Environment and Natural Resources Trust Fund
2019 Request for Proposals (RFP)

Project Title: **ENRTF ID: 229-F**

Restoration of Norway Brook Connectivity to the Pine River by Removal of Norway Lake Dam.

Category: F. Methods to Protect, Restore, and Enhance Land, Water, and Habitat

Sub-Category:

Total Project Budget: $ 2,200,000

Proposed Project Time Period for the Funding Requested: June 30, 2021 (2 yrs)

Summary:

The project will restore and enhance habitat and fish passage and accessibility to the river by removing an existing dam and replacing it with a rock riffle pool structure.

Name: Bryan Drown

Sponsoring Organization: City of Pine River

Title: City Engineer

Department:

Address: P.O. Box 87

Pine River MN 56474

Telephone Number: (218) 821-5242

Email bryandr@bolton-menk.com

Web Address

Location

Region: Central

County Name: Cass

City / Township: Pine River

Alternate Text for Visual:

The attached map shows the project location on the Norway Brook and location of adjacent City Parks north and south of the existing dam under Trunk Highway 84.

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ TOTAL	_____%
____ If under $200,000, waive presentation?			

PROJECT TITLE: Restoration of Norway Brook connectivity to the Pine River by removal of Norway Lake Dam.

I. PROJECT STATEMENT

The City of Pine River will restore and enhance habitat to facilitate fish passage and better public accessibility to the river by removing the existing Norway Lake Dam and replacing it with a rock-riffle-pool structure. Removing the 13-ft. high concrete spillway/gate/roadway existing dam structure will reconnect the nearly 9 miles of the Pine River downstream to the Whitefish Chain of Lakes to the headwaters of the Pine River including over 7 miles of river upstream from Norway Lake to Lake Hattie, the next major lake upstream of Norway Lake. Upstream of Norway Lake over 10 significant lakes in the headwaters of the Pine River basin would be connected to the Whitefish Chain of Lakes. Reconnecting the river will reestablish fish and other aquatic organism passage presently cut off by the existing structure. Removing the dam and water control gates will remove the need for operation and will allow Norway Brook to rise and fall naturally.

II. PROJECT ACTIVITIES AND OUTCOMES

Removal and restoration of the existing dam/road structure will result in the following outcomes: (Data sources include: MPCA stream surveys 2012-14, Fishes of MN Mapper, MNDNR stream survey, MNDNR lake surveys).
Habitat:

- Restores ecological connection between Outstanding Lakes of Biological Significance for fish community
- Diverse stream habitat upstream and downstream of the dam would be reconnected. Riffle habitat will be constructed in 300-foot length of boulder-arch rapids.
- Common species that would benefit include: walleye, northern pike, largemouth bass, white sucker, shorthead redhorse, greater redhorse, hornyhead chub, and rock bass.
- The fish community in Norway Lake will likely be enhanced with an increase in walleye and other species abundance possible through upstream migration.
- Long-ear Sunfish, Northern Sunfish, Silver Redhorse, Sand Shiner and Black Sandshell (mussel) are present below the dam but have not been found upstream of the Pine River Dam.
- Upstream fish passage at the Pine River Dam will not pose a risk of invasive aquatic species range expansion. Dam modification will not increase habitat favorable to invasive species.

Hydrology:

- Water levels and streamflow upstream and downstream from the rock-riffle will fluctuate naturally in response to the seasonal runoff from the 150 square mile contributing watershed. The riffle will convey the full range of streamflows ranging from low flows through extreme floods.
- Public safety is enhanced due to the removal of the gate spillway and currents associated with the dam.
- Less city staff maintenance and liability exist with the rock-riffle construction.

Access:

- Creation of the rock riffle will improve the fishing and water access near two City Parks.
- The rock riffle will provide whitewater boating opportunities, and
- ADA handicap accessible fishing.

Activity 1:
ENRTF BUDGET: $2.2 Million

Outcome	Completion Date
1. Remove existing city owned Norway Lake Dam and construct rock riffle-pool fish passage replacement.	Nov. 1, 2021

III. PROJECT PARTNERS:

A. Partners receiving ENRTF funding

Name	Title	Affiliation	Role
City of Pine River			Owner
Brent Johnson P.E.	Consulting Engineer	Bolton and Menk, Inc.	Project Manager
Bryan Drown P.E.	Consulting Engineer	Bolton and Menk, Inc.	City Engineer

B. Partners NOT receiving ENRTF funding

Name	Title	Affiliation	Role
MN DNR	Fish and Wildlife	State	Biology/hydrology/design
MN DNR	Dam Safety	State	Decomission dam
MN DOT	Highway and Bridge	State	Bridge project/demolition

IV. LONG-TERM- IMPLEMENTATION AND FUNDING:

Upon project completion MNDOT is responsible for new bridge operation and maintenance and the City of Pine River is responsible for the function and maintenance of the rock-riffle pool structure. The City of Pine River maintains the public shore area and accessibility to the river.

V. TIME LINE REQUIREMENTS:

In 2020 MNDOT will construct a new Hwy 84 bridge over Norway Brook (North Fork of the Pine River) in the City of Pine River. Design engineering of the rock riffle will occur in 2020. Upon substantive completion and opening of the new bridge the existing road and bridge/dam structure will be removed and replaced by a rock riffle-pool structure and complete by November 1, 2021.

VI. SEE ADDITIONAL PROPOSAL COMPONENTS:

- **A. Proposal Budget Spreadsheet**
- **B. Project Fact Sheet**
- **C. Visual Component or Map**
- **D. Project Manager Qualifications and Organization Description**
- **E. Letter or Resolution**

2019 Proposal Budget Spreadsheet

Project Title: Norway Brook connectivity to the Pine River by removal of Norway Lake Dam

IV. TOTAL ENRTF REQUEST BUDGET 2-years (2020-2021)

BUDGET ITEM (See "Guidance on Allowable Expenses")	**AMOUNT**
Personnel:	$ -
Professional/Technical/Service Contracts: The City of Pine River has contracted with Bolton & Menk to provide design and construction engineering at an estimated cost of $200,000. Removal of the existing dam and construction of rock-riffle-pool fish passage is estimated to cost $2,000,000. The contractor will be selected through a public, competitive bid process.	$2,200,000
Equipment/Tools/Supplies:	
Acquisition (Fee Title or Permanent Easements):	$ -
Travel:	$ -
Additional Budget Items:	$ -
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 2,200,000

V. OTHER FUNDS *(This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)*

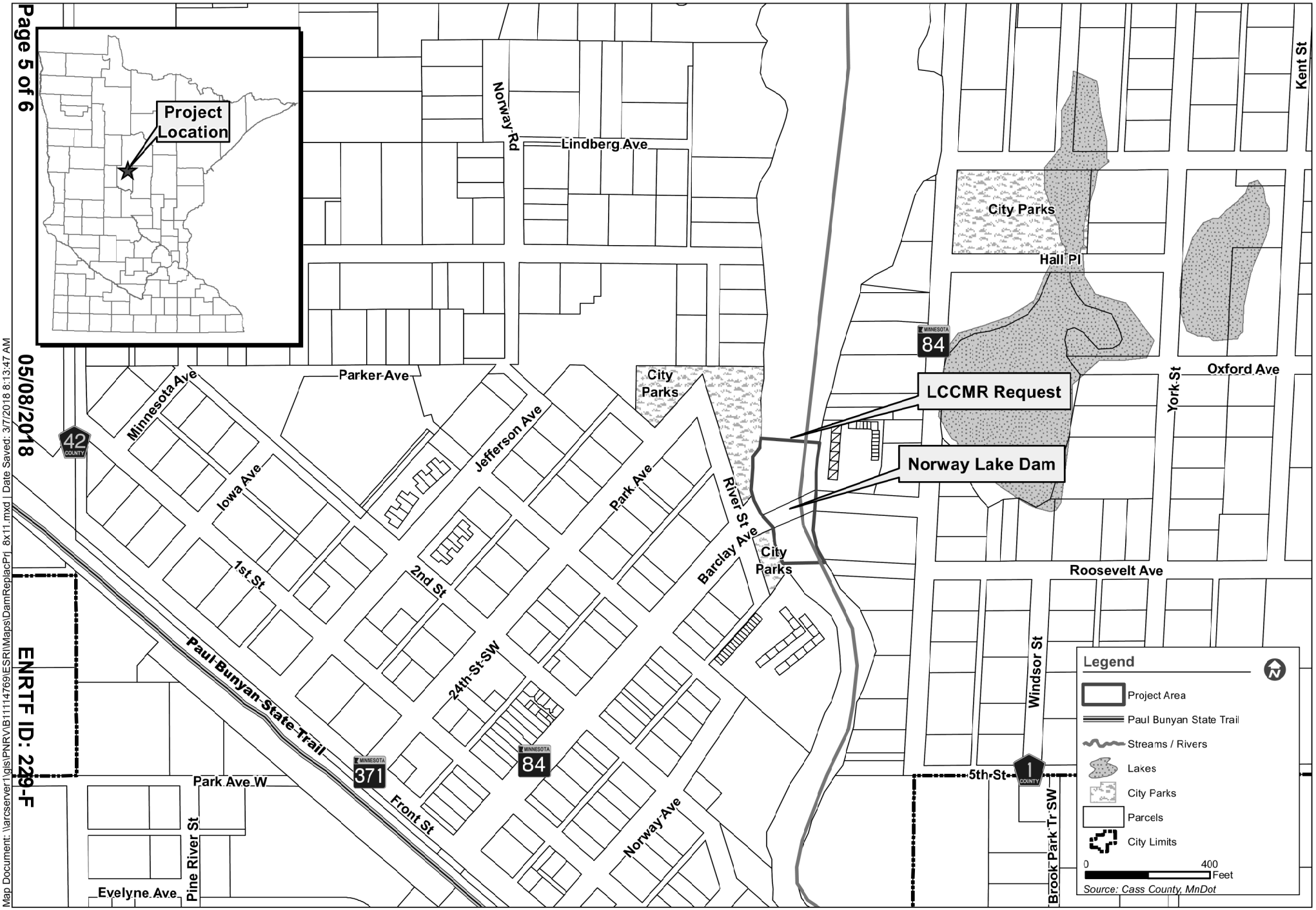
SOURCE OF FUNDS	**AMOUNT**	**Status**
Other Non-State $ To Be Applied To Project During Project Period:		
Other State $ To Be Applied To Project During Project Period: MDNR Dam Safety funds. 50% matching grant to fund engineering design and construction administration.	$ 200,000	*Secured*
Other State $ To Be Applied To Project During Project Period: MNDOT Removal of TH 84 Bridge	$ 35,000	*Pending*
In-kind Services To Be Applied To Project During Project Period:	$ -	
Past and Current ENRTF Appropriation:	$ -	
Other Funding History: Cass County Fund 73 (Feasibility Study)	$ 25,000	*Secured*

Norway Lake Dam Removal Project

City of Pine River

March 2018

BOLTON & MENK
Real People. Real Solutions.



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Brent Johnson, PE
Senior Water Resourses Engineer
Bolton & Menk, Inc.

Brent Johnson began his work with Bolton & Menk, Inc. in 2015. He has extensive experience in water resources engineering as both a consultant and a watershed district engineer. As Engineer and Project Manager he has provided engineering services for projects involving dams, bridges, floodplain mapping, erosion and sediment control, and lake and stream restorations. Brent's experience includes designing rock-riffles, vanes and bioengineered bank stabilizations. He has prepared numerous engineering studies, reports, plans and specifications, performed construction observation and presented reports at board meetings, public hearings and conferences.

Brent holds a B.S. in Ag Engineering from the University of Minnesota and a M.S. in Civil Engineering from North Dakota State University.

Bryan Drown, PE
Project Engineer
Bolton & Menk, Inc.

Bryan has been in the civil engineering industry since 1998. He is experienced in highway and street design, municipal utility design, site design, stormwater management, and residential and commercial development. His background includes managing municipal improvement projects, preparing preliminary and final construction documents, project specifications, and contract administration.

Bryan's career has been spent assisting small municipalities and has served as the Pine River City Engineer for the past six years. In that time Bryan has assisted Pine River with improvements related to water supply, water distribution, street and storm sewer, airport pavement and buildings, and residential development.

Bryan holds a B.S. in Civil Engineering from the University of North Dakota.