



# Environment and Natural Resources Trust Fund

2022 Request for Proposal

## General Information

**Proposal ID:** 2022-293

**Proposal Title:** Lake Koronis Water Quality and Restoration Action Plan2

## Project Manager Information

**Name:** Jen Meagher

**Organization:** Koronis Lake Association

**Office Telephone:** (218) 256-7121

**Email:** jen.8378@hotmail.com

## Project Basic Information

**Project Summary:** Analyses leading to an action plan to prevent and reduce phosphorus levels and improve Lake Koronis water quality. Identify mix of solutions promoting short-term effects, and long-term benefits and partnerships.

**Funds Requested:** \$196,000

**Proposed Project Completion:** September 30 2023

**LCCMR Funding Category:** Small Projects (H)

**Secondary Category:** Methods to Protect, Restore, and Enhance Land, Water, and Habitat (F)

## Project Location

**What is the best scale for describing where your work will take place?**

Region(s): Central

**What is the best scale to describe the area impacted by your work?**

Region(s): Central, Metro,

**When will the work impact occur?**

In the Future

## Narrative

### **Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.**

. Lake Koronis, located south of Paynesville, is a premiere recreational lake and the most significant body of water in the North Fork Crow River Watershed until it reaches the Mississippi River in the metro area. MPCA has identified Lake Koronis as a high priority for protection of aquatic recreation and healthy fish communities and MPCA is planning a draft TMDL protection report for the lake this year. A 2010 watershed study found surrounding land uses to be mostly agricultural with fewer surviving wetlands than most of the region, which suggests both short-term and long-term solutions are needed to improve water quality.

Recent assessments show 90% of the phosphorus (P) flowing into Lake Koronis comes from the Crow River and Rice Lake upstream, resulting in widespread algal blooms. Phosphorus levels have recently been steady, creating a window of opportunity for an action plan to reduce P levels that has immediate effects and long-term benefits. KLA seeks funds to aggregate data and findings from recent studies, evaluate at least three strategies for reducing P levels, and develop a plan of action that is well-grounded in science, reinforces the work of regulatory agencies, and has broad support among property owners and other stakeholders.

### **What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.**

Koronis Lake Association (KLA), will consolidate existing data, conduct additional testing, and evaluate three or more actions that result in short-term and long-term improvements on water quality. Strategies with immediate impacts will be considered, such as injection of aluminum sulfate at strategic points or spreading spent lime, will build momentum among property owners, including Rice Lake, and other stakeholders. Other strategies, such as nearby wetland restoration, will take more time but will sustain momentum and encourage ongoing outreach and implementation of long-term goals that mitigate sources of the problem, including agricultural practices.

LCCMR funds will be used to look at recent studies of water quality, and supplement that data with additional testing and sedimentation analyses in coordination with MPCA's TMDL plan. KLA will also look at lessons learned from other recent LCCMR-funded projects to improve lake water quality and evaluate at least three strategies that have proven to be cost-effective. The final deliverable will be a data-based action plan that is likely to include next steps for engineering of wetland restoration and ongoing maintenance practices, and implementation of cost-effective injections of minerals that reduce phosphorus loads. The action plan will build consensus among property owners and reinforce the actions of regulatory agencies to improve water quality.

### **What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?**

KLA will conduct investigation and outreach activities on current conditions and water quality solutions that result in a detailed plan of action for future funding and implementation. This project will include the following tasks: evaluation of specific prevention and reduction strategies to reduce phosphorus levels as applicable to Lake Koronis; optimal mix of cost-effective strategies to produce both short-term water quality effects and long-term benefits; engagement of additional stakeholders and regulatory agencies to build support for broader, long-term prevention and management efforts; draft a proposal and plan for implementation of strategies, maintenance of systems, and sustainable funding and program management.

## Activities and Milestones

### Activity 1: Initiation, Review of Past Analyses, Selection of Restoration Alternatives

**Activity Budget:** \$14,000

**Activity Description:**

The project will analyze relevant reports and data on water quality from regional and state agencies, including the North Fork Crow River Watershed District (NFCRWD) and others. Additional testing will establish current conditions and trend-lines for temporal and spatial phosphorus (P) loading in Lake Koronis, as well as primary P sources and sinks, most of which is likely to be widely diffused crop farming and livestock operations. While this project will create a framework for changes in agricultural practices over time, KLA will also focus on other best management practices (BMPs) and prevention efforts in the Lake Koronis-Rice Lake area that will have more immediate impacts on water quality. The final milestone, an action plan, will identify potential locations for BMPs and be the basis of outreach to landowners about their willingness to participate in restoration and mitigation efforts. While completing analysis of current data and doing further research, the project will select at least three P reduction alternatives for further research. This process will also include broad participatory consultation with the public and local and state agencies (e.g. lake associations, government agencies and landowners) about the existing studies, new testing data, and the selected options for reducing P levels.

**Activity Milestones:**

Description	Completion Date
Existing data/report analysis	July 31 2022
Selection of three BMP alternatives	August 31 2022
Outreach to agencies and the public	August 31 2022

### Activity 2: Work Plan for Evaluation of Priority Options

**Activity Budget:** \$2,800

**Activity Description:**

Based on Activity 1, the project will develop a Work Plan and schedule for collection of new data that, together with past studies, will form the baseline data for the study of three or more selected options for improving water quality. Based on the known context of the soils, geology and topography of the lake area, new data, and the experience of other lake restoration efforts funded by LCCMR, the most likely alternatives for further study are likely to be injections of aluminum sulfate or spent lime, and restoration of up to three wetland areas west and south of Rice Lake. Further research and testing will consist of Lake Koronis bottom sediment analysis and chemical release rates, physical, chemical and biological monitoring of the lake, including sonde profiles, and monitoring of water inflows. Sediments in selected wetlands along the upstream Crow River will be analyzed for their potential to absorb sediment P. The Work Plan draft will be shared with stakeholders, including the City of Paynesville, North Fork Crow River Watershed and MPCA for their feedback on testing and research objectives. Sample collection and analysis will also be coordinated with MPCA and others to avoid any repetition of testing efforts.

**Activity Milestones:**

Description	Completion Date
Monitoring plan completion	August 31 2022
Consultation with stakeholders	September 30 2022

### Activity 3: Fieldwork and Laboratory Analyses

**Activity Budget:** \$112,100

**Activity Description:**

Fieldwork will commence immediately upon approval of the work plan activities and schedule, with a goal of collecting most samples for analysis in late-summer and fall periods of 2022. Sampling will be done in consultation with the MPCA and NFCRWD to assure coordination of efforts, and efficient utilization of personnel for monitoring and collection tasks. For example, inflow rates and lake water quality sampling may be performed by NFCRWD personnel. LCCMR funds will be used to collect six lake bottom cores that will be extracted for chemical analysis, P release rates, and bench testing. Lake inflow samples will be collected monthly from six sites over one year’s time. Lake sampling will be done at least five times over the course of the two summer periods in 2022 and 2023. Sediment-related testing requires specialized laboratory expertise such as the laboratories at the University of Wisconsin – Stout, which has been performing these tests reliably for decades. In order to assure there is enough time for this advanced testing, the project will seek to collect all sediment field samples in summer and fall of 2022 and secure the services of a laboratory to begin sediment testing as soon as possible in the fall.

**Activity Milestones:**

Description	Completion Date
Monitoring Plan completion	August 31 2022
Consultation with stakeholders	September 30 2022

### Activity 4: Data Evaluation and Feasibility

**Activity Budget:** \$46,700

**Activity Description:**

KLA will use LCCMR funds to contract for the assemblage and analysis of the collected field data will be acquired during Activity 3. After laboratory sediment analyses are completed, one or more of the options selected as a water quality improvement strategy may be deemed to be unfeasible. KLA, its contracted limnologists and testing labs, and project stakeholders will engage in a consultative process to determine which of three or more alternative solutions, or which combination of two or three alternatives, appear to be most feasible and cost-effective based on analysis of data from the field sampling. Final conclusions and recommendations for the draft action plan may require the full collection of data, included sampling scheduled in the Work Plan for Spring 2023. Final recommendations on water quality improvements will be made after all data has been collected and analyzed by project team members and draft recommendations have been reviewed with all stakeholders. Recommended actions will include non-construction level conceptual drawings, cost estimates expressed as dollars/pound P, and 30-year annualized operation and maintenance costs.

**Activity Milestones:**

Description	Completion Date
Analysis and draft recommendations	July 31 2023

### Activity 5: Develop Final Recommendations and Draft Action Plan

**Activity Budget:** \$20,400

**Activity Description:**

The final deliverable of this project will be a draft action plan that includes recommendation on up to three alternatives for reducing P levels and improving water quality in Lake Koronis. The science and testing-based recommendations in

the Action Plan will be the basis of outreach and consultation with Koronis and Rice Lake property owners, local agencies and other regional and state participants in the project. The final project report and action plan with estimated costs for implementation will be the basis for seeking other funds to begin implementation of recommended actions. KLA anticipates that this action plan will build consensus for water quality improvements and be a catalyst for coordinated action among local, regional and state regulatory agencies. The draft action plan will include recommendations for water quality improvements that will have immediate, short-term effects noticeable to users of Lake Koronis and will also establish a framework for ongoing, longer-term activities that further improve and protect water quality.

**Activity Milestones:**

Description	Completion Date
Project report and draft action plan	August 31 2023

## Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Cristopher Skonard	North Fork Crow River Watershed District	Support for testing and analysis; review of project findings	Yes
Tim Keane	Rice Lake Association	Review of findings	No
Tariq Al-Rifai	City of Paynesville	Review of findings	No

## Long-Term Implementation and Funding

**Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?**

Completion of this research will coincide with 2023 Clean Water Fund grants. The CWF deadline is typically in mid-August and this project will prepare its recommendations and cost estimates, in preparation for working with an eligible LGU to submit a 2023 Clean Water Fund application. Funds will be sought for design and construction of recommended alternatives. This project will also provide the basis for supplemental funding from sources such as NFCRWD and other entities. Future funding will also sustain communications and outreach to stakeholders. If a Clean Water Fund grant is awarded, design and construction activities will begin in 2024.

## Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Britton Peak to Lutsen Mountain Bike Trail	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 09i	\$350,000

## Project Manager and Organization Qualifications

**Project Manager Name:** Jen Meagher

**Job Title:** President

**Provide description of the project manager's qualifications to manage the proposed project.**

Jen Meagher is a professional, experienced and professional leader with a demonstrated history of working with teams on complex projects. She worked for over 17 years in management at Target Corporation, leading teams of up to 350 people in multiple retail store locations. She has led teams to open new Target stores in Minnesota and Hawaii. Since 2019, she has worked as a training and leadership development specialist with skills in management, human resources, coaching and training. Jen holds a degree from the University of Northern Iowa. With over 500 members, KLA has a broad base of volunteers, some with highly relevant professional and technical skills who will assist in an advisory role on this project. In its 50 year history, KLA has developed strong working relationships and partnerships with water quality specialists such as Dr. Lorin Hatch who will be contracted to manage testing and analysis of data and water quality improvement options. KLA's experience with the Starry Stonewort mitigation project demonstrates its ability to manage a project such as this one. KLA can also call upon the help and support of the NFCRWD and City of Paynesville for management of this project. The KLA board is confident that Jen has the knowledge and experience to manage the

project, and the association has other resources it can deploy for this project to support Jen and manage this clean water project for the betterment of Lake Koronis.

**Organization:** Koronis Lake Association

**Organization Description:**

Koronis Lake Association (KLA) was formed in 1971 to protect and improve the water quality of Lake Koronis. In 2015, KLA organized and implemented a major water quality management project based on an engineering study by Wenck Engineering and in a funding partnership with the Initiative Foundation and Outdoor Heritage. The goal was to slow the spread and mitigate the effects of the Starry Stonewort exotic species in Lake Koronis. The project continues today with mechanical pulling of vegetation and chemical treatment of high-risk areas and ongoing testing of mitigation strategies with Mankato State University and Minnesota DNR. KLA has a 14-member elected board of directors which meets monthly from spring through autumn. In 2019, KLA received membership dues and contributions totaling nearly \$145,000 to support its activities as an association. In 2020, KLA received financial support from over 250 individual households and 17 businesses in the area, including funding for KLA's annual Fourth of July fireworks display. Jen Meagher was also appointed as President of KLA in 2020. . KLA board members serve because of their love for the lake and their commitment to community involvement and having the best people in their leadership roles.

## Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
<b>Personnel</b>								
KLA President		Project Management			0%	0.38		\$20,000
							<b>Sub Total</b>	<b>\$20,000</b>
<b>Contracts and Services</b>								
Limnologist, Water Resources Engineer	Professional or Technical Service Contract	Data collection and analysis; monitoring workplan; field/lab coordination; meetings; final recommendations and report				0.75		\$79,800
Field Technicians	Professional or Technical Service Contract	Field data collection				0.3		\$28,800
Lab Analysis	Professional or Technical Service Contract	Analysis of new data and vetting of water quality alternatives				0.75		\$60,600
							<b>Sub Total</b>	<b>\$169,200</b>
<b>Equipment, Tools, and Supplies</b>								
	Tools and Supplies	Testing equipment	Water quality assessments					\$5,000
							<b>Sub Total</b>	<b>\$5,000</b>
<b>Capital Expenditures</b>								
							<b>Sub Total</b>	<b>-</b>
<b>Acquisitions and Stewardship</b>								



							<b>Sub Total</b>	-
<b>Travel In Minnesota</b>								
	Miles/ Meals/ Lodging	50 cents per mile; no meals	Meeting attendance; travel to testing sites					\$1,800
							<b>Sub Total</b>	<b>\$1,800</b>
<b>Travel Outside Minnesota</b>								
							<b>Sub Total</b>	-
<b>Printing and Publication</b>								
							<b>Sub Total</b>	-
<b>Other Expenses</b>								
							<b>Sub Total</b>	-
							<b>Grand Total</b>	<b>\$196,000</b>

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
<b>State</b>				
			<b>State Sub Total</b>	-
<b>Non-State</b>				
			<b>Non State Sub Total</b>	-
			<b>Funds Total</b>	-

## Acquisition and Restoration

### Parcel List

Name	County	Site Significance	Activity	Acres	Miles	Estimated Cost	Type of Landowner	Easement or Title Holder	Status of Work
Lake Koronis	Stearns	Recreational and fish habitat	Restoration	3,014	-	\$196,000	Public	State of Minnesota	In progress
<b>Totals</b>				<b>3,014</b>	<b>0</b>	<b>\$196,000</b>			

## Restoration

**1. Provide a statement confirming that all restoration activities completed with these funds will occur on land permanently protected by a conservation easement or public ownership.**

No restoration as part of this phase

**2. Summarize the components and expected outcomes of restoration and management plans for the parcels to be restored by your organization, how these plans are kept on file by your organization, and overall strategies for long-term plan implementation.**

NA

**3. Describe how restoration efforts will utilize and follow the Board of Soil and Water Resources “Native Vegetation Establishment and Enhancement Guidelines” in order to ensure ecological integrity and pollinator enhancement.**

NA

**4. Describe how the long-term maintenance and management needs of the parcel being restored with these funds will be met and financed into the future.**

NA

**5. Describe how consideration will be given to contracting with Conservation Corps of Minnesota for any restoration activities.**

NA

**6. Provide a statement indicating that evaluations will be completed on parcels where activities were implemented both 1) initially after activity completion and 2) three years later as a follow-up. Evaluations should analyze improvements to the parcel and whether goals have been met, identify any problems with the implementation, and identify any findings that can be used to improve implementation of future restoration efforts at the site or elsewhere.**

NA

## Attachments

### Required Attachments

#### *Map*

File: [0ae48c94-457.pdf](#)

#### *Alternate Text for Map*

This map shows the details of Lake Koronis...

#### *Financial Capacity*

File: [0e07fbab-486.pdf](#)

#### *Board Resolution or Letter*

Title	File
KLA Board letter	<a href="#">5e48b4f0-e7b.pdf</a>

### Optional Attachments

#### *Support Letter or Other*

Title	File
Form 990	<a href="#">97824cf5-b31.pdf</a>

## Administrative Use

**Does your project include restoration or acquisition of land rights?**

Yes: Restoration,

**Does your project have potential for royalties, copyrights, patents, or sale of products and assets?**

No

**Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?**

N/A

**Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?**

N/A

**Does your project include original, hypothesis-driven research?**

No

**Does the organization have a fiscal agent for this project?**

No

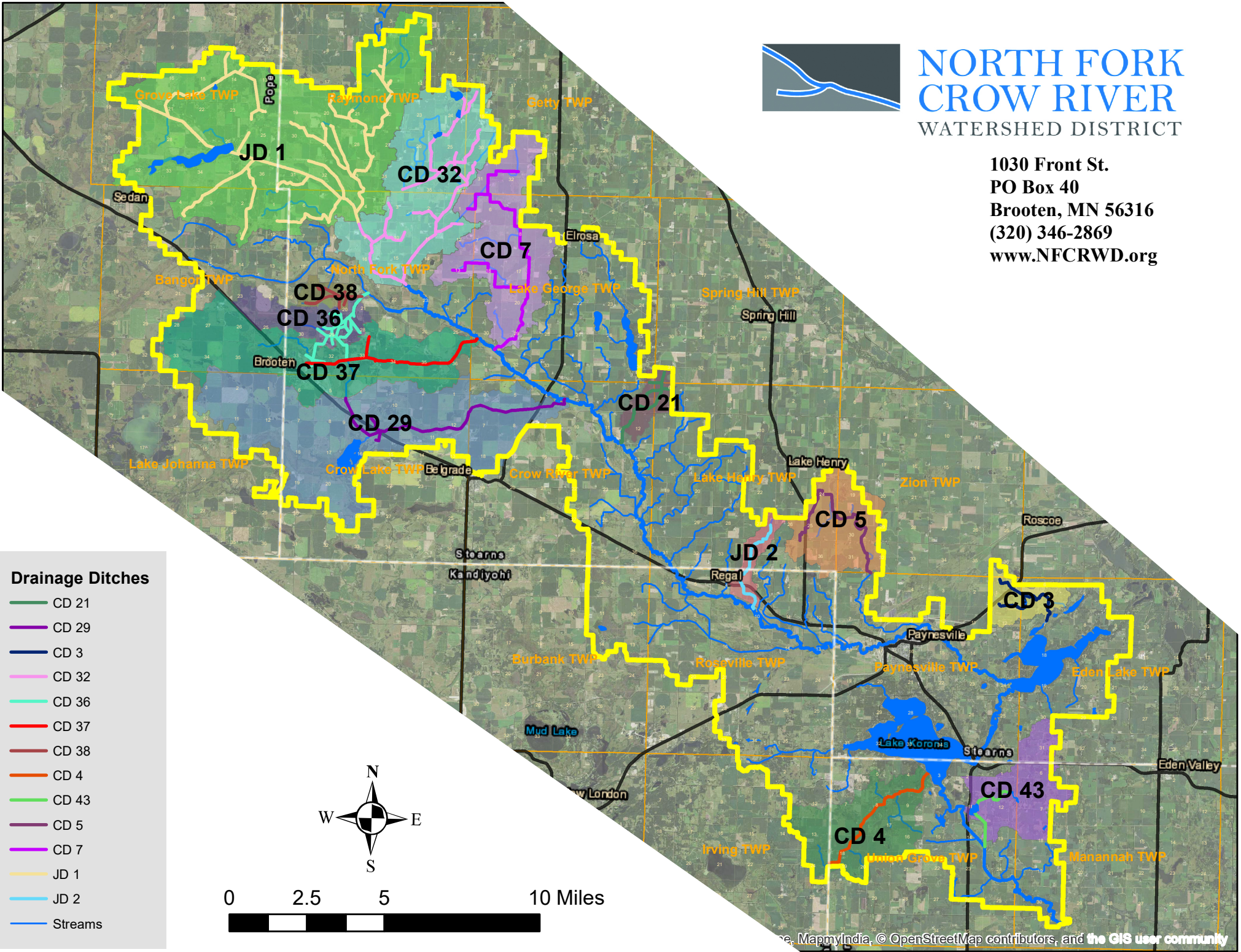




# NORTH FORK CROW RIVER

WATERSHED DISTRICT

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[www.NFCRWD.org](http://www.NFCRWD.org)



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