

**Environment and Natural Resources Trust Fund
2015 Request for Proposals (RFP)**

Project Title:

ENRTF ID: 006-A

County Geologic Atlas Continuation for Water Resource Sustainability [Continuation]

Category: A. Foundational Natural Resource Data and Information

Total Project Budget: \$ 2,542,389

Proposed Project Time Period for the Funding Requested: 2 years, July 2015 - June 2017

Summary:

Continue to produce County Geologic Atlases, Part B, for groundwater protection, wise use, and long-term resource sustainability.

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Sponsoring Organization: MN DNR

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Location

Region: Central, Metro, NW, NE, SW, SE

County Name: Anoka, Brown, Clay, Houston, Kanabec, Meeker, Morrison, Nicollet, Redwood, Renville, Sherburne, Sibley, Winona, Wright

City / Township:

Alternate Text for Visual:

Map showing County Geologic Atlases in Minnesota that are completed or underway.

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



PROJECT TITLE: County Geologic Atlas Continuation for Water Resource Sustainability

I. PROJECT STATEMENT

A geologic atlas provides information that is essential to sustainable management of Minnesota’s groundwater resources by identifying key areas to protect our drinking water and ensure sustainable use. Atlases define aquifer boundaries and identify the interconnection of aquifers to other aquifers, to the land surface, and to surface water resources. Delineation and mapping of aquifers, recharge areas, and karst systems is an essential first step to inform management decisions that will protect water supplies, public health, and the resource. This project will complete or continue up to seven Part B projects initiated or planned under previous funding, including Anoka, Clay, Nicollet, Renville, Sibley, Sherburne and Wright counties. Work may be initiated in Brown, Houston, Kanabec, Meeker, Morrison, Redwood, Washington (revision) and Winona (revision) counties.

Each atlas project includes some or all of the following work components: assembly of data layers and development of conceptual hydrogeologic models; development of maps of the water table; development of maps of aquifers; groundwater sample collection and laboratory analysis; analysis and interpretation of chemistry data; geophysics field data collection and analysis; preliminary technical analysis and maps of groundwater systems; construction of hydrogeologic cross sections; construction of maps of pollution sensitivity; preparation of final atlas report and publication, training of local atlas users, and dissemination of data. Depending on the geologic or hydrologic setting of a specific project, other data or field data may also be assembled or collected. The karst landscape of southeast Minnesota is an example where additional data to further define the hydrogeologic system may be collected and could include expanding existing or defining additional springsheds along with related karst feature and system analysis. Continuing work in a previous project, this project will continue, as projects are completed and data finalized, the assembly of county atlas groundwater maps into geospatial data layers for use in decision-support systems, such as DNR’s new electronic permitting process and DNR’s on-line web-based applications such as Watershed Assessment Tool. These assembled data layers and electronic tools make the information more accessible for local, regional, and state decision makers.

II. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: County Geologic Atlas, Part B: Budget: \$ 2,542,389

Building on Part A atlas data, compile field chemistry, analyze groundwater samples for natural chemistry and age-dating isotopes, and assemble aquifer characteristics data. Prepare groundwater maps, cross sections, and interpretations of pollution sensitivity for publication in completed Part B atlas reports. Continue or begin new Part B projects. As data are finalized and new reports are completed continue to add and assemble GIS and other data onto statewide data layers developed under a previous project. Project design and data collection for two projects continuing in southeast Minnesota, Houston and Winona, may include limited specialty karst system mapping in support of the complete Part B report.

Outcome	Completion Date
1. Publish completed Part B reports (up to six): Publish reports underway at the start of the project period, including Clay, Nicollet, Sibley, Anoka, Wright, Sherburne, Renville.	June 30, 2017
2. Continue Part B projects (up to five), including Morrison, Houston, Winona (update), Redwood, Meeker, and Brown and complete if possible.	June 30, 2017
3. As new projects are completed, continue to add data to compiled GIS data layers.	June 30, 2017
4. Start new Part B projects (up to two): Kanabec and Washington (update).	June 30, 2017



TOTAL BUDGET \$2,542,389

III. PROJECT STRATEGY

See also MGS County Geologic Atlas, Part A, Main Proposal to be submitted separately to LCCMR.

A. Project Team/Partners

The Minnesota Geological Survey completes Part A of county geologic atlases (see MGS Main proposal for county atlas continuation). To determine priority, the MGS requires that the counties participate either with funding or with in-kind services and also considers groundwater sensitivity, resource demand, and the size of the population served. At the completion of the Part A work, DNR completes Part B, the groundwater portion, of the atlases. DNR requests local government sponsorship for training workshops intended for local staff and the public held at the completion of a Part B atlas. Project partners for any karst system mapping work in southeast Minnesota needed to complete the Houston or Winona atlases may include the MGS, Dr. Calvin Alexander (University of Minnesota Dept. Earth Science) and the Root River partnership.

B. Project Impact and Long-Term Strategy

The County Geologic Atlas program is the primary vehicle to provide comprehensive geologic mapping and associated databases at appropriate scales statewide. The MGS receives funding from DNR and also leverages federal dollars from the National Cooperative Geologic Mapping Program of the USGS. The MGS competes annually for these federal cost-share dollars. MGS Part A atlas development is also supported by ENRTF and Clean Water Fund through direct appropriation. DNR is a cooperator and funding partner with the MGS. The Part B atlases are currently supported by a combination of state general fund, ENRTF, and Clean Water Fund appropriations to DNR. Karst system mapping and research to investigate and understand groundwater flow in complex geologic systems and has been ongoing in southeast Minnesota for many years; some of this work has been supported by ENRTF. While there has been significant progress in certain areas, such as Fillmore County, unmapped areas remain.

C. Timeline Requirements

This proposal builds on past LCCMR proposals and the 25-year CGA program history. This proposal provides funding to publish up to six atlases during this project period that were initiated during a previous project and will continue or initiate several additional atlases for future publication. The MGS has initiated work on additional Part A atlases which are necessary to begin the Part B of each atlas. This proposal also builds on past ENRTF springshed mapping support and continues mapping in areas not yet mapped. The accumulated data will be compiled on draft karst plates for the Winona and Houston county geologic atlases, Part B, that will be published when completed.

2015 Detailed Project Budget

Project Title: *County Geologic Atlas Continuation for Water Resource Sustainability*

IV. TOTAL ENRTF REQUEST BUDGET: 2 years

BUDGET ITEM (See "Guidance on Allowable Expenses", p. 13)	AMOUNT
Personnel: Continuation of nine existing ENRTF-funded staff (9.5 FTE); additional .75 FTE (temporary) to support field data collection; additional 1 FTE to expand and improve report development, publication, and information distribution capacity. All except the temporary Hydrologist 1 are two year positions. <i>Existing--</i> Hydrologist Supervisor (classified), Project Manager/Technical Supervisor: \$107,000 (75% salary, 25% benefits); 0.5 FTE Res Sci 3 (classified) technical team lead: \$118,000 (68% salary, 32% benefits); 1 FTE Hydrologist 3 (classified): \$112,000 (68% salary, 32% benefits); 1 FTE (three) Hydrologist 2 (unclassified or classified): \$88,000 (75% salary, 25% benefits); 1 FTE ea. Information Officer 2 (editor) (classified or unclassified): \$54,000 (75% salary, 25% benefits); 1 FTE Research Analyst - GIS (classified or unclassified): \$60,000 (75% salary, 25% benefits); 1 FTE Hydrologist 1 (classified or unclassified) field hydrogeologist: \$62,000 (75% salary, 25% benefits); 1 FTE <i>New --</i> Hydrologist 3 (classified) science reports team lead: \$112,000 (68% salary, 32% benefits); 1 FTE Hydrologist 1 (temporary) field hydrologist: \$46,000; 0.75 FTE	\$ 1,764,052
Contracts: Laboratory analysis of water samples, \$360,000. State contract and U of MN.	\$ 360,000
Equipment/Tools/Supplies: Water sampling and measurement tools and field analytical meters and equipment (est \$20,000). Supplies, including expendable water sampling supplies and safety items (est \$22,000).	\$ 42,000
Travel: In-state vehicle mileage (est \$35,000) and travel expenses (est \$22,000), primarily for water sample and field data collection.	\$ 57,000
Other: <i>Be specific.</i>	\$ -
Additional Budget Items: ' GIS and report publication specialty software. Purchase, upgrades, and license subscription agreements (est \$3,000). <i>Printing six (6) reports (est \$60,000). Speciality training such as GIS, primarily for new hires (est \$5,000). Shipping water samples to laboratory (est \$2,000).</i> ' <i>Direct employee cost: Computer fleet (est \$16,352), supplies (est \$1,760), project specific training expense including safety (est \$8,800), cell phones for 5 field staff safety (est \$3,600)</i> ' <i>Direct support services. DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects. In addition to itemized costs captured in our proposal budget, direct and necessary costs cover HR Support (~\$27,183), Safety Support (~\$6,724), Financial Support (~\$29,120), Communication Support (~\$1,141), IT Support (~\$50,006), Planning Support (~\$704), Procurement Support (~\$235), and division and regional program management (~\$103,712) that are necessary to accomplishing funded programs/projects.</i>	\$ 100,512
' <i>Direct support services. DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects. In addition to itemized costs captured in our proposal budget, direct and necessary costs cover HR Support (~\$27,183), Safety Support (~\$6,724), Financial Support (~\$29,120), Communication Support (~\$1,141), IT Support (~\$50,006), Planning Support (~\$704), Procurement Support (~\$235), and division and regional program management (~\$103,712) that are necessary to accomplishing funded programs/projects.</i>	\$ 218,825
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =	\$ 2,542,389

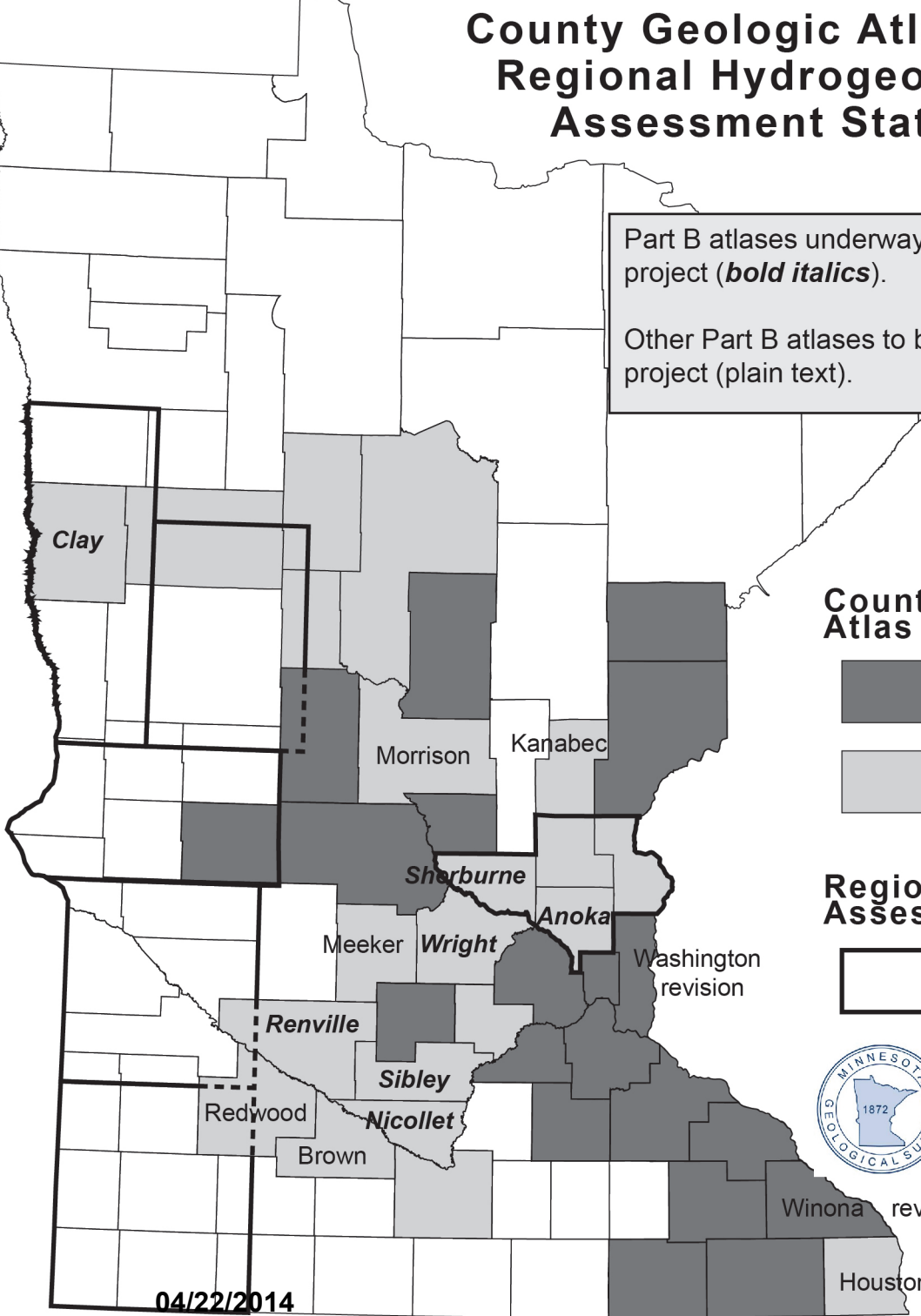
V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State \$ To Be Applied To Project During Project Period:	\$ -	
Other State \$ To Be Applied To Project During Project Period: General Fund, atlas staff and support, estimated \$790,000 for 2-year project period to complete two and initiate two Part B atlases in base program.	\$ 790,000	<i>Pending</i>
In-kind Services To Be Applied To Project During Project Period: County/local government assistance to arrange water sampling access and sponsor local training workshop.	\$ 8,000	Estimated
Funding History: <u>County Atlas</u> : M.L. 1991 ENTRF to DNR \$600,000; M.L. 1993 ENTRF to DNR \$425,000; M.L. 2009 ENTRF Ch 143 Sec 2 Subd 3 to DNR \$890,000 (county geologic atlas portion); M.L. 2011, First Special Session, Chp. 2, Art. 3, Sec. 2, Subd. 03b2, \$600,000; M.L. 2013, Chp. 52, Sec. 2, Subd. 03c, \$1,200,000; <u>Springshed</u> : M.L. 2007, Chap. 30, Sec 2, Subd. 5g, \$125,000; M.L. 2009, Chapter 143, \$250,000; M.L. 2011, 1st Sp. Session, Ch. 2, Art. 3, Sect. 2, Subd. 5(b)- <u>Springshed</u> Phase III, \$220,000; [<u>Atlas</u> - \$3,715,000; <u>Springshed</u> - \$595,000]	\$ 4,310,000	
Remaining \$ From Current ENRTF Appropriation: <u>Atlas</u> -- M.L. 2011, 1st Sp. Session, Ch. 2, Art. 3, Sec. 2, Subd. 03b2, (\$120,203 unspent as of December 31, 2013); M.L. 2013, Chp. 52, Sec. 2, Subd. 03c, (\$1,190,969 unspent as of December 31, 2013) <u>Springshed</u> -- M.L. 2011, 1st Sp. Session, Ch. 2, Art. 3, Sect. 2, Subd. 5(b)- LCCMR-Springshed Phase III July 1, 2011 (\$7,109 unspent as of December 31, 2013)	\$ 1,318,281	Unspent

County Geologic Atlas and Regional Hydrogeologic Assessment Status

Part B atlases underway planned for publication during project (***bold italics***).

Other Part B atlases to be continued or initiated during project (plain text).



County Geologic Atlas

-  Completed (20)
-  in Progress (21)

Regional Hydrogeologic Assessments

-  Completed (6)



04/22/2014

Project Manager Qualifications and Organization Description

Project Manager: Jan D. Falteisek

Degrees and Professional Certificates:

M.A. Geology, University of Missouri, Columbia, Missouri 1984

B.A. Mathematics, Southwest State University, Marshall, Minnesota 1974

Minnesota Professional Geologist, License #30114

Qualifications:

1992 to present DNR Waters Hydrogeologist Supervisor

Provided technical and program direction for the completion of DNR Part B county geologic atlases or regional hydrogeologic assessments. Authored or co-authored several individual plates in reports. Directed the development of project databases, directed the editing and publication of Part B atlases and documents, assured web access of project data, supported staff development of improved mapping tools and techniques, and assisted others in use of and access to project results and data.

Previous employment:

1990 to 1991 DNR Waters Hydrogeologist , coordinating several LCMR projects and completed guidelines for pollution sensitivity.

1984 to 1989 MN Pollution Control Agency, Hydrogeologist, hazardous waste regulations and Superfund site investigations.

1980 to 1983 Missouri Dept. of Natural Resources, Hydrologist, coal mine permitting and regulations.

Project Responsibilities: The project manager will be responsible for: providing overall program management and technical direction for the project; directing project staff; contracting for professional services in support of the program; contracting laboratory and other services; coordinating with project partners; directing the development of atlas reports; and preparing and submitting project work plans, updates and final reports.

Organization Description: The Minnesota Department of Natural Resources (DNR)'s 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.