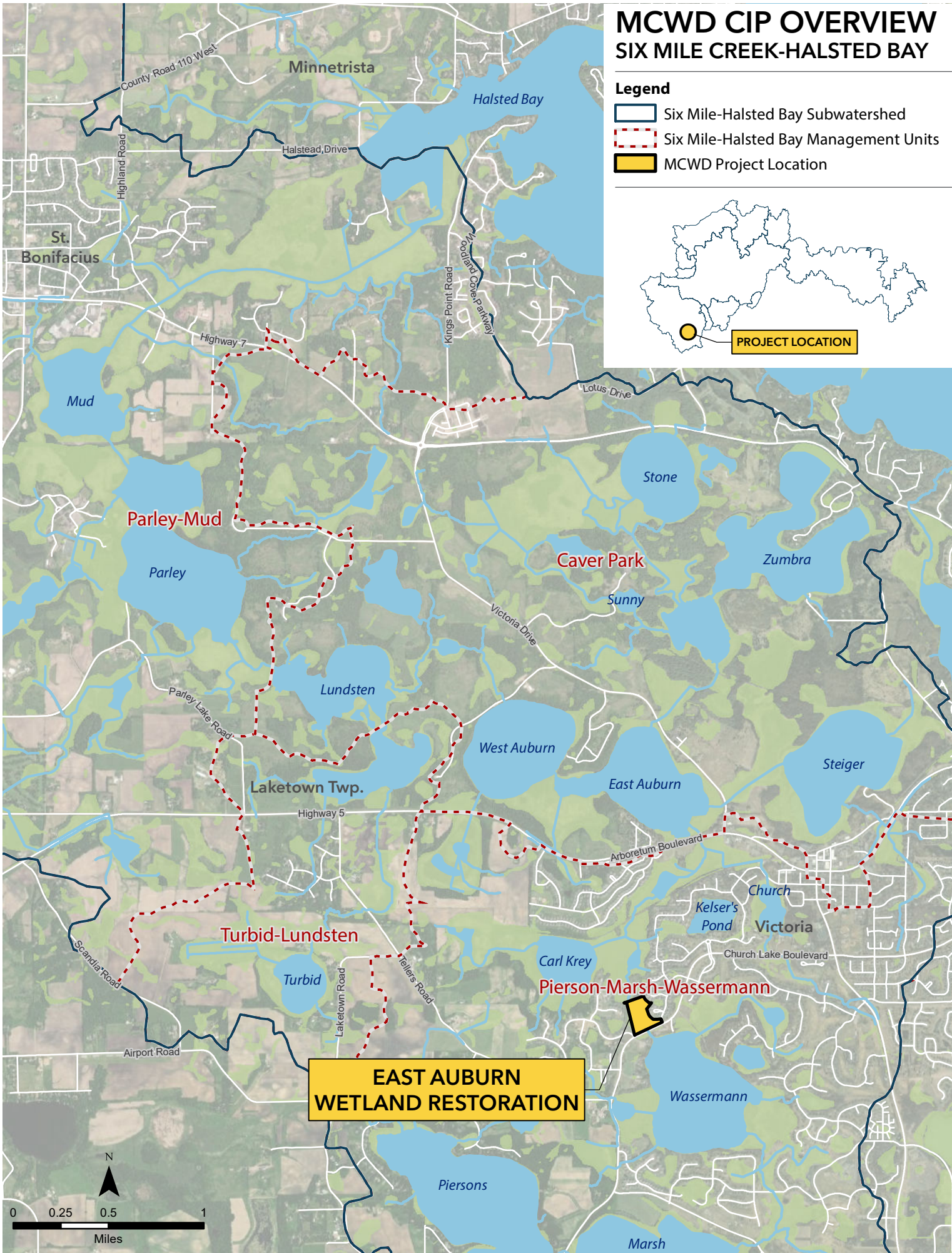
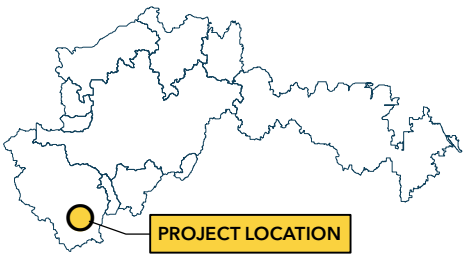


# MCWD CIP OVERVIEW

## SIX MILE CREEK-HALSTED BAY

### Legend

-  Six Mile-Halsted Bay Subwatershed
-  Six Mile-Halsted Bay Management Units
-  MCWD Project Location



# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

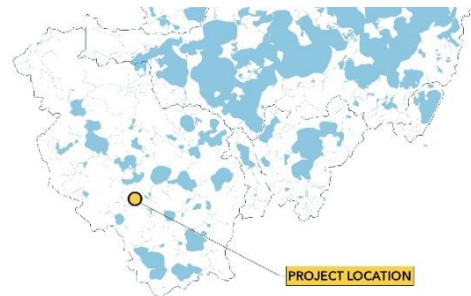
Turbid-Lundsten Corridor Restoration

#### LOCATION

Laketown Township (Six Mile Creek Halsted Bay)

#### TARGET WATERBODY

Turbid, South & North Lundsten Lakes, Six Mile Creek



### DESCRIPTION

#### SCOPE

An individual project or set of combined complementary projects will reduce phosphorus loading and export within this chain of lakes and the adjacent wetlands. Project opportunities to be evaluated include wetland and stream corridor restoration, internal load treatment using alum, and habitat corridor establishment.

#### GOALS

Project benefits may include an approximate 35 lbs/yr nutrient reduction to Turbid Lake and 55 lbs/yr reduction to South Lundsten (based on 2012 feasibility); 95 acres of restored wetlands with associated ecological and hydrological benefits; and future integration with residential development and an expanding greenway corridor.

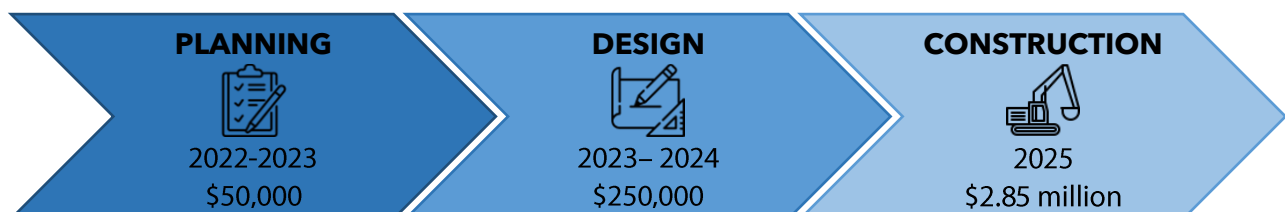
#### JUSTIFICATION

Turbid Lake is impaired for nutrients which is primarily due to internal loading. The lake requires a 138 lbs/yr phosphorus reduction under an approved TMDL. South Lundsten has very high phosphorus concentrations but is classified as a wetland and therefore does not have a TMDL. The altered wetlands around this small chain of lakes and internal loading are the principal drivers of degraded water quality. Previous feasibility studies have identified viable management strategies in this corridor.

#### WORKPLAN SUMMARY

MCWD is in the early planning phase for opportunities in this corridor. The scale of work will be dependent on land acquisition, potential partnerships, and the identification of feasible project opportunities, all of which will be explored through planning work in 2022 and 2023. Projects identified for near term implementation will be advanced through the CIP. The timeline below is based on the assumption that a specific project is advanced out of the planning phase for near term implementation.

### SCHEDULE + BUDGET



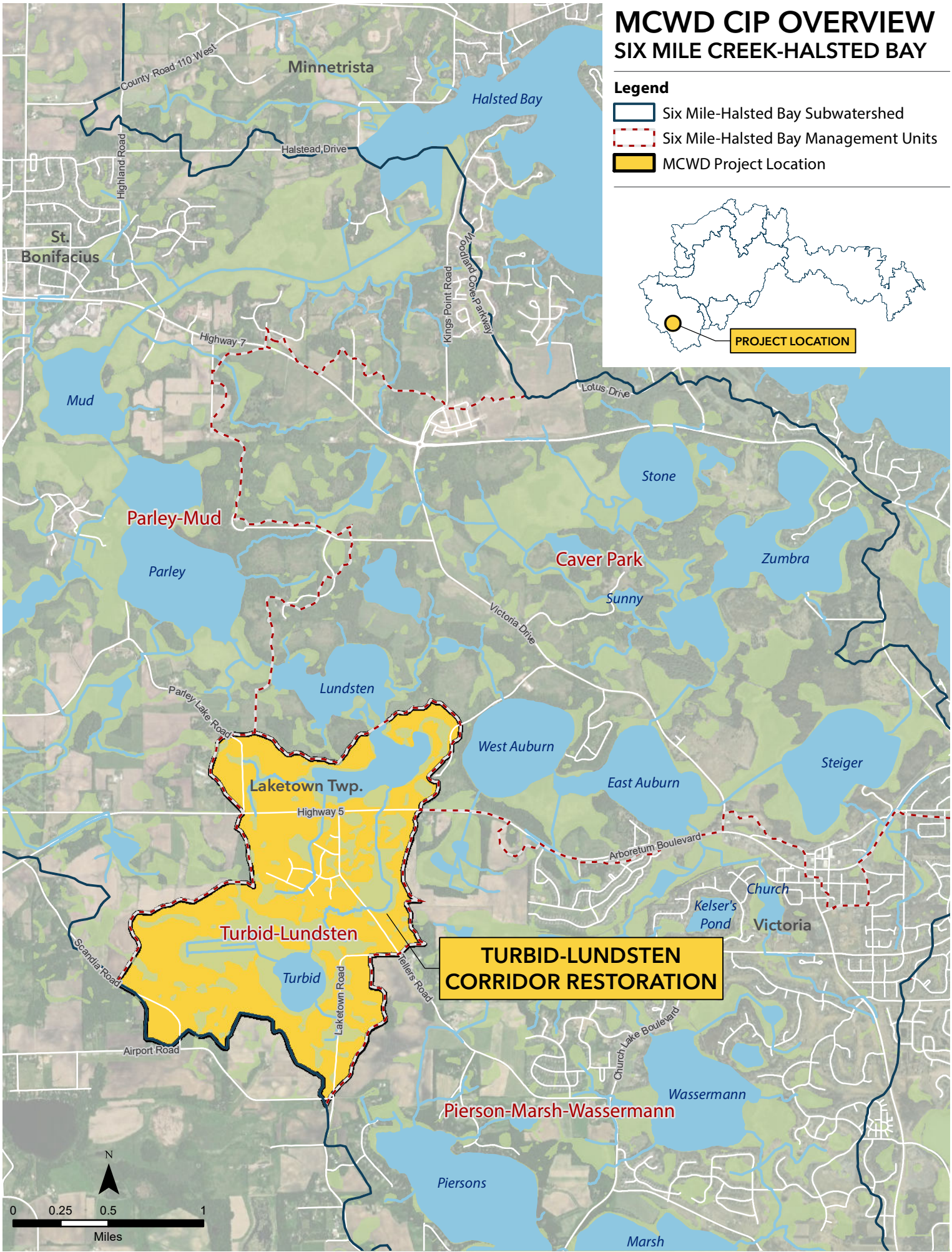
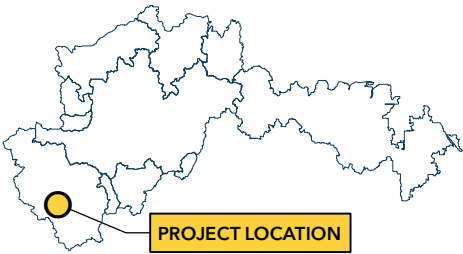


# MCWD CIP OVERVIEW

## SIX MILE CREEK-HALSTED BAY

**Legend**

- Six Mile-Halsted Bay Subwatershed
- Six Mile-Halsted Bay Management Units
- MCWD Project Location



# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

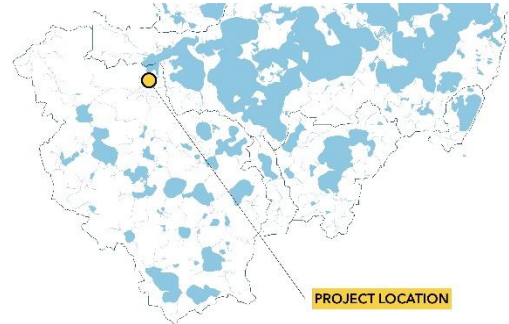
Lake Minnetonka – Halsted Bay Alum Treatment Facility

#### LOCATION

Minnetrista (Six Mile Creek Halsted Bay)

#### TARGET WATERBODY

Halsted Bay, Lake Minnetonka



### DESCRIPTION

#### SCOPE

Evaluate the construction of a phosphorus removal facility which would pump water from Six Mile Creek, treat it using aluminum sulfate (alum), and discharge treated water into the Creek before entering Halsted Bay. Alum treatment to address internal loading in Halsted Bay may also be considered as complementary component of this project.

#### GOALS

This project would reduce nutrient loading to Halsted Bay by an estimated 1,620 lbs/yr. If paired with an in-lake alum treatment, an additional 1,900 lbs/yr reduction could be achieved. Secondary benefits include increased water clarity, reemergence of aquatic habitat, and improved recreational value.

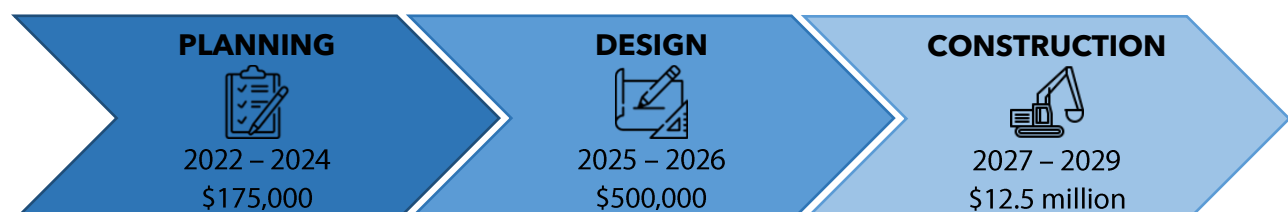
#### JUSTIFICATION

Halsted Bay is impaired for nutrients and requires the largest phosphorus load reduction of any waterbody in the MCWD. Preliminary feasibility assessments identified that 50% of the nutrient load to Halsted Bay is from the Six Mile Marsh wetland (40% internal load, 10% other watershed load), requiring a 2,000 lbs/yr nutrient load reduction. The vast majority of nutrient input to Halsted Bay is dissolved phosphorus, which requires chemical treatment for removal. Meeting state water quality standards in Halsted Bay will require addressing both watershed and internal loading.

#### WORKPLAN SUMMARY

MCWD plans to commence the project planning phase in fall 2022 and will continue through 2023. Preliminary work will focus on reviewing the 2012 feasibility report and validating the conceptual design; meeting with project partners to initiate discussions around facility operations, regulatory frameworks, and funding; and developing a project outreach plan. Consideration of advancing the project into design will be carefully considered by MCWD's Board in collaboration with project partners.

### SCHEDULE + BUDGET



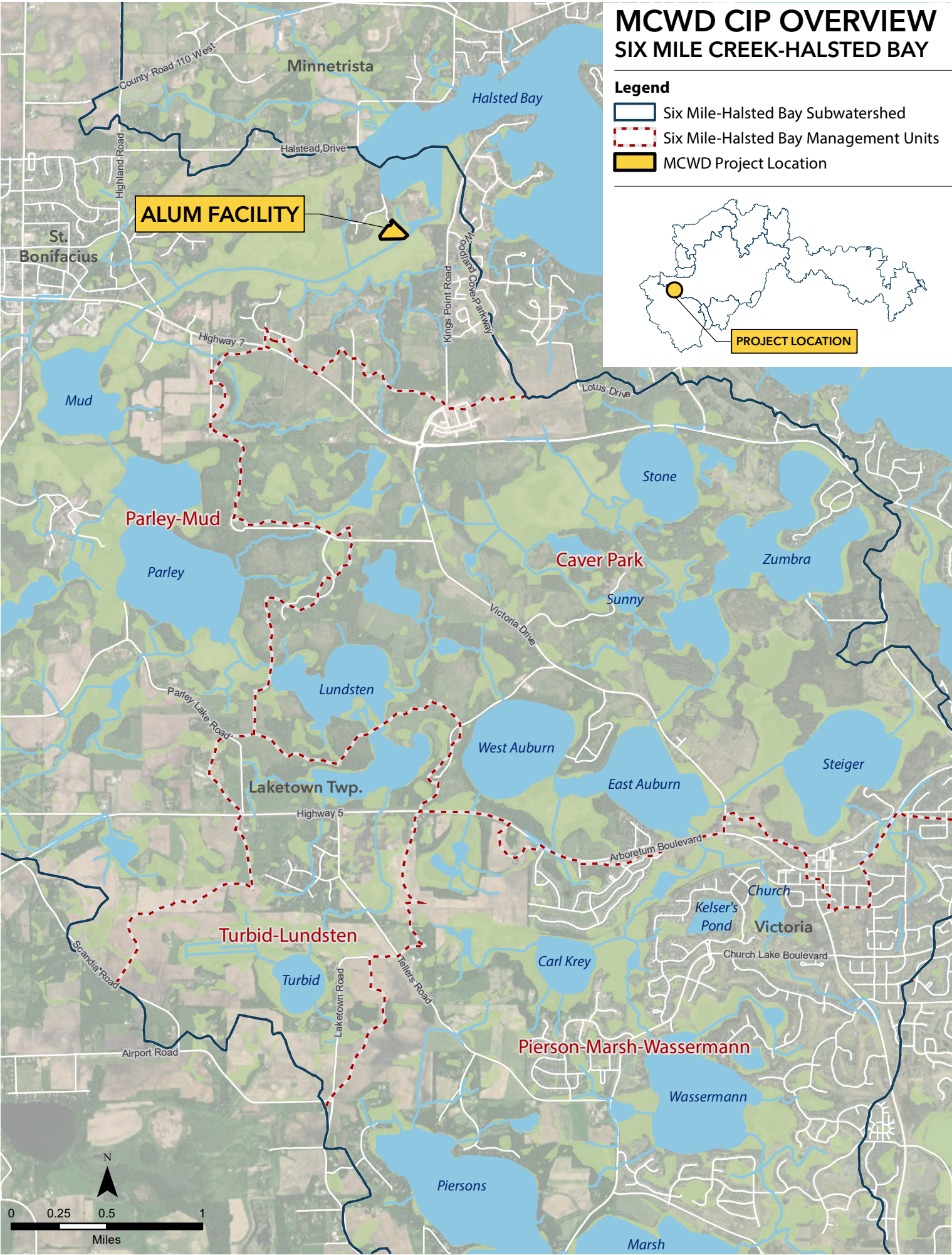
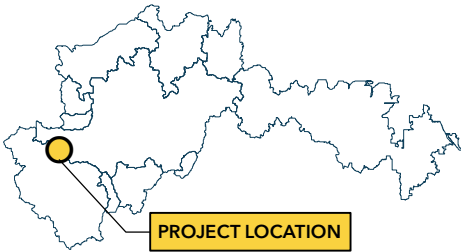


# MCWD CIP OVERVIEW

## SIX MILE CREEK-HALSTED BAY

**Legend**

- Six Mile-Halsted Bay Subwatershed
- Six Mile-Halsted Bay Management Units
- MCWD Project Location





# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

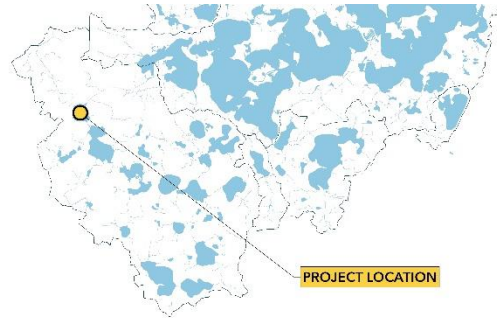
Mud Lake Watershed Load Reductions

#### LOCATION

Minnetrista, St. Bonifacius (Six Mile Creek Halsted Bay)

#### TARGET WATERBODY

Mud Lake, Halsted Bay



### DESCRIPTION

#### SCOPE

Individual project or projects to reduce nutrient loading in the Mud Lake subwatershed which may include wetland rectoration, regional stormwater treatment, and existing stormwater facility retrofits.

#### GOALS

The primary purpose of these projects are to reduce nutrient loading to Mud Lake. Phosphorus sources to Mud Lake are diffuse and implementation will take place in a phased approach, targeting the most cost-effective and highest impact projects first.

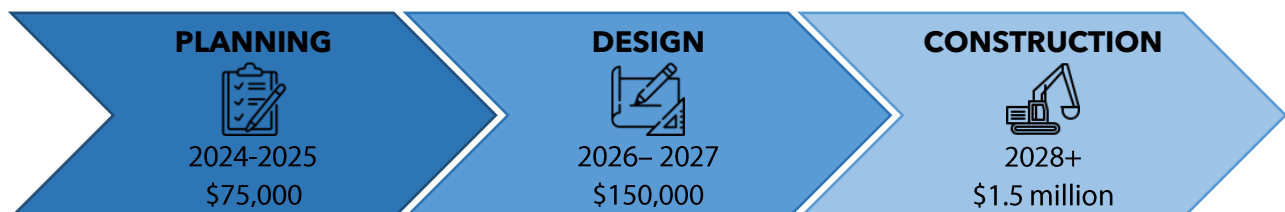
#### JUSTIFICATION

The 2013 Six Mile Diagnostic identified Mud Lake as having very poor water quality, driven by a combination of internal loading, upstream lake water quality, and watershed loading. Reductions between 78% and 95% (1,864 lbs/yr – 2,258 lbs/yr) from the direct watershed are needed to shift the ecological condition of Mud Lake and address downstream impacts to Halsted Bay. Halsted Bay requires the largest phosphorus load reduction in the District and 50% of its load comes from upstream Mud Lake via the Six Mile Marsh wetland complex.

#### WORKPLAN

MCWD completed a study in 2018 that evaluated a range of project opportunities to address nutrient loading to Mud Lake. In 2024, MCWD plans to initiate planning to reevaluate the technical assumptions, preliminary feasibility, and property rights in order to develop a multiphase implementation strategy. The timeline below is based on the hypothetical identification of a project or series of projects through that early planning work. The construction cost assumes a phased implementation approach.

### SCHEDULE + BUDGET

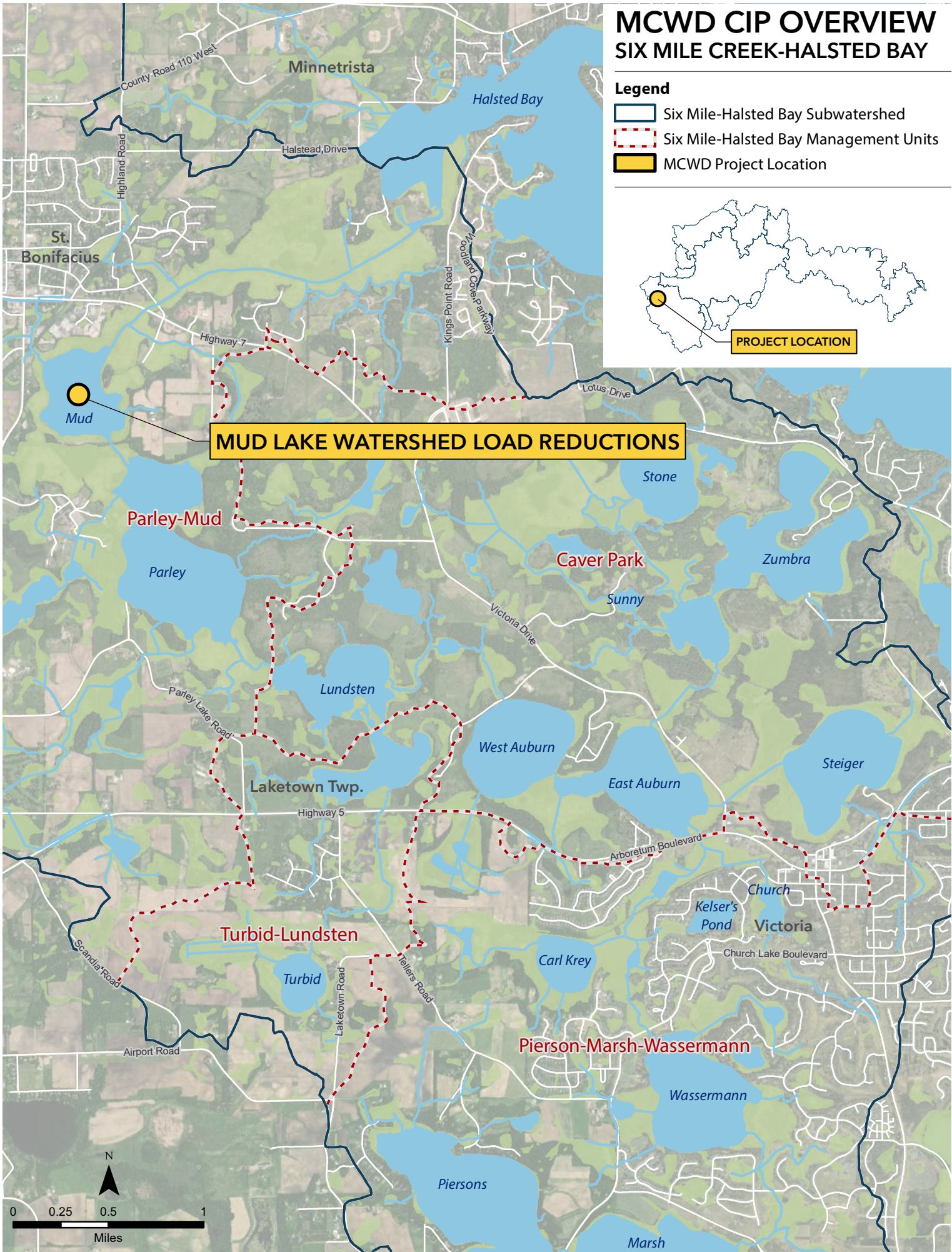
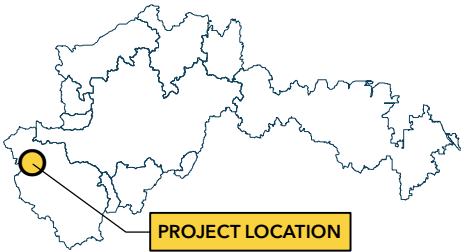


# MCWD CIP OVERVIEW

## SIX MILE CREEK-HALSTED BAY

**Legend**

- Six Mile-Halsted Bay Subwatershed
- Six Mile-Halsted Bay Management Units
- MCWD Project Location





# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

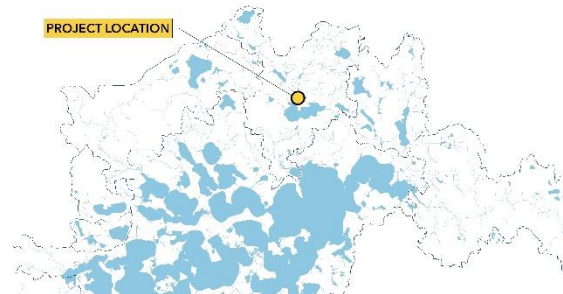
County Road 6 Pond Retrofit

#### LOCATION

Orono (Long Lake Creek)

#### TARGET WATERBODY

Long Lake



### DESCRIPTION

#### SCOPE

Proposed retrofit of an existing MCWD pond providing downstream treatment of both the Wolsfeld and Holy Name management units through the addition of a sand filtration bench to improve water quality treatment capacity.

#### GOALS

Reduce nutrient loading to Long Lake by approximately 150 lbs/yr and reduce TSS loading by approximately 85%.

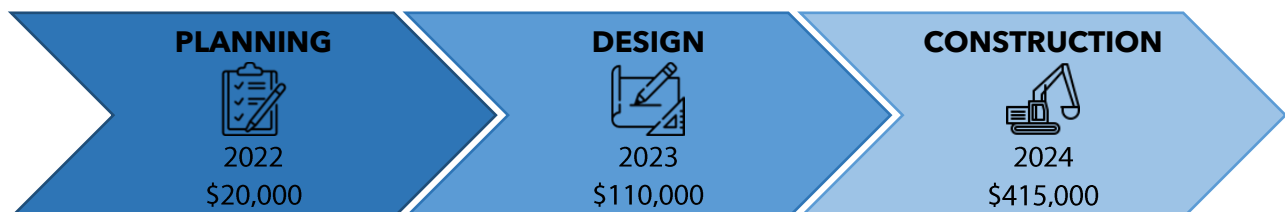
#### JUSTIFICATION

Long Lake is impaired for nutrients and requires a 62% (411 lbs) reduction to meet state water quality standards, including 195 lbs/yr from watershed sources. Monitoring of the County Road 6 pond in 2021 identified concentrations of phosphorus in the pond to be higher than previously understood, presenting an opportunity to make significant progress towards the watershed load reduction goal. With other projects in the subwatershed reliant on land use change, this presents a short term implementation opportunity.

#### WORKPLAN SUMMARY

In 2022, MCWD intends to build on the collected monitoring data and concept development to complete project feasibility. Pending the completion of project feasibility, Board consideration, and project ordering, MCWD anticipates 2023 project design and 2024 construction.



### SCHEDULE + BUDGET

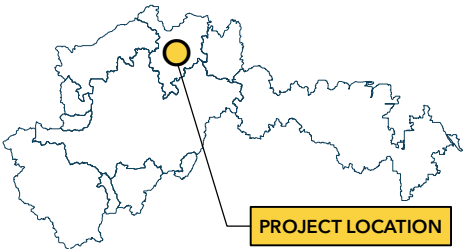


# MCWD CIP OVERVIEW

## LONG LAKE CREEK

**Legend**

-  Long Lake Creek Subwatershed
-  MCWD Project Location





# MINNEHAHA CREEK WATERSHED DISTRICT

## MULTI-YEAR CAPITAL IMPROVEMENT PLAN

2023-2027

### OVERVIEW

#### PROJECT NAME

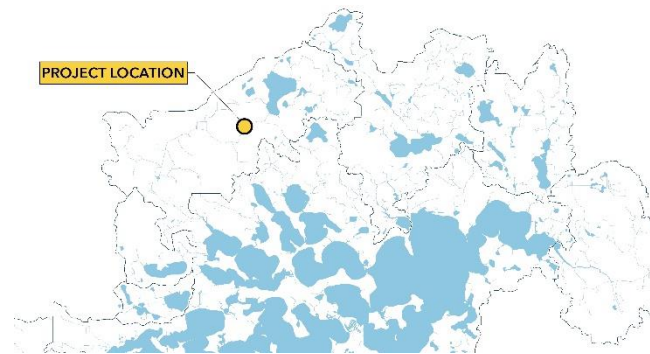
Painter Creek Wetland Restorations

#### LOCATION

Independence, Medina, Minnetrista, Orono  
(Painter Creek Subwatershed)

#### TARGET WATERBODY

Jennings Bay, Lake Minnetonka



### DESCRIPTION

#### SCOPE

Proposed development of a systematic implementation plan for the subwatershed that protects and improves the ecological integrity of the extensive wetland network through hydrologic and vegetative wetland restorations while addressing nutrient loading to downstream Jennings Bay.

#### GOALS

The development of specific project goals will be a component of the implementation plan. Target goals may include increased wetland habitat diversity, reduced sedimentation and pollutant loading, and hydrologic restoration.

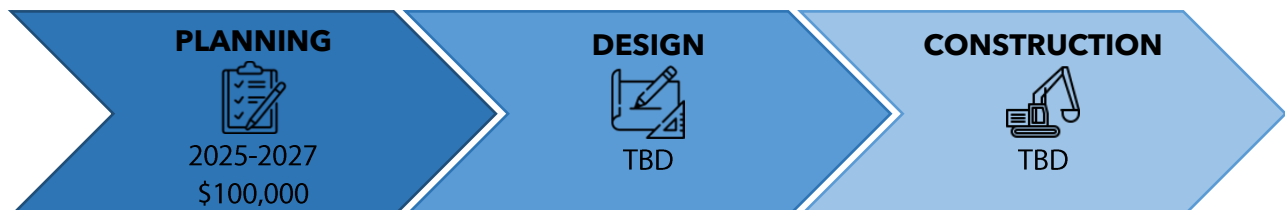
#### JUSTIFICATION

The Painter Creek Subwatershed is a regionally significant subwatershed that contains a number of large wetlands, many of which have been ditched or otherwise altered, that are connected by Painter Creek. Painter Creek contributes an estimated 33-50% of the total annual phosphorus load to Jennings Bay on Lake Minnetonka, which is impaired. 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, which may provide funding and implementation assistance for projects in the subwatershed.

#### WORKPLAN SUMMARY

Prior to commencing project work in the Painter Creek Subwatershed, MCWD will systematically develop an implementation framework that integrates natural resource goals, local context, and the previous work completed in partnership with the USACE. Planning will be initiated in 2025, likely starting with a subwatershed assessment lead by MCWD's Research and Monitoring team.

### SCHEDULE + BUDGET





# MCWD CIP OVERVIEW

## PAINTER CREEK

**Legend**

- MCWD Subwatersheds
- MCWD Project Location

