



Environment and Natural Resources Trust Fund

2027 Request for Proposal

General Information

Proposal ID: 2027-486

Proposal Title: Quantifying Stream Restoration Results to Prioritize Future Investments

Project Manager Information

Name: Tim Sundby

Organization: Carver County Water Management Organization

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Project Basic Information

Project Summary: Establish long-term monitoring of publicly funded stream restoration projects in Minnesota measuring water quality, habitat, and geomorphic outcomes, and create a science-based decision-support index to improve future watershed restoration investments.

ENRTF Funds Requested: \$346,000

Proposed Project Completion: June 30, 2030

LCCMR Funding Category: Water (B)

Project Location

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

Region(s): Metro

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

Statewide

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.

Minnesota has invested millions of public dollars in stream restoration, dam removal, and riparian improvements to improve water quality, habitat, and channel stability. Despite these investments, relatively few projects include consistent post-restoration monitoring capable of quantifying ecological performance or demonstrating return on investment to decision makers.

Most restoration projects focus on design and construction, while long-term evaluation of geomorphic stability, biological condition, and water quality outcomes is inconsistent across watersheds. Without comparable monitoring data, agencies and watershed districts have limited ability to determine which restoration approaches produce the greatest ecological benefits or provide the best use of public funds.

This creates a significant knowledge gap for watershed managers and policymakers responsible for allocating restoration funding. Decision makers need defensible information that demonstrates whether restoration investments are producing measurable improvements in water quality, habitat condition, and channel stability.

This project will leverage existing restoration investments to evaluate project outcomes and build a practical framework for measuring ecological lift. By integrating field monitoring, university-led research, and applied watershed management, the project will generate data and tools that help agencies evaluate restoration effectiveness and prioritize future investments that deliver the greatest water resource benefits.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

Project will establish a coordinated, science-based framework to monitor and evaluate effectiveness of selected stream restoration projects in Carver County, with methods designed for adoption by watershed districts statewide. University of Minnesota researchers and students will collect standardized soil health, geomorphic, biological, and water quality data from recent and upcoming restoration sites, ensuring consistency across watersheds and enabling comparisons over time.

Data will quantify changes in channel stability, sediment transport, aquatic habitat, and water chemistry. Riparian soil management research will assess how soil conditions influence vegetation establishment, nutrient retention, and long-term resilience. Collaboration with MN DNR staff will link recorded data with associated social benefits.

Findings will be synthesized into defensible performance metrics that indicate whether projects improve conditions and how well they advance state water quality and habitat goals. Building on this evaluation, the project will create a watershed-scale restoration decision-support index that integrates ecological outcomes, social benefits, and cost information to guide strategic investment in future projects.

Final products will include unified datasets, monitoring protocols, performance benchmarks, economic valuation guidance, and a practical decision-support tool that watershed districts and state agencies can use to prioritize projects that maximize water quality improvements, enhance habitat, and strengthen restoration funding effectiveness.

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?

This project will produce: (1) application of established MN–WI Stream Quantification Tool (SQT) protocols, with additional supplemental protocols, to measure ecological lift at restored stream sites; (2) multi-year datasets quantifying changes in water quality, geomorphology, and biological condition; (3) defensible performance metrics linking ecological outcomes to measurable public benefits; and (4) a watershed-scale restoration index to guide future investment

decisions. Outcomes will improve agencies' ability to evaluate restoration effectiveness, prioritize high-impact projects, and communicate measurable return on investment. The project will strengthen science-based management of Minnesota's surface waters and enhance long-term water quality and habitat protection.

Activities and Milestones

Activity 1: Field Monitoring and Data Collection

Activity Budget: \$136,090

Activity Description:

Objective:

Measure ecological lift at restored stream sites in Carver County using MN–WI Stream Quantification Tool (SQT) protocols and complementary soil health, water quality and biological metrics.

Tasks and Approach:

Select recently completed and upcoming restoration sites. Apply MN–WI SQT to assess geomorphic stability and habitat condition. Collect water quality data (e.g., nutrients, turbidity) and biological indicators to evaluate aquatic integrity. Collect soil health data. Compile pre-project and as-built information to establish baseline comparisons. Store all data in a centralized database to enable cross-site analysis.

Outputs and Impact:

A multi-year, comparable dataset quantifying restoration performance and ecological lift. Improved understanding of how restoration influences water quality, habitat, and channel stability.

Activity Milestones:

Description	Approximate Completion Date
Site selection finalized	September 30, 2027
Baseline monitoring completed	March 31, 2028
Follow-up monitoring completed	March 31, 2029
Quality-controlled dataset finalized	March 31, 2030

Activity 2: Performance Metrics and Valuation Framework

Activity Budget: \$98,880

Activity Description:

Objective:

Translate monitoring results into defensible performance metrics and public-benefit indicators.

Tasks and Approach:

Analyze SQT, soil health, geomorphic, biological, and water chemistry data to quantify ecological lift. Develop performance benchmarks tied to water quality and habitat improvement. Consult with state partners to ensure methodological rigor. Create and integrate a framework linking ecological outcomes to public and economic benefit indicators.

Outputs and Impact:

Defensible metrics that improve agencies' ability to evaluate restoration effectiveness and communicate return on investment.

Activity Milestones:

Description	Approximate Completion Date
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Draft performance metrics	June 30, 2028
Valuation framework completed	December 31, 2028
Agency review completed	June 30, 2029

Activity 3: Restoration Index Development and Statewide Transferability

Activity Budget: \$111,030

Activity Description:

Objective:

Develop a watershed-scale restoration index and prepare for broader statewide application.

Tasks and Approach:

Integrate performance metrics into a decision-support restoration index. Test the index using Carver County projects.

Develop guidance materials and present findings to watershed districts and state agencies.

Outputs and Impact:

A transferable restoration index and implementation guidance to strengthen science-based water resource investment statewide.

Activity Milestones:

Description	Approximate Completion Date
Index prototype	September 30, 2029
Pilot testing completed	December 31, 2029
Final report and dissemination	June 30, 2030

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Lucius Jonett	Midwest Wetland Improvements	Technical Lead	Yes
Joe Magner	University of Minnesota	Supervisor of UMN Labor and Host/Instructor of workshops	Yes

Dissemination

Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.

Project findings, datasets, and tools will be actively shared to ensure statewide application and long-term impact. Results will be presented to watershed districts, counties, state agencies, and professional organizations through workshops, webinars, and conference presentations (e.g., Minnesota Water Resources Conference, Upper Midwest Stream Restoration Symposium). A publicly accessible technical report will document methodology, performance metrics, ecological lift findings, and guidance for applying the restoration index.

Data summaries and decision-support tools will be shared with participating agencies to integrate into capital improvement planning and restoration prioritization. University partners will incorporate findings into graduate education and applied research programs to broaden professional awareness and technical capacity. Where appropriate, peer-reviewed publication will be pursued to strengthen scientific credibility.

All reports, presentations, and materials will acknowledge the Environment and Natural Resources Trust Fund. By providing clear, accessible documentation and practical tools, this project will promote broader adoption of science-based monitoring and improve how restoration outcomes are evaluated and communicated across Minnesota.

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 work be funded?

Pilot will be implemented in Carver County and designed for statewide transferability. Performance metrics and restoration index will be integrated into Carver County's capital improvement planning and post-restoration evaluation processes. Monitoring framework based on MN-WI SQT methods will be structured so additional watershed districts can apply the methodology and contribute data over time. Following ENRTF funding, Carver County and participating partners will maintain monitoring through existing local and state water management programs. As additional statewide projects adopt the framework, the dataset and decision-support tool will expand, strengthening Minnesota's long-term, science-based approach to stream restoration investment and water resource management.

Project Manager and Organization Qualifications

Project Manager Name: Tim Sundby

Job Title: Water Resources Supervisor

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

Current role is to oversee Projects and Grants for Carver County Water Management Organization, as well as the Monitoring and Development Review Programs. Currently managing \$800,000 in grants and projects, most through

BWSR with WBIF Grants and NRBG. Other grants include DNR Ob Well program and Dept of Ag Pesticide Monitoring Program.

Organization: Carver County Water Management Organization

Organization Description:

The Carver County Water Management Organization (CCWMO) works to protect, manage, and enhance the county's lakes, rivers, wetlands, and groundwater resources through science-based planning, monitoring, and project implementation. As a county-level watershed management entity, CCWMO coordinates with residents, cities, townships, state agencies, and other partners to address water quality, flood reduction, natural resource protection, and regulatory compliance. Its mission is to preserve and improve water resources by integrating land use planning, stormwater management, habitat restoration, and community engagement. The organization conducts lake and stream monitoring, reviews development proposals for conformance with water resource standards, and implements best management practices that reduce pollution and support healthy aquatic ecosystems. CCWMO also provides technical assistance, education, and grant support to help stakeholders adopt sustainable water management practices. Through collaborative planning, transparent governance, and data-driven decision-making, the organization ensures that Carver County's water resources remain resilient and beneficial for current and future generations.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Project Manager		Overall Administration of Grant and Landowner Coordination			0%	0.03		-
							Sub Total	-
Contracts and Services								
University of Minnesota	Subaward	Providing faculty supervision, student researchers, and field monitoring equipment, to collect and analyze required data. Collaborate on developing and testing the new restoration index statewide. Budget: \$155,000 (UMN Staff and Student Assistants), \$1,000 (conferences), \$2,000 (hosting conference).				2.4		\$157,000
Midwest Wetland Improvements, LLC	Service Contract	Offer technical leadership in stream assessment and restoration. Support site selection, arrange monitoring, and manage geomorphic assessments. Guide collaboration and develop watershed restoration index combining ecological data, costs, and site factors. Budget: \$150,695 (Stream Ecologist), \$33,000 (GIS Specialist), \$2,805 (Administrative Assistant), \$1,500 (mileage), \$1,000 (conferences).				0.12		\$189,000
							Sub Total	\$346,000
Equipment, Tools, and Supplies								
							Sub Total	-
Capital Equipment								
							Sub Total	-

Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
							Sub Total	-
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$346,000

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
State				
			State Sub Total	-
Non-State				
In-Kind	Midwest Wetland Improvements	In-kind staff hours from Service Contract to help with all three activities	Secured	\$31,175
In-Kind	Carver County	In-kind staff hours to handle administrative aspects of the grant, including grant reporting, budget review, payments, and landowner contacts	Secured	\$13,600
			Non State Sub Total	\$44,775
			Funds Total	\$44,775

Total Project Cost: \$390,775

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: [23799c22-7df.docx](#)

Alternate Text for Visual Component

This graphic illustrates the proposal's core concept: collecting monitoring data from stream restoration projects to evaluate ecological performance and guide future investments. The pilot begins in Carver County but is designed to scale statewide as additional watershed districts contribute monitoring data and expand the Restorable Stream Index....

Financial Capacity

Title	File
2024 CCWMO Annual Report	c20b0f04-6e6.pdf

Board Resolution or Letter

Title	File
2027-486 LCMMR_Carver Resolution_received 04-13-26	6d5bfeef-3a4.pdf
April 7th, 2026 Board Resolution	571536ce-d29.docx

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

N/A

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

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

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing \$10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care, treatment, education, training, instruction, or recreation to children")?

No

Provide the name(s) and organization(s) of additional individuals assisting in the completion of this proposal:

Lucius Jonett from Midwest Wetland Improvements, LLC; Joe Magner from University of Minnesota; Joseph Anderson from University of Minnesota;

Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR's reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements

Yes, I understand