

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Prioritizing Critical Restoration Sites in the Zumbro Watershed

I. PROJECT STATEMENT

This project will identify and prioritize areas in the Zumbro River Watershed that are critical for restoring and protecting water quality. Studies suggest that small areas of the landscape contribute disproportionately to nonpoint source pollution, so implementation of best management practices (BMPs) should focus on those critical areas to maximize water quality benefits and ensure the most efficient use of resources. Currently, BMPs in the Zumbro Watershed are implemented opportunistically because a coordinated, watershed-wide approach for identifying critical sources of nonpoint source pollution, prioritizing sites and planning implementation projects is absent. Most state funding sources are restricted to “shovel-ready” projects and do not allow for comprehensive planning with the intent of also protecting water not yet listed as impaired. Additionally, local government units would benefit from a prioritized list of project sites to seek funding for locally led implementation projects.

Currently, 26 stretches of the Zumbro River are federally listed as impaired due to high turbidity and/or fecal coliform bacteria. Lake Zumbro, the watershed's largest recreational lake, receives approximately 30,000 cubic yards of sediment each year. Preliminary cost estimates for removing sediment accumulated over time is \$10/cubic yard. Turbidity impairments within the Zumbro River Watershed have profound impacts on recreation and aquatic life here in Southeastern Minnesota and also contribute sediment to the Mississippi River.

This project will use precision conservation strategies to create a prioritized list of critical restoration and protection projects in the Zumbro Watershed. To arrive at this goal, we will 1) analyze Light Detection and Ranging (LiDAR) and other Geographic Information System (GIS) data to identify and rank critical areas of soil erosion and surface runoff for the entire watershed and 2) develop and use an in-field assessment technique to further evaluate the top 50 source locations in the Zumbro and plan BMPs appropriate for those locations.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: LiDAR/GIS Screening for Critical Areas

Budget: \$57,600

The Minnesota Department of Agriculture (MDA) recently disseminated information on a methodology for analyzing LiDAR and ancillary GIS data to efficiently identify and rank critical areas of soil erosion and surface runoff that are potentially hydrologically connected to a surface water body. LiDAR has greatly improved the resolution of elevation data, adding significant efficacy and analytical capabilities to defining critical runoff areas. This project will be among the first to implement MDA's approach for an entire watershed.

Before beginning, we will communicate with Dr. Mulla (U of M) to discuss the progress of his current project, “Strategic Planning for Minnesota's Natural and Artificial Watersheds,” which received funding from the ENRTF in 2010. In particular, we will determine if the new computer topographic analysis software can be applied to our project to more efficiently analyze the large LiDAR datasets for the Zumbro Watershed. Additionally, we will see what data collection and analysis have been completed for the Zumbro Watershed as a result of Dr. Mulla's project and how they may be used to guide or strengthen our project.

Based on the results from Dr. Mulla's project, existing LiDAR data and data acquired in spring 2011 from the Minnesota Elevation Mapping Project will be analyzed to determine critical areas of erosion and runoff in the 910,337-acre Zumbro Watershed. Critical areas identified by the LiDAR analysis will be validated using both a comprehensive field assessment of two diverse ~20,000-acre sub-watersheds (glaciated and non-glaciated) and a survey of randomly selected points throughout the remainder of the watershed. Critical areas with the potential to contribute polluted runoff to water bodies will be identified and prioritized.

Outcome	Completion Date
1. Conduct initial LiDAR analysis	September 2011
2. Field verify analysis	November 2011
3. Obtain prioritized list of critical sources of runoff for the Zumbro	January 2012

Activity 2: Prioritization and BMP Implementation Planning

Budget: \$80,400

This activity will utilize existing in-field assessment techniques to develop a standard procedure for gathering additional information on field conditions for sites identified using LiDAR analysis to assist in planning appropriate BMPs for the sites. The Zumbro Watershed Partnership partners will create a watershed-wide prioritized list of project sites and determine appropriate and validated BMPs to address runoff in those locations using multiple data sources including: the LiDAR analysis, the in-field assessments, an inventory of agricultural stabilization structures due in May 2011, data on state-funded conservation projects, and results from three current projects funded by the ENRTF – “Strategic Planning for Minnesota’s Natural and Artificial Watersheds,” “Statewide Ecological Ranking Conservation Reserve Program (CRP) and Other Critical Lands,” and “Understanding Sources of Aquatic Contaminants of Emerging Concern.” Once complete, landowners can be contacted about implementation projects and funding sought from appropriate jurisdictional authorities for those projects. This protocol will be piloted for the top 50 critical source areas identified in Activity 1. In addition, Zumbro Watershed Partnership partners will be trained in these protocols so they can apply this process to the remainder of critical areas identified through the project.

Outcome	Completion Date
1. Develop standard procedure for in-field assessment of critical runoff sites	June 2012
2. Pilot the in-field assessment for the top 50 runoff sites in the Zumbro	November 2012
3. Create a prioritized list of project sites and plan BMPs for each location	March 2013
4. Train Zumbro Watershed Partnership partners in LiDAR & field protocols	May 2013

III. PROJECT STRATEGY

A. Project Team/Partners

The Zumbro Watershed Partnership will be the fiscal agent and only organization to receive ENRTF funds.

Six Soil and Water Conservation Districts within the Zumbro Watershed (Olmsted, Dodge, Goodhue, Wabasha, Rice and Steele) will provide in-kind support by providing technical assistance, securing property access for in-field work, assisting in prioritizing critical sites, planning BMPs and agreeing to be trained in the established methods. The MDA will provide \$12,500 of in-kind technical assistance. \$12,000 is pending approval by the Minnesota Pollution Control Agency for an inventory of agricultural stabilization structures that will assist in final

project prioritization. Letters of support have been received from Zumbro Watershed Partnership, MDA, and Olmsted, Dodge, and Goodhue Soil and Water Conservation Districts.

B. Timeline Requirements

In Year 1, we will select contractors through a bidding process to conduct the LiDAR analysis, field verification, and development of the in-field assessment protocol. Year 2 will involve applying the in-field protocol to further evaluate the top 50 critical source areas, prioritize sites, plan BMP implementation projects and train Zumbro Watershed Partnership partners.

C. Long-Term Strategy and Future Funding Needs

Zumbro Watershed Partnership partners will be trained in the protocols developed above to monitor changing conditions and update the list of priority projects. Therefore, this project will be maintained without further outside investment by the ENRTF.

2011-2012 Detailed Project Budget

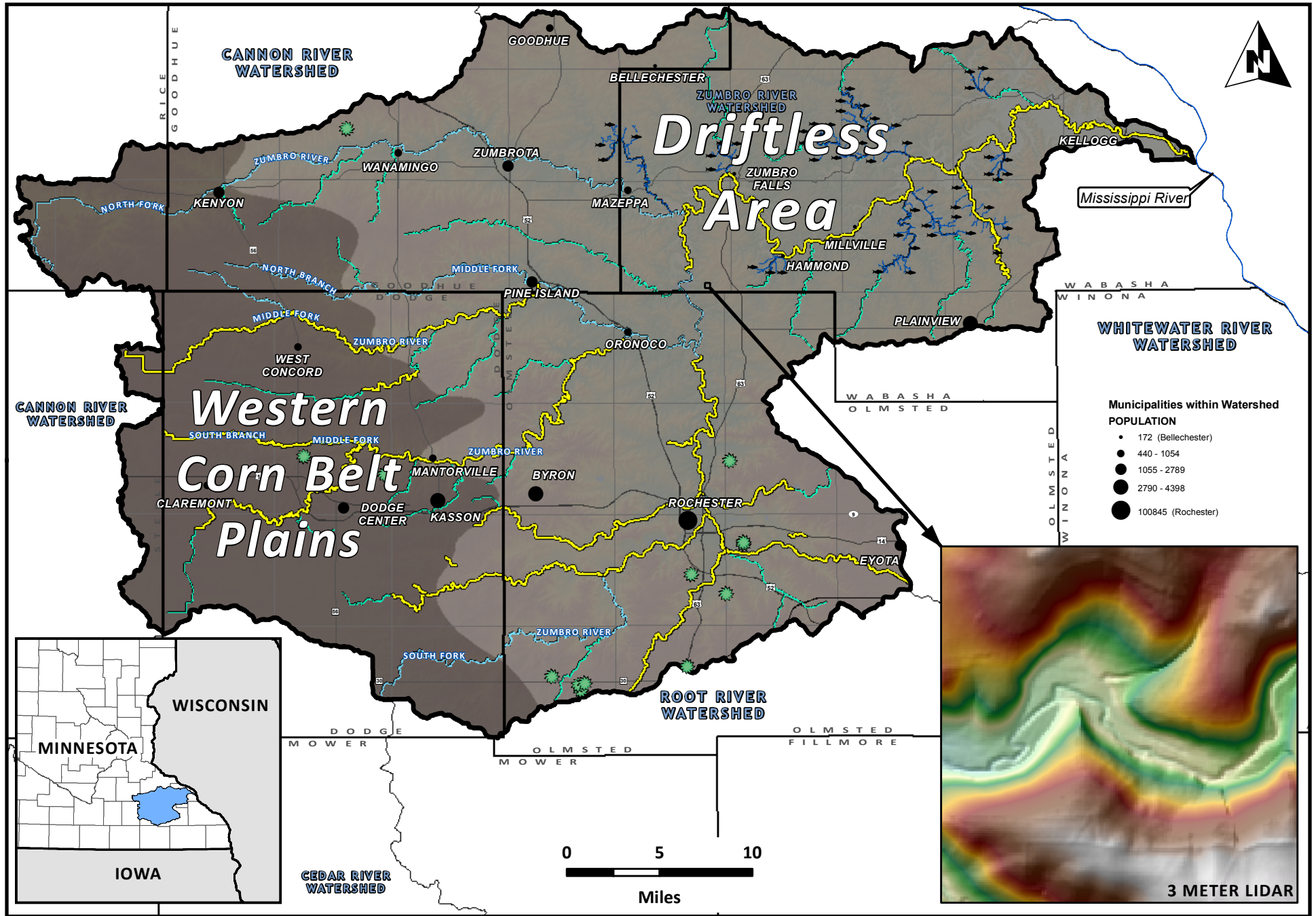
IV. TOTAL TRUST FUND REQUEST BUDGET 2 years

<u>BUDGET ITEM</u>	<u>AMOUNT</u>
Personnel:	
Project Coordination - Lisa Eadens (Zumbro Watershed Partnership), .1 FTE 70% Salary 30% Benefits for 2 years	\$ 12,000
Contracts:	
Professional/Technical - An RFP will be issued to contract for the LiDAR/GIS analysis, in-field verification and final ranked list of critical areas (Activity 1)	\$ 57,600
Professional/Technical - An RFP will be issued to contract for development of the in-field protocol and assessment of the top 50 critical sites, to facilitate prioritization & BMP implementation planning, and conduct training of Zumbro Watershed Partnership partners (Activity 2)	\$ 78,900
Equipment/Tools/Supplies:	
Rental space for GIS lab to Train Zumbro Watershed Partnership Partners	\$ 500
Travel:	
Travel for six (6) SWCD Partners to attend the training sessions	\$ 1,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND \$ REQUEST	\$ 150,000

V. OTHER FUNDS

<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
Other Non-State \$ Being Applied to Project During Project Period: None.	\$ -	NA
Other State \$ Being Applied to Project During Project Period: None.		
In-kind Services During Project Period: The MDA will provide 230 hours of in-kind technical assistance over the 2-year project period. Olmsted, Dodge, Wabasha, Goodhue, Rice, and Steele Soil and Water Conservation Districts will provide 30 hours each of in-kind assistance through landowner contact, project prioritization and training in the protocols.	\$ 20,000	Secured
Remaining \$ from Current ENRTF Appropriation (if applicable): Not Applicable.	\$ -	NA
Funding History: MPCA has designated \$12,000 towards an inventory of agricultural stabilization structures. This money will be available in May 2010 with a project completion deadline of May 2011.	\$ 12,000	Pending

PRIORITIZING CRITICAL RESTORATION SITES IN THE ZUMBRO WATERSHED



Zumbro Watershed Boundary
 Trout Streams
 Calcareous Fens
 Streams
 Impaired Waters (2008)

Prioritizing Critical Restoration Sites in the Zumbro Watershed: Project Manager Qualifications & Organization Description

Qualifications of Project Manager

The project manager for the “Prioritizing Critical Restoration Sites in the Zumbro Watershed” proposal will be Lisa Eadens, Watershed Coordinator for the Zumbro Watershed Partnership (ZWP). Lisa holds a Bachelor of Science in Biology from Davidson College in North Carolina and a Master of Science in Wildlife Ecology and Conservation from the University of Florida. Lisa has worked for the ZWP since September of 2009, administratively supporting the Board, conducting public outreach, coordinating member and partner activities, and administering grants. Prior to the ZWP, Lisa worked for the National Wildlife Federation as the Rocky Mountain Regional Constituent Coordinator, which also included grant administration. Her experience administering grants includes managing budgets, compiling reports, and facilitating partner and community meetings.

Description of Organization

Zumbro Watershed Partnership, Inc is a 501 (c)(3) organization created to serve as a catalyst for interaction between watershed citizens and natural resource professionals. The ZWP is a member driver organization, working across jurisdictional boundaries to achieve the goal of protecting and restoring the natural resources and social benefits of a healthy watershed. The mission of the ZWP is “To promote the protection and improvement of the Zumbro River Watershed.”

The ZWP has prepared a watershed plan for the 910,337-acre Zumbro River Watershed, which serves as the framework for prioritizing projects and seeking grants. Previous grants include: the Natural Resource Conservation Service Conservation Partnership Initiative grant for \$200,000 to launch planning activities and foster partnerships to prepare water quality and wildlife habitat work in the Zumbro Watershed and a McKnight Foundation grant of \$50,000 for operational support and outreach efforts. Current grant awards include a second McKnight Foundation grant of \$30,000 for operational support, a MPCA Surface Water Assessment Grant for \$25,000 and a Minnesota Waters Conservation Partnership grant of \$5,000 to conduct shoreland landowner outreach on buffers.

