



Environment and Natural Resources Trust Fund

M.L. 2023 Approved Work Plan

General Information

ID Number: 2023-080

Staff Lead: Corrie Layfield

Date this document submitted to LCCMR: June 16, 2023

Project Title: Panoway on Wayzata Bay Shoreline Restoration Project

Project Budget: \$200,000

Project Manager Information

Name: Nick Kieser

Organization: City of Wayzata

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Project Reporting

Date Work Plan Approved by LCCMR: June 22, 2023

Reporting Schedule: April 1 / October 1 of each year.

Project Completion: August 31, 2026

Final Report Due Date: October 15, 2026

Legal Information

Legal Citation: M.L. 2023, Chp. 60, Art. 2, Sec. 2, Subd. 08f

Appropriation Language: \$200,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with the city of Wayzata to restore native lake bottom and shoreline vegetation to improve shoreline stability, wildlife habitat, and the natural beauty of Lake Minnetonka's Wayzata Bay. The recipient must report to the Legislative-Citizen Commission on Minnesota Resources on the effectiveness of any new methods tested while conducting the project and may use a portion of the appropriation to prepare that report.

Appropriation End Date: June 30, 2026

Narrative

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.

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. 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, restorative grading, and aquatic habitat restoration.

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 along with restorative grading and aquatic habitat restoration. 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.

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.

Project Location

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

City(s): Wayzata

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

Region(s): Metro

When will the work impact occur?

During the Project and In the Future

Activities and Milestones

Activity 1: Wave Break Installation

Activity Budget: \$180,000

Activity Description:

Field observations along the shoreline in Wayzata indicate few floating-leaved aquatic plants remaining that were 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. The underwater wave break designed for this project will be constructed using concrete “Jersey Barriers,” which are conventionally used as road edge barricades. 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 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. The total cost of this activity is \$60,000 for materials and \$100,000 for installation. ~\$20,000 is for RES installation assistance. See Activity 3 for the assessment schedule. This activity will require permits from the Army Corps of Engineers, MPCA, MCWD and the project team will include copies of permits in updates.

Activity Milestones:

Description	Approximate Completion Date
Bid the Project	January 31, 2024
Permitting Process	March 31, 2024
Installation of wave break	April 30, 2024
Site Preparation	April 30, 2024
Assessment of effectiveness in reducing wave action	August 31, 2024

Activity 2: Installation of local-genetic, native plants and conduct grading in select areas for improved shoreline stability, habitat preservation and natural beauty.

Activity Budget: \$1

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*) and large-leaved pondweed (*Potamogeton amplifolius*). Prior to planting, 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. 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. The total cost of this activity

Activity Milestones:

Description	Approximate Completion Date
Invasive Eradication	May 31, 2024
Completion of Selective Grading and Slope Stabilization	May 31, 2024
Installation of native aquatic vegetation	June 30, 2024
Installation of Native Shoreline Vegetation	July 31, 2024

Activity 3: Monitoring of the native plant field establishment, grading changes, and wave break system

Activity Budget: \$19,999

Activity Description:

Monitoring will be conducted at critical project milestones during site preparation, installation, short-term management, and long-term management. Critical monitoring elements include: Document seed germination in terms of species present and cover of vegetation, ensure survivorship of live plantings (e.g., trees, shrubs, potted plants, plugs), and 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). Besides plantings, the wave break monitoring includes quarterly assessments for stability and functionality. Observations will be reported via a field report that outlines conditions, concerns, and any recommended remedial actions required. Finally, wave break experimentation and impacts on established plant communities will be monitored following all experimental removal of wave breaks through monthly field visits during growing seasons.

Activity Milestones:

Description	Approximate Completion Date
Plant Establishment Field Observation - Year 1 (8 Reports)	June 30, 2025
Plant Establishment Field Observation Years 2-3 (8 Reports) - May 2027	May 31, 2026
3 Years of Wave Break Monitoring - May 2027	May 31, 2026
Wave Break Experimentation and Impacts on Established Plant Communities - May 2027	May 31, 2026
Experimental removal of wave break sections, monitoring of impacts	May 31, 2026
report to the Legislative-Citizen Commission on Minnesota Resources on the effectiveness of any new methods	May 31, 2026

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

Dissemination

Describe your plans for dissemination, presentation, documentation, or sharing of data, results, samples, physical collections, and other products and how they will follow ENRTF Acknowledgement Requirements and Guidelines.

We intend to write a summary of the project design and effects and submit that for publication where professionals involved in aquatic vegetation management would encounter it. A “Notes” or “Communications” section in journals such as Natural Areas Journal or Restoration Ecology would be suitable venues for this summary.

The City of Wayzata will acknowledge ENRTF on all press releases, media interactions, signs, publications, event advertisements, websites, newsletters, printed materials, presentations, and social media related to this project.

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.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
							Sub Total	-
Contracts and Services								
Resource Environmental Solutions (RES)	Professional or Technical Service Contract	A RES member is contracted to be responsible for leading permitting efforts, monitoring and managing the native plant installation along with the wave break system, and creating monitoring reports as noted. RES will dedicate a staff member to one day a week for two years with less time during winter.				0.4		\$40,000
TBD	Professional or Technical Service Contract	Underwater wave break constructed using concrete "Jersey Barriers". The offshore wave break will utilize low-impact, low-cost, readily available materials and will reduce wave energy from boats and winds, allowing native vegetation to regenerate where it has grown previously. \$60,000 for capital costs and \$100,000 for installation.				1.2		\$160,000
							Sub Total	\$200,000
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	\$200,000

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				
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
Cash	Wayzata Conservancy and other potential grant opportunities	Installation of local-genetic, native plants (floating-leaved aquatic, submergent and emergent) for improved shoreline stability, habitat preservation and natural beauty.	Potential	\$70,400
Cash	Wayzata Conservancy and other potential grant opportunities	Conduct grading in select areas and install diverse native vegetation to create a beautiful, stable, multifunctional shoreline.	Potential	\$76,800
Cash	Wayzata Conservancy or other potential grant opportunities	Fund the remaining amount for the professional services of RES if needed.	Potential	\$51,200
			Non State Sub Total	\$623,400
			Funds Total	\$623,400

Acquisition and Restoration

Parcel List

Name	County	Site Significance	Activity	Acres	Miles	Estimated Cost	Type of Landowner	Easement or Title Holder	Status of Work
Parcel 1	Hennepin	Area where the wave break technology and wetland/marsh restoration will take place.	Restoration	0.84	0.1	-	Public		Has Not Begun
Parcel 2	Hennepin	Site of shoreline restoration.	Restoration	2.17	0.25	-	Public		Has Not Begun
Totals				3.01	0.35	-			

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: [5590a230-0e5.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-eea.pdf

Optional Attachments

Support Letter, Photos, Media, Other

Title	File
Wayzata Conservancy Letter of Support	f5598940-5c1.docx
Panoway Public Private Partnership Agreement	94e88cd5-7e5.pdf
Background Check Form	9a649392-f1e.pdf
2023 LCCMR Methods Review_ Updated 1-17-22	b3ec3425-e1a.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

N/A

Additional Acknowledgements and Conditions:

The following are acknowledgements and conditions beyond those already included in the above workplan:

Do you understand and acknowledge the ENRTF repayment requirements if the use of capital equipment changes?

N/A

Do you agree travel expenses must 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, 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