



Environment and Natural Resources Trust Fund (ENRTF)

M.L. 2015 Work Plan

Date of Report: October 17, 2014
Date of Next Status Update Report: January 15, 2016
Date of Work Plan Approval:
Project Completion Date: June 30, 2017
Does this submission include an amendment request? No

PROJECT TITLE: County Geologic Atlases – Part B

Project Manager: Jan Falteisek

Organization: Minnesota Department of Natural Resources

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Location: Anoka, Brown, Clay, Houston, Meeker, Morrison, Nicollet, Redwood, Renville, Sherburne, Sibley, Winona, Wright

Total ENRTF Project Budget:	ENRTF Appropriation:	\$2,000,000
	Amount Spent:	\$0
	Balance:	\$2,00,0000

Legal Citation: M.L. 2015, Chp. 76, Sec. 2, Subd. 03b

Appropriation Language:

\$2,000,000 the first year is from the trust fund to the commissioner of natural resources to continue acceleration of the production of county geologic atlases for the purpose of sustainable management of surface water and groundwater resources. This appropriation is to complete Part B of county geologic atlases, which focuses on the properties and distribution of subsurface water found within geologic formations mapped in Part A in order to characterize the potential yield of aquifers and their sensitivity to contamination. This appropriation is available until June 30, 2018, by which time the project must be completed and final products delivered.

I. PROJECT TITLE: County Geologic Atlases – Part B

II. 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, flow systems, and discharge areas are essential first steps to inform management decisions that will protect water supplies, public health, and the resource. This project will complete, continue, or initiate up to thirteen Part B projects initiated or planned under previous funding, including Anoka, Brown, Clay, Houston, Meeker, Morrison, Nicollet, Redwood, Renville, Sherburne, Sibley, Winona, and Wright 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.

This project will utilize and extend as projects proceed work begun under a previous project to assemble the previously published 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.

This project will also incorporate work under previous projects to identify springsheds and incorporate the results of that work in Winona and Houston counties for the preparation of Part B atlases, including karst system plates for each of the county atlas reports.

III. OVERALL PROJECT STATUS UPDATES:

Project Status as of: January 15, 2016

Project Status as of: July 15, 2016

Project Status as of: January 15, 2017

Project Status as of:

Overall Project Outcomes and Results:

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: County Geologic Atlas, Part B

Description: 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.

Summary Budget Information for Activity 1:

ENRTF Budget: \$ 2,000,000
Amount Spent: \$ 0
Balance: \$ 2,000,000

Outcome	Completion Date
<p>1. Publish completed Part B reports (up to three): Publish reports underway at the start of the project period, including Anoka, Nicollet, Sibley, Wright, Sherburne; continue Part B projects (up to four), including, Winona, Houston, Renville, and Clay; if possible start new Part B projects (up to two): Morrison, Redwood, Meeker, Brown. Includes contract services for laboratory analysis of water samples.</p> <p>Part B Atlas program personnel supported by the General Fund base program may be assigned to one or more of these projects or may work on specific components of projects so funds from both General Fund and ENTRF will be used to complete these atlases. Part B Atlas program personnel supported by CWF funds during FY 16 may be assigned to one or more of these projects or may work on specific components of project so funds from both CWF and ENRTF will be used to complete atlases.</p>	June 30, 2017

Activity Status as of: January 15, 2016

Activity Status as of: July 15, 2016

Activity Status as of: January 15, 2017

Activity Status as of:

Final Report Summary:

V. DISSEMINATION:

Description: Each county geologic atlas, Part B completed is printed in paper format and distributed to county, libraries, state agencies, and other organizations. They are available for sale at the MGS. PDF versions of the report are posted to the DNR web site and are available through http://www.dnr.state.mn.us/waters/groundwater_section/mapping/status.html . Project data, including water chemistry data and GIS data are also posted to the DNR web site. Following publication of each Part B report, a local workshop is held to introduce the report content and train users in its application.

Status as of: January 15, 2016

Status as of: July 15, 2016

Status as of: January 15, 2017

Status as of:

Final Report Summary:

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget Overview:

Budget Category	\$ Amount	Overview Explanation
Personnel:	\$ 1,423,098	Continuation of eleven existing staff (10.25 FTE). Note that in the first year of the project (FY16) some positions will be funded by

		<p>remaining existing ENTRF or CWF appropriations for atlas Part B acceleration or a position may be temporarily vacant during the project period.</p> <p>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 Hydrologist 3 (classified) science reports team lead: \$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 or Research Analyst Int. - 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. Hydrologist 1 (temporary) field hydrologist: \$46,000; 0.75 FTE </p>
Professional/Technical/Service Contracts:	\$228,000	Laboratory analysis of water samples, \$228,000. State master contract for isotope analysis (\$98,000) and U of MN for general chemistry, trace elements and carbon-14 dating (\$130,000).
Equipment/Tools/Supplies:	\$42,000	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).
Direct and necessary services for the appropriation**	\$184,742	Direct and necessary services for the appropriation; see detail below.
Printing:	\$55,000	Printing six (6) reports (est \$9,000 ea. Minncor contract); well owner sampling permission cards (\$1000), (est total \$55,000).
Travel Expenses in MN:	\$43,000	In-state vehicle mileage (est \$25,000) and travel expenses (est \$18,000), primarily for water sample and field data collection.
Other:	\$24,160	GIS and report publication specialty software purchase, upgrades, and license subscription agreements (est \$3,600). Specialty project specific training such as GIS, primarily for new hires (est \$5,000). Shipping water samples to laboratory (est \$2,000). Repairs to project equipment (est \$1,760). Project specific training expense including safety (est \$8,800). Cell

		phones for exclusive use of 5 project specific field staff for safety (est \$3,000).
TOTAL ENRTF BUDGET:	\$2,000,000	

* Estimated amount per budget category; amounts may vary per category but total project budget will not exceed the Total ENRTF budget of \$ 2,000,000.

** *Direct and Necessary expenses include both Department Support Services (Human Resources [~\$22,874], IT Support [~\$50,006], Safety [~\$5,658], Financial Support [~\$20,634], Communications Support [~\$1,141], Planning Support [~\$704], and Procurement Support [~\$235]) and Division Support Services [~\$83,490]. Department Support Services are described in the agency Service Level Agreement, and billed internally to divisions based on rates that have been developed for each area of service. These services are directly related to and necessary for the appropriation. Department leadership services (Commissioner’s Office and Regional Directors) are not assessed. Division Support Services include costs associated with Division business offices and clerical support. Those elements of individual projects that put little or no demand on support services such as large single-source contracts, large land acquisitions, and funds that are passed-thru to other entities are not assessed Direct and Necessary costs for those activities. For this work plan, sole source chemistry contract with an associated cost of \$228,000 have not been assessed Direct and Necessary costs.”

Explanation of Use of Classified Staff:

Any classified position paid for with ENRTF funds will either be 1) backfilled with a new position or 2) the work previously done by this position will be delayed, eliminated, or completed by the start of the project. In anticipation of this work continuing into the future, new positions in this project will be created as classified due to the experienced difficulty in attracting high-quality candidates to fill the unclassified positions. The personnel plan in this work plan is modified to accommodate the option of hiring either unclassified or classified staff for three existing hydrologist 2 positions, two hydrologist 1 positions, the information officer, and the research analyst positions. The positions were originally created as unclassified positions. Allowing the option of reclassifying one or more of the positions as classified when a position vacancy occurs provides the most flexibility in hiring high-quality candidates who might not otherwise apply to a limited unclassified position.

There is one classified position currently working on this project to be paid partially by this grant. The hydrologist supervisor provides overall atlas program direction, on-going program management, and is the technical supervisor for staff assigned to specific atlas projects or who support the atlas program as GIS or report production specialists. A portion of the hydrologist supervisor’s time (0.5 FTE) will be paid by this grant and the remaining portion will be paid by General Fund, subject to an approved DNR budget.

Explanation of Capital Expenditures Greater Than \$5,000: none planned

Number of Full-time Equivalent (FTE) Directly Funded with this ENRTF Appropriation: 10.25 FTE

Number of Full-time Equivalent (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation: N/A

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
Non-state			
In-kind Services During Project	\$5,000	\$	County assists staff in local access to well

Period: County assistance to arrange sampling access and sponsor local training workshop			owners and sponsors the training workshop at the conclusion of the project.
State			
Other State \$ Being Applied to Project During Project Period: General Fund <u>base program support</u> , estimated \$410,000 for the FY15 one-year project period to complete one, continue several, and possibly initiate an additional Part B atlas. Remaining from <u>current ENRTF appropriations</u> : M.L. 2013 Chp. 52, Sec. 2, Subd. 03c, \$1,200,000 thru June 30, 2016 (approx. \$1,050,000 unspent as of July 2014.) Remaining from current <u>Clean Water Fund</u> , M.L. 2013 Ch 137 Art 2 Sec 6 (h), \$1,230,000 July 1, 2013 thru June 30, 2015. (approx. \$780,000 unspent as of July 2014).	\$2,240,000	\$	General Fund base program support provides personnel, laboratory analysis and interpretation, printing, travel expenses, water sampling equipment and supplies, and related expenses. Personnel, laboratory analysis and interpretation, printing, travel expenses, water sampling equipment and supplies, and related expenses. Clean Water Funds specifically to support the acceleration and completion of county geologic atlases
TOTAL OTHER FUNDS:	\$2,245,000	\$	

VII. PROJECT STRATEGY:

See also Minnesota Geologic Survey County Geologic Atlas, Part A, Work Plan 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.

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

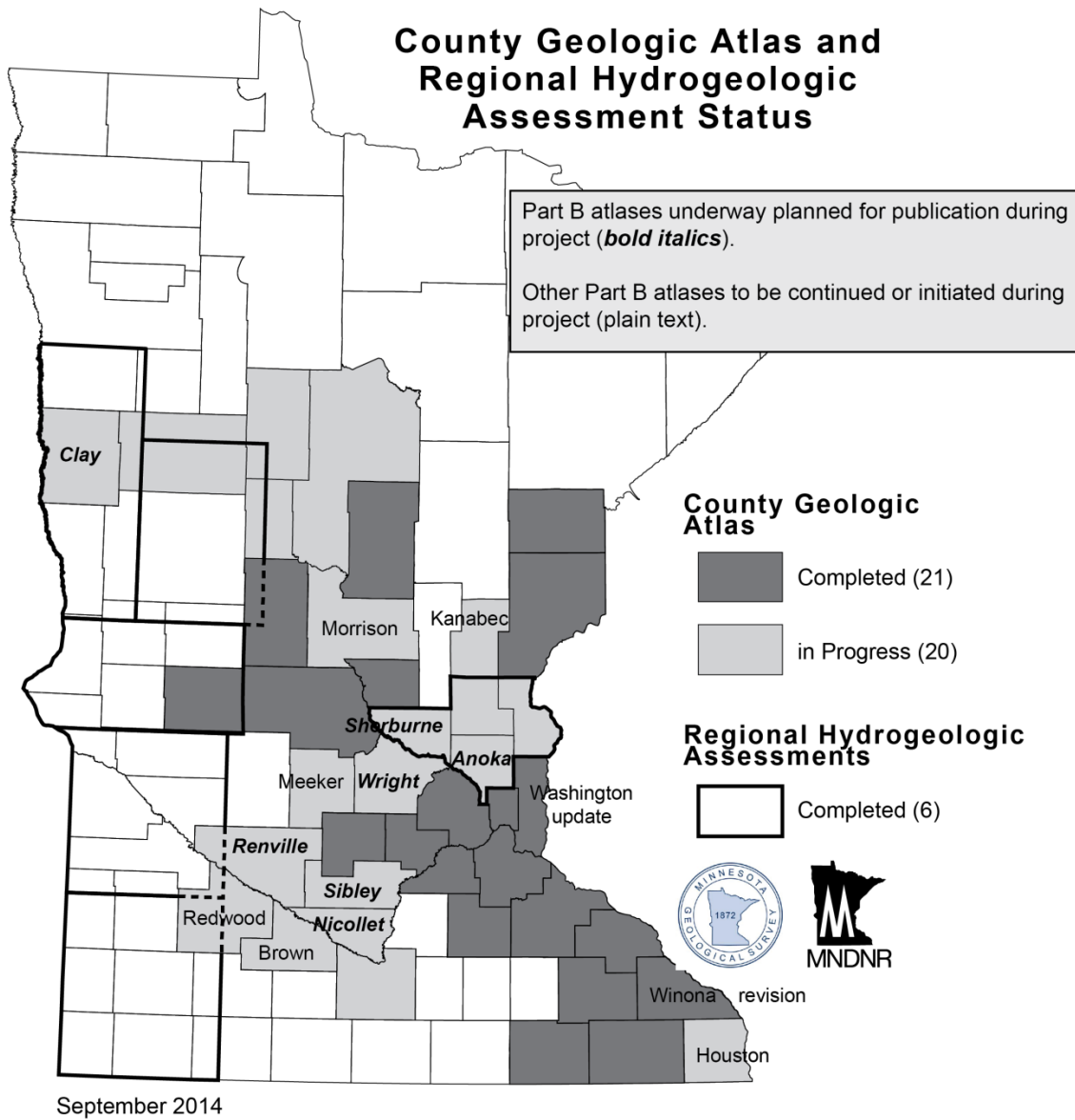
Clean Water Fund through direct appropriation. DNR is a cooperator and funding partner with the MGS. The Part B atlases are currently supported by a combination of state general fund, ENRTF, and Clean Water Fund appropriations to DNR. Springshed mapping and research to investigate and understand groundwater flow in complex geologic systems in southeast Minnesota has been supported by ENRTF; the results of that work will be utilized in any ongoing or future atlas work in southeast Minnesota.

C. Funding History:

Funding Source and Use of Funds	Funding Timeframe	\$ Amount
M.L. 2008 ENRTF (FY09-11) to DNR. Total appropriation was \$1,600,000; a portion funded Phase 1 of the Mt. Simon aquifer investigation; \$706,000 appropriated directly to MGS for atlas continuation. Subd. 4(h) \$861,000 Mt. Simon aquifer	FY 2009---	\$ Subd. 4(h) \$861,000 Mt. Simon aquifer
M.L. 2009 (Part B atlas) ENRTF to DNR. Total appropriation was \$2,695,000; a portion funded DNR county atlas continuation; a portion funded Phase 2 of the Mt. Simon aquifer investigation; \$820,000 appropriated directly to MGS for atlas continuation.	FY 10 ---	\$ Subd. 3(b) \$890,000 county atlas continuation \$895,000 Mt. Simon aquifer.
M.L. 2011 Subd. 03b2 (Part B atlas) ENRTF to DNR for atlas continuation	FY12----	\$600,000
M.L. 2013 (Part B atlas) ENRTF to DNR for atlas continuation	FY14----	\$1,200,000
M.L. 2009 – CWF – expand atlas data acquisition	FY10 ---	\$1,000,000
M.L. 2013 -- CWF – (Part B atlas continuation and acceleration)	FY14 ---	\$1,230,000
M.L. 2007 (Springshed mapping) ENRTF via contract with of MN	FY2008 ----	\$125,000
M.L. 2009 (Springshed mapping) ENRTF DNR	FY10--	\$250,000
M.L. 2011 (Springshed mapping) ENRTF DNR	FY12---	\$220,000 Subd. 05b1

VIII. FEE TITLE ACQUISITION/CONSERVATION EASEMENT/RESTORATION REQUIREMENTS: N/A

IX. VISUAL COMPONENT or MAP(S):



X. RESEARCH ADDENDUM: NA

XI. REPORTING REQUIREMENTS:

Periodic work plan status update reports will be submitted no later than January 15, 2016, July 15, 2016, January 15, 2017, and July 15, 2017. A final report and associated products will be submitted between June 30 and September 15, 2017.

**Environment and Natural Resources Trust Fund
M.L. 2015 Project Budget**



Project Title: County Geologic Atlases – Part B

Legal Citation: M.L. 2015, Chp. 76, Sec. 2, Subd. 03b

Project Manager: Jan Falteisek

Organization: Minnesota Department of Natural Resources

M.L. 2015 ENRTF Appropriation: \$ 2,000,000

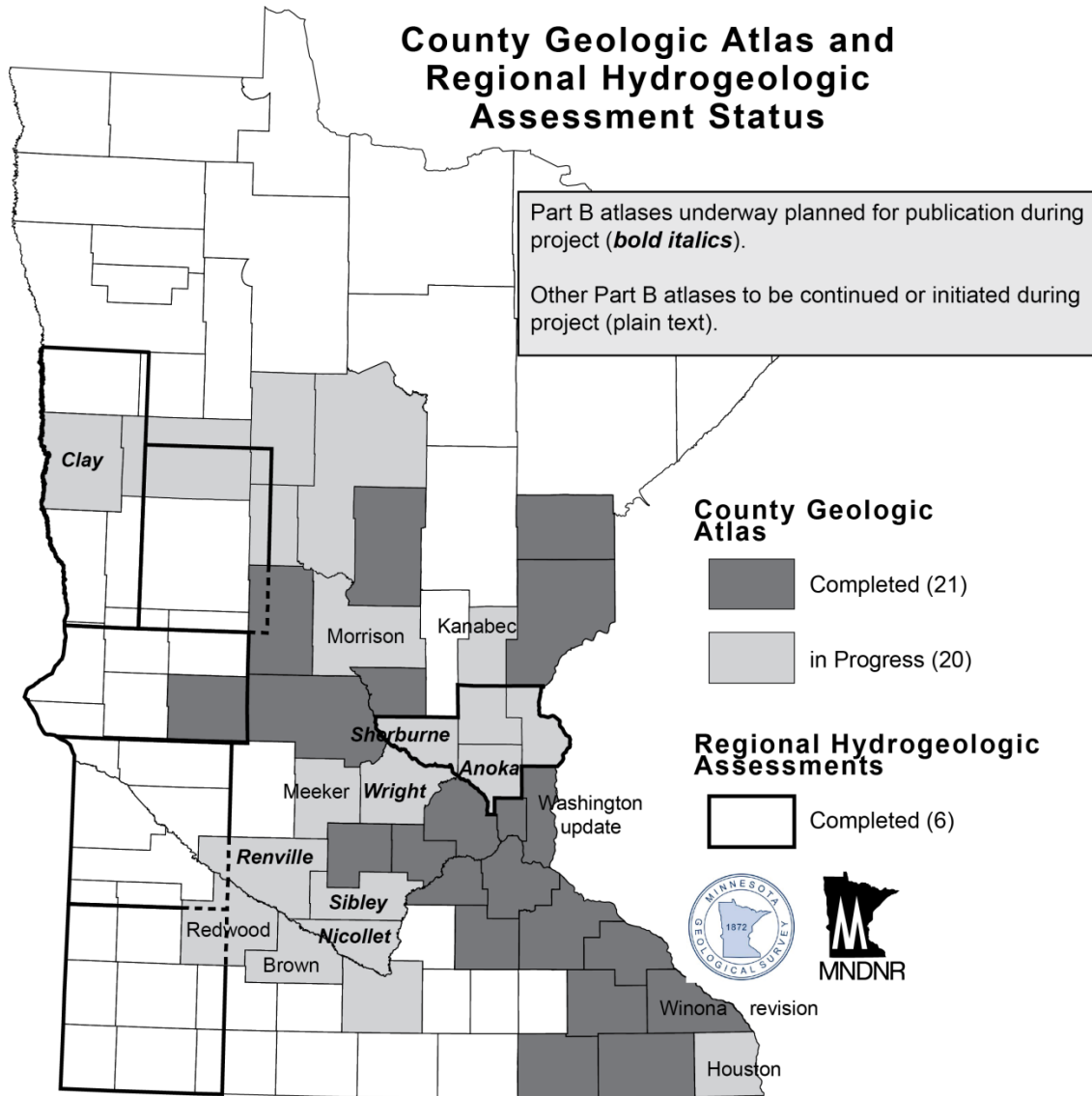
Project Length and Completion Date: 2 years, June 30, 2017

Date of Report: October 23, 2014

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Activity 1 Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	<i>County Geologic Atlas, Part B</i>				
Personnel (Wages and Benefits) -- Continuation of eleven existing staff (10.25 FTE). Note that in the first year of the project (FY16) some positions will be funded by remaining existing ENTRF or CWF appropriations for atlas Part B acceleration.	\$1,423,098	\$0	\$1,423,098	\$1,423,098	\$1,423,098
<i>Hydrologist Supervisor (classified), Project Manager/Technical Supervisor: \$107,000 (75% salary, 25% benefits); 0.5 FTE</i>					
<i>Res Sci 3 (classified) technical team lead: \$118,000 (68% salary, 32% benefits); 1 FTE</i>					
<i>Hydrologist 3 (classified): \$112,000 (68% salary, 32% benefits); 1 FTE</i>					
<i>Hydrologist 3 (classified) science reports team lead: \$112,000 (68% salary, 32% benefits); 1 FTE</i>					
<i>Three Hydrologist 2 (unclassified or classified): \$88,000 (75% salary, 25% benefits); 1 FTE ea</i>					
<i>Information Officer 2 (editor) (classified or unclassified): \$54,000 (75% salary, 25% benefits); 1 FTE</i>					
<i>Research Analyst - GIS or Research Analyst Int. - GIS (classified or unclassified): \$60,000 (75% salary, 25% benefits); 1 FTE</i>					
<i>Hydrologist 1 (classified or unclassified) field hydrogeologist: \$62,000 (75% salary, 25% benefits); 1 FTE.</i>					
<i>Hydrologist 1 (temporary) field hydrologist: \$46,000; 0.75 FT</i>					
Professional/Technical/Service Contracts					
<i>Laboratory analysis of water samples: State contract release L-368(5) for environmental isotope analysis, stable isotopes of oxygen, hydrogen; tritium (\$98,000)</i>	\$98,000	\$0	\$98,000	\$98,000	\$98,000

<i>Laboratory analysis of water samples: U of MN, Dept of Earth Sciences, contract for general chemistry, trace elements and carbon-14 dating (\$130,000).</i>	\$130,000	\$0	\$130,000	\$130,000	\$130,000
Equipment/Tools/Supplies					
<i>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).</i>	\$42,000	\$0	\$42,000	\$42,000	\$42,000
Printing					
<i>Printing six (6) reports (est \$9,000 ea. Minncor contract); well owner sampling permission cards (\$1000), (est total \$55,000).</i>	\$55,000	\$0	\$55,000	\$55,000	\$55,000
Travel expenses in Minnesota					
<i>In-state vehicle mileage (est \$25,000) and travel expenses (est \$18,000), primarily for water sample and field data collection.</i>	\$43,000	\$0	\$43,000	\$43,000	\$43,000
Other					
<i>' GIS and report publication specialty software purchase, upgrades, and license subscription agreements (est \$3,600). Specialty project specific training such as GIS, primarily for new hires (est \$5,000). Shipping water samples to laboratory (est \$2,000). Repairs to project equipment (est \$1,760). Project specific training expense including safety (est \$8,800). Cell phones for exclusive use of 5 project specific field staff for safety (est \$3,000).</i>	\$24,160	\$0	\$24,160	\$24,160	\$24,160
<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 (~\$22,874), Safety Support (~\$5,658), Financial Support (~\$20,634), Communication Support (~\$1,141), IT Support (~\$50,006), Planning Support (~\$704), Procurement Support (~\$235), and division and regional program management (~\$83,490) that are necessary to accomplishing funded programs/projects.</i>	\$184,742	\$0	\$184,742	\$184,742	\$184,742
COLUMN TOTAL	\$2,000,000	\$0	\$2,000,000	\$2,000,000	\$2,000,000

County Geologic Atlas and Regional Hydrogeologic Assessment Status



September 2014



