Environment and Natural Resources Trust Fund

2023 Request for Proposal

General Information

Proposal ID: 2023-080

Proposal Title: Panoway on Wayzata Bay Shoreline Restoration Project

Project Manager Information

Name: Nick Kieser

Organization: City of Wayzata

Office Telephone: (952) 404-5313

Email: nkieser@wayzata.org

Project Basic Information

Project Summary: This project will feature an underwater wave break to create a buffer that will restore, enhance and protect Lake Minnetonka shoreline, using innovative and replicable technologies to improve the ecosystem.

Funds Requested: $200,000

Proposed Project Completion: August 31, 2025

LCCMR Funding Category: Small Projects (H)

Secondary Category: Methods to Protect, Restore, and Enhance Land, Water, and Habitat (F)

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.

The City of Wayzata is committed to restoring the ecological diversity of Lake Minnetonka's shoreline. The history and popularity of the lake's waterfront—and increased access to it—is complex. Flourishing residential, business, and recreational communities along the lake have impacted water quality, plant life, and animal habitat. The very reason many people come to the lake from around the state and region (to enjoy its natural beauty and recreational opportunities often experienced via watercraft) is the root cause of its shoreline degradation. Extensive watercraft usage and the resulting wave action has noticeably impacted the existing shoreline. Native plant communities are particularly susceptible to wake-action and have seen a marked decrease in their overall plant coverage, often replaced by invasive plant species. With loss of native plant communities and climate change, the lake faces an unprecedented threat to the overall health of its lakeshore. It is imperative to keep the lake healthy and heal the damage. Native vegetation will help aquatic animals and pollinators thrive and serve as the base of the food chain for many other lake-based species. This project will help restore, protect and enhance Wayzata's Lake Minnetonka shoreline using an innovative offshore, underwater wave break.

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 Panoway initiative includes the restoration of 2,000 linear feet of waterfront that will greatly enhance this shoreline and shallow lake zone of Lake Minnetonka. The restoration effort will be supported by an innovative offshore wave break, utilizing low-impact, low-cost, readily available materials. The underwater wave break will significantly reduce wave energy from boats and high winds, allowing native aquatic vegetation to regenerate where it has grown previously but now struggles to persist. The wave break will also facilitate the establishment of more diverse native shoreline vegetation above the waterline.

The wave break is intended to remain in place until the native aquatic and shoreline species are fully established. Following establishment, the City of Wayzata will begin an experimental process that includes the removal of select segments of the wave break together with ongoing monitoring of the overall plant and ecosystem health to determine if complete removal is possible. While experimental, the potential of this low-cost and low impact solution could provide valuable insights into how to restore lakeshore marshes in an economical and highly attainable fashion elsewhere on Lake Minnetonka and in other lakes throughout Minnesota. We are seeking funding to help create the wave break for this

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 help protect and preserve Lake Minnetonka for all Minnesotans to enjoy for years to come. The project will restore native lakeshore marsh to part of the shoreline that now lacks such vegetation and habitat. It will create the opportunity to educate students, visitors and residents about lakeshore and littoral zone vegetation. It will soften and beautify a section of shoreline which has a huge number of visitors. And finally, it will provide important information regarding the design and construction of other lakeshore restoration projects, applicable elsewhere on Lake Minnetonka and in other lakes throughout Minnesota.

Activities and Milestones

Activity 1: Wave Break Installation

Activity Budget: $52,800

Activity Description:
Field observations along the shoreline in Wayzata indicate few floating-leaved aquatic plants remaining in an area that was once occupied by significant native marsh vegetation. Wave energy (from wind "fetch" across the lake and boat wakes) creates a volatile environment where few plants can root and persist prohibiting establishment of vegetation along lakeshores. To address wave energy, lake edge restorations often use wave breaks. The underwater wave break designed for this project will be constructed using concrete "Jersey Barriers," which are conventionally used as road edge barricades. Using a barge and/or land-based equipment, these barriers will be set in the lake bottom parallel to the shoreline. They will create a sheltered aquatic zone on the landward side where native plants will be installed (to compete with invasive aquatic plants in the area, such as Eurasian watermilfoil and curly-leaf pondweed—which will be removed before the native planting). An experimental aspect of the wave breaks will entail removing a section(s) after native vegetation establishment to confirm the vegetation can persist without the break; if so, all barriers will be removed. Monitoring the effectiveness of these wave breaks will provide important information applicable to lake-edge marsh restorations throughout Minnesota.

Activity Milestones:

Description	Completion Date
Installation of wave break	April 30, 2024
Assessment of effectiveness in reducing wave action	August 31, 2024

Activity 2: Installation of local-genetic, native plants (floating-leaved aquatic, submergent and emergent) for improved shoreline stability, habitat preservation and natural beauty.

Activity Budget: $70,400

Activity Description:
The lakeshore at the mouth of Gleason Creek originally supported native marsh vegetation in the shallows. Today, the lakeshore is dominated by invasive Eurasian watermilfoil and contains little native floating-leaved, submergent and emergent vegetation. The thick mats of invasive milfoil foul boat propellers and smother native vegetation, resulting in poor habitat for native fish and other aquatic species. Native aquatic plants (e.g., live tubers, rhizomes and "plugs") will be installed in the lake bottom behind the wave breaks. Aquatic plants will include native species such as white waterlily (Nymphaea odorata), large-leaved pondweed (Potamogeton amplifolius), floating pondweed (Potamogeton natans), coontail (Ceratophyllum demersum), wild celery (Vallisneria americana) and hard-stem bulrush (Schoenoplectus acutus). These plantings will be secured using metal landscape staples or similar anchors. The native plantings will establish aquatic habitat in this portion of Lake Minnetonka, benefiting aquatic wildlife (e.g., waterfowl, fish and aquatic macroinvertebrates), enhancing the lake's natural beauty and providing opportunities for outdoor engagement and education associated with the Eco Park.

Activity Milestones:

Description	Completion Date
Installation of native aquatic vegetation	June 30, 2025
Assessment of planting survival	August 31, 2025

Activity 3: Conduct grading in select areas and install diverse native vegetation to create a beautiful, stable, multifunctional shoreline.

Activity Budget: $76,800

Activity Description:

The shoreline is currently dominated by riprap and volunteer/weedy vegetation, providing poor aesthetics and very limited ecological functions. The proposed restored shoreline habitats will consist of native trees, shrubs, grasses, sedges, and wildflowers—a more attractive landscape for people and important habitat for birds, pollinators, and other native wildlife. In select areas, minor grading will be conducted to provide a more accessible space for people to enjoy the lakeside park. Natural bioengineering and/or other erosion control techniques will be used to ensure long-term stability of the shoreline slopes. The native shoreline vegetation will blend seamlessly with the adjacent aquatic habitat restoration, creating a robust and functional mosaic of aquatic and riparian habitats, which will be used by numerous fish and wildlife species.

Activity Milestones:

Description	Completion Date
Completion of selective grading and slope stabilization	May 31, 2024
Installation of native shoreline vegetation	July 31, 2024
Assessment of planting survival	August 31, 2025

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Scott Jordan	Civitas Inc.	Scott is the principal in-charge and design lead for the Panoway project.	No
Doug Mensing	Resource Environmental Solutions (RES, formerly Applied Ecological Services)	Doug is the ecologist and is leading all permitting efforts on behalf of the Panoway project.	Yes
John Hink	Solution Blue	John is the civil engineer responsible for site utilities and stormwater design.	No
Paul Bakke	ERA Structural Engineers	Paul is the lead structural engineer, responsible for the design of the boardwalk structural members.	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?

The Panoway project is a partnership that includes the City of Wayzata, many regional and state funding partners and private individual and institutional donors as well as The Wayzata Conservancy, whose mission includes restoring, enhancing and protecting Wayzata's lakefront and creating a clean, connected, and welcoming community space. More than $7.4 million has been committed to the overall Panoway project to date. The remaining funds for the overall project (and the underwater wave break component of the project) and any future work will be funded through public and private commitments.

Project Manager and Organization Qualifications

Project Manager Name: Nick Kieser

Job Title: Parks Planner

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

Nick Kieser, AICP, will manage the overall project on behalf of the City of Wayzata. Nick has worked for the City for more than three years. He has been involved with the Panoway project throughout. He has served as the staff liaison with the City's Heritage Preservation Board, Parks and Trails Board, Energy and Environment Committee, and the Panoway District Committee which all perform various roles with this project. Nick received a Bachelor of Arts in Geography and Environmental Studies from Gustavus Adolphus College and a Master of Urban and Regional Planning from the University of Minnesota. He has completed the American Institute of Certified Planners certification. Previous to his work with the City of Wayzata he worked in the Planning Department at the City of Medina and worked with the Colorado DNR at the State Forest State Park and in the Walden, CO community. He will serve as the main contact for this grant but will utilize the expertise of many stakeholder groups to complete this project.

Doug Mensing, MS, is a Senior Ecologist with Resource Environmental Solutions (RES, formerly Applied Ecological Services) and will manage the details and logistics of this part of the overall Panoway project. He has over 30 years of experience in the professional ecological and environmental fields, and he has worked for RES since starting its Minnesota office in 2000. As a consulting ecologist, he manages and provides technical support for a broad range of conservation and ecological projects. His wide-ranging applied ecological expertise includes natural resource inventory and assessment; restoration and management planning; greenway corridor design; conservation design and development; naturalized stormwater management; wetland mapping, delineation, assessment, restoration, and

permitting; and bioengineered lakeshore and streambank restoration. Doug's master's research focused on assessment of Minnesota wetlands, including littoral (shallow) wetlands along lakeshores.

Organization: City of Wayzata

Organization Description:
The City of Wayzata started the Panoway on Wayzata Bay project in 2011 by creating a task force to develop a community vision for the area. The City has worked since then to implement this vision and has successfully completed Phase 1 of the project. The City is currently working with the community, stakeholders and consultants to complete Phase 2, including this imbedded shoreline restoration project. The City will continue to manage the entire project from engagement, design, construction and operations/maintenance of the project.

As the nation's largest ecological restoration company, RES supports the public and private sector with solutions for natural resources protection and management, environmental mitigation, stormwater and water quality, and climate and flooding resilience. RES has a unique operating model for delivering ecological uplift, based on science-led design, full delivery, long-term stewardship and guaranteed performance. RES designs, builds and sustains sites that preserve the environmental balance, lifting impaired ecosystems into restored health and ultimately, into self-sufficiency. It has helped clients successfully permit more than 3,900 projects, creating rich, high-functioning ecosystems as part of each permit. Clients include local and state governments, large mining operators, energy production companies, energy transmission companies and Fortune 500 companies.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Parks Planner		Manage overall project for the City of Wayzata and serve as main contact for this grant.			0%	2		$30,400
							Sub Total	**$30,400**
Contracts and Services								
Resource Environmental Solutions (RES)	Professional or Technical Service Contract	Will lead all permitting efforts on behalf of the project and will manage the details and logistics of the project.				2		$91,200
							Sub Total	**$91,200**
Equipment, Tools, and Supplies								
							Sub Total	**-**
Capital Expenditures								
		Underwater wave break constructed using concrete "Jersey Barriers"	The innovative offshore wave break will utilize low-impact, low-cost, readily available materials and will significantly reduce wave energy from boats and high winds, allowing native aquatic vegetation to regenerate where it has grown previously.					$78,400
							Sub Total	**$78,400**
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	**$200,000**

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				
			State Sub Total	**-**
Non-State				
Cash	Grants and gifts from other public and private institutions and individuals	The City and the Conservancy will raise the remaining funds for this project from additional public and private sources. Many prospects have already been identified.	Potential	$400,000
Cash	The Wayzata Conservancy	The Conservancy is considering support of this project if necessary.	Pending	$25,000
			Non State Sub Total	**$425,000**
			Funds Total	**$425,000**

Acquisition and Restoration

Parcel List

Name	County	Site Significance	Activity	Acres	Miles	Estimated Cost	Type of Landowner	Easement or Title Holder	Status of Work
				-	-	-			
Totals				**0**	**0**	**-**			

Restoration

1. Provide a statement confirming that all restoration activities completed with these funds will occur on land permanently protected by a conservation easement or public ownership.

The properties that are associated with the shoreline restoration are both owned by the City of Wayzata. The property ID numbers of these properties are 06-117-22-31-0001 and 06-117-22-42-0032.

2. Summarize the components and expected outcomes of restoration and management plans for the parcels to be restored by your organization, how these plans are kept on file by your organization, and overall strategies for long-term plan implementation.

The proposed ecological restoration and management plans for the Panoway project will include graphic seeding and planting plans and detailed written specifications prescribing all of the steps required for successful removal of invasive aquatic and terrestrial vegetation as well as the establishment of native aquatic (floating-leaved, submergent, and emergent) and shoreline (trees, shrubs, sedges, rushes, grasses and forbs) vegetation. The restored and enhanced areas will contain a diversity of native plant species and habitats characteristic of natural lakeshores of Lake Minnetonka, which will beautify the lakeshore and support a wide variety of native wildlife species (e.g., fish, aquatic macroinvertebrates, birds, pollinators, etc.). Invasive plant removals and native vegetation installation will be accompanied by a short-term management contract, such that the original installer is responsible for meeting project-specific performance standards for the work over the first three years of the project. This contract will ensure successful establishment of the restoration and management plantings, which will then be managed perpetually under a long-term management regime.

Implementation of the findings, results and products developed will be created after the underwater wave break remains in place until native aquatic and shoreline species are established. The City will then begin an experimental process to remove segments of the break and to monitor the overall plant and ecosystem health to determine if complete removal is possible. While experimental, the potential of this innovative low-cost solution could provide valuable insights into how to restore lakeshore marshes elsewhere on Lake Minnetonka and throughout Minnesota. Digital and hard-copy restoration and management plans for establishment, short-term management and long-term management will be retained by the City, which will also fund and ensure their successful execution. This process is a standard approach to restoration and management projects and ensures that initial investments and short-term achievements are protected and sustained to achieve long-term conservation goals.

3. Describe how restoration efforts will utilize and follow the Board of Soil and Water Resources "Native Vegetation Establishment and Enhancement Guidelines" in order to ensure ecological integrity and pollinator enhancement.

RES (the project ecologist) is very familiar with BWSR's "Native Vegetation Establishment and Enhancement Guidelines." RES, as a firm, and its experienced staff, working on the Panoway project, have decades of experience designing and successfully implementing similar ecological restoration and management plans, including lakeshore restorations, establishing pollinator habitat and providing long-term management. Its proven practices and methods are in alignment with BWSR's recommendations and RES has been retained by BWSR to construct and/or manage multiple ecological projects over many years. Ecological integrity and long-term success are foundational to RES' approach to its projects.

4. Describe how the long-term maintenance and management needs of the parcel being restored with these funds will be met and financed into the future.

The funding requirement for the entire Panoway project includes the cost of 10 years of operations and maintenance which includes the shoreline restoration. Once the project is complete, the City and the Wayzata Conservancy will continue to monitor the project to determine what specific costs will be needed each year for maintenance and what, if any, capital costs are needed to fund. During that 10-year financed period, funding options will be explored to ensure that the operations and maintenance of the entire project is continuously met.

5. Describe how consideration will be given to contracting with Conservation Corps of Minnesota for any restoration activities.

The City will explore the option to contract with the Conservation Corps of Minnesota with our design team for the shoreline restoration work. If the Conservation Corps are able to perform the work required for the restoration, then the City would certainly discuss a future contract.

6. Provide a statement indicating that evaluations will be completed on parcels where activities were implemented both 1) initially after activity completion and 2) three years later as a follow-up. Evaluations should analyze improvements to the parcel and whether goals have been met, identify any problems with the implementation, and identify any findings that can be used to improve implementation of future restoration efforts at the site or elsewhere.

Monitoring of ecological restoration and management projects is essential to ensure long-term success. Monitoring will be conducted at critical project milestones during site preparation, installation, short-term management, and long-term management. Critical monitoring elements include: a) Ensure invasive vegetation has been removed per the plans and specifications, b) Ensure soil is prepared before installing native seed and plants, c) Oversee/inspect seeding and planting operations, d) Document seed germination in terms of species present and cover of vegetation, e) Ensure survivorship of live plantings (e.g., trees, shrubs, potted plants, plugs), and f) ensure all performance standards (percent cover by native vegetation, survivorship, etc.) are met at multiple stages of establishment. Monitoring will be conducted multiple times a year for the first three years, with incremental performance standards evaluated several times before final inspection (at the end of the short-term management period). Overall performance will be documented during each monitoring inspection, and any issues or concerns identified will be reported promptly to the City and installer, after which remedial actions will be defined and executed in a timely fashion (as approved by the City). The contract's performance standards and associated installer warranty will protect the project and the City from poor execution or other shortcomings or failures. The results of the Panoway lakeshore restoration, especially as they relate to the innovative wave break application, will be conveyed to BWSR for their use in "What's Working for Conservation" (http://bwsr.state.mn.us/whats-working-conservation) and/or other knowledge-sharing platforms.

Attachments

Required Attachments

Map

File: 675de624-35b.pdf

Alternate Text for Map

11x17 graphic plan that includes renderings, and a technical detail for the wave break....

Board Resolution or Letter

Title	File
City of Wayzata Council Resolution	804e9601-eaa.pdf

Optional Attachments

Support Letter or Other

Title	File
Wayzata Conservancy Letter of Support	f5598940-5c1.docx
Panoway Public Private Partnership Agreement	94e88cd5-7e5.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

Yes: Restoration,

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

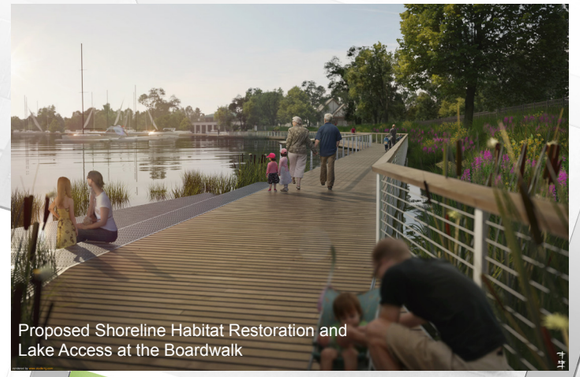
Does your project include original, hypothesis-driven research?

Yes

Does the organization have a fiscal agent for this project?

No

Proposed Wave Break and Shoreline Habitat Restoration at Depot Park



Proposed Shoreline Habitat Restoration and Lake Access at the Boardwalk

Proposed Wave Break, Shoreline and Aquatic Habitat Restoration at Eco Park

Proposed Wave Break, Shoreline and Aquatic Habitat Restoration viewed from the Restored Section Foreman House at the Eco Park

Shoreline Habitat Restoration

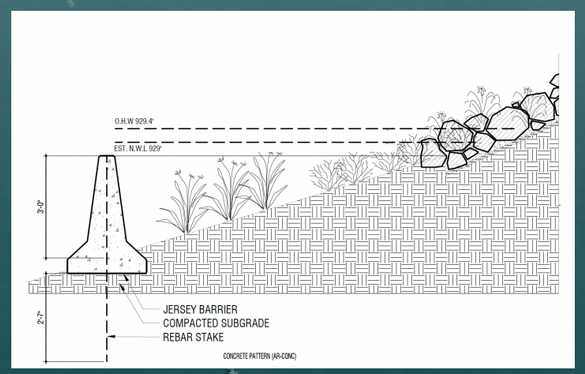
Aquatic Habitat Restoration

Shoreline Habitat Restoration

Aquatic Habitat Restoration

Grading and Shoreline Habitat Restoration

Aquatic Habitat Restoration



Proposed Cross-Section of Underwater Wave Break

Approximate Limits of Underwater Wave Break