Environment and Natural Resources Trust Fund

2026 Request for Proposal

General Information

Proposal ID: 2026-405

Proposal Title: Phase II Investigation of Pine and Curry Island SNA

Project Manager Information

Name: Anthony Pirkl

Organization: Lake of the Woods County

Office Telephone: (218) 434-0917

Email: anthony_p@co.lotw.mn.us

Project Basic Information

Project Summary: The Phase II investigation of Pine and Curry Island SNA erosion aims to develop restoration solutions that protect wildlife habitat, improve water quality, enhance recreation, and strengthen long-term coastal resilience.

ENRTF Funds Requested: $550,000

Proposed Project Completion: June 30, 2028

LCCMR Funding Category: Fish and Wildlife (D)

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.

Pine and Curry Island, a designated Scientific and Natural Area (SNA) in Lake of the Woods, is experiencing severe erosion due to high water levels, extreme storm events, and disrupted sediment transport. This erosion threatens critical wildlife habitat, water quality, and shoreline stability, impacting both ecological integrity and outdoor recreation opportunities.

A Phase I investigation, fully funded by federal and local dollars, identified the primary causes of erosion, including longshore sediment transport disruptions, extreme weather events, and historical land modifications. Without intervention, continued erosion will degrade the island's natural resources, reduce habitat for fish and wildlife, and increase sedimentation in the surrounding waters.

This proposal seeks funding for Phase II, which will build on previous research to develop and inform restoration strategies. Potential solutions include shoreline stabilization, sediment management, and habitat restoration to protect the island's ecological functions, enhance water quality, and ensure long-term coastal resilience.

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.

This phase will focus on developing targeted restoration strategies to stabilize the shoreline, restore habitat, and improve water quality.

To guide these efforts, the project will include topographic and bathymetric surveys to map current site conditions, along with a review of historical surveys to assess long-term shoreline changes. Biological and natural resource surveys will be conducted to evaluate habitat quality and biodiversity. Additionally, an Acoustic Doppler Current Profiler (ADCP) will be installed to measure wave and current patterns, while sub-bottom profiling will help analyze sediment layers and erosion trends. Sediment sampling will also be performed to study sediment composition and movement.

The data collected from these field studies will support hydrodynamic modeling and sediment transport analysis, which are crucial for identifying effective shoreline stabilization methods. Using these insights, conceptual design plans will be developed to guide shoreline restoration, sediment management, and habitat enhancement.

Funding will support engineering design, permitting, and initial implementation, ensuring Pine and Curry Island remains resilient against erosion while protecting habitat, improving water quality, and preserving its role as a natural buffer for surrounding shorelines and waterways.

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?

Phase II investigation on Pine and Curry Islands in Lake of the Woods aims to enhance the protection, conservation, and preservation of the area's natural resources, which includes the state endangered and federally threatened Piping Plover along with other state threatened and special concern bird species. Key outcomes include strategies for stabilizing shorelines to prevent erosion, restoring native habitats, and improving water quality. This will protect critical ecosystems, support biodiversity, and enhance the resilience of the islands against extreme weather events. The project promotes long-term sustainability, balancing human use with environmental stewardship, ensuring the islands remain ecologically intact.

Activities and Milestones

Activity 1: Data Collection & Synthesis

Activity Budget: $165,000

Activity Description:
Personnel will be onsite to conduct bathymetric surveys and to set up equipment to monitor wave, current, & sediment transport functions. Staff will also coordinate with governmental agencies that are active in the vicinity of the project to collect and synthesize previously collected data and coordinate any data collection being conducted as an in-kind contribution.

The collection & synthesis of this data will ensure that all hydraulic and hydrodynamic models that examine the islands are both detailed and accurate. Models with this level of detail are required to assess the efficacy and feasibility of proposed remediation to Pine & Curry Islands.

Activity Milestones:

Description	Approximate Completion Date
Collection of Field Data	October 31, 2026
Processing of Field Data	February 28, 2027
Synthesis of All Data	April 30, 2027

Activity 2: Hydraulic & Hydrodynamic Modeling

Activity Budget: $275,000

Activity Description:
The project involves developing refined models to evaluate lake-wide circulation, wave growth, wave propagation, and shoreline evolution, focusing on the barrier island system between the lake and Four Mile Bay. Models will be run for three constant and two variable lake water levels, covering periods from 1 month to 20 years, to assess the effects of different design alternatives on sediment transport, erosion, and shoreline changes. These models will help evaluate the status quo (do nothing) scenario and compare it to three design alternatives.

The modeling will include updates to the lake circulation model developed in Delft software during Phase I, which will focus on circulation and erosional/depositional patterns. CSHORE models will be developed to assess shoreline trends, while the Dune Response Tool (DRT) will be used to evaluate wind-driven sediment transport on the islands. A sediment transport model will quantify the effects in-lake structures along the south shore between Long Point and Wheeler's Point, including the Zippel Bay Jetty on sediment movement and its impact on island degradation. The results will inform the effectiveness of conceptual designs by assessing factors like shear stress, erosion, deposition, and shoreline trends.

Activity Milestones:

Description	Approximate Completion Date
Calibrate Wholistic Lake Model	June 30, 2027
Evaluation of Updrift Sediment Transport	July 31, 2027
Draft Report of Results from the Evaluation of Proposed Conceptual Designs	September 30, 2027

Activity 3: Conceptual Design

Activity Budget: $85,000

Activity Description:
In developing conceptual designs, stakeholder and community engagement will be crucial for the project's success. Up to three stakeholder meetings are anticipated, in coordination with MN DNR, to develop and assess design alternatives. Simplified renderings will aid in communicating the designs. Two local community meetings will be organized by Lake of the Woods County and Soil and Water Conservation District (SWCD), involving key stakeholders like MN DNR, local tribes, and consultants.

An evaluation of climate change effects on Lake of the Woods will inform design alternatives, considering factors like precipitation, wind, temperature, and lake levels. Findings will ensure that the proposed designs are resilient to climate change.

A "do-nothing" option and at least three other alternatives will be considered.

The feasibility of the design alternatives will be assessed, focusing on constructability, efficacy, phosphorus loading, aquatic ecosystem impacts, legacy contaminants, and water quality. Input from the International Rainy-Lake of the Woods Watershed Board will guide the analysis. Construction, cost, maintenance, climate change resilience, and overall impact will be key considerations in the feasibility report.

Activity Milestones:

Description	Approximate Completion Date
Issued Summary of Stakeholder Engagement	November 30, 2027
Draft Climate Change Report of Findings Issued for Review	November 30, 2027
Draft Design Alternatives Feasibility Report Issued for Review	January 31, 2028

Activity 4: Investigation Report

Activity Budget: $25,000

Activity Description:
The work performed in earlier tasks will be condensed and summarized into a final report. Care will be taken to highlight how the islands are currently responding to the changing lake environment, what will happen if nothing is done to help the islands recover, and what steps are recommended to protect, enhance, and rebuild the islands. The report will be submitted to all project stakeholders.

Activity Milestones:

Description	Approximate Completion Date
Draft Report Issued for Comment	March 31, 2028
Final Report Issued for Review	April 30, 2028

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Ecological and Water Resources Staff	Minnesota DNR	Project Partner	No
Resource Conservationists	Lake of the Woods Soil and Water Conservation District	Project Partner	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 work be funded?
Once Phase II is completed, the restoration strategies and conceptual designs will serve as a foundation for securing additional funding for full-scale implementation. Phase I identified several potential funding sources, including the International Joint Commission (which provided the majority of Phase I funding), NOAA's Coastal Habitat Restoration and Coastal Resilience Program, the National Fish and Wildlife Foundation's National Coastal Resilience Fund, and local partners. These sources will be pursued to support the next phase of restoration efforts.

Project Manager and Organization Qualifications

Project Manager Name: Anthony Pirkl

Job Title: Lake of the Woods County Public Works Director.

Provide description of the project manager's qualifications to manage the proposed project.
Anthony Pirkl serves as the Public Works Director and Highway Engineer for Lake of the Woods County, overseeing a broad range of civil engineering projects. His responsibilities include managing the funding, design, construction, and maintenance of roadways, bridges, legal ditch systems, landfills, and utilities.

Prior to his role at Lake of the Woods County, Anthony worked as a consultant specializing in coastal modeling and engineering in the Great Lakes and Caribbean. His expertise in coastal processes and shoreline erosion, combined with his local knowledge of Pine Island and Lake of the Woods, provides a unique perspective on regional environmental challenges.

With extensive experience leading multi-stakeholder projects, Anthony coordinates efforts among consultants, contractors, public officials, and policymakers to ensure successful project execution. He has a proven ability to navigate complex permitting processes with agencies such as FEMA, FHWA, MnDOT, MPCA, USACE, DNR, and local municipalities. His strategic approach streamlines approvals, mitigates regulatory challenges, and ensures projects remain on schedule and within budget.

Having played an active role in Phase 1 of this project, Anthony brings invaluable local knowledge of Pine Island and its surrounding areas. His expertise in project management, regulatory compliance, and infrastructure development makes him exceptionally qualified to lead this initiative to success

Organization: Lake of the Woods County

Organization Description:
Lake of the Woods County is the Youngest county in the State of Minnesota. Lake of the Woods County, Minnesota has many missions, including economic development, environmental protection, and emergency management.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
							Sub Total	**-**
Contracts and Services								
AMI Consulting Engineers P.A.	Service Contract	Sub contracting work				6		$550,000
							Sub Total	**$550,000**
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	**$550,000**

Classified Staff or Generally Ineligible Expenses

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

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
In-Kind	Minnesota Division of Natural Resources (DNR)	Stakeholder and Community Engagement	Secured	$16,360
In-Kind	Minnesota Division of Natural Resources (DNR)	Climate Change Report of Findings	Secured	$8,250
			State Sub Total	**$24,610**
Non-State				
Cash	Lake of the Woods Soil and Water Conservation District	2023 Bathymetric Survey - LOTW	Secured	$22,500
Cash	International Joint Commission	2023 Field Data Collection	Secured	$109,350
Cash	Lake of the Woods County Parks Funds	2023 Bathymetric Survey	Secured	$21,500
In-Kind	Lake of the Woods County Staff	2023 Topographic Survey of Pine Island	Secured	$18,150
In-Kind	Lake of the Woods County	2025 Morris Point Survey	Secured	$25,000
Cash	International Joint Commission	Lake Circulation, Wave, and Shoreline Morphology Modeling	Secured	$69,250
Cash	International Joint Commission	Phase 1 Investigation Report and Community Engagement	Secured	$36,350
In-Kind	Lake of the Woods County	Project Management and Grant Reporting Phase I and Phase II	Secured	$60,000
			Non State Sub Total	**$362,100**
			Funds Total	**$386,710**

Total Project Cost: $936,710

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: d42d3a95-48e.pdf

Alternate Text for Visual Component

Project Area Overview and Pictures from Phase I work. Additional visual on the amount of island lost due to erosion from 1965 - 2024....

Financial Capacity

Title	File
LOTW County Trial Balance	18fe7756-d1e.pdf
2023 Lake of the Woods County Audit	2398091e-15a.pdf

Board Resolution or Letter

Title	File
County Board Resolution	88c0e177-8fb.pdf

Supplemental Attachments

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

Title	File
Capital Construction Project Questionnaire	92883c68-22c.pdf
Capital Construction Budget Addendum	634b5aa2-e12.xlsx
Climate Change Report for Lake of the Woods	3edf8aa6-ff2.docx
MPCA Letter of Support	b8b92b42-003.pdf
Grand Treaty 3 Letter of Support	57d828d2-c97.pdf
Phase 1 Investigation Report	5ccd8aca-11c.pdf
Riverbend Resort Letter of Support	4554b130-37e.pdf
Ballards Resort Letter of Support	c68b478c-3fa.pdf
John Burkel Letter of Support	dca0afd3-9ea.pdf
Lake of the Woods Tourism Letter of Support	92755702-33a.pdf
Bidel Durran Letter of Support	ea2ae978-1c7.pdf
Lake of the Woods Soil and Water Conservation District Letter of Support	fe1282e9-ce4.pdf
City of Baudette Letter of Support	24270913-b77.pdf
Red Lake Band of Chippewa Indians Letter of Support	4fcb696a-ec0.pdf

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?

Yes

Does the organization have a fiscal agent for this project?

Yes, Lake of the Woods County

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:

Anthony Pirkl - Public Works Director - Lake of the Woods County

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