Environment and Natural Resources Trust Fund
2020 Request for Proposals (RFP)

Project Title: **ENRTF ID: 116-BH**

Expanding Protection of Minnesota Water through Industrial Conservation

Category: H. Proposals seeking $200,000 or less in funding

Sub-Category: B. Water Resources

Total Project Budget: $ 178,430

Proposed Project Time Period for the Funding Requested: June 30, 2023 (3 yrs)

Summary:

Decrease water demand in communities at risk for inadequate ground water supply or quality by providing technical assistance to identify cost-effective ways to reduce industrial/commercial water use.

Name: Laura Babcock

Sponsoring Organization: U of MN

Job Title: MnTAP Director

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Location:

Region: Statewide

County Name: Statewide

City / Township:

Alternate Text for Visual:

Map illustrating target geographies for project activities based on Minnesota groundwater use from DNR permits, groundwater vulnerability and industry clusters along with a project activity outline.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____%

PROJECT TITLE: Expanding Protection of Minnesota Water through Industrial Conservation

I. PROJECT STATEMENT

This project seeks to decrease water demand in communities at risk for inadequate ground water supply or quality by providing technical assistance to identify cost-effective ways to reduce industrial/commercial water use. The Minnesota Technical Assistance Program (MnTAP) will identify target regions with water access and/or water quality challenges by utilizing detailed community water system knowledge of partner Minnesota Rural Water Association (MRWA) and others. MnTAP and MRWA will engage these regions by conducting water efficiency workshops, direct technical assistance to businesses, and placing interns in businesses with high water efficiency opportunity to launch conservation implementation.

The current proposal seeks to expand a successful industrial/commercial water efficiency program currently limited to the metro area to the entire State of Minnesota. MnTAP has demonstrated that industrial water efficiency technical assistance can reduce industrial water use, decrease water demand and improve operating costs. Technical assistance efforts have achieved significant water savings through maintenance and minor process modifications.

- A food processing facility achieved over 2 million gallons of water savings annually and operating cost reduction of $14,000/yr by optimizing pump operations and irrigation controls.
- A healthcare facility identified 7.6 million gallons of water savings annually and operating cost reduction of $123,000/yr by optimizing water discharge procedures and developing a replacement schedule for less efficient equipment at the end of useful life.
- A ready mixed concrete producer saved 4.3 million gallons of water annually by implementing reuse.

Some parts of Minnesota suffer from low producing aquifers that are unable to support growth in residential and industrial/commercial water use. Other areas may have sufficient water supply, however, high water use may result in contamination due to drawdown and infiltration. Reducing water demand in areas at risk for water scarcity or well contamination may provide a low cost option for water management activities when compared with well drilling or extensive water purification.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1*: Identify and engage regions with water supply and/or water quality challenges*

Description: Partner with MRWA to identify 10 regions in Minnesota that have not received water efficiency technical assistance previously and could benefit from reduced water demand. The regions will be selected based on aquifer resiliency, MRWA regional knowledge, and the presence of significant industrial activity. Regional water supply providers and commercial/industrial water users will be contacted for participation in the project. Project opportunity information sharing will be conducted through communication pieces and educational workshops on water use best management practices and success stories from past projects.

ENRTF BUDGET: $55,630

Outcome	Completion Date
1. 10 outreach targets identified.	9/1/2020
2. Characterize regions by industry and water conservation potential.	11/1/2020
3. 3-4 regions receive directed outreach for water conservation technical assistance.	12/31/2020
4. 3-4 educational workshops on water conservation in participating regions.	3/31/2021
5. 5-8 high water users identified.	3/31/2021

Activity 2: *Conduct water conservation assessments at industrial facilities and measure impact*
Description: Conduct technical assistance site assessments at the sites identified in Activity 1 to demonstrate water conservation and source reduction opportunities. Site assessments will include mapping site water use, identifying high use operations and recommending options to manage water use more efficiently. Up to three complex, technical projects will be chosen as summer intern projects to assess industrial water use, develop water saving recommendations and launch conservation implementation.

ENRTF BUDGET: $102,800

Outcome	Completion Date
1. 5-8 water conservation and source reduction site assessments complete.	5/31/2022
2. 3 water conservation focused intern projects in the selected regions.	9/30/2022
3. All participating sites receive follow up assistance from MnTAP.	11/30/2022
4. 10,000,000 gallons of water reduced annually.	12/31/2022

Activity 3: *Share results and replication opportunity throughout the state*
Description: Outline a self-assessment process to identify water efficiency opportunity and disseminate success stories/lessons learning to a broad audience throughout Minnesota. Present findings at available regional meetings, informational publications and through a webinar that is open to the public and recorded for future viewing. Maintain effective reporting communications with project sponsor.

ENRTF BUDGET: $20,000

Outcome	Completion Date
1. 3 intern success stories published.	10/30/2022
2. Presentations outlining the project outcomes.	9/30/2022
3. 1 webinar recorded and archived for future viewing.	10/30/2022
4. Water use assessment screening tool developed.	10/30/2022

III. PROJECT PARTNERS AND COLLABORATORS:

MnTAP will expand our project partnership with MRWA to leverage outreach and technical assistance capabilities of both organizations. MRWA has deep connections with communities across Minnesota that may benefit from water efficiency technical assistance. MRWA will make project information and research findings available on the MRWA website, as well as in MRWA's publications. MRWA will be a contracted partner to work closely with MnTAP to identify and engage communities with efficiency opportunity, support training activities and encourage implementation of recommendations. Regional business and local government leaders will be important collaborators to share project information within identified communities to promote engagement and broaden support for the projects and implementation of recommended water efficiency measures.

IV. LONG-TERM IMPLEMENTATION AND FUNDING:

This project seeks to develop a strategy to bring a demonstrated industrial/commercial water efficiency technical assistance program to communities throughout the state interested in water management strategies. Once developed and documented, these strategies will be available to communities, businesses and existing programs that assist Minnesota communities with sustainable water use for replication beyond the program time period.

V. SEE ADDITIONAL PROPOSAL COMPONENTS:

A. Proposal Budget Spreadsheet
B. Visual Component or Map
C. Project Manager Qualifications and Organization Description

Attachment A: Project Budget Spreadsheet
Environment and Natural Resources Trust Fund
M.L. 2020 Budget Spreadsheet
Legal Citation:
Project Manager: Laura Babcock
Project Title: Expanding Protection of Minnesota Water through Industrial Conservation
Organization: University of Minnesota
Project Budget: $178,430
Project Length and Completion Date: 2.5 yrs, December 31, 2022
Today's Date: April 4, 2019

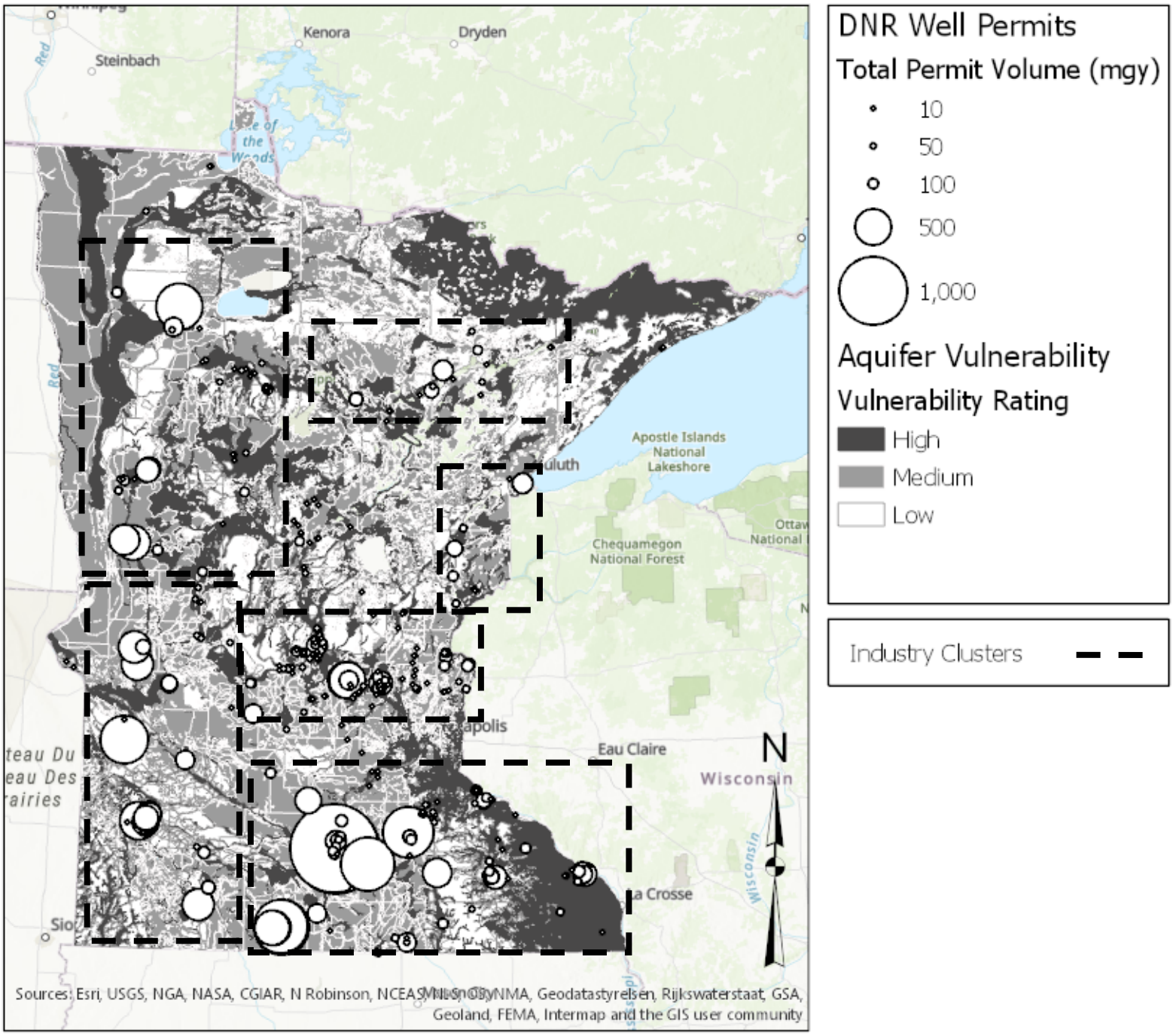
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Budget	Amount Spent	Balance
BUDGET ITEM			
Personnel (Wages and Benefits)	$ 124,130	$ -	$ 124,130
Engineer, $59,514 (71.6%salary, 28.4%fringe), 0.4 FTE			
Intern Manager, $6,479 (71.6%salary, 28.4%fringe), 0.05 FTE			
Communications, $7,294 (71.6%salary, 28.4%fringe), 0.05 FTE			
Intern, $25,848 (92.3% salary, 7,7%fringe), 1 FTE (3 students)			
Supervisor, $10,583 (71.6%salary, 28.4%fringe), 0.05 FTE			
Principal Investigator, $14,412 (65.8%salary, 34.2%fringe), 0.05 FTE			
Professional/Technical/Service Contracts			
Minnesota Rural Water Association to provide direct community outreach and promote project results through website and meetings. Sole source contract based on MRWA extensive experience and relationships in target communities	$ 50,000	$ -	$ 50,000
Equipment/Tools/Supplies			
Intern safety equipment and supplies	$ 800	$ -	$ 800
Printing			
		$ -	$ -
Travel expenses in Minnesota			
Travel by car to regions within Minnesota to provide training, technical assistance and intern projects focused on commercial/industrial water efficiency, possible lodging at per diem rates	$ 2,000	$ -	$ 2,000
Other			
Water efficiency educational events location space rental for up to 3 sites	$ 1,500	$ -	$ 1,500
COLUMN TOTAL	$ 178,430	$ -	$ 178,430

SOURCE AND USE OF OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
Non-State: Intern Company Cost Share	Pending	$ 9,000	$ -	$ 9,000
State: MPCA Annual grant to MnTAP for operations, rent associated with FTE	Secured	$ 10,360	$ -	$ 10,360
In kind: University of Minnesota Indirect Charges 26% MTDC	Secured	$ 46,390	$ -	$ 46,390

Other ENRTF APPROPRIATIONS AWARDED IN THE LAST SIX YEARS	Amount legally obligated but not yet spent	Budget	Spent	Balance
None		$ -	$ -	$ -

Expanding Protection of Minnesota Water through Industrial Conservation

Existing Groundwater Use and Vulnerability



Project Outline

Engage Regions → Engage Industrial Users → Provide Technical Assistance → Implement Suggestions → Develop Process Model

LCCMR 2020 Proposal
Expanding Protection of Minnesota Water through Industrial Conservation
Regents of the University of Minnesota
Minnesota Technical Assistance Program

Project Manager Qualifications

Laura Babcock, Ph.D. has been the Director of the Minnesota Technical Assistance Program (MnTAP) since 2011. Prior to her position at MnTAP, Laura spent 20 years in industrial process technology roles including research, product and process development. Laura manages the MnTAP organization providing technical leadership to staff which includes 12 full time staff members and 12-18 student interns and administratively manages a grant sponsored budget of $1.3 million per year. MnTAP is a grant funded program in the University of Minnesota, School of Public Health, Division of Environmental Health Studies that provides no-cost technical assistance to industries and communities across the state to improve environmental outcomes and business performance. Laura has extensive experience managing the technical and administrative activities of environmentally focused assistance project that generate implemented results. Past history of MnTAP annual grant performance is summarized in our annual IMPACT environmental benefits reports posted on the MnTAP website - http://www.mntap.umn.edu/resources/publications/impact/.

Organization Description

The Minnesota Technical Assistance Program (MnTAP) is an outreach program at the University of Minnesota that helps Minnesota businesses develop and implement industry-tailored solutions that prevent pollution at the source, maximize efficient use of resources, and reduce energy use and costs to improve public health and the environment.

MnTAP staff members provide no-cost, confidential, industry-tailored technical assistance. By reducing waste and increasing efficiency, clients can save on disposal and raw material costs and decrease regulatory compliance burdens as well as create healthier and safer working conditions while reducing environmental impacts.

Established in 1984, MnTAP is grant funded in part by a pass-through grant from the Minnesota Pollution Control Agency's Resource Management and Assistance Division to the University of Minnesota, School of Public Health, Division of Environmental Health Sciences. Other grants come from partners including Minnesota Department of Commerce, Division of Energy Resources, Metropolitan Council, counties and other local units of government, U.S. Environmental Protection Agency (EPA) Region 5, U.S. Department of Energy (DOE) and energy utilities. As part of the University, MnTAP has no regulatory responsibilities or obligations allowing us to work closely and confidentially with a variety of businesses throughout the state. MnTAP typically provides technical assistance to over 200 companies per year. In the past 5 years, MnTAP has conducted technical assistance activities in 74 of the 87 Minnesota counties and actively seeks opportunities to provide service to all regions of Minnesota.