

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

LCCMR ID: 152-E2

Project Title:

Support Decision Makers in Watersheds with System-Level Science

LCCMR 2010 Funding Priority:

E. Natural Resource Conservation Planning and Implementation

Total Project Budget: \$ \$1,540,000

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

Other Non-State Funds: \$ \$0

Summary:

This project will develop a new approach and provide a specific watershed-scale tool to help manage human activities and natural resources on a system level.

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Sponsoring Organization: DNR

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Web Address:

Location:

Region: Statewide

County Name: Statewide

City / Township:

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

MAIN PROPOSAL

PROJECT TITLE: Supporting Decision-Makers in Watersheds with System-Level Natural Resource Science

I. PROJECT STATEMENT

Local land and water use decision makers are often unable to effectively use the variety of natural resource information that's available on a system-level, due the complexity of gathering this information, time constraints, decision-point architecture, legal, and social constraints. Connecting local, county, and state agency decision-makers to useful information that reflects the complexity and breadth of system dynamics is a prerequisite for optimizing management activities in a sustainable context.

The project goal is to develop a new approach and provide a specific watershed-scale tool to help manage human activities and natural resources on a system level. This project will create a framework, enhance a new set of information (the GIS-based Watershed Assessment Tool, WAT), develop explicit delivery plans for 4 watersheds, and deliver a specific product for resource managers in these watersheds that will substantially increase the ability of decision makers to use available system-level natural resource information at a watershed level.

II. DESCRIPTION OF PROJECT RESULTS

Result 1: *Develop a Framework for assessing and applying available system-level information in land and water use decisions within watersheds.*

Budget: \$ 300,000

Deliverable	Completion Date
1. Identify local watershed decision-makers, their needs and current use of data and information	Dec 31, 2010
2. Identify Resource Management Decision points	Dec 31, 2010
3. Identify the relevant system-level natural resources information	Oct 31, 2010
4. Construct a Framework around the above deliverables that is credible, replicable, and scalable.	June 30 2011

Result 2: *Enhance the development of "the watershed assessment tool," which is a new system-level tool that is explicitly directed to watershed level decision makers.*

For a watershed-based approach to be successful, a large amount of information regarding the current state of watershed resources is necessary. Unfortunately, despite the large amount of existing geographic information system (GIS) information that could be utilized, this information is not readily available for managers in an easily accessible, broadly applicable, summarized form. The Watershed Assessment Tool (WAT) is designed to bridge this gap by presenting background information on watershed concepts and a comprehensive series of GIS layers directly to users on a public website. This information is organized and delivered within a 5-component framework of hydrology, geomorphology, biology, connectivity and water quality to facilitate discussion and quantification of healthy watershed function and interactions. Along with the resource information, managers need descriptions of the social and economic context of the watershed. By developing and presenting to users streamlined access to a watershed-level view, this effort intends to 'raise the bar', in terms of the breadth of information reviewed before even routine decisions are made which will affect the current and future resource conditions.

Budget: \$ 340,000

Deliverable	Completion Date
5. Examine and incorporate critical indices describing important social aspects of ecology within watersheds.	April 30 2011
6. Examine and incorporate critical indices describing the economics of a watershed.	April 30 2011

Result 3: Develop information delivery system plans for four watersheds around the state.

Use the framework (Result 1) in four watersheds and create explicit delivery plans for system-level information (especially Result 2) to key decision makers supporting key decision points within those watersheds. Moving toward sustainability requires us to align conservation and development patterns and provide information to do that in ways that it is valued and can be used effectively. Effectively connecting land and water use decision makers, natural resource managers, and stakeholders with crucial information at a watershed scale is a necessary step to advancing sustainable natural resource management.

Budget: \$ 450,000

Deliverable**Completion Date**

8. Analysis of decision architecture: who is making important resource decisions, what information are they using, what information do they need to enhance the sustainability of these decisions, what form and presentation is most useful to them, what are the key decision points and legal, institutional and social context(s) of their decisions.

April 30 2011

9. Provide summary of the above analysis and specific recommendations to create explicit delivery plans to key stakeholders using the enhanced WAT.

Sep 30 2011

Result 4: Deliver the tool to natural resource managers in one of the above watersheds.

Based on the analysis and information above, the Watershed Assessment Tool will be applied, in a “hands on” process, to a specific watershed and group of natural resource managers.

Budget: \$ 450,000

Deliverable**Completion Date**

10. Apply the above results in one of the four studied watersheds to a wide range of situations, to begin implementing system-level management.

Jun 30 2012

11. Gather feedback from local, county, and state managers to improve the usefulness and timeliness of the tool.

Jun 30 2012

III. PROJECT STRATEGY**A. Project Team/Partners**

The project team for this project will include a DNR Division of Ecological Resources project manager, hydrologist, ecologist, and a natural resource economist. The primary proposal contacts are: (1) Ian Chisholm; DNR Division of Ecological Resources, Stream Habitat Program, ian.chisholm@dnr.state.mn.us, 651-259-5080; (2) Dave Leuthe, DNR Division of Waters, dave.leuthe@dnr.state.mn.us, 651-259-5709; (3) Brian Stenquist, DNR Division of Ecological Resources, brian.stenquist@dnr.state.mn.us, 651-259- 5144.

B. Timeline Requirements

The timeline for this project is estimated to be 36 months. Work for all objectives and deliverables will be scheduled in an overlapping manner.

C. Long-Term Strategy

This project represents one of the key tools for establishing and managing dynamic and “connected” terrestrial and aquatic habitats which will directly benefit natural resource management and society. Implementing this strategy requires a comprehensive, coordinated effort, on a statewide scale, over the long term.

Project Budget

Supporting Decision-Makers in Watersheds with System-Level Natural Resource Science

IV. TOTAL PROJECT REQUEST BUDGET (3 years)

BUDGET ITEM <i>(See list of Eligible & Non-Eligible Costs, p. 13)</i>	AMOUNT
Personnel:	\$ -
1 fte Project Manager; 3 years; 80% salary:20% benefits	\$ 300,000
1 fte : Project Consultant; Natural Resources Economist: 3 years; 80% salary:20% benefits	\$ 300,000
1 fte : Project Consultants; Ecologist: 3 years; 80% salary:20% benefits	\$ 300,000
1 fte : Project Consultants; Hydrologist: 3 years; 80% salary:20% benefits	\$ 300,000
1 fte Project Consultant; Information Delivery Specialist: 3 years; 80% salary:20% benefits	\$ 300,000
Contracts:	NA
	\$ -
Equipment/Tools/Supplies: <i>In this column, list out general descriptions of item(s) or item type(s) and their purpose - one line per item/item type.</i>	\$ -
5 Computers, monitors, software and support	\$ 15,000
Acquisition (Fee Title or Permanent Easements): <i>In this column, indicate the proposed # of acres and who will hold title (e.g. DNR, Non-profit).</i>	NA
Travel:	\$ -
In-state travel (technical expert collaboration - 3 years)	\$ 18,000
Out of state travel (regional and national collaboration - 3 years)	\$ 7,000
Additional Budget Items:	NA
TOTAL PROJECT BUDGET REQUEST TO LCCMR	\$ 1,540,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period:	NA	
Other State \$ Being Applied to Project During Project Period:		
	NA	
In-kind Services During Project Period:	\$ -	
1200 hours (i.e. DNR and nonprofit staff) technical guidance over 3 years	\$ 24,000	
Remaining \$ from Current Trust Fund Appropriation (if applicable):	NA	
Funding History:	NA	

Organization Description:

Minnesota Department of Natural Resources

Mission Statement: Our mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life. (see <http://www.dnr.state.mn.us/aboutdnr/index.html> for additional information about the Minnesota DNR).

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Qualifications:

EDUCATION

Master of Science Fisheries Science (Zoology), University of Wyoming
9/1983-8/1985
Thesis: Winter stream conditions and brook trout winter habitat associations in the Snowy Range, Wyoming

Bachelor of Science Water Resources & Biology, 9/1974-5/1976
University of Wisconsin/Stevens Point 1/1978-8/1980

PROFESSIONAL EXPERIENCE

1989-present **Natural Resources Program Supervisor;** Supervise and direct Division of Ecological Resources Stream Habitat Program.
Minnesota Department of Natural Resources
St. Paul, Minnesota

1985-1989 **Project Research Biologist;** Direct Bonneville Power Administration funded research project to document the effects of Libby Dam operation on the reservoir fishery.
Montana Department of Fish, Wildlife, and Parks
Libby, Montana

