

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

LCCMR ID: 017-A2

Project Title: Drainage Records Modernization and Shared GIS Database

Category: A2. Natural Resource Data and Information: Distribution, Application, and Training

Total Project Budget: \$ 715,000

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

Other Non-State Funds: \$ 0

Summary:

Develop shared GIS database for key characteristics of Minnesota Statutes Chapter 103E publicly administered drainage systems, update Drainage Records Modernization Guidelines, and make available cost-share for drainage records modernization.

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Sponsoring Organization: Board of Water and Soil Resources

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Location

Region: Statewide

Ecological Section: Statewide

County Name: Statewide

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 _____%

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Drainage Records Modernization and Shared GIS Database

I. PROJECT STATEMENT

This project will make cost-share available to county and watershed district drainage authorities for modernization of Minnesota Statutes Chapter 103E drainage system records and provide funding to develop a shared Geographic Information System (GIS) database at the Minnesota Geospatial Information Office (MnGeo) for key information about the location and characteristics of these publicly administered drainage systems (Funding Priority A2). Characteristics of the shared database will integrate with business requirements of drainage authorities and draw on recent experience of drainage authorities and their consultants involved with drainage records modernization. This project will also update Drainage Records Modernization Guidelines first published by the BWSR in September 2008. The shared database and updated guidelines will be developed prior to making drainage records modernization cost-share available.

Drainage is critical for agricultural production on much of Minnesota's farmland, and multi-purpose water management is critical for peak flow control, erosion control and water quality (Funding Priority B1). At this time, more than 100 counties and watershed districts serve as public drainage authorities under Minnesota Statutes Chapter 103E. This includes approximately 21,000 miles of public drainage ditches and many thousands of miles of subsurface tile. The records for these drainage systems have been maintained by counties and watershed districts primarily in hard copy of various materials from different production methods. Many of these records are very old (more than 100 yrs.) and are becoming faded and fragile.

Since 1997, BWSR has administered incentives for public drainage system inventories and records modernization to enhance drainage management, through Local Water Planning Challenge Grants and Drainage Records Modernization Cost-Share. The stakeholder Drainage Work Group, which involves more than 20 associations, organizations, agencies and academic institutions facilitated by the BWSR, has been a proponent of drainage records modernization and guidelines. Recent records modernization projects by drainage authorities and their consultants have helped to identify opportunities to advance drainage records modernization guidelines and develop a statewide shared database for key public drainage infrastructure records. These electronic drainage system records would improve GIS data statewide, including the National Hydrography Dataset, which is important for water management in Minnesota.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Establish project team, agreement and advisory committee. Budget: \$5,000

BWSR will execute an agreement with MnGeo to serve as the prime contractor this project. Members of the stakeholder Drainage Work Group, the interagency Drainage Management Team, drainage authorities with drainage records modernization experience, and other practitioners with relevant expertise, will be recruited to serve on a project advisory committee.

Outcome	Completion Date
1. Project team and interagency agreement with MnGeo established	September 2011
2. Project advisory committee established and oriented	October 2011

Activity 2: Collect input to define database requirements, priorities. Budget: \$40,000

In coordination with BWSR, the project advisory committee and Drainage Work Group, MnGeo will solicit input from stakeholders via survey and focus groups to define business requirements, priorities, cost controls and objectives for updated drainage records modernization guidelines and a statewide, shared GIS database for key drainage system records.

Outcome	Completion Date
1. Survey and focus groups with drainage authorities and practitioners	December 2011
2. Specific objectives for advanced guidelines and shared database defined	January 2012

Activity 3: Develop shared database and updated guidelines. Budget: \$170,000

MnGeo and its consultants will design and create a shared GIS database for key public drainage system records and populate with existing data for one or more pilot counties or watershed districts. MnGeo will construct and host a web-based mapping application for easy access to the data and ensure integration of GIS specifications into updated drainage records modernization guidelines.

Outcome	Completion Date
1. Draft shared database and updated records modernization guidelines	August 2012
2. Review and input by project advisory committee	October 2012
3. Completed database and updated records modernization guidelines	January 2013

Activity 4: Use new guidelines and database with cost-share grants. Budget: \$500,000

BWSR will conduct a Drainage Records Modernization Cost-Share RFP and selection process, with application ranking assistance by the interagency Drainage Management Team. Applicants will be required to use the updated Drainage Records Modernization Guidelines and shared database, which will be located at MnGeo. Minimum 1:1 local match will be required.

Outcome	Completion Date
1. RFP to drainage authorities for Records Modernization Cost-Share	January 2013
2. Review and ranking of apps and grant recommendations to BWSR	March 2013
3. Drainage Records Modernization Cost-Share grants approved by BWSR	June 2013
4. Projects completed and key records on shared database at MnGeo	June 2014

III. PROJECT STRATEGY

A. Project Team/Partners

Roles to be funded by sources other than ENRTF:

- *Al Kean, P.E., Chief Engineer, BWSR:* Project management, oversight and coordination.
- *Joel Peterson, P.E., Ph.D., Water Resources Engineer, BWSR:* Project technical assistance and program management for Drainage Records Modernization Cost-Share.
- *Advisory committee members:* Provide perspective, advice, and review of draft products.

Roles to be funded by requested ENRTF grant:

- *John Hoshal, Supervisor, GIS Project Services, MnGeo :* Lead contract and production manager.
- *Other MnGeo Staff:* Technical development and review assistance.
- *Private consultant(s):* Assist development of shared GIS database for public drainage system records and updated Drainage Records Modernization Guidelines, in consultation with MnGeo, BWSR and advisory committee.

B. Timeline Requirements

This project will require 3 years, from July 2011 to June 2014.

C. Long-Term Strategy and Future Funding Needs

This project is part of coordinated efforts to modernize and preserve public drainage system records and to promote multi-purpose drainage management statewide. The estimated need for Drainage Records Modernization Cost-Share remaining after this project is \$1.5 million.

2011-2012 Detailed Project Budget

PROJECT TITLE: Drainage Records Modernization and Shared GIS Database

IV. TOTAL TRUST FUND REQUEST BUDGET 3 years

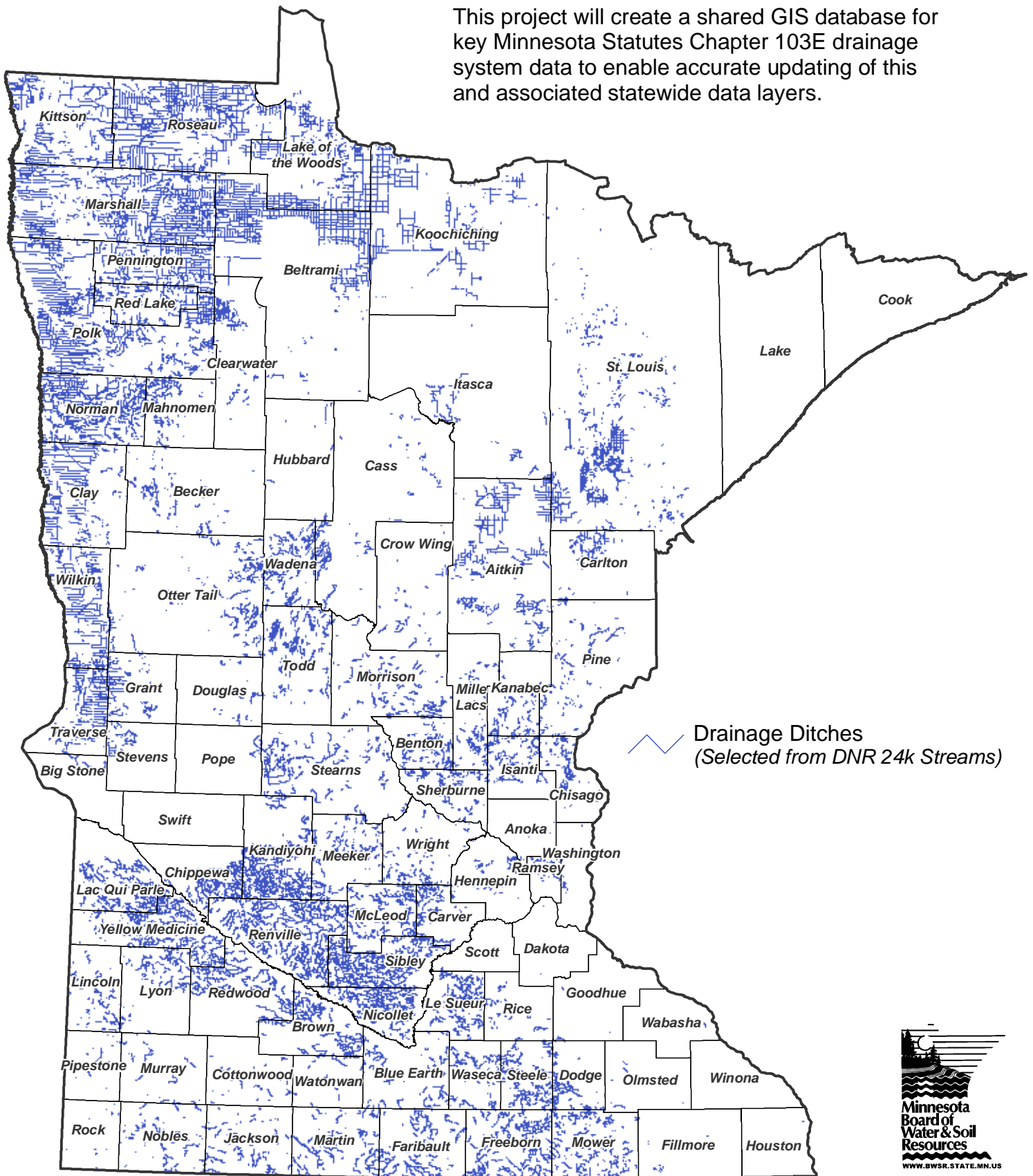
<u>BUDGET ITEM</u>	<u>AMOUNT</u>
Personnel:	N/A
Contracts: Minnesota Geospatial Information Office to serve as the prime contractor to scope and develop a shared database for Minnesota Chapter 103E public drainage system records and to update the Drainage Records Modernization Guidelines.	\$213,000
Equipment/Tools/Supplies:	N/A
Acquisition (Fee Title or Permanent Easements):	N/A
Travel: Focus group meetings in the primary agricultural areas of the state (estimate 3-6) with drainage records users and consultants (drainage authorities, engineers, auditors, drainage inspectors, viewers, records modernization consultants).	\$2,000
Additional Budget Items: BWSR will provide competitive drainage records modernization cost-share to county and watershed district drainage authorities using updated Drainage Records Modernization Guidelines and new shared GIS database, with minimum 1:1 local match required.	\$500,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND \$ REQUEST	\$715,000

V. OTHER FUNDS

<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
Other Non-State \$ Being Applied to Project During Project Period: Minimum 1:1 local match for competitive drainage records modernization cost-share. \$500,000 of drainage records modernization cost-share allocated in FY09 was matched by approximately \$1,000,000 of local cash and in-kind match.	\$500,000	Pending
Other State \$ Being Applied to Project During Project Period:	N/A	
In-kind Services During Project Period: BWSR Staff Time: (4% Al Kean, 4% Joel Peterson) (salary, benefits, other OH)	\$34,800	
Remaining \$ from Current ENRTF Appropriation (if applicable):	N/A	
Funding History:	N/A	

Circa 1980 Locations of Drainage Ditches from USGS Maps

This project will create a shared GIS database for key Minnesota Statutes Chapter 103E drainage system data to enable accurate updating of this and associated statewide data layers.



2011-2012 Project Manager Qualifications and Organizational Description

PROJECT TITLE: Drainage Records Modernization and Shared GIS Database

Project Manager Qualifications

Allan Kean, P.E., serves as Chief Engineer and manager of the Technical Services Section of the Board of Water and Soil Resources. This role involves supervision, financial management and leadership. Mr. Kean has served as a section manager for BWSR since 1992.

Mr. Kean served as project manager and editor for preparation of the "*Public Drainage Ditch Buffer Study, February 2006*" and the "*Drainage Records Modernization Guidelines, September 2008*", which involved contracts with the University of Minnesota, Water Resources Center and the Minnesota State University, Mankato, Water Resources Center.

Since 2006, Mr. Kean has served as a facilitator of the stakeholder Drainage Work Group, which involves more than 20 associations, organizations, agencies and academic institutions having a focus on science-based mutual understanding and consensus recommendations regarding drainage policy and drainage management. He has facilitated associated consensus recommendations for updates of Minnesota drainage law and testified at legislative committee hearings on behalf of the Drainage Work Group regarding these recommendations.

As project manager, Mr. Kean will also serve as coordinator with the stakeholder Drainage Work Group and help coordinate with other stakeholders for this project. He will be responsible for oversight of a contract with the Minnesota Geospatial Information Office, including completion within budget and on schedule.

Organizational Description

The mission of the Board of Water and Soil Resources is to: "Improve and protect Minnesota's water and soil resources by working in partnership with local organizations and private landowners". This project will help accomplish BWSR's mission by creating a shared database and updating guidelines for public drainage records modernization. A statewide database for key electronic records of public drainage systems will enable improved water management in Minnesota. Multi-purpose drainage management is a critical component of land use practices to improve water quality in Minnesota.

The BWSR facilitates the stakeholder Drainage Work Group, as well as the interagency Drainage Management Team. BWSR also works with local government units for conservation, water quality, and wildlife habitat on private lands, as well as for flood damage reduction, including work with watershed district and county drainage authorities. BWSR has administered state cost-share for public drainage records modernization since 1997, as funding has been available. Therefore, BWSR is well positioned to lead this project.