

**Environment and Natural Resources Trust Fund  
2012-2013 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 109-F**

Training for Engaging Landowners in Reducing River Sediment

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**Topic Area:** F. Outreach/Education/Training

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**Total Project Budget:** \$ 245,000

**Proposed Project Time Period for the Funding Requested:** 3 yrs. July 2013 - June 2016

**Other Non-State Funds:** \$ 0

**Summary:**

A handbook and training materials will be developed, and local conservation staff will be trained to engage landowners in understanding and implementing flow-driven sediment reduction practices.

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**Sponsoring Organization:** U of MN

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**Location**

**Region:** Statewide

**County Name:** Statewide

**City / Township:**

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<input type="checkbox"/>	Funding Priorities	<input type="checkbox"/>	Multiple Benefits	<input type="checkbox"/>	Outcomes	<input type="checkbox"/>	Knowledge Base
<input type="checkbox"/>	Extent of Impact	<input type="checkbox"/>	Innovation	<input type="checkbox"/>	Scientific/Tech Basis	<input type="checkbox"/>	Urgency
<input type="checkbox"/>	Capacity Readiness	<input type="checkbox"/>	Leverage	<input type="checkbox"/>	Employment	<input type="checkbox"/>	TOTAL <input type="checkbox"/> %



# Environment and Natural Resources Trust Fund (ENRTF)

## 2012-2013 Main Proposal

**PROJECT TITLE: Training for Engaging Landowners in Reducing River Sediment**

### I. PROJECT STATEMENT

**1. Background and Justification:** Watershed and conservation staff need methods and materials for engaging landowners in practices that will reduce stream flow-driven sediment. The Minnesota River does not meet state water quality standards for turbidity and suspended sediment. Recent research indicates that 65-70% of the sediment leaving the Minnesota River originates from streambanks, bluffs, and ravines, and that contributions from these sources have increased over time. Upland sources, primarily farm fields, were previously thought to directly produce the majority of sediment, so education focused on in-field practices like conservation tillage. Increases in sediment that result from unstable stream channels are due to increasing frequency and magnitude of higher flows. The increases in flows are attributed, in part, to loss of wetlands, surface and subsurface drainage, and changes in land cover. Little attention has been paid to the need for and implementation of water management practices such as controlled drainage, retention wetlands and ponds, and perennial plant buffers. New technical information about the sources of and solutions for flow-driven sediment needs to be adapted for rural landowners and managers in the Minnesota River Basin and other agricultural areas of the state. Reducing peak flows and streambank erosion is a recommendation of the LCCMR-Statewide Conservation and Preservation Plan.

**2. Goal and Outcomes:** The long-term **goal** of this project is to reduce streambank, bluff, and ravine erosion, and thereby reduce sediment and turbidity impairments in Minnesota’s streams and rivers. Flow reduction strategies also reduce phosphorus and nitrogen loads. This will improve habitat for fish and aquatic plants, and reduce the infill rate of Lake Pepin and other lakes. The project **outcomes** are:

- 1) A large group of local conservation staff equipped and trained with tools and methods to
- 2) Engage landowners and managers in major agricultural areas of the state which will lead to
- 3) Increased understanding and implementation of flow-driven sediment reduction practices.

**3. Methods:** The project staff will work with conservation professionals and landowners to develop a handbook, training materials, and methods for engaging landowners in understanding and addressing flow-related sediment reduction. A “train-the-trainer” program with workshops and field exercises will enable local conservation and watershed staff to use the methods and materials to engage landowners in sediment reduction.

### II. DESCRIPTION OF PROJECT ACTIVITIES

**Activity 1: Work with Local Conservation Staff and Landowners to Design and Test Teaching Materials and Methods for Engaging Landowners and Managers in Sediment Reduction. Budget:** \$138,500

Project partners, in consultation with local staff and landowners, will develop an illustrated booklet and other teaching materials describing flow-related sediment sources, causes of changes in flows, and practices that will moderate flow-related sediment impairments. The approach is to “follow the drop” from precipitation to the stream, and present opportunities for managing water along its path. This requires translating specialist information on the impact of land management on stream flow and sediment movement into concepts and language useful for agricultural land managers. These materials will be prepared in print, electronic, and web-based formats. Pilot field demonstrations and workshops to improve the program’s approach, messages, and training materials will be conducted and evaluated through surveys, observation, and interviews with landowners and managers.

Outcome	Completion Date
1. Evaluation of two each of pilot workshops and field exercises to inform improvement of design of the teaching materials and methods.	July 2014
2. Illustrated booklet and teaching support materials adapted, tested and made available in print and online.	December 2014

**PROJECT TITLE: Training for Engaging Landowners in Reducing River Sediment**

**Activity 2: Equip and Train Conservation Staff**

**Budget: \$87,698**

Project staff and partners will conduct “train-the-trainer” workshops and field exercises, six each across the state, for conservation and watershed staff. They will model methods and use of teaching materials to engage landowners and managers in recognizing and reducing flow-driven sediment impairments. Project staff will then provide coaching to local staff as they deliver their initial workshops and field exercises for landowners and managers. An evaluation will be conducted to assess the quality of the training, who has attended, and the learning gains achieved.

<b>Outcome</b>	<b>Completion Date</b>
1. Local conservation staff from about 30 counties equipped with education approaches and materials to engage local landowners and managers.	March 2016
2. An evaluation of the extent and effectiveness of training provided.	March 2016
3. Delivery of ten local workshops and field exercises by local conservation staff in 2015-2016 with coaching assistance by the project staff.	June 2016

**Activity 3: Evaluate the Use of the Training Materials and Methods.**

**Budget: \$18,802**

UM staff will conduct interviews and surveys with local conservation staff that have attended training workshops and field exercises to determine extent of use of the training materials and methods with landowners and managers.

<b>Outcome</b>	<b>Completion Date</b>
Evaluation of the extent of use of the training materials and methods by local conservation staff in their work with landowners and managers, as well as intent of owners and managers to implement practices addressed in the program.	June 2016

**III. PROJECT STRATEGY**

**A. Project Team/Partners**

Technical lead: Chris Lenhart, UM Dept. Bioproducts & Biosystems Engr., partial salary from ENRTF.

Evaluation specialist: Whitney Meredith, UM Extension, partial salary from ENRTF.

Project coordination and materials development: Ann Lewandowski, UM Water Resources Center (WRC), partial salary from ENRTF.

Training program lead: Karen Terry, UM Extension, time contributed .

Project manager: Les Everett, UM WRC, time contributed .

Technical content: Bruce Vondracek, USGS Fisheries Biologist; Brenda Asmus, MPCA, time contributed.

Training program development and delivery: Gary Wyatt, UM Extension; Linda Meschke, Rural Advantage and Martin SWCD; time contributed.

**B. Timeline Requirements**

Three years are required to carry out this project. Development of training materials, testing materials and methods, and adjusting them according to target audience response will require half of the project time, including one summer for field testing methods and materials. Conducting train-the-trainer workshops, summer field exercises, and evaluations requires the second half of the project time.

**C. Long-Term Strategy and Future Funding Needs**

The dominance of stream flow-related sediment impairments in rural watersheds has only recently been documented, so development of training materials and methods for addressing landowners/operators on this topic has not occurred prior to this project. In the long term, materials and methods developed in this project will need to be periodically revised to incorporate new research results and training methods. UM Extension and state agencies will be encouraged to adopt this as an ongoing program, and the training materials will be available on the web for long-term access.

**2012-2013 Detailed Project Budget**  
**Training for Engaging Landowners in Reducing River Sediment**

**IV. TOTAL ENRTF REQUEST BUDGET three years**

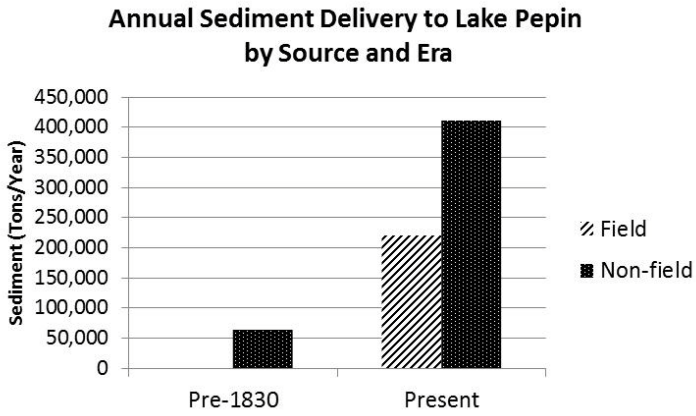
<b>BUDGET ITEM</b>	<b>AMOUNT</b>
<b>Personnel:</b> (All positions listed below are grant supported without permanent funding.)	\$171,514
Chris Lenhart, UM, Technical leader; 20% time year 1, 15% time year 2; 73.5% salary, 26.5% fringe	\$ 30,962
Whitney Meredith, UM Extension, Evaluation specialist; 17% time, 3 years; 73.5% salary, 26.6% fringe	\$ 30,817
Ann Lewandowski, UM Water Resources Center (WRC), Coordinator for training materials development and training delivery; 50% time for 2 years, 40% for 1 year; 73.5% salary, 26.5% fringe	\$ 97,020
Accountant, UM WRC, managing all expenses of personnel, travel, services and supplies of project; 5% time, 3 years; 70.3% salary, 29.7% fringe	\$ 12,715
<b>Services:</b>	\$52,000
Stream booklet (9,000 copies) and teaching aids design, printing, and web posting	\$ 29,000
Local hosts' costs for 2 focus groups, 8 workshops, and 8 field exercises	\$ 22,000
Print final evaluation survey report and followup materials	\$ 1,000
<b>Equipment/Tools/Supplies:</b>	\$4,656
Participant notebooks and training materials for 320 participants	\$ 4,656
<b>Travel:</b> All in-state.	\$16,830
Information collection and training materials development (9 trips, 300 mi./round trip @\$0.55/mi., 4 overnight travel expenses).	\$ 2,000
Preparation and delivery of 2 focus groups, 2 trial workshops, 2 trial field exercises in rural Minnesota (\$0.55/mi., 300 mi. round trip/instructor, 2 instructors for focus groups and workshops and 3 for field exercises, from different locations per event. Overnight travel expenses one instructor per event.)	\$ 3,090
Preparation and delivery of 6 workshops and 6 field exercises across Minnesota (\$0.55/mi., 300 mi. round trip/instructor, 2 instructors for workshops and 3 for field exercises, from different locations per event. Overnight travel expenses one instructor per event.)	\$ 9,600
Coordination and completion of coaching and evaluation (10 trips, 300 mi./round trip @\$0.55/mi., 4 overnight travel expenses).	\$ 2,140
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$245,000</b>

**V. OTHER FUNDS**

<b>SOURCE OF FUNDS</b>	<b>AMOUNT</b>	<b>Status</b>
<b>Other Non-State \$ Being Applied to Project During Project Period:</b>	None	
<b>Other State \$ Being Applied to Project During Project Period:</b>	None	
<b>In-kind Services During Project Period:</b>		
Karen Terry, UM Extension, Training leader; 30% time, 3 years; salary and fringe	\$ 71,667	
Leslie Everett, UM WRC, Project manager: 5% time, 3 years; salary and fringe	\$ 13,176	
<b>Remaining \$ from Current ENRTF Appropriation (if applicable):</b>	N/A	
<b>Funding History:</b>	None	

**PROJECT TITLE: Training for Engaging Landowners in Reducing River Sediment**

**Sediment Sources and Example Management Practices to Reduce Flow-Related Erosion**



Data: Science Museum of Minnesota, St. Croix Research Station



Photo: Shawn Schottler

Streambank Erosion, LeSueur River Watershed



Photo: Carrie Jennings

Bluff Erosion, LeSueur River

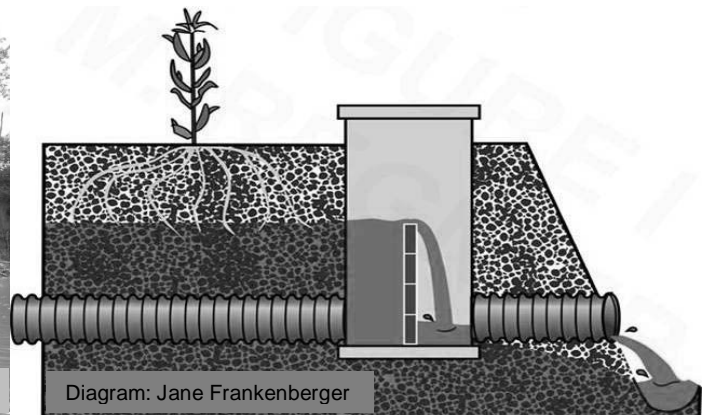


Diagram: Jane Frankenberger

Drainage Water Management



Ditch Buffer/Filter Strip



Tile Outlet to Restored Wetland, Seven-Mile Creek

## **Project Title: Training for Engaging Landowners in Sediment Reduction**

### **Project Manager Qualifications and Organization Description**

#### **Project Manager and Administrative Lead:**

Les Everett, Agronomist, University of Minnesota Water Resources Center.

- Since 1995 has proposed and managed grant funded projects from PCA (319), MDA, NRCS, LCCMR-ENRTF, and McKnight Foundation that, in partnership with UM Extension and state and federal agencies, have provided outreach and on-farm research in the areas of crop nutrient, manure, feedlot, tillage, and grazing management, as well as training on use of LiDAR for conservation for local conservation staff.
- Serves on both the Stakeholder Advisory Board and Science Advisory Panel for the Lake Pepin and Minnesota River TMDLs.
- Was co-chair of the Land Use Practices Team for the LCCMR Statewide Conservation and Preservation Plan.
- Is the UM representative to the NRCS State Technical Committee.

#### **Project Technical Lead:**

Chris Lenhart, Hydrologist, Research Professor, UM Dept. of Bioproducts & Biosystems Engineering

- Currently leading several research project in hydrology, geomorphology and watershed management at the University of Minnesota.
- Author & co-author of numerous publications on hydrology, restoration and stream geomorphology.
- Taught classes in hydrology, wetlands, soils and plant ecology at MSU-Mankato and UM.

#### **Project Training Lead:**

Karen Terry, UM Extension Educator, Water Resources:

- Water resources educator with UM Extension since 2006.
- Worked with the MN DNR for 15 years as a stream ecologist, concentrating on research and outreach.
- Is the lead educator on the Extension-funded pilot project titled Streamside Ecology, designed to teach stream system functions to local government leaders.

#### **Organization Description:**

The **University of Minnesota Water Resources Center** (WRC) facilitates interdisciplinary research, education, and outreach on water resources. It hosts the Water Resources Science graduate program with faculty affiliates across many UM Departments. In collaboration with UM Extension as well as state and federal agency partners, it develops and delivers outreach and professional education programs on storm-water management, on-site sewage treatment, agricultural practices and other topics. The WRC hosted and chaired the Lake Pepin and Minnesota River TMDL Science Advisory Panels.