

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

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**Subd: 03b2**

**Project Title:** County Geologic Atlases for Sustainable Water Management

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**Category:** A1. Natural Resource Data and Information: Collection

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**Total Project Budget: \$** 600,000

**Proposed Project Time Period for the Funding Requested:** 4 yrs, July 2011 - June 2015

**Other Non-State Funds (secured): \$** 0

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**Summary:**

Initiate seven County Geologic Atlases Part B for groundwater protection, wise use, and long-term resource management: Anoka, Blue Earth, Clay, Nicollet, Renville, Sibley, and Wright counties.

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**Name:** Jan Falteisek

**Sponsoring Organization:** DNR

**Address:** 500 Lafayette Rd  
Saint Paul MN 55155

**Telephone Number:** 651-259-5665

**Email** jan.falteisek@state.mn.us

**Web Ad** mndnr.gov

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**Location:**

**Region:** NW, Central, Metro, SE

**Ecological Section:** Minnesota and NE Iowa Morainal (222M), Red River Valley (251A), North Central Glaciated Plains (251B)

**County Name:** Anoka, Blue Earth, Clay, Nicollet, Renville, Sibley, Wright

**City / Township:**

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# 2011-2012 MAIN PROPOSAL

**PROJECT TITLE: County Geologic Atlases Part B for Seven Counties**

## I. PROJECT STATEMENT

Geologic atlases provide information essential to sustainable management of groundwater resources. Atlases define aquifer boundaries, the connection of aquifers to the land surface, and the connection of aquifers to surface water resources. They facilitate and enhance the operations of natural resource management and regulation by state and local government units.

A complete geologic atlas consists of Part A constructed by the Minnesota Geological Survey and focused on geology and the County Well Index, and Part B constructed by the DNR Division of Waters and focused on hydrogeology and pollution sensitivity. A Part B report includes maps of the water table, aquifers, direction of groundwater flow, and interpretation of aquifer sensitivity to pollution. Each report also typically includes a description of the natural chemistry of groundwater; isotope data interpreted for groundwater age; and compiled aquifer characteristics, where available, from aquifer pumping tests. These reports will allow future work to further quantify groundwater flow and detailed analysis of groundwater systems.

County Geologic Atlases are specifically identified as essential data in the Statewide Conservation Plan, and in the efforts of the Environmental Quality Board, DNR Waters, and the Water Resources Center at the University of Minnesota to design a sustainable water management process. County geologic atlases facilitate management activities to identify sustainable water use and to protect water quality

This project continues the acceleration of Part B County Geologic Atlases by DNR that were initiated under M.L. 2009 that provides funding through June 30, 2012. This request provides for start-up costs for new Part B starts in the first and second years; continues staff costs for year two; and provides for project data collection costs in the first and second years. Publication of these reports is planned for 2014 or 2015. This is a joint effort by the Minnesota Geological Survey and DNR and the MGS will prepare a separate, coordinated proposal.

## II. DESCRIPTION OF PROJECT ACTIVITIES

**Activity 1:** Initiate seven (7) new County Geologic Atlases Part B in Blue Earth, Nicollet, Sibley, Anoka, Clay, Renville, and Wright counties **Budget:** \$ 600,000

<b>Outcomes</b>	<b>Completion Date</b>
Outcome 1. Initiate the Blue Earth, Nicollet, and Sibley Part B atlases. Includes assembly of data layers and development of conceptual hydrogeologic models; development of preliminary maps of the water table; groundwater sample collection and analysis; geophysics field data collection and analysis; technical analysis and maps of groundwater systems; construction of hydrogeologic cross sections; and maps of pollution sensitivity. Publication is planned for FY2014. Part B Atlas program hydrogeologists supported by General Fund will be assigned to these projects so therefore funds from both General Fund and ENTRF will be used to complete these atlases.	June 30, 2013

<p>Outcome 2. Initiate Anoka, Clay, Renville, and Wright Part B atlases. This includes assembly of data layers and development of conceptual hydrogeologic models; development of preliminary maps of the water table; groundwater sample collection and analysis; geophysics field data collection and analysis; technical analysis of groundwater systems. Development will continue through FY14. Publication is planned for FY2015. Part B Atlas program hydrogeologists supported by the ENRTF will be assigned to these projects.</p>	<p>June 30, 2013</p>
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### III. PROJECT STRATEGY

*See also MGS Atlas 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). At the completion of the Part A work, DNR Waters Division completes Part B, the groundwater portion, of the atlases. To initiate a project, the MGS will require that the counties participate either with funding, or with in-kind services. Local participation is a primary factor in determining which counties are chosen for this project. Groundwater sensitivity, resource demand, and the size of the population served are also considerations. The DNR does not require additional local funding or in-kind services to do the Part B portion of an atlas. However, DNR does request local government sponsorship of the training workshop for local staff and the public that is held at the completion of a Part B atlas. The local government makes the arrangements and DNR atlas project staff present the training program. The workshop program transfers knowledge and data acquired during the atlas project to local users and managers for improved decision-making and long-term resource protection.

#### B. Timeline Requirements

This proposal builds on past LCCMR proposals and the 25-year CGA program history. This proposal provides funding to initiate and support seven (7) atlases during the project period. Publication of these Part B atlases will be in FY14 to FY15. Each Part B atlas project takes about two years to complete. The MGS has initiated work on additional Part A atlases that will be completed in the future. Part B atlases will need to be completed for those projects in the future.

#### C. Long-Term Strategy and Future Funding Needs

MGS is the geologic mapping agency of the state and intends to provide comprehensive geologic mapping and associated databases at appropriate scales statewide as quickly as possible. The County Geologic Atlas program is the primary vehicle for completing this goal. Atlases are complete or under construction for 29 of the 87 counties. The MGS receives funding from DNR Waters, and also leverages federal dollars from the National Cooperative Geologic Mapping Program of the USGS. The MGS competes for these cost share dollars annually and they cover half of the costs of each map product incurred in that one-year window. MGS intends to cost share several of the map products associated with their proposal. MGS Part A atlas development is also supported by ENRTF and Clean Water Fund direct appropriations to MGS.

DNR Waters has been a cooperator and funding partner with the MGS since the early 1990's. For each Part A atlas completed by the MGS, DNR completes a Part B atlas. The Part B atlases are currently supported by a combination of state general fund, ENRTF, and Clean Water Fund appropriations to DNR.

## 2011-2012 Detailed Project Budget

### County Geologic Atlases Part B for Seven Counties

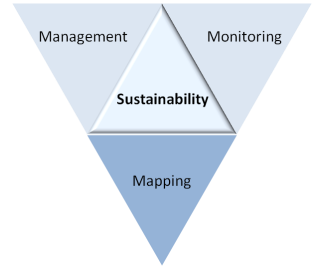
#### IV. TOTAL TRUST FUND REQUEST BUDGET (2 years - FY12-13)

<u>BUDGET ITEM</u>	<u>AMOUNT</u>
<b>Personnel: Continuation of four full-time unclassified positions hired under M.L. 2009 funding, which provides staff costs for FY2012. These are unclassified positions.</b> Hydrologist 2 - will start two atlases Hydrologist 2 - will start two atlases Technical Editor (Information Officer 2) - will edit atlas reports, including text, maps, charts, tables, and illustrations for publication Research Analyst (GIS) - will provide GIS analysis	\$ 260,000
<b>Contracts:</b> Laboratory analysis of 100 water samples for cations, anions, trace elements, tritium, and several carbon-14 per each of seven (7) new atlas projects. Average cost per sample \$465. State contract (MDH, U of M).	\$ 280,000
<b>Equipment/Tools/Supplies:</b> Water sampling tools and field analytical meters and equipment	\$ 11,000
Supplies, including expendable water sampling supplies	\$ 15,000
<b>Travel:</b> In-state vehicle mileage \$13,000 and travel expenses \$16,000	\$ 29,000
<b>Additional Budget Items:</b> Report production software licenses and continued upgrades to assure efficient report preparation and publication	\$ 3,000
Shipping costs for water samples to laboratory	\$ 2,000
<b>TOTAL ENVIRONMENT &amp; NATURAL RESOURCES TRUST FUND \$ REQUEST</b>	\$ 600,000

#### V. OTHER FUNDS

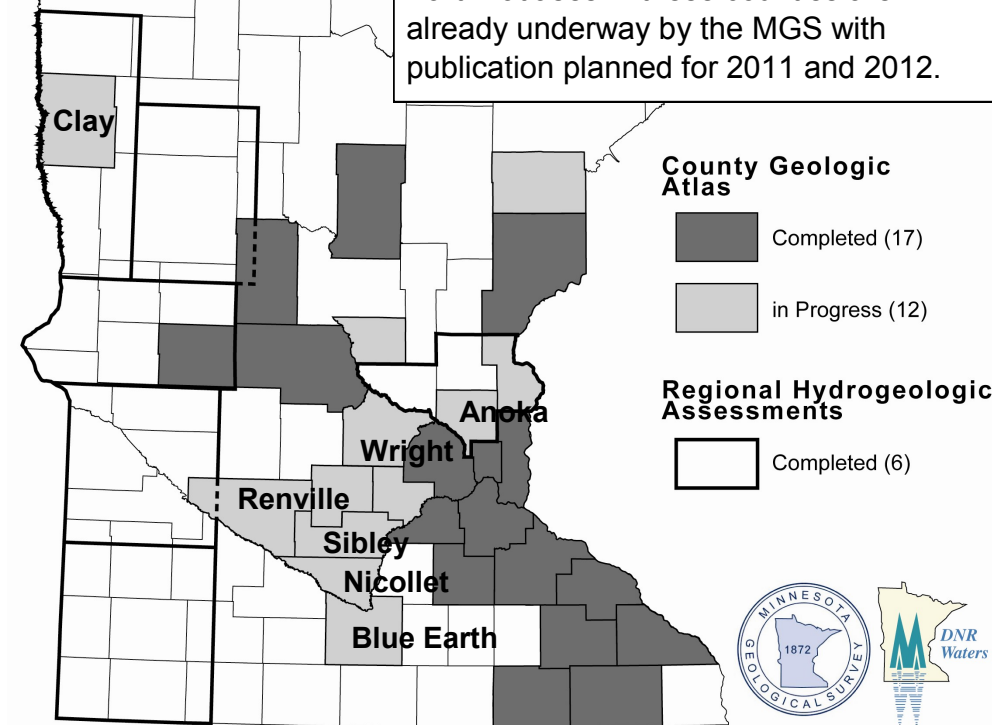
<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
<b>Other Non-State \$ Being Applied to Project During Project Period:</b>	\$ -	
<b>Other State \$ Being Applied to Project During Project Period:</b> General Fund, atlas staff and support, estimated \$940,000 for 2-year project period to initiate three and complete two Part B atlases in base program. Clean Water Fund, M.L. 2009 Ch 172 Art 2 Sec 5(f) for July 1, 2009 thru December 31, 2014; estimated \$500,000 of CWF appropriation will be used during project period.	\$ 1,440,000	Secured, Pending
<b>In-kind Services During Project Period:</b> County assistance to arrange sampling access and sponsor local training workshop	\$ 5,000	estimated
<b>Remaining \$ from Current ENTRF Appropriation: M.L. 2009 Ch 143 Sec 2 Subd 3 ENTRF to DNR \$890,000 (county geologic atlas portion).</b> An additional \$52,869 of the unspent balance is encumbered, primarily for laboratory services.	\$ 864,606	Unspent
<b>Funding History: 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);</b>	\$ 1,915,000	
Minnesota DNR's In-kind Contribution: \$43,200 for shared services and governance	\$ 43,200	not secured

# County Geologic Atlas and Regional Hydrogeologic Assessment Status

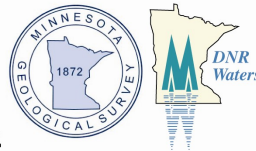


This map shows the seven Part B atlases to be initiated in this project.

Part A atlases in these counties are already underway by the MGS with publication planned for 2011 and 2012.

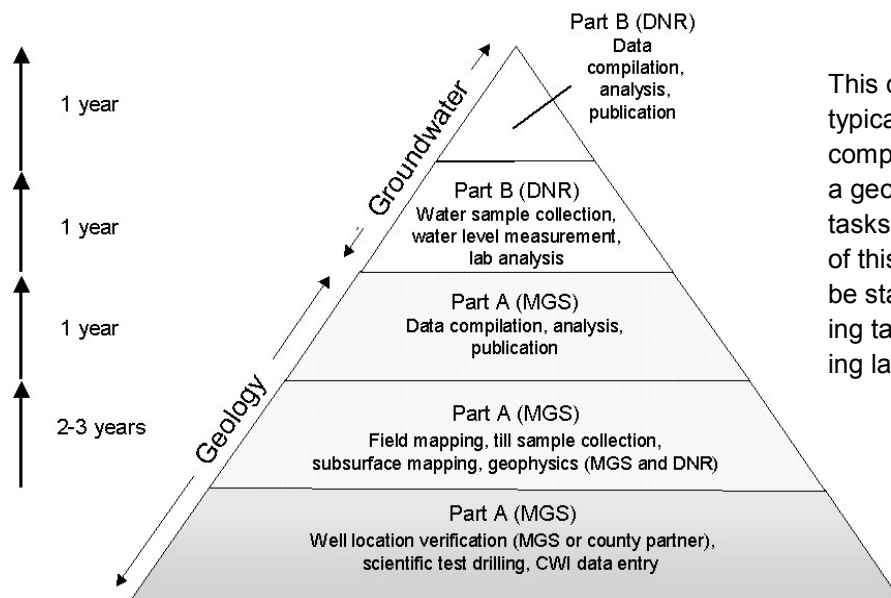


April 2010 gm, jdf



Funding provided by the Environment and Natural Resources Trust Fund.

## County atlas tasks and dependencies



This diagram shows the typical tasks involved in completing both parts of a geologic atlas. The tasks within each layer of this pyramid can only be started after completing tasks in the underlying layer.

## **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 15 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 technical direction for the project, directing project staff, 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. The department consists of several divisions based on the state's natural resources, such as Fish and Wildlife, Forestry, Lands and Minerals, Parks and Trails, and Ecological Resources and Waters, as well as four regions and four support bureaus.