



Environment and Natural Resources Trust Fund

M.L. 2020 Approved Work Plan

General Information

ID Number: 2020-048

Staff Lead: Michael Varien

Date this document submitted to LCCMR: August 19, 2021

Project Title: Peatland Restoration in the Lost River State Forest

Project Budget: \$135,000

Project Manager Information

Name: Torin McCormack

Organization: Roseau River Watershed District

Office Telephone: (218) 463-0313

Email: rrwd@mncable.net

Web Address: <http://www.roseauriverwd.com/>

Project Reporting

Date Work Plan Approved by LCCMR: August 20, 2021

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

Project Completion: June 30, 2024

Final Report Due Date: August 14, 2024

Legal Information

Legal Citation: M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 08h

Appropriation Language: \$135,000 the second year is from the trust fund to the commissioner of natural resources for an agreement with the Roseau River Watershed District to collect physical attribute data from drained peatlands, incorporate the data into a decision matrix, and generate a report detailing peatland restoration potential throughout the Lost River State Forest.

Appropriation End Date: June 30, 2024

Narrative

Project Summary: The project will collect physical attributes from the Lost River State Forest and generate model and report detailing comprehensive hydrologic restoration strategies for future restorative efforts.

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

The problem this proposal seeks to address is; establishing a repeatable methodology to assess and prescribe restorative measures on large partially drained peatlands. Drained or partially drained peatlands comprise many of the headwater regions to large watersheds in northern Minnesota. Restoring hydrology to peatlands have benefits to water quality downstream, peak flow reduction, protection/preservation/enhancement of unique habitat and allow for carbon sequestration. Restoration, while beneficial in many aspects can have impact on adjoining land uses or ownership. This conflict can be a deterrent to establishing a project, or transitioning a project from design phase to construction. This proposal will assess the physical potential of restoring peatlands and compare the data collected in the field with GIS datasets of land use, ownership and LiDAR to determine potential conflicts. Restoration, preservation and enhancement of peatlands has been achieved by the state, individuals and private consultants, however these efforts vary in project scope, land use composition and methodology to achieve the intended goal. Establishing a repeatable methodology for restoring large tracts of peatlands would provide a roadmap for additional restoration of drained peatlands within the State of Minnesota with the intent of accelerating efforts to restore peatlands.

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.

The project will collect physical characteristics of the drained corridors of the peatland at every 1' interval of elevation along the jurisdictional ditch within the project footprint. The elevation, peat humification and vegetation data collected will be converted into GIS files and compared with existing land use, landownership and LiDAR datasets. All GIS data will be incorporated into the decision matrix, a model which will evaluate the potential degree of physical restoration of hydrology and contrast that with potential impacts on land use within the forest or inundation on private lands. The decision matrix will also provide a suite of restorative measures applicable to any individual site on a 1' contour interval. The output of the decision matrix, maps of the project, supporting data collected, literature review and detail of methodology will be compiled in a final report. The report will serve as a roadmap to acquire funding for restoration, provide a baseline of conditions prior to any restoration and serve as a template for assessing restoration of other peatlands 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?

The outcome of this project is a document detailing prescriptive restoration strategies within the Lost River State Forest peatlands. The restoration of hydrology and vegetation of these wetland complexes will provide numerous ecological and water quality benefits both within and downstream of the Lost River State Forest. A result of the project will develop a methodology that can be replicated on similar watershed scale wetland restoration projects throughout northern Minnesota and a "road map" for watershed scale restorations that provide sustainable strategies to improve water quality, ecological integrity and resiliency to climatic change.

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?

Region(s): NW

When will the work impact occur?

In the Future

Activities and Milestones

Activity 1: Existing Data Review and Data Collection Selection

Activity Budget: \$4,604

Activity Description:

Review of all available existing historic data that includes aerial photos, geotechnical, county soil survey, NWI and geologic data. Complete pre-selection of data cross sections to create efficiency during field assessments. Licensed Minnesota professional soil scientist in cooperation with Watershed Specialist will review all available historic data. GIS specialist in cooperation with Watershed Specialist will determine cross section locations prior to field assessments.

Activity Milestones:

Description	Completion Date
Data Review Completion, Selection of Data Collection Transects	October 31, 2021

Activity 2: Collect peat humification data and elevation data

Activity Budget: \$94,375

Activity Description:

Peat samples and elevation data will be collected at each cross section, located at each 1- foot interval drop in elevation across the ditch laterals. The peat samples will be located 10 meters and 100 meters from the edge of ditch or edge of spoil/roadway. MN Professional Soil Scientist/Classifier will determine humification using VonPost method. Elevation data will be collected 100 meters on either side of the ditch by Watershed specialist. Watershed Specialist will collect peat sample locations and cross section data of roadways or spoil bank, where present.

Activity Milestones:

Description	Completion Date
Field Data Collection - Phase 1	October 31, 2021
Field Data Collection - Phase 2	October 31, 2022

Activity 3: Input data into Decision Matrix, generate report

Activity Budget: \$36,021

Activity Description:

Data collected from the field will be converted to a shapefile format, the elevation and soil data will be combined with existing GIS datasets to create a decision matrix. The results of the decision matrix will be compared to potential constraints of adjacent properties and infrastructure landscape position. A final report will be generated, detailing the process, data results and restoration strategy best suited to the health of wetlands and water quality benefits.

Activity Milestones:

Description	Completion Date
Summary of Phase 1 Field Data	December 31, 2021
Summary of Phase 2 Field Data	December 31, 2022
Decision Matrix for Phase 1 and 2	June 30, 2023
Final Project Report	June 30, 2023

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Minnesota Department of Natural Resources Warroad Forestry Office	Department of Natural Resources	The Warroad Forestry office is the local land manager for the project footprint. The Forestry office has provided data and input in regards to timber resources and issues related to water to the project manager. This partner will have an active role in providing input throughout the project.	No
Roseau County Board of Commissioners	Roseau County	The Legal Ditch system is administered by the County of Roseau. The outcomes of the project will be reviewed by the Board of Commissioners, who will then determine the proper steps forward through MN 103E.	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.

The report, methodology, and documentation of data collection will be available on the Roseau River Watershed District website : <http://www.roseauriverwd.com/index.html>. The project will be listed in the projects tab of the website, reference to the project will be share on social media via facebook and Instagram. The watershed district will distribute the report to local government and agency partners.

The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the ENRTF Acknowledgement Guidelines.

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?

Additional funding requests will be required for engineering and construction of peatland restoration in the Lost River State Forest. The prescriptive strategies outlined in the final report will be utilized in seeking future funding from local, regional, state and federal sources to implement phased restoration within the project footprint. The report will serve as a roadmap, providing sufficient data to applicable best management practices to address ongoing peatland degradation and the subsequent impacts it has on water quality, water quantity and climate change.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Watershed Specialist		Data Collection			0%	0.22		\$35,966
Administrator		Project Coordination, Report Writing			0%	0.06		\$8,000
							Sub Total	\$43,966
Contracts and Services								
TBD	Professional or Technical Service Contract	Soil Scientist, provide descriptions of peat humification. Contribute applicable information to final report. GIS Specialist, Generate Decision Matrix and map products for the report. Environmental Technician, report writing and data review. Water Resources Engineer, Hydraulic Analysis.				0.26		\$72,080
							Sub Total	\$72,080
Equipment, Tools, and Supplies								
	Equipment	Survey equipment rental	Survey equipment required to collect elevation data					\$9,000
	Equipment	All terrain vehicle rental	Vehicle required to access remote sites within the project					\$7,854
	Tools and Supplies	Purchase Peat Sampling Probe	Specialty equipment required for collecting peat and muck soils					\$2,100
							Sub Total	\$18,954
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	\$135,000

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				
			Non State Sub Total	-
			Funds Total	-

Attachments

Required Attachments

Visual Component

File: [355ee864-b34.pdf](#)

Alternate Text for Visual Component

Project location within the State of Minnesota, with inset LiDAR graphic of Roseau County and project limits shown within...

Board Resolution or Letter

Title	File
Roseau River Watershed Board Resolution	d030068b-c8a.pdf

Optional Attachments

Support Letter or Other

Title	File
Roseau County Board, Letter of Support	63087b68-452.pdf
MNDNR, Letter of Support	7dad851e-113.pdf
Background Check Certification Form	a6abed86-b02.pdf

Difference between Proposal and Work Plan

Describe changes from Proposal to Work Plan Stage

Unchecked restoration box, clarified equipment rental and purchase descriptions in the budget

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?

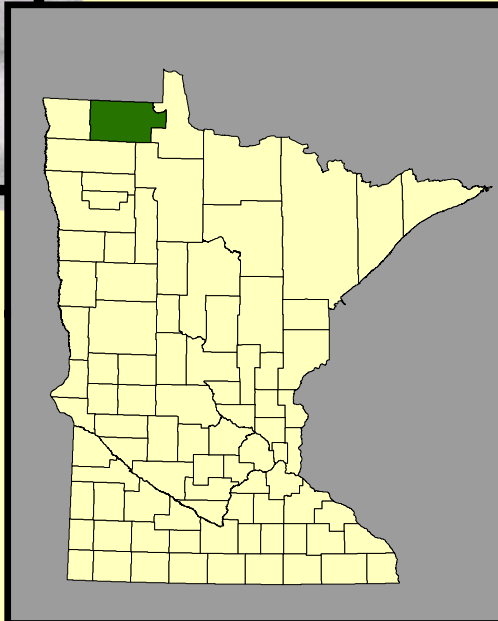
No

Does the organization have a fiscal agent for this project?

No

Lost River State Forest

Roseau County



**Lost River State Forest
Peatland Restoration**



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Date: 12/3/2020
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