



LOWER MINNESOTA RIVER WATERSHED DISTRICT

Executive Summary for Action

Lower Minnesota River Watershed District Board of Managers Meeting
Wednesday, June 15, 2022

Agenda Item

Item 6. E. – Watershed Management Plan

Prepared By

Linda Loomis, Administrator

Summary

i. Revisions to LMRWD Rules

The Board authorized initiation of the Rules revision process at the March 2022 meeting of the LMRWD Board of Managers. Since that time the LMRWD distributed the proposed rule revisions and have met with the LMRWD Technical Advisory Committee (TAC) on June 15, 2022. Draft rules revisions were shared with the TAC and the TAC was asked to comment on the revisions on or before July 1, 2022.

Comments were received and documented. Responses were prepared by Young Environmental on behalf of the LMRWD and entered into a table for dissemination. A Technical Memorandum was prepared by Young Environmental and is attached. The Memorandum includes the comment/response table. The Board should authorize distribution of the comment/response table to partners.

Attachments

Technical Memorandum dated July 15, 2022 – Lower Minnesota River Watershed District (LMRWD) rule revision process

Recommended Action

Motion to approve draft rule revision and authorize submission of draft rules to the Board of Water and Soil Resources

ii. Update to LMRWD Comprehensive Watershed Management Plan

At the May 2022 meeting of the LMRWD Board of Managers, the Board authorized staff to proceed with a minor plan amendment to the LMRWD Comprehensive Watershed Management Plan. Staff has put together a draft implementation program for the Board to review. The draft plan includes a gradual increase in the amount of the budget that comes from a general levy and is using some of the fund balance to project projects in the first few years of the program.

Young Environmental Consulting Group has provided a summary of the process so far and outlined the process moving forward. Also attached is a draft implementation program.

Attachments

Technical Memorandum Dated July 15, 2022 – Lower Minnesota River Watershed District (LMRWD) Watershed Management Plan Implementation Plan Update

Recommended Action

Motion to approve (or modify) draft Implementation plan and authorize staff to initiate amendment process

Technical Memorandum

To: Linda Loomis, Administrator
Lower Minnesota River Watershed District

From: Meghan Litsey, CPESC
Della Schall Young, CPESC, PMP

Date: July 15, 2022

Re: Lower Minnesota River Watershed District (LMRWD) Watershed
Management Plan Implementation Plan Update

In 2018, the Implementation Program section of the Watershed Management Plan (Plan) was updated with an emphasis on the activities associated with the first five years (2018–2022). In addition, it was acknowledged that the remaining years in the plan (2023–2027) would require an update in 2022 to effectively plan the second half of the Implementation Program. The Implementation Program section now requires a minor plan amendment to emphasize activities for the years 2023–2027.

Young Environmental Consulting Group (Young Environmental) consulted the LMRWD’s Technical Advisory Committee (TAC) on June 15, 2022, to review the draft Implementation Program amendment and seek recommendations from the TAC on additional programs, projects, and studies. Young Environmental received project submissions from the following TAC members: Carver Watershed Management Organization, the City of Shakopee, and the City of Savage. Their projects have been incorporated into the draft Implementation Program Tables 4-1 and 4-3 attached.

Below are the suggested amendments, the Plan amendment process, and Young Environmental’s recommended next steps.

Suggested Modifications

Attached is the draft Implementation Program Tables 4-1 and 4-3 summarizing the proposed modifications.

Plan Amendment Process

The process to amend the Watershed Management Plan is outlined in MS 103B.231 and summarized below:

- The Plan amendment must be submitted in writing to the LMRWD Board of Managers and Board of Water and Soil Resources for review and comment. Allow a minimum of 30 days for review.
- The comments received during the 30-day review period will be collected and summarized.
- The Plan amendment will be finalized and must be adopted by a majority vote of the LMRWD managers.
- The final Plan amendment will be shared with stakeholders and posted on the LMRWD's website.

Recommendations

With the Managers' approval, Linda Loomis, administrator; Young Environmental, technical consultant; and Rinke Noonan, legal counsel will initiate the Plan amendment process with the Minnesota Board of Water and Soil Resources. Barring any unforeseen issues, we hope to have the final Plan amendment to the Managers for final approval in September 2022.

Attachments: Draft Implementation Program Tables 4-1 and 4-3

Table 4-1: Lower Minnesota River Watershed District—Implementation Program Budget for 2023–2027

ACTION	Year				
	2023	2024	2025	2026	2027
EXPENDITURE					
Administrative and Managerial					
General administrative services, conferences, coordination with LGUs, stakeholders, and other project partners, LGU program reviews, 9-Foot Channel, and advisory committees (Technical and Citizen)	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Administrative/Managerial Budget Total	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Studies and Programs					
Cost-Share Incentive and Water Quality Restoration Program	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
Dredge management	\$240,000	\$240,000	\$240,000	\$126,000	\$240,000
Eagle Creek Bank Restoration at Town & Country RV Park Feasibility Study		\$30,000			
Education and Outreach Program	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Fen Private Land Acquisition Study		\$50,000	\$25,000		
Fen Stewardship and Management Program	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Gully Inventory and Assessment Program	\$90,500	\$150,000	\$150,000	\$150,000	\$150,000
Implementation of the Sustainable Lake Management Plans		\$50,000	\$50,000		\$50,000
Monitoring Program and detailed data assessments	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Project and permit reviews	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Seminary Fen Restoration Site C-2 Study	\$20,000	\$40,000			
Spring Creek Site 3 Design Feasibility Study	\$50,000				
Trout streams geomorphic assessments		\$100,000			\$100,000
Watershed Management Plan				\$50,000	\$100,000
Water Resources Restoration Fund	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Studies and Programs Budget Total	\$795,500	\$1,055,000	\$860,000	\$721,000	\$1,035,000
Capital Improvements					
Dredge site culvert replacement				\$51,500	
Eagle Creek Bank Restoration at Town & Country RV Park Project			\$69,800	\$90,200	
Eagle Creek Brown Trout Habitat Improvements Project					\$70,000
Minnesota River floodplain modeling	\$75,000				
Minnesota River Study Area 3—Bluff Stabilization Project		\$100,000	\$100,000		
Seminary Fen Restoration Site B		\$50,000	\$25,000		
Seminary Fen Restoration Site C-2 and C-3 design and construction			\$55,000	\$50,000	\$65,000
Shakopee Riverbank Stabilization Project		\$50,000	\$50,000		
Spring Creek Sites 1 and 2 Design and Construction Stabilization Project		\$100,000	\$100,000	\$70,000	
Spring Creek Vegetation Management Project	\$40,000				
Stormwater BMP at parking lot near Lewis Street West and Second Avenue West Project	\$50,000	\$50,000			
Vernon Avenue upgrade at the dredge site				\$62,500	
Capital Improvements Budget Total	\$165,000	\$350,000	\$399,800	\$324,200	\$135,000
TOTAL EXPENDITURES	\$1,210,500	\$1,655,000	\$1,509,800	\$1,295,200	\$1,420,000

REVENUE					
General Levy	\$250,000	\$250,000	\$250,000	\$250,000	\$250,000
Planning and Implementation Levy	\$525,000	\$625,000	\$650,000	\$675,000	\$700,000
Metropolitan Council Grant	\$5,500	\$5,500	\$5,500	\$5,500	\$5,500
Dredge Material Management Grant	\$240,000	\$240,000	\$240,000	\$240,000	\$240,000
Grants	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Fund balance and closed or unrealized projects	\$90,000	\$434,500	\$264,300	\$24,700	\$124,500
TOTAL REVENUE	\$1,210,500	\$1,655,000	\$1,509,800	\$1,295,200	\$1,420,000

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Table 4-3: Lower Minnesota River Watershed District—Capital Improvement Projects

Project Name	Project Descriptions	Project Partner	Estimated Cost	Estimated Timeline
<i>Capital Improvement Projects</i>				
Dredge Site Culvert Replacement	A culvert near the site entrance needs to be removed and replaced. The District will work with the Army Corps of Engineers to perform the culvert replacement.	Army Corps of Engineers	\$51,500	2026
Eagle Creek Bank Restoration at Town & Country RV Park Project	The District will develop a design and stabilize the hillslope failure near the campground on Main Branch of Eagle Creek to reduce sedimentation to the creek.	MNDNR, City of Savage	\$160,000	2025–2026
Eagle Creek Brown Trout Habitat Improvements Project	Background research indicates the East Branch historically has been able to support a more reliable brown trout population despite having some of the worst habitat conditions in the watershed. The District will complete habitat improvements in the East Branch to support brown trout populations.	MNDNR, USFWS	\$70,000	2027
Minnesota River Floodplain Modeling	The Lower Minnesota River Floodplain Model Feasibility Study determined that the hydrologic and hydraulic modeling commonly used to regulate development in the floodplain and evaluate Rule C permits are out of date. The hydrologic statistical analysis, based on the USGS streamgage at Jordan, has not been updated in 20 years, missed four of the top ten recorded floods on the Minnesota River, and must be reevaluated to determine the flood flows within the LMRWD reach. Following the hydrologic update, the hydraulic model of the Lower Minnesota River should be comprehensively updated to incorporate recent developments in the floodplain, the revised flow data, and better data where available to evaluate the flood risk within the Lower Minnesota River floodplain. The initial capital investment of updating the hydrology and hydraulic model will be followed by annual updates to maintain the hydraulic model and incorporate the most recent data from municipalities and LMRWD permits.	Army Corps of Engineers	\$75,000	2023
Minnesota River Study Area 3—Bluff Stabilization Project	Located on the north bank of the Minnesota River, this area has been prone to erosion for some time. The District, in partnership with the City of Eden Prairie, has evaluated options to stabilize the slope, protect public and private infrastructure, and prevent future degradation of the Minnesota River water quality resulting from the Area 3 bank erosion. The District will set aside 5 percent of construction costs to support the project.	Army Corps of Engineers, City of Eden Prairie	\$200,000	2024–2025
Seminary Fen Restoration Site B	A partially drained 17-acre wetland from Falls Curve Road to Old Highway 12, which is predominantly growing reed canary grass, will be restored. The restoration involves disabling the drainage system and restoring vegetation.	City of Chaska, MNDNR	\$75,000	2024–2025

Project Name	Project Descriptions	Project Partner	Estimated Cost	Estimated Timeline
Seminary Fen Restoration Sites C-2 and C-3 Design and Construction	The final design and construction will be done for the Ravine Sites C2 and C-3, which are discharging sediment into the Seminary Fen Wetland Complex.	City of Chaska, MNDNR	\$170,000	2025–2027
Shakopee Riverbank Stabilization Project	This project will include stabilizing sections of the Minnesota River riverbank that are eroding along the City of Shakopee’s parallel trunk sanitary sewer line that flows to L-16 and other storm sewer outlets.	City of Shakopee	\$5,280,000 (District’s contribution: \$100,000)	2024–2025
Spring Creek Vegetation Management Project	The creek will be prone to further erosion without the added protection of adequate vegetation. Vegetation management (e.g., removal of invasives, native plantings, etc.), particularly in the floodplain and channel banks, will be explored with the property owners.	Carver SWCD	\$40,000	2023
Spring Creek Sites 1 and 2 Stabilization Project	After the vegetation management project is complete, Site 1 and Site 2 along Spring Creek will be stabilized using the Carver SWCD’s designs (increased riprap size and standard gradation recommended).	Carver SWCD	\$270,000	2024–2026
Stormwater BMP at Parking Lot near Lewis Street West and Second Avenue West Project	This stormwater best management practice project will be coordinated with the parking lot rehabilitation near Lewis Street West and Second Avenue West near Pablo’s restaurant in Shakopee. The project focuses on providing water quality treatment to untreated stormwater runoff that is routed directly to the Minnesota River.	City of Shakopee	\$750,000 (District’s contribution: \$50,000)	2023–2024
Vernon Avenue Upgrade at the Dredge Site	Approximately two-thirds of a mile of Vernon Avenue (from Hwy 13 to the site entrance) requires upgrading to allow for increased truck traffic. The District will coordinate with the Army Corps of Engineers to upgrade Vernon Avenue.	Army Corps of Engineers	\$62,500	2026
Potential Projects - Unfunded				
Minnesota River Assessment of Ecological and Economic Impacts of Sedimentation	<p>This project will examine sedimentation in the Lower Minnesota River Watershed by monitoring, modeling, and analyzing sediment sources, sinks, and pathways in the watershed; summarizing how sources, sinks, and pathways may have changed; and estimating the economic and ecological effects of sedimentation. The project team will look at how sedimentation (1) changes the stage-discharge relationships that may cause flooding, (2) generates costs to maintain a commercial navigation channel on the Minnesota River, and (3) affects the ecological conditions of the watershed. Through these analyses, a new baseline could be established and an understanding created of how changes in land use alter the watershed baseline and create a new condition.</p> <p>In addition, the District will pursue upstream flow management that is consistent with recommendations of the NCED group using the Management Option Simulation Tool (MOSM) in the Le Sueur watershed and similar approaches in other watersheds to mitigate this issue.</p>	Army Corps of Engineers	\$162,500	2024–2027

Project Name	Project Descriptions	Project Partner	Estimated Cost	Estimated Timeline
Minnesota River Assessment of Water Storage Benefits and Opportunities	Using the Agricultural Conservation Planning Framework (ACPF) and the Prioritize, Target, and Measure Application (PTM app), we will determine whether a flow reduction would benefit from the placement of storage measures in key locations throughout the basin. This analysis will help us understand whether the threshold for meaningful change can be realized to recommend specific levels of storage in the basin. The analysis is needed to accomplish the desired outcomes: (1) hydrocorrect DEMs for the lower watershed where storage impacts are desired, (2) run ACPF on priority subbasins to determine where storage opportunities exist, (3) develop a detailed hydrologic model if one does not exist, (4) run existing and storage scenarios to determine whether the amount of the discharges could be lowered for hypothetical rainfall events ranging from 10-year to 100-year events, and (5) summarize the saturation of storage and the maximum change anticipated in the specific agro-ecoregion.	Army Corps of Engineers	\$150,000	2024–2027
Lower Minnesota River Sediment Analysis	Previous analysis of how sedimentation has changed in the floodplain of the Lower Minnesota River has involved using pollen assemblages to date horizons. However, further analysis is required to confirm that the interpreted horizons are correct. The District will use dating of the stored core material to date the sediment to provide a more accurate understanding of sedimentation in the floodplain.	Freshwater Society, U of M	\$12,500	2024
East Chaska Creek Chain of Lakes SWA Implementation	Carver County Watershed Management Organization (CCWMO) seeks to collaborate with the City of Chaska and the District to implement strategies identified in the East Chaska Creek Chain of Lakes Subwatershed Analysis Feasibility Study. Projects would reduce impervious surfaces and add stormwater treatment for currently untreated areas and improve the quality of stormwater runoff reaching the East Chaska Creek Chain of Lakes. Projects will be completed as time and funding allow.	City of Chaska, CCWMO	\$200,000	2024–2027
Carver Creek Gully Stabilization	CCWMO plans to will stabilize a large gully on Carver Creek in Dahlgren Township (Section 26).	Carver SWCD, NRCS, CCWMO	\$40,000	2025
Dahlgren Road Stormwater Retrofit	CCWMO will address stormwater issues along Dahlgren Road west of County Road 11. Stormwater from the road surface currently drains untreated to Timber Creek, a tributary of Carver Creek.	Dahlgren Township, City of Carver, CCWMO	\$40,000	2025
East Chaska Creek Chain of Lakes Reclamation—Phase 2	CCWMO will implement methods to control carp populations and improve water quality in the East Creek Chain of Lakes as identified in the Drawdown Feasibility Study. This phase would focus on Big Woods, McKnight, Jonathan, and Grace Lakes.	City of Chaska, CCWMO	\$225,000	2027
Grace Lake Ravine Stabilizations	Ravines on the northwest side of Lake Grace are contributing both sediment and phosphorus to the lake. These projects will stabilize and reduce the amount of sediment reaching Lake Grace.	City of Chaska, CCWMO	\$300,000	2025–2027
Courthouse Lake Native Restoration	Multiple projects are underway around Courthouse Lake to restore both the shoreline and turfed areas to a native setting.	Carver SWCD, CCWMO	\$75,000	2023–2027
Big Woods and Hazeltine Lake Goldfish Management Program	A feasibility study is currently underway to produce a management plan for goldfish control in Big Woods and Hazeltine Lakes. Depending on the outcomes of the study, long-term management will follow the outline provided in this study.	MNDNR, CCWMO	\$100,000	2023–2027

Project Name	Project Descriptions	Project Partner	Estimated Cost	Estimated Timeline
Chaska Creek Bank Stabilization	Streambank erosion is present along Chaska Creek between Hwy 212 and Creek Road in Chaska contributing TSS and TP to Chaska Creek, especially during periods of high flow. Potential project areas will be identified and implemented in coordination with City of Chaska's Creek Rd redevelopment projects.	City of Chaska, CCWMO	\$332,000	2023–2027
Stormwater Pollutant Reduction in Untreated and Undertreated Urban Areas—East Chaska Creek Chain of Lakes	CCWMO will work with the City of Chaska to identify areas where additional stormwater treatment will provide additional nutrient removal within the East Chaska Creek Chain of Lakes Watershed. Priority will be given to projects that provide TP reductions to help meet TMDL goals for impaired waters of Hazeltine, Jonathon, and McKnight Lakes.	City of Chaska, CCWMO	\$100,000	2023–2027
East Chaska Creek Chain of Lakes Ravine Stabilizations	Ravines draining to the Chain of Lakes are contributing both sediment and phosphorus to the lake. These projects will stabilize slopes and manage stormwater discharge to reduce the amount of sediment reaching adjacent lakes.	City of Chaska, CCWMO	\$150,000	2023–2027
SW Chaska Ravine Stabilizations	Ravines ultimately draining to the Minnesota River are contributing both sediment and phosphorus to the river. These projects will stabilize slopes and manage stormwater discharge to reduce the amount of sediment discharging downstream.	City of Chaska, CCWMO	\$200,000	2023–2027
SW Chaska Wetland Preservation and Enhancements	Future development of this area of Chaska may provide opportunities for wetland preservation or enhancements. Priority for project locations will be based upon the Wetland Restoration Assessment of the 2020 Water Plan.	City of Chaska, CCWMO	\$100,000	2023–2027
Big Woods Lake Gully Restoration	One ravine has been identified as a potential project site to restore. Restoration will reduce the amount of sediment and phosphorus that will reach Big Woods Lake.	City of Chaska, CCWMO	\$150,000	2023–2027
Schroeder's Acre Park Water Reuse	This project consists of providing irrigation to three baseball diamonds and soccer fields with water supplied by the stormwater pond in the park.	City of Savage	\$370,000	2024–2027
Schroeder's Acres Park Alum Treatment	The City of Savage proposes to conduct alum treatment at Schroeder's Acres. This would prevent 12 to 24 pounds of total phosphorus (TP) from entering Eagle Creek each year.	City of Savage	\$35,600	2024–2027
BF Nelson Pond Alum Treatment	The City of Savage proposes to conduct alum treatment at the BF Nelson Pond. This would prevent 22 to 44 pounds of TP from entering Eagle Creek each year. Each dose is expected to cost \$39,900. Doses need to be applied every five years. Alum treatment here has a total cost of \$199,500 over 25 years.	City of Savage	\$39,900	2024–2027
Wyoming Avenue Stormwater Structure	The Wyoming Avenue Stormwater Structure includes the installation of a water quality treatment structure in an untreated industrial land use that discharges directly to Eagle Creek at TH 101.	City of Savage	\$668,600	2024–2027
TH 13 Stormwater Structure	This proposed project consists of installing an underground stormwater treatment structure in the right-of-way south of Trunk Highway 13. The structure would work in conjunction with the previously mentioned structure along Wyoming Avenue South to provide treatment to over 13 acres of industrial runoff currently flowing directly into Eagle Creek.	City of Savage	\$240,100	2024–2027
Zinram Avenue Stormwater Structure	This proposed project would consist of installing an underground stormwater treatment structure along Zinran Ave. The structure would provide treatment to over 18 acres of commercial runoff currently not being treated by the City of Savage.	City of Savage	\$168,800	2024–2027

Project Name	Project Descriptions	Project Partner	Estimated Cost	Estimated Timeline
Eagle Creek Parkway Bank Stabilization	This proposed project would stabilize banks underneath the Eagle Creek Parkway bridge crossing the East Branch of Eagle Creek. The creek is currently estimated to be eroding an average of 2 inches per year, which could deposit approximately 8,600 lbs. of sediment into the creek annually.	City of Savage	\$106,00	2024–2027
Covington Pond Filtration Bench	This proposed project consists of an intensive pond restoration plan for the basins on the City-owned parcel at Ensign Ave and 125th St W. A filtration bench would be placed between the existing ponds to provide additional treatment to a large portion of residential and upstream drainage areas.	City of Savage	\$315,200	2024–2027
Preserve Trail Stormwater Structure	This proposed project would install an underground stormwater treatment structure on the western portion of a parcel owned by the Savage Economic Development Authority. The structure would provide treatment to over 17 acres of residential runoff prior to it entering the large storm basin in the business park.	City of Savage	\$558,300	2024–2027

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