

**Environment and Natural Resources Trust Fund
2011-2012 Request for Proposals (RFP)**

LCCMR ID: 033-B

Project Title: Improving Habitat/Surface Water Quality through Precision Conservation

Category: B. Water Resources

Total Project Budget: \$ \$454,000

Proposed Project Time Period for the Funding Requested: 3 yrs, July 2011 - June 2014

Other Non-State Funds: \$ 0

Summary:

Precision Conservation Planning will accelerate improved habitat, water quality, and flood control in a cost effective way by utilizing LiDAR data and other state of the art tools.

Name: Andy Henschel

Sponsoring Organization: Shell Rock River Watershed District

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Albert Lea MN 56007

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Web Address: www.shellrock.org

Location

Region: SE

Ecological Section: Minnesota and NE Iowa Morainal (222M)

County Name: Freeborn

City / Township: Albert Lea

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ Employment	_____ TOTAL _____%

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Improving Habitat and Surface Water Quality through Precision Conservation

I. PROJECT STATEMENT

Shell Rock River Watershed District (SRRWD) Management Plan developed in 2004 has identified goals for accelerating programs for improved habitat, water quality and flood control through a variety of conservation measures in the areas surrounding Albert Lea Minnesota, the “Land Between The Lakes”, the southern gateway for Minnesota’s Lake country. The selection, prioritization and implementation of appropriate protection, enhancement and restoration measures on area lands, streams, ditches, rivers, lakes and wetlands in the Shell Rock Watershed can be accelerated in phases and aided with the new LiDAR and GIS precision conservation decision making tools. The SRRWD plans to initiate Precision Conservation Planning to increase the cost effectiveness of conservation planning with the use of LiDAR and other new tools. The ability to process and analyze the highly accurate GIS-based tools can provide 5:1 to 7:1 efficiency over the traditional means of natural resources risk assessment, conservation planning and project design. By employing state-of-the-art tools for conservation, the tasks of defining, delineating and prioritizing critical areas for conservation and water quality improvements can be more efficient and productive. Cost savings can be used for tangible on-the-ground implementation projects that show results for the entire watershed.

Combining the LiDAR’s high resolution topography with the primary watershed attributes such as soils, slope, aspect, catchment area and curvature can be used to assess, analyze, display and tabulate the most important secondary attributes such as soil erodibility or indices for wetness, stream power and flow accumulation. The use of the new precision tools in a GIS format for the entire SRRWD creates significant efficiencies and can produce accurate assessments at a fraction of the cost of traditional air photo interpretation and field visits. By using the new techniques for terrain analysis and critical area assessments SRRWD can identify critical areas that contribute to a disproportionately large amount of erosional sediments and phosphorous to surface waters. The goals of the project will be measured by the number and effectiveness of the new conservation measures that will protect, enhance and restore the lakes, rivers, streams and lands in the watershed.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Use LiDAR and GIS tools to map primary and secondary attributes of the entire watershed and identify and prioritize effective conservation measures and recruit landowner action and participation to mitigate specific areas contributing to habitat and water quality degradation within the 246 square mile Shell Rock River Watershed. The entire SRRWD will be divided into four sub-watershed group phases (see attached figure) completing the following tasks per phase; compilation mapping of primary and secondary attributes for the entire watershed (Phase I-IV), data processing and mapping of secondary attributes (Phases I-IV), evaluate critical source areas delivering non-point source pollution and creating habitat and water quality degradation (Phase I-IV), prioritize critical source areas and make landowner contacts for on-the-ground water quality improvement projects (Phase I-IV).

	Budget: \$63,000
Outcome	Completion Date
<i>1. GIS based map and data set identifying critical source areas delivering non-point source pollution for the entire watershed (Phases I-IV).</i>	<i>Dec. 31, 2011</i>
<i>2. Prioritize critical source areas for on-the-ground water quality improvement projects (Phases I-IV).</i>	<i>Dec. 31, 2011</i>

Activity 2: Accelerate design selection for on-the-ground conservation and water quality improvement projects based on identification of priority areas. The selection of appropriate design features and implementation practices will take a systems approach to meeting water quality goals in a particular sub-watershed, a task that is facilitated by the flexible scales for analyzing LiDAR and GIS data. Priority will be given to twenty five sites in Phase I of the project that meet the Shell Rock Watershed conservation goals. Based on the flow patterns and discharge points into waterways design standards will be selected for tile inlets, side inlets, flow control, wetland restoration, water impoundments, ditch construction and maintenance, stream bank erosion and buffers. **Budget: \$84,000**

Outcome	Completion Date
<i>1. Devise standard set of 25 Conservation Measures (BMP's) per phase (Phase 1-4)</i>	<i>April 30, 2012</i>
<i>2. Field Staff select sites of devised standard conservation measures (BMP's)</i>	<i>June 30, 2012</i>
<i>3. Detailed engineering of BMP's requiring grading plans</i>	<i>August 31, 2012</i>

Activity 3: Acquire conservation easements or fee title for critical areas where implementation practices will be installed and maintained in phase I of the project. **Budget: \$132,000**

Outcome	Completion Date
<i>1. Acquire conservation easements or fee title on 25 selected critical source areas (approximately 75 acres) in Phase I of the project.</i>	<i>November 31, 2012</i>
<i>2. Implement 25 conservation measures (BMP's) in identified critical areas (approximately 75 acres) for Phase I of the project.</i>	<i>November 31, 2012</i>

Activity 4: Construct, monitor and permanently maintain 25 conservation measures (BMP's) for the improvement of habitat and water quality in Phase I of the project. Permanent conservation practices will be installed on land owned by the District or on private land that is covered by Permanent Conservation Easements. **Budget: \$175,000**

Outcome	Completion Date
<i>1. Construction of 25 conservation measures (BMP's) within Phase I of the project.</i>	<i>June 1, 2013</i>
<i>2. Monitor and maintain constructed conservation measures in Phase I of the project.</i>	<i>November 31, 2013</i>

III. PROJECT STRATEGY

A. Project Team/Partners

The SRRWD will be the fiscal agent receiving funds for the project. The following local agencies will assist by providing technical input: Freeborn County SWCD, Minnesota Natural Resources Conservation Service, Freeborn County, US Army Corps of Engineers and the City of Albert Lea. Outside services required to complete the project include environmental, GIS, engineering and construction.

B. Timeline Requirements

The goal for timeline requirements of project is approximately 3 years. An additional 4 months or until November 30, 2013 will be required for project completion to assure that each constructed conservation measure is adequately stabilized preventing erosion issues during rainfall events.

C. Long-Term Strategy and Future Funding Needs

The project will require future funding requests for easement acquisition, and construction of 75 additional conservation measures proposed in phases II-IV (25 per phase). A long term monitoring/maintenance plan will be implemented to assure all constructed conservation measures are adequately functioning as designed for the project.

2011-2012 Detailed Project Budget

IV. TOTAL TRUST FUND REQUEST BUDGET 2 years

BUDGET ITEM	AMOUNT
Personnel:	
Contracts:	
Professional/Technical - To utilize LiDAR based GIS services to map primary and secondary attributes throughout the watershed. To provide a tool to identify and prioritize effective conservation measures within watershed. The District will use a competitive selection process, based on qualifications.	\$ 63,000
Professional/Technical/Engineer - Design on-the-ground conservation measures (BMP's). The District will use a competitive selection process, based on qualifications.	\$ 84,000
Professional/Technical - Construct 25 conservation measures in Phase I of the project. The District will use a competitive selection process, based on qualifications. The District will use a competitive selection process, based on qualifications.	\$ 100,000
Equipment/Tools/Supplies:	
Construction materials for 25 conservation measures in Phase I of the project. Materials to be used include: earth work, culverts, rock, fill material, tile, water control structures, materials will vary based on the Precision Conservation priorities defined in Phase I.	\$ 75,000
Acquisition (Fee Title or Permanent Easements):	
Permanent Conservation Easements total approximately 45 acres for Phase I of the project. Shell Rock River Watershed District will hold the titles for the easements.	\$ 72,000
Land fee title acquisition total approximately 30 acres for Phase I of the project. Shell Rock River Watershed District will hold the titles for the property.	\$ 60,000
Travel:	
Additional Budget Items:	
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND \$ REQUEST	\$ 454,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ Being Applied to Project During Project Period:		
Other State \$ Being Applied to Project During Project Period:		
In-kind Services During Project Period:		
Easement or property acquisition fees this includes attorney, watershed district manager, financial and clerical services, provided by SRRWD	\$ 40,000	
Construction and Site Monitoring Services of conservation measures, provided by SRRWD	\$ 6,000	
Landowner contact and correspondence, provided by SRRWD	\$ 3,000	
Fiscal agent project management fees, provided by SRRWD	\$ 10,000	
Critical source model development, on site ground truthing and verification and correlation with contractor of conservation measures, provided by SRRWD	\$ 21,750	
Remaining \$ from Current ENRTF Appropriation (if applicable):		
Funding History:		

2011-2012 Acquisition List for Environment and Natural Resources Trust Fund Proposal

Project Manager Name: Shell Rock River Watershed District - Andy Henschel

Environment and Natural Resources Trust Fund \$ Request: \$ 454,000

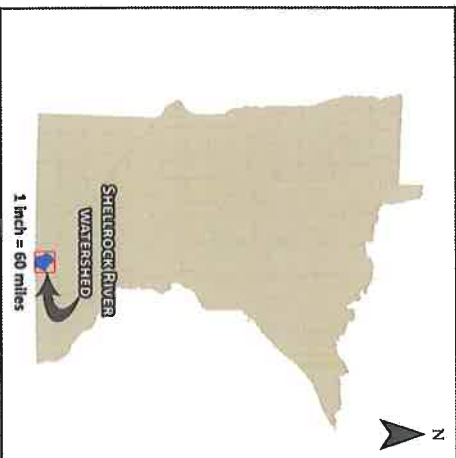
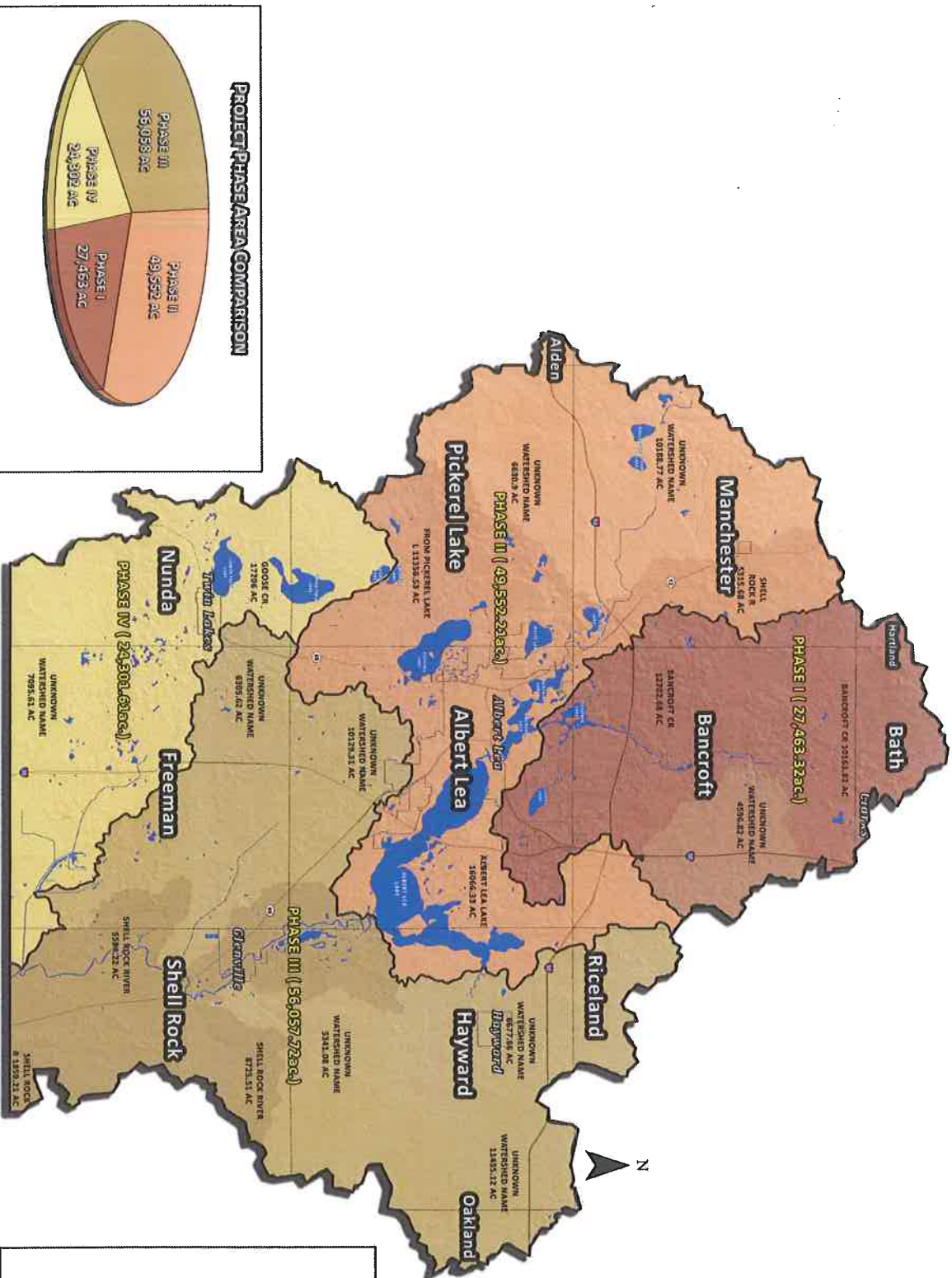
Final Title Holder(s): Shell Rock River Watershed District

#	Parcel Name	Acquisition Type (Fee-Title OR Conservation Easement)	County	Estimated # of Acres	Geographical Coordinates			
					Latitude	Longitude	UTM-X	UTM-Y

NOTES: The District will not be able to identify the parcels for fee title purchase or easement until the Precision Conservation mapping is complete. After the mapping is complete the District will be able to prioritize the most critical areas and then will approach landowners to negotiate parcels for fee title purchase or easement. The District will use many criteria to chose priority areas, such as: highly erodible soils, water volume storage, and habitat benefits.

IMPROVING HABITAT AND SURFACE WATER QUALITY THROUGH PRECISION CONSERVATION

SHELL ROCK RIVER WATERSHED DISTRICT
 FREEBORN COUNTY, MINNESOTA



SRRWD Project Manager Qualifications and Organization Description

SRRWD Watershed Conservationist/Project Manager – Andy Henschel

Shell Rock River Watershed District (2007 to Present):

- Watershed Technician
- Project Manager for all watershed district projects, previous projects include: Flood Mitigation Project – South Industrial Park, 3 electrical fish barriers, Pollution Prevention Program /Onsite Sewer Compliance and water monitoring programs.

Freeborn County Watershed Field Technician (2001 – 2007):

- Performed county inspections and enforced County septic ordinances, worked with small communities on wastewater treatment projects, established County water monitoring program. Aided in re-writing the Freeborn County Water Plan

Education:

- B.S. in Environmental Science and Geography.
- Minor in Biology with a GIS Specialty.
- Erosion/Sediment Control Specialist

Organizational Description

Shell Rock River Watershed District – was established on June 25, 2003 by citizen petition. In 2004, the District finalized the SRRWD Water Management Plan, to address all water quality issues. The District covers about 246 square miles, within Freeborn County. The District has 7 Board Managers and 5 employees.

The District is blessed with 12 Lakes and is located in the Western Corn Belt Region of Southern Minnesota. Albert Lea Lake is the first lake you see when traveling north, on Interstate 35, into Minnesota. All water within the District drains to a common point – the Shell Rock River. The Shell Rock River flows into the Cedar in Iowa and finally the Mississippi Rivers.

The District has been aggressively working to solve problems that have resulted in 3 lakes and the Shell Rock River to be listed on the MPCA's impaired waters list. Accomplishments include: implementing filter strip program, Pollution Prevention Program /Onsite Sewer Compliance, wetland reclamation, water retention areas, 3 electric fish barriers, urban and rural BMPs, and many other projects that address water quality issues.

The mission of the Shell Rock River Watershed District (SRRWD) is to implement reasonable and necessary improvements to the water-related and other natural resources of the District. The Board of Manager oversees many efforts to conserve, protect and manage water resources of the watershed. The SRRWD works closely with the City of Albert Lea, Freeborn County, Farm Service Agency, state agencies, and active citizen volunteers to improve water quality.

**Shell Rock River Watershed District
Resolution 2010-01
March 30, 2010**

BE IT RESOLVED that the Shell Rock River Watershed District, hereinafter referred to as "Authorized Official" (Authorized Agent) acts as legal sponsor for the Precision Conservation Project contained in the

Legislative-Citizen Commission on Minnesota Resources (LCCMR) Application to be submitted on April 9, 2010, and that Authorized Official is hereby authorized to apply to the LCCMR, hereinafter referred to a "State," for funding of this project on behalf of the applicant.


BE IT FURTHER RESOLVED that the Applicant has the legal authority to apply for financial assistance, and the institutional, managerial and financial capability to ensure adequate acquisition, maintenance and protection of the proposed project.

BE IT FURTHER RESOLVED that the Applicant has not incurred any construction costs or has not entered into any written agreements to purchase property proposed by this project.

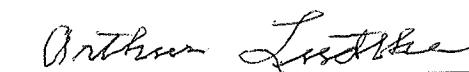
BE IT FURTHER RESOLVED that the Applicant has not violated any Federal, State, or local laws pertaining to fraud bribery, graft, kickbacks, collusion, conflict of interest or other unlawful or corrupt practice.

BE IT FURTHER RESOLVED that upon approval of the application by the State, the Authorized Official may enter into an Agreement with the State for the above-referenced project, and that the Applicant certifies that it will comply with all applicable laws and regulations as stated in the contract agreement.

NOW, THEREFORE BE IT RESOLVED that Andy Henschel, Watershed Conservationist for the Shell Rock River Watershed District, is hereby authorized to execute such Agreements as are necessary to implement the project on behalf of the Applicant.



Gary Pestorius, Chair
Shell Rock River Watershed District



Arthur Ludtke, Secretary
Shell Rock River Watershed District