

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

Project Title:

ENRTF ID: 096-E2

Southeastern Minnesota Resource Vulnerability Assessment and Educational Project

Topic Area: E2. NR Info Collection/Analysis

Total Project Budget: \$ 316,000

Proposed Project Time Period for the Funding Requested: 2 yrs. July 2013 - June 2015

Other Non-State Funds: \$ 0

Summary:

A Natural Resource Vulnerability Assessment involving resource analysis and community education. Assessment of agriculture, fish, wildlife, and forest resources to vulnerability from invasive species, soil desiccation, and changing habitat.

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Location

Region: SE

County Name: Filmore, Houston, Olmstead, Wabasha, Winona

City / Township:

<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"/> %

Project Title: **Southeastern Minnesota Resource Vulnerability Assessment and Educational Project**

I. PROJECT STATEMENT

Minnesota’s future leaders will need to be good stewards of our natural resources. In order to be good stewards, they will need to be knowledgeable about Minnesota’s natural resources. The project we propose meets that need directly. First, we will develop an understanding of the status and trends in key natural resources of our region by completing a Natural Resource Vulnerability Assessment (NRVA). Second, using the knowledge gained in the assessment process, we will develop curricular materials for the students and the citizens of Southeastern Minnesota (SEMN).

The NRVA process that we propose is one that we have refined through the completion of 22 natural resource condition and vulnerability assessment projects for the National Park Service (NPS). It has 5 key components:

- Identify key local resources, by dialoguing with scientists and local natural resource managers;
- Model conditions and trends for the identified resources;
- Assess resource vulnerability to evolving physical processes (shifting trends in precipitation, air temperature, soil aridity, etc.) by doing research in scientific and managerial literature, by interviewing subject matter experts, and by using statistically sound/defensible modeling strategies;
- Create vulnerability metrics for each identified resource; and
- Summarize these analyses in a project report.

The process and the resulting report both provide critical information to resource managers regarding a variety of topics, including agriculture, invasive species, water quality, soil condition, fisheries, wildlife, etc. This information assists in the development of future management goals; prioritizes future data acquisition; and puts the expert resource managers in closer touch with the non-expert public.

The project uses the assessment process described above to engage K-16 educational institutions and the wider public. We will video-tape portions of the meetings between the scientists and the managers to develop educational modules for use in schools and with the general public. The resulting modules will deepen their awareness of the region’s key natural resources and the strategies and structures that govern their management. We will achieve 3 fundamental educational objectives:

- Engage teachers and learners from across the K-16 spectrum in the assessment process;
- Construct curricular material and maintain an interactive project website; and
- Host community seminars for the citizens of Southeastern Minnesota.

All three represent vehicles that will enhance resource-awareness, heighten resource-literacy, and improve science and technology literacy with a focus on local resource management objectives.

II. DESCRIPTION OF PROJECT ACTIVITIES – Total Budget \$316,000

Activity 1: Conduct SEMN Resource Vulnerability Assessment Budget: \$ 155,000

Saint Mary’s University of Minnesota/GeoSpatial Services (SMUMN/GSS) will engage local natural resource managers to identify high-value resources, agree on a scope and scale for the process of assessment, complete the assessment, create models, and produce a report for use by the stewards.

Outcome	Completion Date
<i>1. Develop ecological and physical processes assessment framework</i>	<i>Oct 2013</i>
<i>2. Natural resource modeling for Southeastern MN</i>	<i>Oct 2013</i>
<i>3. Community (species-based) and stressor assessment</i>	<i>Dec 2014</i>
<i>4. Final Assessment Report</i>	<i>March 2015</i>

Activity 2: Educational Curriculum and K-16 Engagement**Budget: \$ 133,000**

SMUMN/GSS will record portions of the scoping and assessment meetings between the scientists and the resource managers, collaborate with local school representatives and pre-service teachers from the SMUMN department of education to edit the raw material into deliverable modules, and then deliver the modules both in the schools and at public forums.

Outcome	Completion Date
<i>1. Curriculum modules for integration to STEM (Science, Technology, Engineering, and Math) classes, appropriately scaled units across the K-16 spectrum</i>	<i>January 2014-2015</i>
<i>2. Make and edit video recordings of project planning sessions (ongoing)</i>	<i>Oct 2013- July 2014</i>
<i>3. Classroom presentations on Resource Dynamics and Change Analysis (ongoing)</i>	<i>Aug 2014- May 2015</i>
<i>4. Web-based tool for resource observations, inquiry, and discussion</i>	<i>Ongoing</i>

Activity 3: Community Education and Information Sharing**Budget: \$ 28,000**

SMUMN, through GSS, will develop and maintain an interactive website where both the faculty and student users in a secure and educational context. SMUMN through GSS, will host the edited videos of the scoping and assessment meetings on the site. SMUMN/GSS will also host at least 4 live workshops in four SEMN cities and at least 4 webinars online.

Outcome	Completion Date
<i>1. Website for project information and discussion (ongoing)</i>	<i>June 2015</i>
<i>2. Public webinars on project status, outcomes, and discussion (quarterly)</i>	<i>June 2015</i>
<i>3. Public natural resource management workshops offered in various SEMN cities (with a minimum of 4 cities) and 4 virtual sessions.</i>	<i>June 2015</i>

III. PROJECT STRATEGY

A. Project Team The team includes a *Program Manager* (SMUMN/GSS) who will manage, serve as the fiscal agent, assist with outreach, coordinate community engagement, and lead the interagency assessment collaboration; 2 scientists (GSS) and an *Invasive Species Specialist* (SMUMN) who will lead the NRVA; a *modeler/scientist* (GSS) who will lead the downscale modeling effort. The natural resource stewards, from the National Park Service (NPS), Fish and Wildlife Service (FWS), Natural Resources Conservation Service (NRCS), Soil and Water Conservation District (SWCD), and Land Stewardship Initiative (LSI) will be key partners in ensuring that our research and analysis are aimed at the right resources and at the right scale. Even though they are not funded, the report of the research and analysis will be relevant to these managers' resource management priorities and will ensure their interested involvement. The team also includes 2 professional educators (SMUMN) who will collaborate with at least 2 local teachers from Winona Area Catholic Schools (WACS), Cotter High School (CHS), and Winona Area Public Schools (WAPS) to develop curricular and educational materials. The educational partners will be directly engaged (in modes that are scaled appropriately) in the research, analysis, and construction of curriculum about the relevant information. The outcomes of the educational component will be relevant to the educator's broader curricular goals and objectives, thus ensuring their interested involvement.

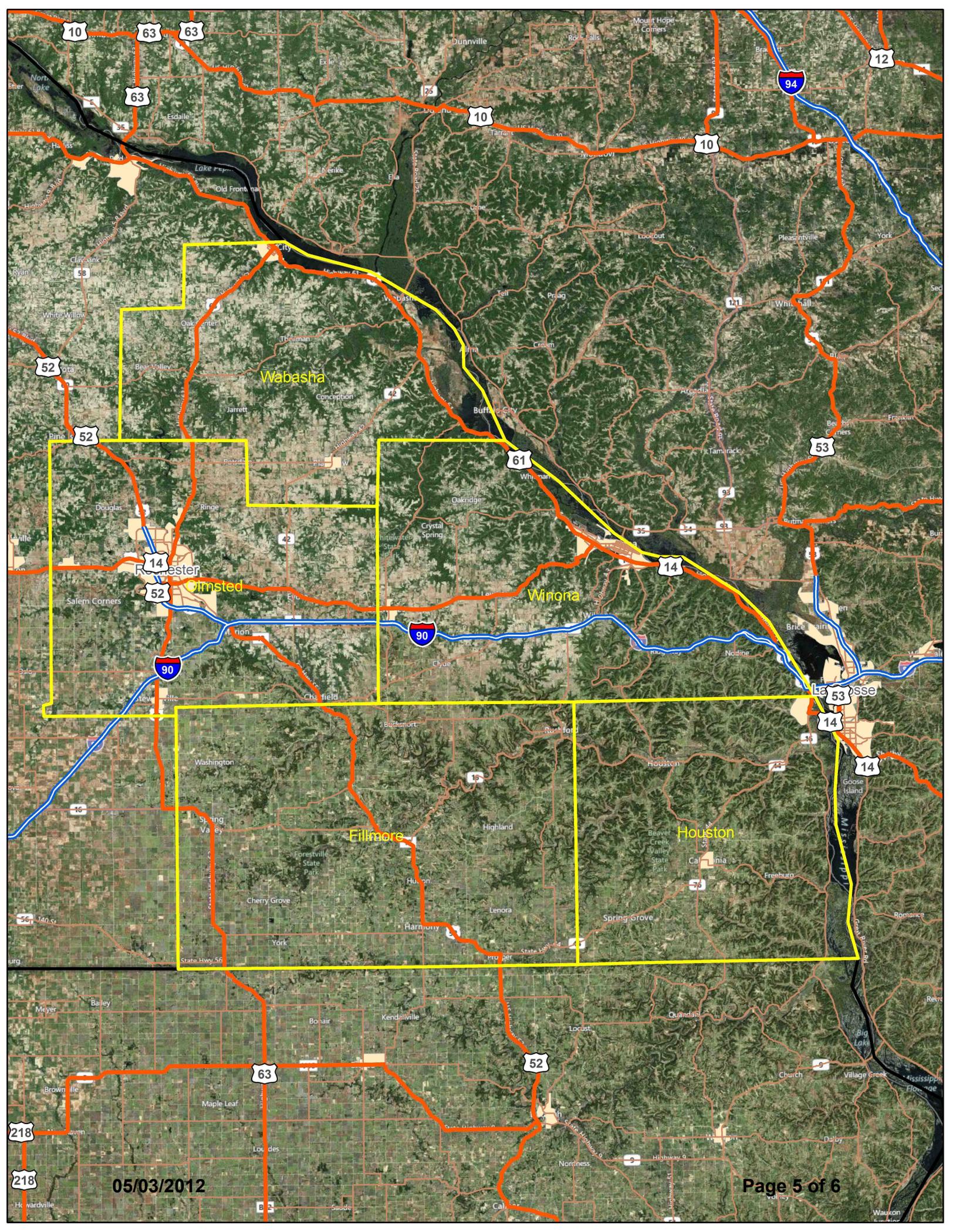
B. Project dependency Resource analysis must precede curriculum development and outreach activities.

C. Long-term strategy We will use the project's curricular materials in K-12 schools and in universities. This project is intended to function as a model to other regions of the State, who could easily adapt this approach to a form that fits their key resources, their natural resource stewards, their local universities and/or school districts.

2013-2015 Detailed Project Budget
Southeastern Minnesota Resource Vulnerability Assessment
 Sponsor: Saint Mary's University of Minnesota

IV. TOTAL TRUST FUND REQUEST BUDGET (2 years - \$315,700)

<u>BUDGET ITEM</u>	
Personnel:	<u>AMOUNT</u>
Project Management 15% FTE, (74% salary, 26% benefits, time period July 1, 2013-June 30, 2015)	\$42,000
Natural Resource Specialist; 70% FTE, (74% salary, 26% benefits, period July 1, 2013 to July 1, 2015)	\$60,000
Natural Resource Specialist; 50% FTE, (74% salary, 26% benefits, period July 1, 2013 to July 1, 2015)	\$34,000
Natural Resource Specialist and Modeler; 20% FTE, (74% salary, 26% benefits, period July 1, 2013 to July 1, 2014)	\$13,000
Invasive Species Scientist; 20% FTE (74% salary, 26% benefits, period July 1, 2013 to July 1, 2015)	\$13,000
Student Interns, (92% salary, 8% benefits, period July 1, 2013 to July 1, 2015)	\$34,000
Professor %10 FTE, (74% salary, 26% benefits, period July 1, 2013 to July 1, 2015)	\$20,000
Assistant Professor %25 FTE, (74% salary, 26% benefits, period July 1, 2013 to July 1, 2015)	\$30,000
Assistant Professor %25 FTE, (74% salary, 26% benefits, period July 1, 2011 to July 1, 2013)	\$30,000
K-12 Educator %25 FTE, (74% salary, 26% benefits, period July 1, 2013 to July 1, 2015)	\$33,000
Equipment/Tools/Supplies:	
Digital video camera	\$500
Travel (presentations and coordination to communities and schools within SE Minnesota):	
Two individuals, meals, lodging, and mileage. Mileage at 0.42/mile. Per diem at M&IE = \$45/day and lodging at \$75/day.	\$3,300
Additional Budget Items:	
Curricular Materials (printing and DVD production/distribution)	\$2,500
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND DOLLARS REQUEST	\$316,000
V. OTHER FUNDS	
<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>
In-kind Services During Project Period:	
Saint Mary's University of MN: Web Server, IT support and computers, Internet connectivity, GeoObserver and UMBSN Websites for Information sharing, and web customization to support information sharing	\$60,000
Saint Mary's University of MN; Office Space for Project Management and Operations (2 years)	\$30,000
TOTAL IN-KIND	\$90,000
TOTAL PROJECT BUDGET	\$405,710



GEOSPATIAL SERVICES, SAINT MARY'S UNIVERSITY OF MINNESOTA.

GeoSpatial Services (GSS) is Saint Mary's University of Minnesota's (SMUMN) project center. It integrates staff, faculty, students, and the community (as appropriate) to accomplish its project responsibilities. GSS maintains a national reputation in managing large complex projects, utilizing sophisticated problem-solving skills, natural resource expertise, geospatial technology, and expertise in climate change modeling and vulnerability assessment. GSS has implemented dozens of projects at national, regional and local scales. GSS developed a public outreach program known as the Upper Mississippi Basin Stakeholder Network (UMBSN); GeoObserver, a web-based mapping, inquiry, social networking site designed to facilitate outdoor student engagement and curriculum development; and it works closely with the University faculty to support research, education, and other outreach activities.

BARRY DRAZKOWSKI

Executive Director, GeoSpatial Services, St. Mary's University of Minnesota, 1997 to present.

Primary management responsibility for GSS strategic direction, marketing, operations, staffing, human resources, fiscal and budget planning, contracts, agreements, and all other factors affecting the growth, expenses, projects, management or supervision. GSS is a million-plus dollar University project center with a staff structure varying from 10-25 full time analysts and IT specialists, and 5-15 part time undergraduate and graduate assistants. GSS maintains commercial contracts and cooperative agreements to support its client/partner project activities.

Principle Investigator, Badlands National Park Climate Change Vulnerability Assessment, September 2010 to present. Responsible for project design, development, management, and coordination. GSS is implementing the NPS Badlands climate change vulnerability assessment in partnership with the NPS national I&M office, the Northern Great Prairies Network, the Park's Natural Resources Staff, the USGS, the Forest Service, and the local Tribal Authority.

Principle Investigator, National Park Service Natural Resource Condition Assessments, September 2008-present. Responsible for the design, development, coordination and implementation of the natural resource condition assessments for Wrangell-St. Elias, Denali, Klondike Gold Rush, Yukon-Charlie Rivers, Kenai Fjords, Wind Cave, Jewel Cave, Devils Tower, the Missouri National Recreational River, Knife River Indian Villages, Fort Union Historic Site, Big Bend, Big Horn Canyon, Guadalupe and Mountains National Parks.

Designed and implemented the Upper Mississippi Basin Stakeholder Network, St. Mary's University of Minnesota, September 2000 - 2007. Developed the Stakeholder Network program and successfully solicited \$360,000 in grants from the McKnight Foundation for its implementation (www.umbsn.org). This public outreach and education program included publishing a newspaper, the Mississippi Monitor, and distributing to over 10,000 individuals.

Key Committee Memberships. Coordination and Collaboration, Team Co-Leader for the Data and Information Subcommittee for the Great Lakes Collaboration. Member of the Great Lakes Commissions Information and Data infrastructure Expert Panel. Member of the Federal Geospatial Data Committee's Wetland Subcommittee. Congressman Ron Kind's River Advisory Committee. City of Winona Aghaming Park Committee and Riverfront Development Commission.