



Environment and Natural Resources Trust Fund

2025 Request for Proposal

General Information

Proposal ID: 2025-224

Proposal Title: Workforce Development and Certification for Water Quality Improvement

Project Manager Information

Name: Andy Erickson

Organization: U of MN - St. Anthony Falls Laboratory

Office Telephone: (612) 239-2046

Email: eric0706@umn.edu

Project Basic Information

Project Summary: The project will create a certification curriculum that will enhance the technical capacity of water quality practitioners responsible for making watershed planning and project implementation decisions to maximize public benefit.

ENRTF Funds Requested: \$131,000

Proposed Project Completion: June 30, 2027

LCCMR Funding Category: Small Projects (H)

Secondary Category: Water Resources (B)

Project Location

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

Statewide

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

Statewide

When will the work impact occur?

During the Project and In the Future

Narrative

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

Minnesota is making substantial investment to improve and protect the quality of surface water and groundwater. While some training and certification programs exist, water quality professionals responsible for developing restoration or protection strategies often learn the process of good investment decision-making from trial-and-error over many years of experience. Even with years of experience, many decision-makers aren't familiar with best practices for establishing good and achievable water quality goals or how to track and report progress towards achieving those goals (i.e., metrics of success). Water quality professionals need a standard, robust, and thorough certification course that emphasizes best practices for making well-informed, achievable, and trackable decisions for water quality protection and improvement. This project will overcome the challenges of this problem by 1) demonstrating "best public value" when local, state, and federal resource professionals make investment decisions to improve water quality, by employing a structured and rigorous decision-making process; 2) serving the engineering and scientist practitioner community by enhancing current education programs; and 3) build workforce capacity by decreasing the amount of time needed to onboard new resource professionals.

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.

The project improves the ability of Minnesota's workforce to demonstrate that investments in water quality are reasonable and maximize public benefit, by enhancing the technical capacity of water quality practitioners responsible for making watershed planning and project implementation decisions. The lack of sufficient staff to deliver grant dollars, especially at the local level, creates a bottleneck in working with partners interested in improving water quality. We will create, promote, and deliver a hybrid online/in-person course that teaches how to apply a methodical and structured decision-making process to increase capacity. Practitioners who successfully complete the course's eight (subject) modules are officially designated as "Certified Water Quality Professionals." Participants will receive instruction about how to use new and innovative methods to describe surface water quality problems within a watershed, determine where to begin lake and stream restoration and protection efforts, establish credible and achievable water quality goals, develop an implementation strategy, track and report progress, and adapt the implementation strategy based on actual water quality improvement. This will increase the technical capacity of local, state, and federal staff; watershed district staff; consultants; and U of M students and graduates responsible for making water quality investment decisions.

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?

Our goals are: 1) improving the technical capability of water quality practitioners within Minnesota; and 2) addressing the shortage of professionals within Minnesota delivering water quality services, by increasing the technical capacity of current and number of new resource professionals. After completing the course, participants will become a "Certified Water Quality Professional," which improves the water quality practitioner's ability to demonstrate that investments in water quality are reasonable and maximize public benefits. Standardizing the decision process by certifying professionals increases the likelihood that funds spent to improve water quality result in measurable improvement.

Activities and Milestones

Activity 1: Develop and Deploy Curriculum

Activity Budget: \$131,000

Activity Description:

An existing online training course will be adapted and updated for deployment to a MN water quality practitioner audience. If needed, the course materials will be migrated to a University of Minnesota online course system (e.g., Canvas). A parallel, in-person deployment of the course will also be developed to mirror the online course. This increases accessibility to learners that prefer in-person instruction. The course will then be deployed in a beta-testing phase to ensure proper dissemination, identify bugs and errors, and solidify expected time to completion. The course will then be advertised to water quality professionals throughout Minnesota through existing partnerships between the University and local, state, and federal agencies in metro and outstate communities. The course is tentatively expected to be offered in person twice per year (spring and fall) and online during 3-4 quarters (spring, summer, fall, winter). Course instructors will provide technical support to participants and assess post-class effectiveness through feedback surveys and in-person interviews.

Activity Milestones:

Description	Approximate Completion Date
Course Development	January 31, 2026
Course Private Testing and Revision	March 31, 2026
Course Public Launch	April 30, 2026
Course Initial Evaluation	September 30, 2026
Course Revision and update	March 31, 2027
Course Deployment and Evaluation	June 30, 2027

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
John Chapman	University of Minnesota - Bioproducts and Biosystems Engineering	John Chapman will serve as the co-Principal Investigator and co-lead curriculum development and deployment.	Yes
Mark Deutschman	University of Minnesota - St. Anthony Falls Laboratory	Mark Deutschman will serve as the co-Principal Investigator and co-lead curriculum development and deployment.	Yes

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?

ENRTF funds will be used to adapt a training course curriculum to be specific for Minnesota and then deploy it Minnesota as a certification program. At the completion of the project, this program will be fully self-funded by participant registration fees for certification and re-certification. The U of M Erosion and Stormwater Management Program has successfully used this model for 20 years training over 3000 attendees per year.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Removing CECs from Stormwater with Biofiltration	M.L. 2023, , Chp. 60, Art. 2, Sec. 2, Subd. 04j	\$641,000

Project Manager and Organization Qualifications

Project Manager Name: Andy Erickson

Job Title: Research Manager

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

Dr. Andrew J. Erickson, PhD, PE, is a Research Manager at St. Anthony Falls Laboratory and the University of Minnesota and registered professional engineer in Minnesota. Dr. Erickson's research pursues an understanding of water quality in urban and agricultural watersheds, assessment and maintenance of stormwater treatment practices, and developing new stormwater treatment technologies such as the Iron-Enhanced Sand Filter. He is Principal Investigator on \$1.05M worth of active stormwater research projects. Dr. Erickson is lead author for the book, "Optimizing Stormwater Treatment Practices: A Handbook of Assessment and Maintenance," the editor of the University of Minnesota stormwater newsletter, UPDATES to approximately 2000 email subscribers, and leads the Minnesota Stormwater Seminar Series for approximately 200 stormwater practitioners per month. Dr. Erickson has given more than 300 presentations, 35 invited guest lectures, and 39 one- and two-day professional workshops. Dr. Erickson is the Chair of the ASTM International E64 Committee on Stormwater Control Measures and serves the University of Minnesota as the Chair of the Water Council, a member of the St. Anthony Falls Lab Executive Committee, a member of the Civil, Environmental, and Geo-Engineering Graduate Faculty, an affiliate member of the Water Resources Science Graduate Program, a member of the Center for Transportation Studies Scholar Program, and a member of the Environment and Energy in Transportation Research Council.

Organization: U of MN - St. Anthony Falls Laboratory

Organization Description:

The St. Anthony Falls Laboratory (SAFL) is an interdisciplinary fluid mechanics research lab and educational facility under the College of Science and Engineering at the University of Minnesota. We are engineers and scientists who collaborate across disciplines to solve fluids-related problems in the Earth-surface environment. Our vision encompasses both science and practice, beginning with basic research and moving through application, decision-making, and management. SAFL integrates cutting-edge experimental work at laboratory and field scales with advanced computational tools and theory to obtain innovative, science-based solutions to fluid-flow challenges. Located on Hennepin Island in the Mississippi River in the heart of Minneapolis, SAFL serves as a resource for departments across the Twin Cities campus, the statewide University system, and the broader research community. We partner with local, state and federal agencies; private consulting firms; businesses of many kinds; technical associations; and other educational institutions to expand knowledge and solve problems.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Andy Erickson		Principal Investigator			27%	0.1		\$16,224
John Chapman		co-Principal Investigator			27%	0.1		\$14,661
Mark Deutschman		co-Principal Investigator			7%	0.34		\$65,577
Bridget Mendel		Director of Communications			27%	0.18		\$19,268
							Sub Total	\$115,730
Contracts and Services								
Thinkific	Professional or Technical Service Contract	Thinkific is the web hosting platform on which the training curriculum will be hosted.				-		\$2,400
Dianne Volek - InTouch24-7	Professional or Technical Service Contract	Dianne Volek of InTouch24-7 is a web developer, digital and technical communications specialist that plans, writes, designs and delivers multi-channel communication projects. Dianne will support the development and deployment of the curriculum in a digital platform.				1.6		\$4,800
							Sub Total	\$7,200
Equipment, Tools, and Supplies								
	Tools and Supplies	Coursebook printing at \$10/attendee x 200 attendees	Printing services for in-person workshop coursebooks and materials.					\$2,000
							Sub Total	\$2,000
Capital Expenditures								
							Sub Total	-

Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Conference Registration Miles/ Meals/ Lodging	One attendee (registration = \$350, parking = \$30)	Attending the MN Water Resources Conference to announce and promote the Water Quality Certification Program and its effectiveness.					\$380
	Miles/ Meals/ Lodging	Expenses to deploying a workshop in another location (two people, lodging 2 nights = \$560, meals = \$125, miles = \$0.67/mile x 240 miles = \$160; total = 845/workshop x 2 workshops = 1690)	While training will be provided online, some learners benefit from in person training. To increase accessibility, at least one in-person workshop will be deployed outside the University of Minnesota campus.					\$1,690
	Other	Venue + Catering for local and remote workshops (\$500 rental + \$500 catering = \$1000 per workshop x 4 workshops = \$4000)	Venue rental costs + catering for in person workshops					\$4,000
							Sub Total	\$6,070
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
							Sub Total	-
Other Expenses								
							Sub Total	-
							Grand Total	\$131,000

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				
			Non State Sub Total	-
			Funds Total	-

Total Project Cost: \$131,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: [a9a0b8c2-f94.pdf](#)

Alternate Text for Visual Component

Course Module Outline...

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
Sponsored Projects Administration Support Letter	5a3ba281-a09.pdf
UMN SPA approval letter	84012f67-06e.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

Yes

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

Yes

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF? If so, describe here (1) the source and estimated amounts of any revenue and (2) how you propose to use those revenues:

Yes, ENRTF funds will be used to develop and deploy a training course curriculum and certification program. At the completion of the project, this program will be fully self-funded by participant registration fees for certification and re-certification.

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

Yes, Sponsored Projects Administration

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:

Angela Boutch (SAFL-UMN), Christina Doherty (SPA-UMN), Victoria Troxler (SPA-UMN)

