Environment and Natural Resources Trust Fund 2009 Phase 2 Request for Proposals (RFP)

LCCMR ID: 044-B1 **Project Title:** Targeting Water Quality Solutions to High-Contributing Areas Total Project Budget: \$ \$782,000 Proposed Project Time Period for the Funding Requested: 3 years: July 2009 to June 2012 Other Non-State Funds: \$ \$251,000.00 Priority: B1. Reduce Soil Erosion First Name: Robert Last Name: Patton Sponsoring Organization: MN Dept. of Ag Address: 625 Robert St N St. Paul MN 55155 **Telephone Number:** 651-201-6226 Email: bob.patton@state.mn.us Fax: 651-201-6120 Web Address: www.mda.state.mn.us **Region: County Name:** City / Township: Central, SW, SE

Summary: Integrates and pilots recently developed tools and findings to achieve seamless delivery of clean water restoration and protection in agricultural watersheds, targeting high-contributing areas of the landscape.

Main Prop	osal: 1008-2-047-proposal-Targeting Solutions Final Proposal.doc				
Project B	udget: 1008-2-047-budget-Targeting Solutions Budget.xls				
Qualificat	ions: 1008-2-047-qualifications-2008LCCMRQuals.DOC				
Map: 1008-2-047-maps-Final map.doc					
Letter of Resolution:					

MAIN PROPOSAL

PROJECT TITLE: Targeting Water Quality Solutions to High-Contributing Areas

I. PROJECT STATEMENT

The need to strategically target water quality solutions to high-contributing areas of the landscape is widely recognized but only recently have new technologies made it feasible. Emerging products and findings from several state-led Clean Water Legacy-funded and related projects have great potential to aid locally-led strategic targeting of efforts to reduce nutrient and sediment loads in agricultural watersheds. Building on the momentum from those projects, this project ensures that the state does not miss the opportunity to accelerate strategic targeting by hiring two Basin Coordinators—one each in the Lower Mississippi and Minnesota River Basins—to engage local partners simultaneously in up to six major watersheds in piloting and locally adapting new strategic targeting and related products as an integrated package. Below is a partial list of these products.

- Digital terrain analysis methods developed by the U of M to map previously hard-to-identify highcontributing areas relative to sediment & nutrient loading, such as gully edges & tile drain outlets;
- New farm-scale natural resource and environmental quality assessment tools, including easy-touse resource assessment indices being developed by the MN Project;
- The forthcoming Conservation Funding Guide (<u>www2.mda.state.mn.us/webapp/cpdt/default.jsp</u>), a highly accessible one-stop source of information on private lands conservation practices and associated payments available to Minnesota landowners; and,
- Early findings on innovative, practical on-farm solutions involving cover crops, managed grazing, and conservation drainage techniques to address high-contributing areas.

II. DESCRIPTION OF PROJECT RESULTS

Result 1: Maps of High-Contributing Areas

→ Local GIS specialists will learn (in U of M-led workshops) and apply digital terrain analysis methods to map and analyze high-contributing areas relative to sediment-related TMDLs. → Basin Coordinators and partners will use the resulting maps to estimate high-contributing acreage and associated treatment costs using existing general, agroecoregion-scale practice recommendations for each type of high-contributing area, to aid TMDL implementation planning and watershed protection planning.

Deliverables (for each participating major watershed)	Completion Date	
1. Maps of high-contributing areas	12/2010	
2. Estimates of high-contributing acreage and treatment costs	3/2011	

Result 2: Farm Assessments/Conservation Plans & Funding Options

Basin Coordinators and local partners will: → Conduct a conservation planning sign-up offering landowners financial incentives to obtain any of several farm-scale conservation plans or natural resource and environmental quality assessments (in coordination with the Minnesota Project's proposed Resource Assessment Index project), with special attention to new opportunities for high-contributing areas, such as CRP constructed wetlands sited to intercept tile lines and other innovative practices; → Use the Conservation Funding Guide (see above) to help landowners understand and access existing funding options for plan implementation; → Enhance the online guide by improving usability and adding local content based on feedback from landowners and conservation professionals such as SWCDs, NRCS, The Nature Conservancy, and Pheasants Forever; and → Write case studies describing conservation technical assistance needs in high-contributing areas as well as existing or proposed arrangements to strengthen local capacity to meet those needs.

Deliverables

- 1. Customized farm assessments or plans for at least 50 farmers in each participating 4/2011 watershed, or at least 300 assessments/plans total
- **2.** Communication of funding options to landowners using the Conservation Funding 4/2011 Guide online tool, and enhancements to the tool based on user feedback
- **3.** Technical assistance case studies for at least two participating watersheds 4/2011

Budget: \$106,000

Budget: \$216,000

Completion Date

Targeting Water Quality Solutions to High-Contributing Areas (continued)

Result 3: Demonstrating Innovative Solutions in High-Contributing Areas

Budget: \$396,100

Building on preliminary findings, a Demonstration Project Manager will collaborate with farmer cooperators and professional-technical specialists (see Budget) to demonstrate and quantify \rightarrow nutrient, sediment and bacterial load reductions; \rightarrow peak flow reductions; and \rightarrow habitat and practical benefits of promising new cover crop, managed grazing and conservation drainage techniques on working farms in high-contributing areas across varied landscapes.

Deliverables

Completion Date

- 1. Demonstration of cover crops at 10 new sites and managed grazing at 3 existing 11/2011 sites on working farms in the Lower Miss. Basin, with 1 field day per site (13 total)
- **2.** Demonstration of state-of-the-art conservation drainage upgrades at 2 existing sites 11/2011 on working farms (one in each basin), with 1 field day per site (2 total)
- **3.** Data on load reductions and economic benefits from all 15 sites, plus flow and 4/2012 waterfowl population data from the conservation drainage sites

Result 4: Improved Communication of Water Quality Progress & Outcomes Budget: \$64,000

Consistent with an effectiveness tracking and reporting framework recently developed by the U of M Water Resources Center and a Clean Water Council-proposed searchable database of TMDL-related research, Basin Coordinators and partners will: → Use deliverables from Results 1 and 2 to pilot new, more effective ways to measure progress and communicate water quality outcomes to citizens; and → Use first-year data from Result 3 to pilot a centralized, standardized system for reporting data from on-farm practice evaluations to enable corroboration by peer-reviewed research.

Deliverables

Completion Date

- **1.** Samples of new, more effective ways to report measurable outcomes
 4/2011
- 2. A sample of centralized, standardized reporting of on-farm practice evaluation data 4/2011

III. PROJECT STRATEGY AND TIMELINE

A. Project Partners

The two Basin Coordinators (\$320K) will achieve Results 1-4 with substantial in-kind collaboration from SWCDs, watershed partnerships and alliances, and other agencies/organizations in participating major watersheds in the two basins. (Discussions with candidate watersheds are under way.) A state level in-kind Project Design Team of MDA, PCA, BWSR, DNR and nongovernment organizations including, at a minimum, the Minnesota Agricultural Water Resources Coalition and the Minnesota Association of Soil and Water Conservation Districts, will help MDA develop the project work plan prior to 6/2009 and guide its implementation for the duration of the project. The U of M (Dr. David Mulla) will conduct two mapping workshops (\$5K) in Result 1. Partners for Result 2 and Result 3 are listed in the Project Budget. Project staff will coordinate closely with MDA's proposed Root River Small Watershed project on all four results.

B. Project Impact

The project will help local partners reduce nutrient and sediment loads from roughly 350,000 acres of high-contributing areas across varied landscapes in participating watersheds, and jumpstart strategic targeting to aim for similar results in other watersheds. The integrated, locally adapted package of strategic targeting, farm conservation planning and on-farm practice evaluation findings will help participating watersheds get a "bigger bang for the buck" from existing or ongoing implementation funds such as farm bill conservation programs and anticipated Clean Water Legacy implementation funds.

C. Time

All activities will occur between July 2009 and June 2011, with Result 3 alone continuing through June 2012 in order to span two complete growing seasons, which is necessary to obtain the desired data.

D. Long-Term Strategy

The package of strategic targeting and related products piloted through this one-time project will help watershed partners do more (achieve higher load reductions) with less, regardless of the amount and timing of existing, ongoing, and anticipated funding for overall Clean Water Legacy Act implementation. Also, since the project is conducted in multiple major watersheds, it will aid the pending transition to a statewide rotating major-watershed cycle PCA is devising to make the TMDL process more efficient and holistic (e.g., integrating multiple restoration and protection goals) and the timing more predictable.

Three-Year Project Budget

IV. TOTAL PROJECT REQUEST BUDGET

BUDGET ITEM		AMOUNT	<u>% FTE</u>
Personnel:			
Results 1-4: Two MDA Basin Coordinators (for Minnesota R. and Lower			
Mississippi R., 2 yrs, FY2009-FY2011) salary and benefits (30% of salary)		320,000	100%
Result 3: MDA Demonstration Project Manager (3 yrs, FY2009-FY2012), salary			
and benefits (30% of salary)	\$	200,000	100%
Contracts:			
Result 1: UM Faculty/Staff (Dr. David Mulla) - 2 mapping workshops	\$	5,000	
Result 2: Programmer for Conservation Funding Guide enhancements	\$	30,000	
Result 3: UM Technician - tech support for monitoring, data mgtmt. & analysis	\$	15,000	
Result 3: Helicopter service for aerial seeding of cover crops	\$	18,000	
Result 3: Cover cropping farmer-consultant (Andy Hart) stipend	\$	4,500	
Result 3: Drainage specialist for conservation drainage design and installation	\$	25,000	
Result 3: Conservation drainage farmer-cooperator (Tony Thompson) stipend	\$	15,000	
Equipment/Tools:	\$	-	
Result 3: Managed grazing and conservation drainage monitoring equipmt./software and maintenance	\$	40,000	
Other:	\$	-	
Result 2: Conservation planning signup workshops & landowner incentive payments (room rental, refreshments, \$1,000 incentive payments to 50 farmers)	\$	53,000	
Result 3: Travel costs for three personnel (2 FTE for 2 yrs. & 1 FTE for 3 yrs. @10,000 mi./yr & \$0.50/mi.)	\$	25,000	
Result 3: Field days, meetings, other outreach (8 field days @ \$100, meeting lunches for 100 @ \$8)	\$	1,600	
Result 3 Lab sample analysis (250 water @ \$100, 800 biomass & soil @ \$6.25)	\$	30,000	
TOTAL PROJECT BUDGET REQUEST TO LCCMR	\$	782,100	

V. OTHER FUNDS

SOURCE OF FUNDS		AMOUNT	<u>Status</u>
Other Non-State \$ Being Leveraged During Project Period: \$250,000			
NRCS EQIP & CIG, \$1000 USFWS	\$	251,000	Pending
In-kind Services During Project Period:			
MDA: .7 FTE existing staff; travel, communications.	\$	60,000	
Local Partners Salary & Travel	\$	85,000	
Past Spending: MDA Clean Water Legacy Research \$95,000 cash; NRCS for			
Cons. Funding Guide \$10,000 cash	\$	105,000	

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Page 4 of 6

Project Manager Qualifications and Organization Description

Project Manager: Robert Patton, AICP, Interim Section Supervisor
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Qualifications

Bob Patton is Interim Supervisor for the Ag Development and Environmental Quality Section, in the Agricultural Development and Financial Assistance Division of the Minnesota Department of Agriculture (MDA). In addition to his supervisory responsibilities, he is lead worker for the agricultural land use program (information and technical assistance to local governments and administration of Minnesota's agricultural land preservation program), and is the MDA's Technical Representative to the Environmental Quality Board (advising the Commissioner of Agriculture relating to the Commissioner's duties on the EQB). Bob has been with the MDA for 14 years, and has 28 years of experience in urban and regional planning, much of which included environmental planning. Prior to coming to the MDA and Minnesota, Bob worked in both county and city planning offices in Washington State. He is a member of the American Institute of Certified Planners (AICP).

Bob has been the project manager for two LCMR projects: the 1997 project, 09(c) *Reinventing the Agricultural Land Preservation Program*; and the 2001 project, 08(b) *Agricultural Land Preservation*.

Organization Description

The Minnesota Department of Agriculture is a state agency created under Minnesota Statutes, Chapter 17. The MDA's mission is to enhance Minnesotans' quality of life by ensuring the integrity of our food supply, the health of our environment, and the strength of our agricultural economy.



