



Environment and Natural Resources Trust Fund

2022 Request for Proposal

General Information

Proposal ID: 2022-081

Proposal Title: Strategic Framework to Guide Local Water Storage Implementation

Project Manager Information

Name: Henry Van Offelen

Organization: Board of Water and Soil Resources

Office Telephone: (218) 849-5270

Email: henry.van.offelen@state.mn.us

Project Basic Information

Project Summary: Framework to prioritize water storage projects strategically throughout the state. The framework will use existing data, local stakeholder input, be scalable, and emphasize multi-benefit water storage (water quality, flooding, habitat).

Funds Requested: \$220,000

Proposed Project Completion: June 30 2024

LCCMR Funding Category: Foundational Natural Resource Data and Information (A)

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.

Adding water storage to the landscape is critical to improving watershed conditions (reduced flooding and erosion, improved water quality, improved habitat quality, increased resiliency to climate change). Local governments and landowners are interested in putting water storage practices on the land, but there is no comprehensive framework to guide decision-making to strategically invest local, state, and federal dollars. A science-based, systematic approach that local governments and citizens can use to evaluate water storage opportunities is essential to improving watershed conditions. There currently is no comprehensive approach to prioritize, identify, and assess water storage projects and their ability to achieve multiple benefits, including: improve water quality, improve habitat, reduce flood damages, and increase landscape resiliency to climate change.

An implementation framework is needed now more than ever as the state considers funding water storage programs. The framework will provide critical information to bridge the gap between ongoing watershed planning processes (e.g., One Watershed One Plan) and local governments' desire to implement multiple-benefit projects that spend public and private funds wisely. This framework will empower citizens and local governments to make well informed science-based decisions, help remove current implementation barriers, and accelerate implementation of water storage practices.

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.

This project will develop a scientifically sound process with integrated information and communication strategies (i.e. "Framework") to engage and educate local conservation professionals so they can achieve water storage goals. The framework will systematically guide users through: 1) problem identification and goal setting, 2) creation and use of a water storage opportunities dataset to identify, compare, and prioritize storage projects for multiple benefits, and 3) a streamlined process that local decision-makers can use to implement water storage scenarios in their watershed. The framework will include tools to create and evaluate potential water storage datasets along with education materials, workbooks, and step-by-step instructions that local planners can use to engage landowners and measure progress toward achieving multipurpose watershed goals. The framework will be tested and refined in three Minnesota watersheds (HUC8) with different levels of available data and plans. Local water planners, citizens, and state agency staff will be engaged to apply the framework and select an optimal set of water storage projects within each their watersheds.

The final framework components, including communication strategies, will be distributed statewide for use in training local partners in their watersheds.

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?

Project outcomes will increase water storage within Minnesota's watersheds which is essential to future conservation and enhancement of Minnesota's water resources, improved water quality, and reduced flooding.

Outcomes include: 1) increased local understanding of watershed hydrology and storage needs, 2) refined data, tools, and models to identify, prioritize, and evaluate water storage opportunities, 3) systematic process that local conservation professionals can use to produce plans with prioritized multipurpose projects to meet goals, 4) local engagement and buy-in to water storage implementation strategies in three watersheds, and 5) a framework directly transferable for use in all Minnesota watersheds.

Activities and Milestones

Activity 1: Develop implementation framework

Activity Budget: \$155,900

Activity Description:

Develop the technical information for the water storage framework in three watersheds. The framework data, maps, GIS tools, models and materials (flow charts, workbooks, guidance documents) crafted in this activity is critical to guiding local participants through a systematic process from problem identification to water storage project selection. Activities include:

- Identifying the extent, frequency, and duration of flooding and related hydrology issues
- Establishing practical and defensible goals, tied to specific outcomes;
- Establishing and weighing successful implementation factors;
- Developing and evaluating various water storage scenarios (e.g., ability to achieve multipurpose outcomes);
- Evaluating the order of project implementation within the watershed (e.g., where to work first);
- Establishing methods to determine outcomes (e.g., public versus private);
- Developing realistic estimates of funding needs;
- Developing methods for tracking progress and adapting as needed to ensure the expected outcomes are realized.

The technical products created in this activity will use and build on existing watershed data and hydrologic modeling, are consistent with current watershed plans, and help overcome common barriers to water storage implementation. Common barriers include a lack of technical tools and capacity needed to establish local water storage priorities and evaluate water storage projects relative to multipurpose goals.

Activity Milestones:

Description	Completion Date
Assemble base watershed data	October 31 2022
Develop water storage opportunities database	January 31 2023
Evaluate water storage scenarios	October 31 2023
Data dissemination and report	April 30 2024

Activity 2: Test Implementation Framework in Demonstration Watersheds

Activity Budget: \$64,100

Activity Description:

Test the framework by partnering with local watershed teams in three diverse watersheds (HUC8). Watersheds from different areas of the state with a variety of available data and models will be selected to ensure the framework is transferable to other watersheds. The teams will work step by step through the framework in a series of facilitated meetings that use the products created in Activity 1.

The team will use Activity 1 products and available models (e.g. LiDAR, HSPF, PTMApp) to identify, explore, and evaluate potential water storage sites (e.g. impoundments, drainage water management, wetland restoration, increased soil health). Team members will use the characteristics of potential sites to screen their potential to meet hydrology, water quality, and habitat goals. Hydrological screening metrics include peak and annual flow reduction potential and storage volume needed to create non-contributing areas. Water quality screening metrics include sediment and nutrient reduction potential. Habitat screening metrics are based on proximity to MN wildlife action network priorities. Additional screening metrics (e.g life-cycle costs, permit likelihood) will also be derived. These metrics enable local

watershed teams to objectively compare and prioritize water storage sites and create water storage scenarios to meet multipurpose goals.

Activity Milestones:

Description	Completion Date
Kickoff meetings and project orientation with local implementation teams	December 31 2022
Develop scenarios, evaluate scenarios, and select preferred water storage scenario in each watershed.	December 31 2023
Package framework materials for distribution and use in other watersheds	June 30 2024

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Charles Fritz	International Water Institute	The International Water Institute team will provide technical expertise in LiDAR, GIS, and hydrologic modeling needed to derive and refine decision support data needed for this project as well as their on-the-ground experience of working with local governments and landowners to implement conservation practices.	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 be funded?

This framework (systematic process, packaged information, communication strategies) will give local governments the tools, information, and strategic step-by-step process to meet their watershed water storage goals required in comprehensive watershed management plans. Once established, the framework tools and processes are directly transferrable to all watersheds. Local conservation professionals, state agency staff, and citizens will use it to evaluate and implement storage projects and ensure that local, state, and federal funds are used wisely to evaluate and implement projects with multipurpose outcomes. The framework will add value to ongoing watershed planning efforts and be integrated into implementation efforts throughout Minnesota.

Project Manager and Organization Qualifications

Project Manager Name: Henry Van Offelen

Job Title: Clean Water Specialist, MN Board of Water and Soil Resources

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

Henry Van Offelen has been a Clean Water Specialist for the Minnesota Board of Water and Soil Resources for four years. Prior to this work he was Minnesota DNR's Red River Coordinator and a Natural Resources Scientist for MN Center for Environmental Advocacy. He has more than 20 years of extensive experience in working with local and state partners in watershed monitoring, planning, and implementation efforts. He has managed the Roseau Lake Water Quality implementation projects and led multiple comprehensive watershed surveys. He has been part of a team developed methods to use LiDAR data to identify water storage areas and extensive experience using PTMApp and HSPF data. Mr. Van Offelen holds a Master's of Science Degree in Fisheries from Cornell University and a Bachelor's Degree in Fisheries from the University of Minnesota.

Organization: Board of Water and Soil Resources

Organization Description:

BWSR's mission is to improve and protect Minnesota's water and soil resources by working in partnership with local organizations and private landowners. Core functions include implementing the state's soil and water conservation policy, comprehensive local water management, and the Wetland Conservation Act as it relates to the 41.7 million acres of private land in Minnesota.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Clean Water Specialist		Project Manager			15%	0.18	X	\$38,000
							Sub Total	\$38,000
Contracts and Services								
International Water Institute	Professional or Technical Service Contract	International Water Institute staff will compile and create most of Activity 1 data and will package this information into understandable information for Activity 2. They will be a partner in presentation, recording, and evaluating Activity 2 scenarios. This is a sole source contract to the project partner.				0		\$103,000
TBD	Professional or Technical Service Contract	Adapt and refine existing hydrologic models and best management practice prioritization tool to readily evaluate and report outcomes of water storage scenarios developed by local watershed groups. Contract will be selected via RFP or competitive bidding following Department of Administration's contracting guidelines.				0		\$70,000
TBD	Professional or Technical Service Contract	Develop professional communication materials for local government staff use in outreach efforts to landowners that promote water storage implementation projects. Contract will be selected via RFP or competitive bidding following Department of Administration's contracting guidelines.				0		\$9,000
							Sub Total	\$182,000
Equipment, Tools, and Supplies								
							Sub Total	-
Capital Expenditures								

							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	\$220,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Personnel - Clean Water Specialist		Project Manager	Classified : Project manager duties associated with this statewide grant are above and beyond typical job responsibilities associated with this classified position.

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
In-Kind	Funding for BWSR staff that will participate in Activities 1 and 2 including the chief engineer, clean water specialists, and board conservationists	Staff time to participate on technical team in development, review, and packaging of materials in Activity 1. Staff time to participate in three local watershed teams in scenario development and evaluation process as part of Activity 2.	Secured	\$25,000
In-Kind	Funding for BWSR staff travel expenses associated with this project.	Travel related expenses associated with BWSR staff	Secured	\$6,000
			State Sub Total	\$31,000
Non-State				
			Non State Sub Total	-
			Funds Total	\$31,000

Attachments

Required Attachments

Visual Component

File: [3c0276ff-50a.pdf](#)

Alternate Text for Visual Component

Overview of proposed water storage implementation framework including process steps, information, and anticipated multipurpose outcomes....

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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

WATER STORAGE IMPLEMENTATION FRAMEWORK



