



Grant project summary

Project title: Mississippi River - St. Cloud WRAPS Cycle 2 - Phase 2
Organization (Grantee): Sherburne SWCD
Project start date: 11-12-2021 Project end date: 6-30-2024 Report submittal date: 7-11-2024
Grantee contact name: Francine Larson Title: District Manager
Address: 425 Jackson Ave NW
City: Elk River State: MN Zip: 55330
Phone number: 763-220-3434 Fax: Email: flarson@sherburneswcd.org
Basin (Red, Minnesota, St. Croix, etc.) /Watershed & 8 digit HUC:: Mississippi River-St Cloud County: Sherburne

Project type (check one):

- Clean Water Partnership
Total Maximum Daily Load (TMDL)/Watershed Restoration or Protection Strategy (WRAPS) Development
319 Implementation
319 Demonstration, Education, Research
TMDL/WRAPS Implementation

Grant funding

Final grant amount: \$170,00.00 Final total project costs: \$169,500.10
Matching funds: Final cash: \$ Final in-kind: \$ Final Loan: \$
MPCA project manager: Phil Votruba

For TMDL/WRAPS development or TMDL/WRAPS implementation projects only

Impaired reach name(s): Battle Brook (07010203-535), Elk River (07010203-507, 508, 548), Mayhew Creek (07010203-509 New WID 203-750), Rice Creek (07010203-512), Snake River (07010203-529), St. Francis River (07010203-700), Tibbets Brook (07010203-736), Unnamed creek (07010203-528), Unnamed creek (Fairhaven Creek 07010203-565)
AUID or DNR Lake ID(s): Eagle Lake (71-0067-00), Elk Lake (71-0055-00), Fremont Lake (71-0016-00), Little Mary (North Bay 86-0139-02), Little Mary (South Bay 86-0139-01), Millstone Lake (86-0152-00)
Listed pollutant(s): E. coli, Nutrients, TSS (stressor for fish/invert bioassessment)
303(d) List scheduled start date: November 12, 2021 Scheduled completion date: June 30, 2024

AUID = Assessment Unit ID
DNR = Minnesota Department of Natural Resources

Executive summary of project

Problem

This project sought to develop a Cycle 2 Watershed Restoration and Protection Strategy (WRAPS) report for the Mississippi River St. Cloud (MRSC) Watershed as well as a Total Maximum Daily Load (TMDL) report for 17 impaired waterbodies in the watershed. The waterbodies consist of rivers and lakes located within the watershed impaired for excessive nutrients, *Escherichia coli* (*E. coli*), and fish and macroinvertebrate bioassessments. The sources of pollutants to these waterbodies varies greatly; nutrients arrive from both urban and rural watershed runoff, shoreline erosion, internal nutrient processes, and septic systems while bacteria sources include urban and rural watershed runoff, feedlots, hobby farms, septic, known point sources and unknown sources. The TMDL identifies the unique circumstances for each waterbody and outlines a target concentration or loading rate for each of the 17 waterbodies. The WRAPS report articulates the “state of the watershed”, work completed in the past decade, success stories, opportunities for continued conservation work, and challenges that watershed managers still face. In addition to the TMDL and WRAPS, MPCA staff facilitated a Lake Protection Planning effort for three exceptional waterbodies; Big Lake, Mitchell Lake, and Sugar Lake.

Waterbody improved

The WRAPS report focuses on a Hydrologic Unit Code (HUC) 8 watershed scale, detailing existing conditions and documenting the history of work done to reach the current state. There have been success stories in this watershed due to diligent work; the WRAPS report discusses delistings on several waterbodies and numerous positive trend indicators. The watershed still holds numerous impaired waterbodies so continued work is necessary. The TMDL report is of value as it outlines potential sources and target goals for 17 additional waterbodies. Still, additional impairments exist in the watershed that are not covered by a TMDL and were deferred to Cycle 3.

Project highlights

The Cycle 2 WRAPS represents the most detailed and comprehensive account of watershed conditions, management history, successes, challenges, and opportunities for the MRSC Watershed. It was completed concurrently with the MRSC Watershed Partnership’s One Watershed, One Plan (1w1p) effort. Data collected from the WRAPS fed neatly into the 1w1p planning framework and was valuable for prioritizing and goal setting. The TMDL report greatly increases the knowledge on waterbody condition for 17 impaired waterbodies and computes a target pollution reduction goal for each. The Lake Protection Planning report is a relatively new product that will assist watershed managers in maintaining the exceptional quality of three watershed lakes (Big 71008200, Mitchell 71008100 and Sugar 86023300). Finally, this effort was coupled with a successful outreach program in hosting of the Minnesota Humanities Center’s “Water Are Water MN” traveling exhibit. The partnership hosted this exhibit to bring the updated scientific data about our watershed’s conditions to the public. Four events were held to engage the community on water related topics. Through these efforts the participants shared their water stories and experiences with each other, deepening connections between the LGU partners and the community.

Results

This project resulted in the completion of a Cycle 2 WRAPS for the MRSC Watershed, a TMDL report for 17 impaired waterbodies, a Lake Protection Plan for three waterbodies, new connections to the watershed community through an interactive engagement program and producing an incredible amount of data for integration to the partnerships 1w1p project. This watershed partnership has been incredibly busy in the past few years working on WRAPS, TMDL, 1w1p, and other watershed initiatives. With the investment towards these efforts complete and a high level of understanding obtained regarding watershed conditions and landowner priorities, the partnership is ready to move forward with these products toward further watershed success.

Partnerships (Name all partners and indicate relationship to project)

Partners for this effort included local government units (LGUs), state agencies, and contracted consultants.

LGUs: Benton SWCD, Clearwater River Watershed District, Meeker SWCD, Mille Lacs SWCD, Sherburne SWCD, Stearns County, Stearns SWCD, Wright SWCD.

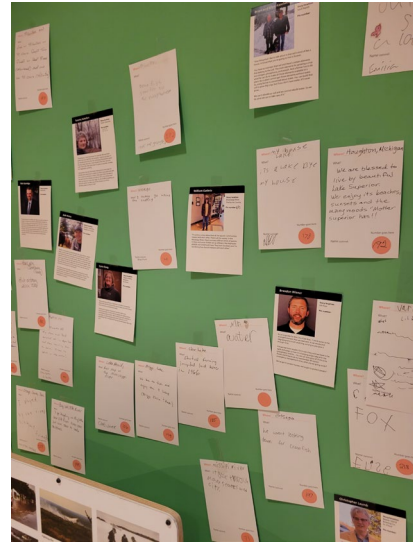
State agency: Minnesota Pollution Control Agency

Consultant: Tetra Tech

Pictures



We Are Water – Entrance Display



We Are Water – Pinned water stories from exhibit visitors



We Are Water – children hear about aquatic invasive species from Climb Theater performers.



We Are Water – MPCA and LGU staff provide an update on the “State of the Watershed” to exhibit visitors.



We Are Water – Children learn about how a watershed functions.



We Are Water – A local farmer showcases conservation tillage equipment at a Conservation Agricultural Field Day event.

SECTION I – WORK PLAN REVIEW

This project included an overarching Goal along with several Objectives, described below.

Goal: Complete a Cycle 2 WRAPS report and address several impaired waters through the development of TMDLs. Incorporate strategies designed to protect unimpaired waters.

Objective 1: Project Administration & Coordination

Task A: Project Administration

Sherburne SWCD staff served as the fiscal agent for this project. This job included requesting and compiling periodic invoices from project partners who had a role in directing and developing the project content. Additionally, two semi-annual progress reports were drafted each year of the project to keep MPCA staff informed on the status of the effort.

Task B: Project Coordination

A series of meetings were held with the Local Partner Team, MPCA and consultant to guide the project. Meetings were held virtually to accommodate busy schedules, but were occasionally in-person. The meetings included project updates, presentations from the consultant, MPCA or partner state agencies. Additionally, the Local Partner Team (LPT) discussed project content and made decisions as needed to direct the project.

Objective 2: Develop TMDLs, Develop TMDL Report, and Update 2015 WRAPS

Task A: TMDL Development

Early in the project timeline, the LPT and MPCA discussed and selected waterbodies for TMDL development. With more impairments than available funding, some waterbodies would need to be deferred until Cycle 3. The partnership chose to focus on 16 *E. coli* and lake nutrient impairments with one stream fish/bug impairment.

Tetra Tech was chosen to develop the TMDLs and report for this watershed, with the LPT and MPCA providing local data as requested. The TMDL development included a source assessment for pollutants including review of recent Intensive Watershed Monitoring (IWM) data, Monitoring & Assessment data, Stressor ID reports, local professional knowledge and monitoring, as well as historic data from the 2015 TMDL and WRAPS. Stream load duration curves were computed for the stream systems using the Hydrological Simulation Program – FORTRAM (HSPF) model. For lake systems, a Bathtub model was developed to simulate nutrient and algae as well as determine the allowable nutrient load to each lake. Then, allocations were determined for load and wasteload sources. All of this was included within a single TMDL report that was finalized in June 2024.

Task B: WRAPS Update

The LPT and MPCA reviewed the 2015 WRAPS and discussed opportunities to include new data and additional information. The WRAPS also documented current watershed conditions and changes/trends from the 2015 WRAPS report. This watershed is on the fringe of two large metro areas in the state and has a wide variety of resources and land use. This geographical setting results in a variety of challenges and opportunities for water resources. The 2024 WRAPS outlines these important aspects into a single document which will be a valuable resource for continued planning and conservation implementation.

Task C: Project Meetings

The LPT, MPCA, Consultant and partners met as needed during the project to support TMDL and WRAPS development. Meeting content included pertinent updates and information presentations, as well as accompanying information from supplemental projects. For example, concurrently with this effort the local watershed partnership developed a Landscape Stewardship Plan with BWSR to prioritize and target areas for forestry protection and restoration. Additionally, the partnership began in 2022 a 1w1p effort for this same watershed. Updates on these efforts were provided at each meeting and discussion was had regarding opportunities for these efforts to work with each other.

Task D: Review Process

Review of the TMDL began in fall 2023 by the MPCA, then by the LPT, and finally by the US Environmental Protection Agency. Review of the WRAPS document began in December 2023 by the MPCA and January 2024 by the LPT. A Public Notice Review period occurred from 5/13/2024 to 6/12/2024. All comments were considered and addressed by MPCA staff (WRAPS and TMDL) as well as Tetra Tech (TMDL).

Objective 3: Public Participation / Outreach

Task A: Watershed Planning Discussions

Project meetings with the LPT and MPCA included discussion of public outreach. The partnership decided to apply for a traveling exhibit hosted by the Minnesota Humanities Center, "We Are Water MN". The partnership was awarded a successful application and planned for the exhibit to be on display for two months in Becker, MN which is centrally located in the watershed.

Task B: Minimum of Two Public Participation Events

The We Are Water MN exhibit was on display from March 2023 through April 2023, open to the public during normal business hours at the Sherburne County History Center. Additionally, several public participation events were scheduled. First, the partnership hosted a Opening Ceremony where citizen members and local community leaders were invited to view the exhibit and share "water stories" about their experiences with water. A Water Bar was set up to allow attendees to taste water from a variety of sources (city tap water, rural well, etc.). The second event, coinciding with "World Water Day" featured the Water Bar again as well as free well water nitrate testing. LGU and MPCA staff provided a presentation on the "Status of the MRSC Watershed" that included recent data from IWM and Stressor ID efforts. The third event, an evening with "The Lake Detective Steve McComas", featured discussions on blue-green algae and lake health metrics in the MRSC Watershed. A fourth event, "Youth Water Festival" provided families an opportunity to engage with the exhibit, view a soil health demonstration, play in a watershed 3-D imaging sand box, and

participate in an interactive performance about aquatic invasive species with Climb Theater. Finally, the fifth event “Agricultural Conservation Field Day” was held at a local producer’s farm and featured talks about irrigation efficiency technology, soil health conservation practices, and new conservation related machinery.

Lastly, the partnership held a virtual public meeting on May 23rd to present a summary of the plan and answer any questions from attendees.

Objective 4: Pollution Source Assessment

Task A: Perform field reconnaissance supplemental pollution source monitoring

Supplemental monitoring was completed on Fairhaven Creek as well as Little Mary and Millstone Lakes to fill water quality gaps. Data was collected in summer of 2022 to support the TMDL development of these waterbodies.

Conversations took place with the partnership regarding modeling needs and the lack of a hydroconditioned watershed. There is a need for a culvert inventory, however the partnership lacked the funding to complete this work. Additionally, there was a lack of understanding of how to collect and log such information. Sherburne SWCD reviewed the DNR’s Culvert Inventory Application Suite and worked with staff to outline a local protocol. The protocol included pre-existing procedures for logging new culvert information, but also to take existing culvert data and conform it to the DNR’s standard template. A summary protocol document was produced and shared with the partnership.

Task B: Summarize in project reports or EQuIS database

All water quality data collected for this effort was submitted to EQuIS databases. Additionally, a culvert inventory data collection protocol document was produced and shared with the partnership.

Section II – Grant Results

Measurements

The goals of this project were to complete a Cycle 2 WRAPS and TMDL report, include strategies for resource protection, and collect any necessary supplemental environmental data. All goals have been achieved for this project.

Products

Products produced for this project include:

- Mississippi River St. Cloud Watershed Restoration and Protection Strategies (WRAPS) Cycle II Report
- Mississippi River St. Cloud Total Maximum Daily Load (TMDL) Report
- Lake Protection Plan for Big, Mitchell and Sugar Lakes
- Local Culvert Inventory Data Collection Protocol
- Water quality data from Fairhaven Creek, Little Mary and Millstone Lakes (available in EQuIS)
- A summary sheet of the We Are Water program

Public Outreach and Education

This project included a large amount of public outreach and education, particularly through the partnership with the Minnesota Humanities Center and the We Are Water MN exhibit. Information was shared on surface water and groundwater issues, with good discussions taking place on the importance of the regions water resources and ways to protect and enhance them. Both the WRAPS and TMDL are incorporated into the Mississippi River St Cloud Comprehensive Watershed Management Plan (One Watershed, One Plan), ensuring that these resources are utilized in future planning.

Long-Term Results

The development of TMDLS and WRAPS, coupled with the public outreach events, have spurred many important conversations and have developed new partnerships. For example, there are ongoing discussions about groundwater quality in this particularly sandy aquifer with private well residents, township officials, county commissioners, agricultural producers, and SWCD staff. These conversations came about due to availability of new information regarding groundwater quality and will lead to new conservation work and long-term monitoring. Collaborations for stream and lake protection have increased through engagement riparian landowners and lake associations. The TMDL and WRAPS discuss the importance of lake protection which, coupled with recent efforts to prioritize and target forestry work, will result in new outreach and funding for forestry protection and conservation easements. Because the timing worked well, these documents were captured into the Mississippi River St Cloud Comprehensive Watershed Management Plan (One Watershed, One Plan) which will allow the resources to be utilized further as implementation of the plan begins.

Section III – Final Expenditures

Objective	Line Item		MPCA Funds Awarded	MPCA Funds Expended prior to this Invoice	MPCA Funds Expended this Invoice	MPCA Funds Expended	Balance	Budget Expended (%)
Objective 1	Project Administration & Coordination	LGU	\$12,720.00	\$11,730.00	\$990.00	\$12,720.00	\$0.00	100%
	Project Administration & Coordination	LPT	\$2,160.00	\$2,160.00	\$0.00	\$2,160.00	\$0.00	100%
Objective 2	TMDL Development	LGU	\$3,150.00	\$3,150.00	\$0.00	\$3,150.00	\$0.00	100%
	TMDL Development	LPT	\$3,165.00	\$3,165.00	\$0.00	\$3,165.00	\$0.00	100%
Objective 3	Public Participation / Outreach Planning	LGU	\$3,498.20	\$1,590.00	\$1,905.00	\$3,495.00	\$3.20	99.91%
	Public Participation / Outreach Planning	LPT	\$900.00	\$900.00	\$0.00	\$900.00	\$0.00	100%
Objective 4	Pollution Source Assessment	LGU	\$1,740.00	\$1,740.00	\$0.00	\$1,740.00	\$0.00	100%
	Pollution Source Assessment	LPT	\$4,800.00	\$4,800.00	\$0.00	\$4,800.00	\$0.00	100%
	Laboratory Fees / Supplies / Shipping	LPT/LGU	\$1,969.10	\$1,969.10	\$0.00	\$1,969.10	\$0.00	100%
	Mileage	LPT/LGU	\$176.00	\$176.00	\$0.00	\$176.00	\$0.00	100%
	Consultant Expense	Tetra Tech	\$135,721.70	\$133,805.80	\$1,419.20	\$135,225.00	\$496.70	99.63%
Total:			\$170,000.00	\$165,185.90	\$4,314.20	\$169,500.10	\$499.90	99.71%