

FINAL REPORT

2001 Project Abstract

For the Period Ending June 30, 2004

Title: Updating Outmoded Soil Surveys—Continuation

Project Manager: Greg Larson

Organization: Board of Water and Soil Resources

Address: 1 West Water Street, Suite 200, St. Paul, MN 55107

Fund: Trust Fund

Legal Citation: ML 2001, 1st Special Session, [Chap.2], Sec. [14], Subd. [7C]

Appropriation Amount:\$ 500,000

Overall Project Outcome and Results

Existing soil surveys for three counties, Goodhue, Fillmore and Wabasha, were orthorectified by the University of Minnesota, Department of Soil, Water and Climate. About 75 percent of Dodge County, the fourth and final county in the project area, was completed. Dodge County will be completed by June 30, 2005 as part of final map finishing. These orthorectified products are being used to develop a legend for update mapping, editing soil lines and as an interim digital soil survey. The BWSR hired (from county funds) a student intern-GIS graduate student-to assist the NRCS staff with line editing. Two private sector soil scientists worked under contract with BWSR (using county funds) to collect soil data for legend development and soil interpretations. Through June 30, 2003 seven hundred eighty transects (780), including over 7,800 soil cores to a depth of 80 inches, have been described. These data are providing essential information concerning the use and management of soil, and will assist in the update of soil interpretations. Development of a legend to guide update mapping is about 90 percent complete. Update mapping is underway in areas that have a legend. About 1,400,000 (of 1.65M) acres has been addressed in the four county project area. Research at the UM focused on the investigation of methods to incorporate remotely sensed imagery into the making of soil maps, including interactive delivery of soil survey information over the Internet.

Project Results Use and Dissemination

As data is certified as accurate, it is made available to the public. Interim digital products, including soil lines, will be available before June 30, 2006. Members of the project team make frequent presentations to local government staff and officials in the project area.

Project Completion Date: June 30, 2006

LCMR Final Work Program Report 2001

I. PROJECT TITLE: Updating Outmoded Soil Surveys-Continuation

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Total Biennial Project Budget:

\$LCMR:	\$500,000	\$Cost share:	\$293,248
Spent:	<u>\$479,765</u>	Spent:	<u>\$284,766</u>
=\$LCMR Balance	\$20,235	=\$Cost share Balance:	\$8,482

A. Legal Citation: ML 2001, 1st Special Session, [Chap. 2], Sec. [14], Subd, [7C]

Appropriation Language: \$250,000 the first year and \$250,000 the second year are from the trust fund to the board to water and soil resources for the second biennium of a three biennia project to accelerate a statewide program to update and digitize outmoded soil surveys in four southeast counties. Participating counties must provide a cost-share. This appropriation is available unit June 30, 2004, at which time the project must be completed and final projects delivered, unless an earlier date is specified in the work program.

Status of Cost Share Requirement: Participating counties provided cost share funds by February 1, 2003.

II. and III. FINAL PROJECT SUMMARY:

Three of the existing soil surveys, Goodhue, Fillmore and Wabasha were orthorectified by the University of Minnesota, Department of Soil, Water and Climate. About 75 percent of Dodge County was completed. Dodge County will be completed by June 30, 2005 as part of final map finishing. These orthorectified products are being used to develop a legend for update mapping, editing soil lines and as an interim digital soil survey. The BWSR hired (from county funds) a student intern-GIS graduate student-to assist the NRCS staff with line editing. Two private sector soil scientists worked under contract with BWSR (using county funds) to collect soil data for legend development and soil interpretations. Through June 30, 2003 seven hundred eighty transects (780), including over 7,800 soil cores to a depth of 80 inches, have been described. These data are providing essential information concerning the use and management of soil, and will assist in the update of soil interpretations. Development of a legend to guide update mapping is about 90 percent complete. Update mapping is underway in areas that have a legend. About 1,400,000 (of 1.65M) acres has been addressed in the project area. Research at the UM focused on the investigation of methods to incorporate remotely sensed imagery into the making of soil maps, including interactive delivery of soil survey information over the Internet.

IV. Outline of Project Results:

Result 1: Improve the quality of existing soil maps to aid their update and assist in the compilation of revised soil maps.

LCMR Budget:	\$75,000	Balance:	\$3813
County \$:	\$0	Balance:	\$0
Completion Date:	June 30, 2006		

Final Status: An orthorectified base map for Goodhue, Fillmore and Wabasha Counties was completed.

Result 2: Develop a descriptive legend (“blueprint”) for doing the update and collect soils information to improve interpretations.

LCMR Budget:	\$108,000	Balance:	\$10,000
County \$:	\$150,000	Balance:	\$ 0
Completion Date:	June 30, 2006		

Final Status: Two consulting firms were under contract to gather data to support the project. Four hundred eighty transects have been done since July 1, 2001. Legend development is about 90 percent complete.

Result 3: Update, as necessary, previous soil mapping.

LCMR Budget:	\$120,000	Balance:	\$6,422
County \$:	\$143,248	Balance:	\$8,482
Completion Date:	June 30, 2006		

Final Status: NRCS staff are developing a new data base and reviewing the work of the consultants. About 1,400,000 (of 1.65M) acres has been addressed in the SE.

Result 4: Technical and research support for digital and field science.

LCMR Budget:	\$197,000	Balance:	\$0
County \$:	\$0	Balance:	\$0
Completion Date:	June 30, 2006		

Final Status: Investigation of methods to incorporate remotely sensed imagery into the making of soil maps has been completed, including the interactive delivery of soil survey information over the Internet.

V. TOTAL PROJECT BUDGET:

All Results: Personnel: \$743,201

All Results: Equipment: \$42,047

All Results: Development: 0

All Results: Acquisition: 0

All Results: Other: \$8,000

TOTAL BUDGET: \$793,248 (See Attachment A)

VI. PAST, PRESENT AND FUTURE SPENDING:

A. Past Spending: This project complements a sixteen year and nearly an 11 million dollar effort of the LCMR to produce an initial soil survey in Minnesota counties. That effort ended in 1993. During that time, nearly 28 million acres were mapped in 62 counties as part of a state, federal and local partnership. In addition to state contributions, the federal government and county government contributed 18.5 and 8.1 million dollars, respectively. Currently, the NRCS is providing 2.5 million dollars through 36 soil scientists. However, priorities limit them to finishing the "once-over" soil survey effort began by the LCMR in 1977. Hence, the NRCS can only initiate soil survey updates upon completion of ongoing surveys. This project has enabled the State to help direct the priorities of the NRCS toward the acceleration of soil survey updates and the NRCS (jointly with BWSR) has hired a regional project soil scientist and two county-based soil scientists for the southeastern Minnesota soil survey update effort. In addition to the 1999 LCMR appropriation of \$50,000, the LCMR contributed \$130,000 to the update of the Fillmore County Soil Survey. That project—as a single county effort—ended December 31, 1999 and was incorporated into the four county effort described herein.

B. Current and Future Spending: \$500,000 of state funding will be needed in the last (third) biennium to complete this project. Counties will contribute \$219,990 of cost share the last biennium. Counties and the NRCS are expected to contribute (yet unknown) funding after project completion to maintain the database.

C. Project Partners: NRCS contact: Joe McCloskey and University of Minnesota contact: Jay Bell. NRCS staff receiving LCMR project dollars (through a contract) were Charles Saari, Peter Hartment and Joe Falkenberg. University of Minnesota staff receiving LCMR project dollars (through a contract) were Dan Wheeler, Joel Nelson and four or more students. (Refer to Attachment A for more details.)

D. Time: As previously stated, this project will take six years (3 biennia) to complete. This work plan final report is through the second biennia.

VII. DISSEMINATION: As the projects herein are developed and approved—as appropriate—by the NRCS and the University of Minnesota, they will be marked "advanced copy," and used and distributed by NRCS and project cooperators without restriction.

VIII. LOCATION: This project will focus on Dodge, Fillmore, Goodhue and Wabasha Counties.

IX. REPORTING REQUIREMENTS: periodic work program progress reports were submitted February 26, 2002; July 2, 2002 and January 16, 2003.

X. RESEARCH PROJECTS: Not applicable.

Project Title: Updating Outmoded Soil Surveys-Continuation (September 3, 2003)

Project Number: 07 C

LCMR Funding: \$500,000

Attachment A Deliverable Products and Related Budget															
2001 LCMR Project Biennial Budget															
Objective/Result															
	Result 1 Budget:	Result 1 Current Invoice:	Result 1 Balance:	Result 2 Budget:	Result 2 Current Invoice:	Result 2 Balance:	Result 3 Budget:	Result 3 Current Invoice:	Result 3 Balance:	Result 4 Budget:	Result 4 Current Invoice:	Result 4 Balance:	Project Total:		
Budget Item (Title of Result)	Improve existing maps			Develop legend			Update mapping			Technical & Research support			Budget Total:	Current Invoice Total:	Balance Total:
Wages, salaries & benefits (see below)															
Contracts															
Professional/Technical contract with U of M, Dept, Soil, Water & Climate (see end notes)	75,000	71,187	3,813							162,953	162,953	0	237,953	234,140	3,813
Professional/Technical contract with USDA/NRCS (see end notes)				100,000	90,000	10,000	112,000	105,578	6,422				212,000	195,578	16,422
Space Rental: NOT ALLOWED	X			X			X						X		
Maintenance of drill rigs				1,000	1,000	0							1,000	1,000	0
Utilities															
Other direct operating costs (county payment for contractors)				150,000	150,000	0	143,248	134,766	8,482				293,248	284,166	8,482
Printing															
Advertising															
Aerial Phototgraphy							8,000	8,000	0				8,000	8,000	0
Office supplies (List specific categories)															
Other Supplies (software, licenses and fees)															
Local automobile mileage paid															
Other travel expenses in Minnesota															
Travel outside Minnesota (where?)															
Tools and equipment: lease of pick-up, additional drill rig and trailer, geotech equipment				7,000	7,000	0				28,047	28,047	0	35,047	35,047	0
Office equipment & computers (Lap top computer and data-logging software)										6,000	6,000	0	6,000	6,000	0
Other capital equipment (list specific items)															

Land acquisition																
Land rights acquisition (less than fee)																
Buildings (for what?)																
Other land Improvement (for what?)																
Legal fees (for what?)																
COLUMN TOTAL	75,000	71,187	3,813	258,000	248,000	10,000	263,248	248,344	14,904	197,000	197,000	0	793,248	764,531	28,717	

End Notes:

Note: Personnel paid with LCMR funds. (% refers to contribution of LCMR funds to their salaries and benefits. FT (full time) PT (part time)

U of M:

Dan Wheeler, Project Coordinator - 35% FT

Total UM
Contract
\$237,953 as
follows: 225,000
personnel; 9,000
software fees and
3,953 supplies
and travel

Joel Nelson, Production Coordinator - 70% FT
4 of more students (to be) hired -100% each PT

NRCS

1 Project Leader (Charles Saari) 50% FT

Total NRCS
contract
\$212,000 as
follows: 212,000
personnel

2 County Subset Leaders (Peter Hartman, Joe Falkenberg)
50% each FT