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

Project Title: **ENRTF ID: 228-F**

Using Economic Analysis to Repair the Sunrise River

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

Sub-Category:

Total Project Budget: $ 575,000

Proposed Project Time Period for the Funding Requested: June 30, 2023 (4 yrs)

Summary:

The Comfort Lake-Forest Lake Watershed District will perform diagnostic subwatershed monitoring of the impaired Sunrise River in southern Chisago County to identify, then implement, the most cost-effective pollutant reduction project(s).

Name: Mike Kinney

Sponsoring Organization: Comfort Lake-Forest Lake Watershed District

Title: District Administrator

Department:

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Location

Region: Metro

County Name: Chisago

City / Township: Wyoming

Alternate Text for Visual:

First figure is general location map of Sunrise River and Comfort Lake subwatershed. Second figure is aerial of a degraded reach of the Sunrise River located upstream of Comfort Lake.

_____ 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: Using Economic Analysis to Repair the Sunrise River

I. PROJECT STATEMENT: The Comfort Lake-Forest Lake Watershed District will perform diagnostic subwatershed monitoring of the impaired Sunrise River in southern Chisago County to identify, then implement, the most cost-effective pollutant reduction project(s).

Weighing the economics of water resource improvement projects is a key element in effective watershed management, and with limited funding available, maximizing project efficiency is crucial in order to meet state goals. Effectively targeting the highest pollutant loading sources is imperative, and is at the core of the Comfort Lake-Forest Lake Watershed District's (CLFLWD) adaptive management strategy. This strategy has proven effective further up in the Watershed District at Moody Lake in Chisago County. Using diagnostic monitoring, the CLFLWD identified projects along a single tributary to Moody Lake which will result in 80% of the watershed nutrient load reduction needed for Moody to reach the state phosphorus concentration standard of 40 μ/L. Overall project cost-effectiveness for bringing Moody Lake to the state standard is estimated at under $60 per pound of phosphorus removed, and project effectiveness monitoring results suggest the CLFLWD is on track to achieve these goals by end of 2018.

Further downstream in the watershed district, the CLFLWD proposes to use the same strategy to repair the degraded Sunrise River and nutrient impaired Comfort Lake which is part of the St. Croix River watershed. Phase 1 of the project will entail targeted diagnostic monitoring in order to identify the highest sources of phosphorus and total suspended solids (TSS) loading through the Sunrise River to Comfort Lake, thus identifying the most cost-effective projects. Past CLFLWD studies have identified four or more potential projects (each estimated to cost around $.5-1M) that could be implemented in this system. These range from streambank and wetland restorations to urban BMPs. Once the diagnostic monitoring and data analysis is complete, the top project(s) will move forward into the feasibility and implementation phase. Following implementation, project effectiveness monitoring will occur in order to quantify actual pollutant reductions and inform next steps in order to fully address the goal load reduction. Below is a summary of the proposed steps:

1. Diagnostic monitoring to identify highest loads and most effective project(s) (2019/2020)
2. Project selection, feasibility, and implementation – streambank restoration, wetland restoration, or urban BMPs (2021/2022)
3. Post-construction project effectiveness monitoring (2021/2022)
4. Additional project selection, feasibility, and implementation (as necessary)

While this process has proven to be effective in the Moody Lake subwatershed and is in use in other parts of the CLFLWD, including the Forest Lake and Little Comfort Lake subwatersheds, this strategy of truly targeted monitoring does not yet appear to be widespread across the state. In place of diagnostic monitoring, desktop analysis is oftentimes used for the same purpose, but with less accurate and quantifiable results. Considering the imminence of the One Watershed-One Plan program (and subsequent increased emphasis on inter-agency coordination and use of Prioritized, Targeted, and Measurable (PTM) goals) wide-spread adoption and utilization of this strategy is a must. The CLFLWD proposes to lead the way, while coordinating with statewide agencies such as PCA and BWSR, in developing a standard framework for PTM monitoring and implementation that can be used by other organizations. The ultimate goal is to better equip other organizations such as watershed districts, soil and water conservation districts, and watershed management organizations with tools to measurably achieve PTM goals.

A likely project in the Comfort Lake subwatershed will entail restoration of a heavily eroded reach of the Sunrise River located directly upstream of Comfort Lake. This would address phosphorus and total suspended solid reductions to Comfort Lake which outlets directly into a lower reach of the Sunrise River which runs through the Carlos Avery State Wildlife Management Area. Comfort Lake is an impaired public waterbody, has a public boat

landing and is used recreationally for swimming, fishing, and motorized and non-motorized boating. Comfort Lake is 219 acres, the second largest lake in the District, and is highly visible from State Highway 8. The project would restore a section of the Sunrise River which has been degraded over time by heavy streambank erosion. The main cause of the erosion is due to changes in land-use which has resulted in the unmanaged overgrowth of boxelder and other such canopy tree cover. This unmanaged growth has shaded the banks and reduced the ability for soil-stabilizing grasses and undergrowth to thrive. This project would result in improved water quality in the stream and in receiving waterbodies. The City of Wyoming owns drainage easements along the entire stretch of the heavily eroded streambank between 256th Street and Comfort Lake. The CLFLWD has begun discussions with the City to develop an agreement to allow the CLFLWD to use those easements for the restoration work.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: *Diagnostic Monitoring*
Description: Targeted monitoring of the Sunrise River and Comfort Lake subwatershed to identify major sources of nutrient pollution and prioritize cost-effective projects. This Activity will be carried out cooperatively by the District engineer, Emmons and Olivier Resources, and river restoration engineering firm, Inter-Fluve.
ENRTF GRANT BUDGET: $75,000

Outcome	Completion Date
Diagnostic monitoring results memo and prioritized list of projects	*December 2019 or 2020*

Activity 2: *Project Construction & Maintenance*
Description: On-the-ground implementation of project components as identified during the diagnostic monitoring phase of this project. The project may include streambank restoration, wetland restoration, or urban BMPs. This Activity will be carried out by a contractor awarded the construction project through a public bidding process.
ENRTF GRANT BUDGET: $500,000

Outcome	Completion Date
Project construction and creation of long-term operations and maintenance plan	*December 2021 or 2022*

III. PROJECT PARTNERS:

A. Partners receiving ENRTF funding - None

B. Partners NOT receiving ENRTF funding

Name	Title	Affiliation	Role
Robb Linwood	City Administrator	City of Wyoming	City of Wyoming holds easements along the Sunrise River

IV. LONG-TERM- IMPLEMENTATION AND FUNDING: The District will execute an agreement with the landowner (which may likely be the City of Wyoming) to ensure long-term maintenance and performance over the project lifespan. Ongoing maintenance will occur according to the project operations and maintenance plan, and be at least partially funded through the District's Operations and Maintenance program, which is funded annually through the District's ad valorem tax levy. Monitoring phases will be funded through the District's Monitoring & Data Acquisition program (which is also funded through the District's tax levy).

V. TIME LINE REQUIREMENTS: Project development tasks will commence immediately after grant execution, with diagnostic monitoring and engineering tasks following close behind. It is estimated that project construction may begin approximately one year after grant agreement execution.

2019 Proposal Budget Spreadsheet

Project Title: Using Economic Analysis to Repair the Sunrise River

IV. TOTAL ENRTF REQUEST BUDGET 4 years

BUDGET ITEM (See "Guidance on Allowable Expenses")	**AMOUNT**
Service Contracts: Construction contract for project. Potential projects may include streambank restoration, wetland restoration, and urban best management practices. (Contractor to be selected via bidding process, as required by statute)	$ 500,000
Professional/Technical/Service Contracts: Pre-project diagnostic monitoring (EOR and Inter-Fluve)	$ 75,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 575,000

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: Project technical feasibility and design, and post-construction effectiveness monitoring (EOR and Inter-Fluve)	$ 80,000	*CLFLWD 2019 levy*
Other State $ To Be Applied To Project During Project Period:	N/A	N/A
In-kind Services To Be Applied To Project During Project Period: District staff project management and oversight, and grant administration and reporting	$ 20,000	*CLFLWD 2019 levy*
Past and Current ENRTF Appropriation:	N/A	N/A
Other Funding History:	N/A	N/A

Project Area Map

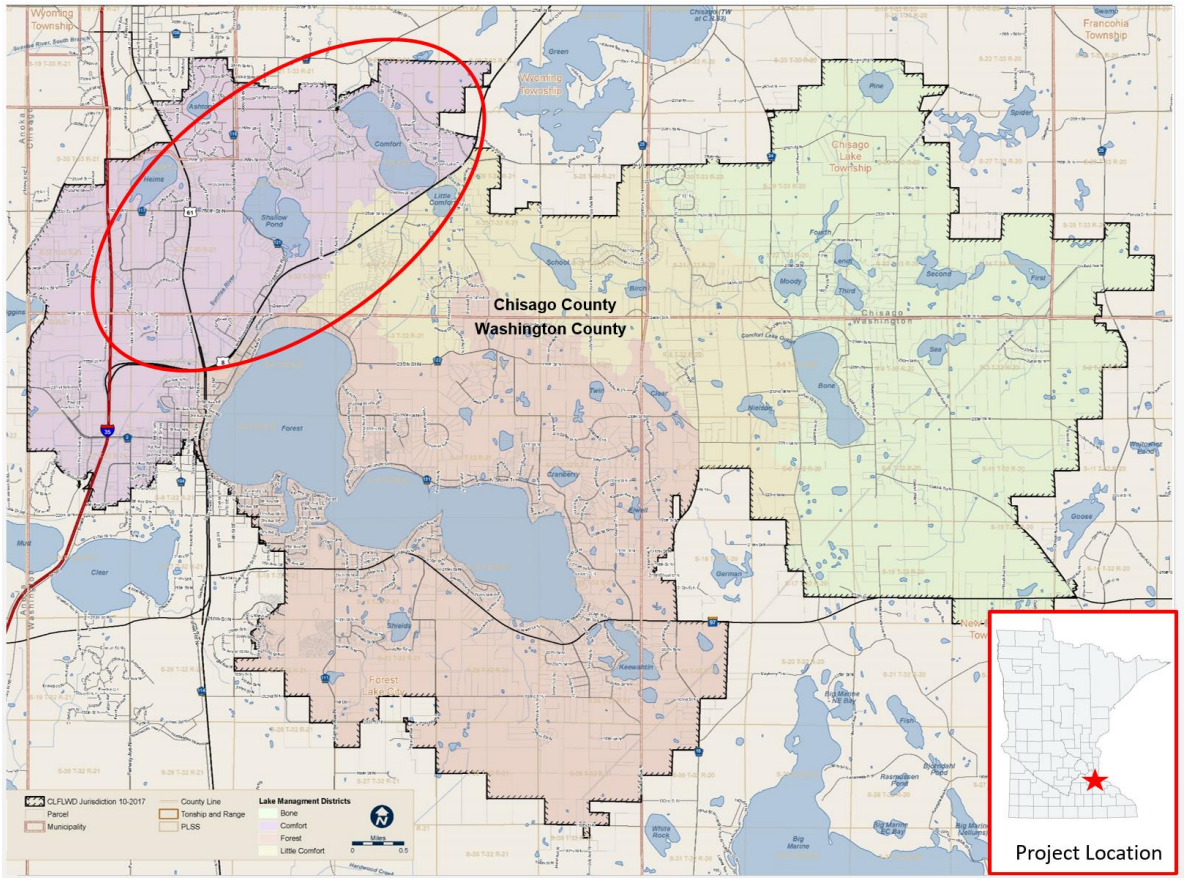

Figure 1. Project Location Map – Sunrise River/Comfort Lake subwatershed

Figure 2. Potential stream restoration project area

Project Manager Qualifications and Organization Description

The Comfort Lake-Forest Lake Watershed District is a local government organization that covers 49 square miles in northern Washington and southern Chisago counties. The District includes portions of the City of Wyoming, Chisago City, Chisago Lake Township, Franconia Township, the City of Forest Lake, and the City of Scandia. Like other watershed districts, our geographic boundaries are not determined by municipal boundaries, but instead by hydrologic boundaries. Our mission is protect and improve water resources through adaptive management approaches and education of local stakeholders.

The CLFLWD is governed by an appointed, five-member Board of Managers. Managers are appointed by the counties within which the Watershed District is located. Because the Comfort Lake - Forest Lake Watershed District is located within Chisago and Washington counties, the make-up of the Board of Managers reflects the percent of the watershed within each County. Roughly 60 percent of CLFLWD is within Washington County and 40 percent is within Chisago County. Therefore, in CLFLWD, two managers are appointed by Chisago County and three managers are appointed by Washington County. The Board of Managers meets monthly at Forest Lake City Hall and encourages members of the public to attend.

The District has an Administrator (Mike Kinney) and four additional in-house staff members. The District also contracts work with an engineering firm, legal firm, and accounting firm in addition to contracting work with the two County Soil and Water Conservation Districts.

More information about the history and approach of the District can be found in the 2012 Watershed Management Plan, which is available on the District website at www.clflwd.org.

Mike Kinney has been the District Administrator for the Comfort Lake–Forest Lake Watershed District since 2014. He has a master's degree in Water Resources Management from the University of Wisconsin, Madison, is a certified crop adviser, and has over 20 years of experience in resource planning and management. In addition, Mike was a commissioned officer in the Navy, did research for NASA while working for the U.S. Bureau of Mines, and spent a year teaching at the University in Prague, Czech Republic followed by a summer research project on Lake Baikal in Siberia. Mike grew up on a dairy farm near Lake Superior where his father taught him the importance of having a business mindset and using cost-benefit analysis. Today, he lives on a farm of his own near Hudson, Wisconsin and utilizes the cost-benefit analysis approach to manage water resources in the CLFLWD.