

**Environment and Natural Resources Trust Fund
2010 Request for Proposals (RFP)**

LCCMR ID: 098-C

Project Title:

Strategic Wetland Restoration in the Red River Basin.

LCCMR 2010 Funding Priority:

C. Habitat Restoration, Enhancement, and Acquisition

Total Project Budget: \$ \$438,800

Proposed Project Time Period for the Funding Requested: 3 years, 2010 - 2013

Other Non-State Funds: \$ \$20,000

Summary:

Resource professionals will apply geospatial tools to strategically prioritize areas in the Red River Basin for wetland restoration and will develop and evaluate an implementation strategy for restoring wetlands.

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Sponsoring Organization: MN Center for Environmental Advocacy

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Web Address: www.mncenter.org

Location:

Region: NW

County Name: Becker, Beltrami, Clay, Clearwater, Grant, Kittson, Mahnommen, Norman, Otter Tail, Pennington, Polk, Red Lake, Roseau, Wilkin

City / Township:

_____ Knowledge Base	_____ Broad App.	_____ Innovation
_____ Leverage	_____ Outcomes	
_____ Partnerships	_____ Urgency	_____ TOTAL

MAIN PROPOSAL

PROJECT TITLE: Strategic Wetland Restoration in the Red River Basin.

I. PROJECT STATEMENT

In the Minnesota portion of the Red River basin, more than 85% of wetlands have been drained or filled. Wetland loss contributes to increased flood damage and to the loss and degradation of fish and wildlife habitat, water quality, and many other ecosystem services. Some wetlands are restored each year at considerable cost. These restorations typically depend on local priorities and landowner interest in existing conservation programs. A targeted and integrated wetland restoration and implementation strategy will ensure that future wetland restorations are implemented strategically with the most societal benefits.

This project has two goals: 1) prioritize areas on the landscape for wetland restoration based on their potential to reduced flood damages, improve water quality (reduce sediment yield), and improved fish and wildlife habitat, and 2) develop, implement, and evaluate the effectiveness of a wetland restoration implementation strategy in the Red River basin.

To achieve the first goal, the statewide wetland restoration strategy (SWRS, www.bwsr.state.mn.us/wetlands/Restoration_Strategy.pdf) will be applied to the Red River basin. The SWRS recommends prioritizing wetland restorations based on water quality improvements, habitat gains, and flood damage reduction. Four technical teams (flood damage reduction, water quality, fish habitat, wildlife habitat) of experienced resource professionals will apply existing geographic information system (GIS) models and refine them to achieve this goal.

The modeling efforts in this wetland restoration based proposal are complementary to those in the "Statewide ecological ranking of Conversation Reserve Program (CRP) and other critical lands" project funded by LCCMR. That statewide project will identify marginal lands for conservation using a 30 meter digital elevation model (DEM). This project will prioritize areas for wetland restoration for four specific functions based on finer resolution 3 meter DEM.

To achieve the second goal, a team of technical resource professionals with direct experience working with landowners to implement successful wetland restorations and University researchers will review existing wetland restoration programs, identify gaps, host GIS based public participation workshops, survey landowner attitudes toward wetland restoration, and develop an implementation strategy. This strategy will then be applied and evaluated.

The Red River basin is an ideal region to apply this strategy because the basin has:

- High resolution Lidar topographic and Restorable Wetland Inventory (RWI) data.
- Watershed based hydrologic models in every watershed district and SWAT water quality models available or in development for most watersheds,
- Wetland restoration GIS models for wildlife habit (USFWS HAPET).
- Comprehensive watershed plans with wetland restoration goals,
- A flood damage reduction strategy that recommends wetland restorations,
- TMDL plans in development for numerous stream reaches impaired for turbidity, and
- Resource professionals with demonstrated capacity for wetland restorations.

II. DESCRIPTION OF PROJECT RESULTS

Result 1: Evaluate and develop of GIS models for two pilot areas **Budget:** \$ 129,750
Convene technical teams, test and refine existing GIS tools to identify and rank areas on the landscape for their potential to provide wetland functions (sediment reduction, flood damage reduction, fish habitat, wildlife habitat), and recommend GIS model for basin application.

Deliverable

Completion Date

1. Lidar derived surface flow network, hydrologically conditioned DEM, and delineated catchments for surface flow network in two pilot areas. October, 2010

- | | |
|---|---------------|
| 2. GIS layer that ranks lands for each wetland function in two pilot areas. | January, 2011 |
| 3. Refined or new models for each wetland function. | June, 2011 |
| 4. Recommended models to be applied basin wide. | July, 2011 |

Result 2: Complete wetland restoration strategy for Red River basin Budget: \$ 141,500

Technical teams will apply GIS models from Result 1 to the entire Red River basin to produce GIS layers and maps that rank landscape areas for each wetland function.

Deliverable	Completion Date
1. Lidar derived surface flow network, hydrologically conditioned DEM, and delineated catchments for surface flow network in the Red River basin.	March, 2011
2. GIS layers/maps that rank areas for wetland restorations based on fish and wildlife habitat, sediment reduction, & flood damage reduction benefits.	May, 2012
3. Integrate GIS layers into online Red River basin Lidar product viewer	June, 2012

Result 3: Develop wetland restoration implementation strategy Budget: \$ 119,500

Applied resource professionals will review, compare, and evaluate existing programs and plans used to effectively implement wetland restorations, identify program gaps, assess landowner attitudes, and recommend program changes and/or new incentive programs.

Deliverable	Completion Date
1. Wetland restoration program summary.	February, 2011
2. Landowner stewardship and wetland restoration survey report.	March, 2012
3. Eight GIS based public participation workshops.	March, 2012
4. Wetland restoration implementation strategy for landowners & agencies.	June, 2012

Result 4: Assess effectiveness of implementation strategy in pilot area Budget: \$ 47,000

The implementation team will restore wetlands in a pilot watershed using the prioritization and implementation strategies, assess the results, and finalize an implementation strategy.

Deliverable	Completion Date
1. Restored wetlands based on prioritization and implementation strategies.	November, 2012
2. Evaluate and report on effectiveness and satisfaction of process.	March, 2013
3. Final wetland restoration implementation strategy.	May, 2013

III. PROJECT STRATEGY

A. Project Team/Partners – Henry VanOffelen, MN Center for Env. Advocacy; Charles Fritz, International Water Inst.; Dr. Rex Johnson, USFWS; Dr. David Fulton, U. of MN, St. Paul; Linda Kingery, U of MN, NW Regional Sustainable Development Partnership; MN Board of Water and Soil Resources, Sandra Poppenga, USGS Earth Resources Observations and Science Center (EROS).

B. Timeline Requirements - July 1, 2010 to June 30, 2013

C. Long Term Strategy. The Lidar based GIS products will be a foundation for future water management in the Red River basin. The implementation strategy will be a foundation for implementing conservation programs. Both products could be used to help prioritize funding for conservation in the region (e.g., by Lessard Outdoor Heritage Council). Future project funding will be needed to evaluate the water quality, fish and wildlife habitat, and flood damage reduction benefits of wetlands restored using this process.

This project is consistent with long term fish and wildlife habitat, water quality, and flood damage reduction goals in the Minnesota's State Conservation and Preservation Plan, the Red River mediation agreement, Minnesota's Comprehensive Wildlife Conservation Strategy, Red River basin watershed district plans, MN State Wetland Restoration Strategy, Campaign for Conservation's 50-year vision, and Minnesota's State Conservation and Preservation Plan.

Project Budget

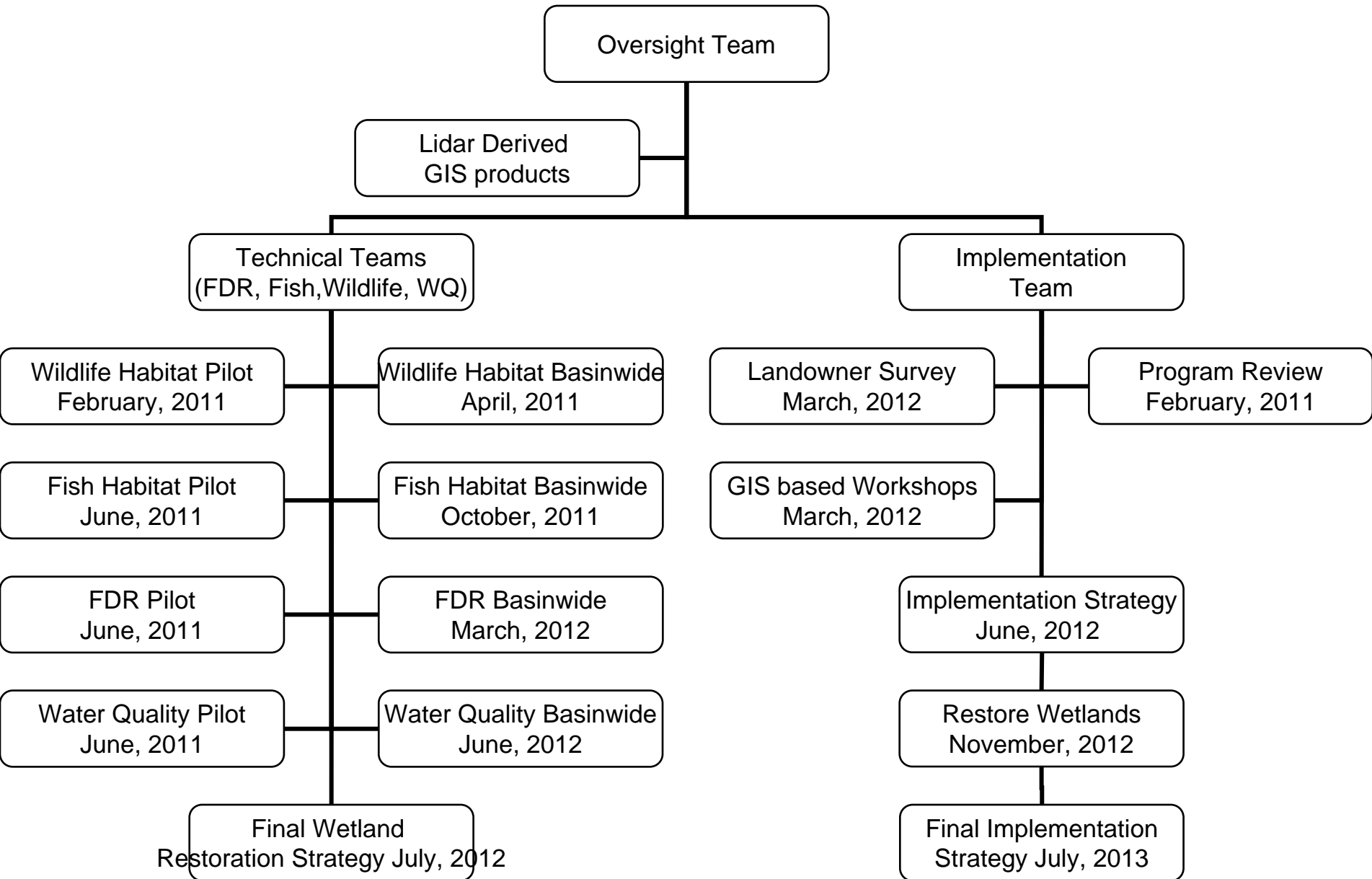
IV. TOTAL PROJECT REQUEST BUDGET (3 years)

BUDGET ITEM <i>(See list of Eligible & Non-Eligible Costs, p. 13)</i>	AMOUNT
Personnel:	\$ -
Project Manager - Henry VanOffelen for coordination and oversight of all aspects of this project. Approximately 45% of an FTE in project year 1 and 2 and 15% of an FTE in year 3. 85% salary. 15% benefits.	\$ 72,000
Project GIS Coordinator - MCEA GIS specialist to coordinate all aspects of the GIS work conducted by technical teams and also final map products. Approxiamtely 10% of an FTE in year 1 and 5% FTE in years 2 and 3. 85% salary. 15% benefits	\$ 13,000
18	\$ -
Oversight Team Consultant - Charles Fritz. Interenational Watershed Institute director for participation on project oversight team. 80% salary. 20% benefits	6500
Wildlife Habitat Team Service GIS specialist - complete basin wide wildlife priority layer based on restorable wetland inventory	15000
Flood Damage Reduction (FDR) Team Technical Consultants - contract services for three experienced watershed engineers to serve on FDR technical team to guide development and application of the FDR priority layer and maps.	\$ 34,000
Flood Damage Reduction Team (FDR) GIS Consultant - contract services for GIS work needed to identify FDR priority areas on the landscape based on Lidar derived GIS data layers.	25000
Water Quality (WQ) Team Consultants - contract services for GIS and water quality modeling needed to identify priority areas for sediment reduction the dominant impairment in the Red River basin.	41000
U.S. Geological Survey, Earth Resources Observation and Science Center - Lidar derived surface flow network, hydrologically conditioned DEM, and delineated catchments for surface flow network in the Red River basin.	75000
University of Minnesota, Dept. of Fisheries and Wildlife, -Graduate Student for 3 years contract service to develop and conduct landowners survey, GIS based public participation workshops, and evalautions.	135000
Equipment/Tools/Supplies: Terabyte hard drives; Laptop Computer, Projector	\$ 3,800
Travel: Mileage and lodging to attend meetings for all project related activities.	\$ 18,500
Additional Budget Items:	\$ -
TOTAL PROJECT BUDGET REQUEST TO LCCMR	\$ 438,800

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period:		
Northwest Regional Sustainable Development Partnership	\$ 10,000	pending
Red River Water Management Board	\$ 10,000	pending
Other State \$ Being Applied to Project During Project Period:	\$ -	
In-kind Services During Project Period: Salary and travel expenses for technical and implementation team members from MN DNR fisheries, MN DNR wildlife, MN DNR Eco. Resources, MN PCA, BWSR, USFWS, NRCS, and County SWCD's	\$ 165,000	approved and pending

Strategic Wetland Restoration in the Red River Basin. Project Overview



ORGANIZATIONAL DESCRIPTION

MCEA fills a unique niche in Minnesota's environmental community, with a focus on using law, science, and research to protect our natural resources, wildlife, and public health. We focus on work that produces tangible environmental improvements, often using unusual coalitions to achieve these results. The citizens of Minnesota and its natural resources are the beneficiaries of our work.

MCEA is a 501(c)(3) tax-exempt nonprofit corporation controlled at the policy level by a 17-member Board of Directors. MCEA was formed in 1974 as Project Environment Foundation (PEF). In 1993, the Board of Directors changed PEF's name to the Minnesota Center for Environmental Advocacy (MCEA) and undertook an ambitious strategic plan to expand and strengthen MCEA and better coordinate the entire Minnesota environmental community. In the past 15 years, MCEA has continued its record of successfully challenging environmental degradation and creating innovative partnerships to improve Minnesota's natural environment. Today, MCEA works in five program areas: Water Quality, Land Use and Transportation, Public Health, Clean Energy, and Wildlife and Natural Resources. A brief description of each program area can be found at www.mncenter.org. MCEA currently has a 22-person staff including policy experts, attorneys, scientists and a geographic information system specialist.

PROJECT MANAGER QUALIFICATIONS

Henry VanOffelen joined MCEA in June, 2002 as Natural Resource Scientist. His work is focused on Red River Basin flood reduction and natural resource enhancement projects, where for the past eight years he has provided leadership for multi-disciplinary and multi-agency project teams. He has experience working with landowners and local, state and federal officials to develop comprehensive watershed management plans to enhance natural resources and reduce flood damage.

Henry is a member of the Red River Basin Flood Damage Work Group's Technical and Scientific Advisory Committee (TSAC) and co-author of TSAC Technical Paper 13 "On-Channel Storage in the Red River Basin – Guidelines for Site Selection, Design, and Operation" and TSAC Technical Paper 14 "Incorporation and Evaluation of Natural Resource Benefits in Red River Basin Flood Damage Reduction Projects". He is the author of several watershed based fisheries investigations, natural resource assessments for watershed district plans, and he currently participates on several watershed project teams.

Henry also has an appointment as adjunct professor at University of Minnesota, Crookston, and has taught 2 semesters of "Wetland Ecology and Management". He is known to and respected by natural resource professionals throughout the region, including natural resource agency staff at the local, state, and federal levels.

For twelve years prior to joining MCEA, Henry was employed by the Minnesota Department of Natural Resources (DNR), where he worked as the Red River fisheries specialist, the 1837 Treaty Biologist, a fisheries research biologist and as fisheries specialist. He has a Master's in fisheries biology from Cornell University and a Bachelor's in fisheries from the University of Minnesota.