



Environment and Natural Resources Trust Fund (ENRTF) M.L. 2011 Work Plan

Date of Status Update:

Date of Next Status Update: 1/1/2012

Date of Work Plan Approval: 6/23/2011

Project Completion Date: 6/30/2014

Is this an amendment request? _____

Project Title: Zumbro River Watershed Restoration Prioritization

Project Manager: Lisa Eadens

Affiliation: Zumbro Watershed Partnership

Address: 1485 Industrial Dr NW, Rm 102

City: Rochester **State:** MN **Zipcode:** 55901

Telephone Number: (507) 226-6787

Email Address: admin@zumbrowatershed.org

Web Address: <http://www.zumbrowatershed.org>

Location:

Counties Impacted: Dodge, Goodhue, Olmsted, Rice, Steele, Wabasha

Ecological Section Impacted: Minnesota and Northeast Iowa Morainal (222M),
Paleozoic Plateau (222L)

Total ENRTF Project Budget:	ENRTF Appropriation \$:	150,000
	Amount Spent \$:	<u>0</u>
	Balance \$:	150,000

Legal Citation: M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 05d

Appropriation Language:

\$75,000 the first year and \$75,000 the second year are from the trust fund to the commissioner of natural resources for an agreement with the Zumbro Watershed Partnership, Inc. to identify sources of erosion and runoff in the Zumbro River Watershed in order to prioritize restoration and protection projects.

I. PROJECT TITLE: Zumbro River Watershed Restoration Prioritization

II. PROJECT SUMMARY: This project will identify and prioritize areas in the Zumbro River Watershed that are critical for restoring and protecting water quality. Currently, conservation practices 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. Studies suggest that small areas of the landscape contribute disproportionately to nonpoint source pollution, so implementation of conservation projects should focus on those critical areas to maximize water quality benefits and ensure the most efficient use of resources. To arrive at our goal, we will 1) analyze Light Detection and Ranging (LiDAR) data and other Geographic Information System (GIS) data to identify and rank critical areas of soil erosion and surface runoff for the 910,337-acre watershed and 2) develop and use an in-field assessment technique to further evaluate the top 50 source locations in the Zumbro Watershed. Outcomes of this project include determination of the top 50 critical sites, and identification of appropriate conservation practices and potential funding sources for those projects. In addition, Zumbro Watershed Partnership partners will be trained in the protocols developed so they can apply this process to the remainder of critical areas identified through the project and monitor changing conditions to update the list of priority projects as necessary. The Minnesota Department of Agriculture is a collaborating agency on this project and will help disseminate results to other Minnesota watersheds that may want to conduct similar projects.

III. PROJECT STATUS UPDATES:

Project Status as of January 31, 2012:

Project Status as of June 30, 2012:

Project Status as of January 31, 2013:

Project Status as of June 30, 2013:

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: LiDAR/GIS Screening for Critical Areas

Description: In 2010, the Minnesota Department of Agriculture (MDA) 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 major 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 2011 from the Minnesota Elevation Mapping Project will be analyzed to determine critical areas of erosion and surface 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. Based on the field verification, the threshold value used in the analysis will be modified. The

deliverables for this step of the project will be 1) the determination of an appropriate threshold value or multiple threshold values for the Zumbro Watershed and 2) a ranked list of critical areas in the Zumbro Watershed.

Summary Budget Information for Activity 1:

ENRTF Budget: \$ 66,200
Amount Spent: \$ 0
Balance: \$ 66,200

Activity Completion Date:

Outcome	Completion Date	Budget
1. Conduct initial LiDAR analysis	December 2011	\$ 23,500
2. Field verify analysis	May 2012	\$ 34,600
3. Obtain preliminary prioritized list of critical sources of runoff for the Zumbro	June 2012	\$ 8,100

Activity Status as of January 31, 2012:

Activity Status as of June 30, 2012:

Activity Status as of January 31, 2013:

Activity Status as of June 30, 2013:

Final Report Summary:

ACTIVITY 2: Prioritization and BMP Implementation Planning

Description: 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 Best Management Practices (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 at the top 50 sites. Multiple data sources will be used, including: the LiDAR analysis, the in-field assessments, an inventory of agricultural stabilization structures due in May 2012, 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.

Summary Budget Information for Activity 2:

ENRTF Budget: \$ 83,800
Amount Spent: \$ 0
Balance: \$ 83,800

Activity Completion Date:

Outcome	Completion Date	Budget
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1. Develop standard procedure for in-field assessment of critical runoff sites	June 2012	\$ 5,000
2. Pilot the in-field assessment for the top 50 runoff sites in the Zumbro	November 2012	\$ 58,300
3. Create a prioritized list of project sites and plan BMPs for each location	March 2013	\$ 7,000
4. Train Zumbro Watershed Partnership partners in LiDAR & field protocols	May 2013	\$ 13,500

Activity Status as of January 31, 2012:

Activity Status as of June 30, 2012:

Activity Status as of January 31, 2013:

Activity Status as of June 30, 2013:

Final Report Summary:

V. DISSEMINATION:

Description: Results from this study will be shared on the Zumbro Watershed Partnership website, www.zumbrowatershed.org, at quarterly meetings of the Zumbro Watershed Partnership Project Advisory Committee, and at monthly meetings of the Zumbro Watershed Partnership Board of Directors as appropriate. We also anticipate sharing the information at one or more regional meetings of the Basin Alliance for the Lower Mississippi in Minnesota that meets bi-monthly and includes agency and non-profit staff from 13 counties in SE Minnesota.

The MDA will be instrumental in adding statewide value to the project and in disseminating results. The same MDA staff who are partners on this project also serve on state-level Clean Water Fund interagency teams charged with coordinating restoration/protection strategies, implementing funding, and research. Therefore, they will use the lessons learned through this project to provide important input into the emerging state-level coordination framework. Additionally, MDA staff will assist in adapting project results to produce sample maps and data for communicating which sites are prioritized, and why, in a user-friendly manner suitable for stakeholder meetings and other forms of civic engagement in locally led restoration/protection efforts. This communication will benefit other Minnesota watersheds that may want to conduct similar projects.

Status as of January 31, 2012:

Status as of June 30, 2012:

Status as of January 31, 2013:

Status as of June 30, 2013:

Final Report Summary:

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget:

Budget Category	\$ Amount	Explanation
Personnel:	\$ 7,000	Project Coordination - Lisa Eadens (Zumbro

		Watershed Partnership), .1 FTE 100% for 2 years.
Professional/Technical Contracts:	\$ 141,000	Contractor (TBD-competitive bid) for the LiDAR/GIS analysis and the in-field verification of the LiDAR analysis; Contractor (TBD-competitive bid) for the development and execution of the 50 in-field assessments; Contractor (TBD-competitive bid) to facilitate final site prioritization and BMP implementation planning, and training of Zumbro Watershed Partnership partners.
Equipment/Tools/Supplies:	\$ 500	Rental space for GIS lab to train Zumbro Watershed Partnership partners. This is intended to be an all-day workshop held at either Winona State University or UM Rochester for approximately 10-15 people.
Printing:	\$ 500	Printing of: maps highlighting erosion hot spots; standard procedure protocol; reports from the 50 in-field assessments; and other training documents and documents for distribution.
Travel Expenses in MN:	\$ 1000	Mileage (\$.50/mile) for six SWCD partners to attend two training sessions to be held in Rochester and/or Winona. SWCD partners will be traveling from Goodhue, Wabasha, Dodge Center, Rochester, Owatonna and Faribault.
TOTAL ENRTF BUDGET:	\$ 150,000	

Explanation of Use of Classified Staff: NA

Explanation of Capital Expenditures Greater Than \$3,500: NA

Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation: .1 FTE (Lisa Eadens, Zumbro Watershed Partnership)

B. Other Funds: Cash

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
State			
MPCA (Contract with ZWP executed 4/28/11)	\$ 12,000	\$ 0	Inventory of agricultural stabilization structures in the Zumbro Watershed that will assist in final project prioritization.
TOTAL OTHER FUNDS:	\$ 12,000	\$ 0	

Other Funds: In-Kind

Source of Funds	\$ Amount Proposed	\$ Amount Spent	In-Kind Description
State			
MDA	\$ 12,500	\$ 0	230 hours of in-kind technical assistance.
Local			
Six SWCDs (Goodhue, Wabasha, Olmsted, Rice, Steele, Dodge)	\$ 7,500	\$ 0	30 hours each of in-kind assistance through landowner contact, project prioritization and training in the protocols.

TOTAL OTHER FUNDS:	\$ 20,000	\$ 0	
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VII. PROJECT STRATEGY:

A. Project Partners: The Zumbro Watershed Partnership will be the fiscal agent and only organization to receive ENRTF funds. Other partners include:

- Skip Langer, Olmsted Soil and Water Conservation District
- Beau Kennedy, Goodhue Soil and Water Conservation District
- Jen Dankers, Wabasha Soil and Water Conservation District
- Jim Hruska, Dodge Soil and Water Conservation District
- Steven Pahs, Rice Soil and Water Conservation District
- Dan Arndt, Steele Soil and Water Conservation District
- Adam Birr, Minnesota Department of Agriculture
- Barbara Weisman, Minnesota Department of Agriculture

B. Project Impact and Long-term Strategy: 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. In 2010, the MDA disseminated information on a new methodology for efficiently identifying and ranking critical areas of soil erosion and surface runoff across a watershed. This project will be among the first to utilize this methodology across an entire major watershed to identify and prioritize a list of water resotation and protection projects that will achieve the most measurable improvement in water quality. This prioritized project list will increase local competitiveness in securing grants from other sources to fund implementation of these projects. Additionally, Zumbro Watershed Partnership partners will be trained in these protocols so they can monitor changing conditions to update the list of priority projects as necessary. The MDA is a partnering agency on this project and will collaborate with other state agencies to help disseminate results to other Minnesota local government units that may want to conduct similar projects.

C. Spending History: NA

VIII. ACQUISITION/RESTORATION LIST: NA

IX. MAP(S): See attached file

X. RESEARCH ADDENDUM: NA

XI. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted not later than January 31 2012, June 30 2012, and January 31 2013. A final report and associated products will be submitted between June 30 and August 1, 2013 as requested by the LCCMR.

Attachment A: Budget Detail for M.L. 2011 (FY 2012-13) Environment and Natural Resources Trust Fund Projects

Project Title: Zumbro River Watershed Restoration Prioritization

Legal Citation: *Fill in your project's legal citation from the appropriation language*

Project Manager: Lisa Eadens

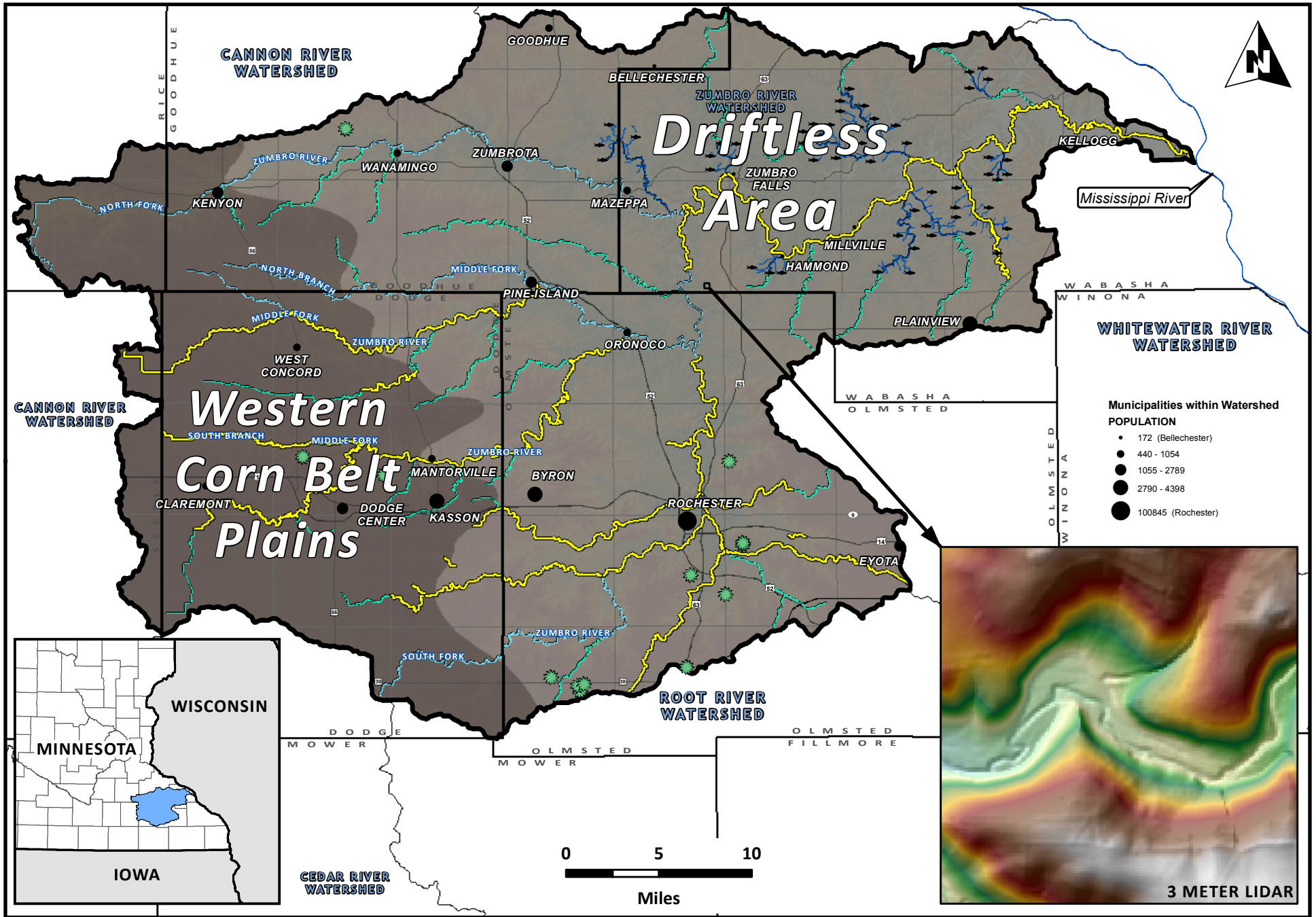
M.L. 2011 (FY 2012-13) ENRTF Appropriation: \$150,000

Project Length and Completion Date: 2 years; June 30, 2013

Date of Update: January 31, 2012

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Balance	Activity 2 Budget	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	LiDAR/GIS Screening for Critical Areas			Prioritization and BMP Implementation				
Personnel (Wages and Benefits)	\$3,500		\$3,500	\$3,500		\$3,500	\$7,000	\$7,000
Project Coordination - Lisa Eadens (Zumbro Watershed Partnership), .1 FTE 100% salary for 2 years								
Professional/Technical Contracts								
TBD (competitive bid): LiDAR/GIS analysis, in-field verification, determination of threshold value for Zumbro Watershed, preliminary ranked list of critical areas	\$62,600		\$62,600	\$0		\$0	\$62,600	\$62,600
TBD (competitive bid): Development of protocol and execution of 50 in-field assessments.				\$61,620		\$61,620	\$61,620	\$61,620
TBD (competitive bid): Facilitation of prioritization & BMP implementation planning, and conduction of Zumbro Watershed Partnership partner training.				\$16,780		\$16,780	\$16,780	\$16,780
Equipment/Tools/Supplies								
Rental space for GIS lab to train Zumbro Watershed Partnership Partners. This is intended to be an all-day workshop held at either Winona State University or UM Rochester for approx. 10-15 people.				\$500		\$500	\$500	\$500
Printing (maps of erosion hot spots, standard procedure protocol, reports from the 50 in-field assessments, and other training documents and documents for distribution)	\$100		\$100	\$400		\$400	\$500	\$500
Travel expenses in Minnesota								
Mileage (\$.50/mile) for six SWCD partners to attend two training sessions to be held in Rochester and/or Winona. SWCD partners will be traveling from Goodhue, Wabasha, Dodge Center, Rochester, Owatonna and Faribault.				\$1,000		\$1,000	\$1,000	\$1,000
COLUMN TOTAL	\$66,200	\$0	\$66,200	\$83,800	\$0	\$83,800	\$150,000	\$150,000

PRIORITIZING CRITICAL RESTORATION SITES IN THE ZUMBRO WATERSHED



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