FILLMORE COUNTY SOIL SURVEY UPDATE
10(g) $130,000 FRF

Nonstate Match $130,000

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The purpose of this project was to accelerate the process of updating the Fillmore County soil survey. 1:12,000 scale aerial photography as well as infrared aerial photography was purchased for the entire county to aid in the mapping. The County contracted with a consultant to begin the process of developing a descriptive legend for the Major Land Resource Area (MLRA) 104 which consists of the southwestern portion of the county. Quality control on the project was done by the Natural Resources Conservation Service (NRCS). 35,000 acres of mapping was completed during the first phase. At the end of this phase we have developed a legend that will be used by production soil mappers in the next phase of the project as they begin to complete the update-mapping in Fillmore, Dodge, Goodhue and Wabasha Counties .

Completion date: 12/31/99

July 26, 1999
LCMR Work Program Update

Date of Final Work Program Report: January 1, 2000
Date of Work Program Approval: December 2, 1996
Date of Revised Work Program Approval: June 23, 1997
Project Completion Date: December 31, 1999

LCMR WORK PROGRAM – 1997 – 1999

I. PROJECT TITLE: Fillmore County Soil Survey Update

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Total Biennial Project Budget:

	FY 98	FY 99		FY 98	FY 99
$ LCMR	**65,000**	**65,000**	**$Match**	**65,000**	**65.000**
-$LCMR Spent:	**51,213**	**53,500**	**-$Match Spent:**	**51,213**	**53,500**
=LCMR Balance	**13,787**	**11,500**	**=Match Balance**	**13,787**	**11,500**

A1. Legal citation: ML 1995, [Chap. 220] [Sec.19,][Subd. 7(g)].
Original Appropriation Language: This appropriation is from the future resources fund to the Board of Water and Soil Resources to provide 50% for the non federal share to begin a three biennium project to update the Fillmore County Soil Survey into a digitized and manuscript format. Date compatibility requirements in Subd. 15 apply to this appropriation.

A2. Legal Citation: ML 1997, [Chap. 216][Sec.15][Subd.16(a)].
Extension to Original Appropriation Language: The availability of the appropriations for the following project is extended to June 30, 1998: Laws 1995, chapter 220, section 19, subdivision 7, paragraph (g), Fillmore county Soil Survey update.

A3. Legal Citation: ML 1997, [Chap. 216][Sec.15][Subd. 10(g)].
Supplemental Appropriation Language: This appropriation is from the trust fund to the board of water and soil resources to provide half of the non federal share for the second year of a six year project to update the Fillmore county soil survey into a digitized and manuscript format.

A4. Legal Citation: ML 1999, [Chap, 231], [Sec. 16], [Subd. 25(a)].
Extension to Supplemental Appropriation Language. The availability of appropriations for the following projects is extended to June 30, 2000: Laws 1997, chapter 216, section 15, subd. 10 (g), Fillmore County Soil Survey Update.

B. Status of Match Requirement: The Fillmore county Board of Commissioners has committed $130,000 of non-state matching funds.

II. PROJECT SUMMARY AND RESULTS: The purpose of this project is to begin the several year process of updating the Fillmore county Soil Survey. The update is needed so that current soil survey maps, interpretations and soil database are available for managing agriculture, forestry, urbanizing lands, recreation and wildlife. The existing soil survey was completed in 1954 and was funded by the U.S. Department of Agriculture, Soil Conservation Service (renamed the Natural Resources Conservation

Service(NRCS). Soil maps and resource managers of private, county, state, and federal lands, assessors, associates and zoning officials will use data. Also, there is a need to produce soil survey maps on an orthophotographic basemap suitable for GIS and other computer applications.

The update will be accomplished by refining the composition of soil map unites, checking and refining soil map unit delineation's on the existing soil survey, gathering field documentation and updating the soil database. Although most production soil mapping will be done subsequent to this phase, some production mapping will be done so that information is available to land users. All soil mapping will be compiled on an orthophotographic basemap.

No commitment has been made regarding digitizing the updated soil survey. Digitizing is not budgeted as a component of this project. However, when digitized, the updated soil survey will meet NRCS Soil Survey Geographic Database (SSURGO) standards and be part of the State of Minnesota digital soil database.

III. PROGRESS SUMMARY:

IV. OUTLINE OF PROJECT RESULTS:

The project will be undertaken in the western part of Fillmore County in Major Land Resource Area (MLRA) 104. (Refer to the attached map.) MLRA 104 was selected because the terrain in more open and the land use is more agricultural than the eastern part of the county. A private contractor will do the work with quality assurance provided by the NRCS soil scientists in cooperation with the University of Minnesota, Department of Soil, Water and Climate. Quality assurance will provide that the soil survey meets National Cooperative Soil Survey (NCSS) Standards. The NCSS standard ensures that soil surveys convey consistent soil information across the United States.

Historically, in Minnesota, soil mapping ahs been done exclusively by NRCS personnel or state and local government employees operating under the direction of NRCS personnel. This project is unique in that a private contractor will be selected through a bidding process to perform the work. Given the complexity of the landscape and the limited number of qualified contractors to perform—and hence bid—this type of work, the size of the work area in MLRA 104 will be determined as part of the process of selecting a contractor. This work plan will be revised when a contractor has been selected and the size of area determined. The work plan revision will address the allocation of workload—and budget—between the results.

Result 1: Develop a descriptive legend and collect interpretive information.

LCMR Budget:	$90,000	Balance	$11,500
Match:	$90,000	Balance	$11,500
Completion Date:	January 1, 2000		

During this phase, work will focus on legend development, with limited production mapping. The soil survey legend consists of soil map unit symbols, soil map unit names, and descriptions of the soil map units (the extent of various soils in the map unit, their physical properties, type of landform and so forth). It is essential that a soil survey legend be developed before the start of production mapping.

The descriptive legend will be developed through the assessment of user needs, geomorphologic investigations, transects across the landscape, soil sampling, evaluation of information from the existing Fillmore County Soil Survey and soil surveys in nearby counties and adjacent counties in Iowa, previous special projects, geological mapping, water table studies, existing soil characterization date, and the interpretation of aerial photography, Emphasis will be given to identifying and working with the users of the soil survey to ensure that the update addresses their needs. Recorrelation, map revision, remapping and map compilation activities will begin after the descriptive legend has been developed.
Products: A soil survey descriptive legend developed using the National Soil Information System, preliminary interpretive tables, detailed map unit descriptions and/or preliminary edits to the soil survey database, and taxonomic unit descriptions.

>>>As of June 21, legend development for MLRA 104 is progressing. The contractor is completing a summary of the 15-20 major map units and data entry on all other minor map units. The contractor is also developing the concept of 2 new soil series. NRCS and BWSR have completed a quality check of the mapping. At the completion of this project, a legend will be developed that will be used in the soil survey update for the LCMR project covering other counties in Southeastern Minnesota.>>>

Result 2: Production soil mapping

LCMR Budget:	$40,000	Balance:	$0
Match:	$40,000	Balance:	$0
Completion date:	January 1, 2000		

Production mapping will begin after the soil survey descriptive legend is developed and approved by the NRCS. Much of this activity will involve splitting existing soil map units into one or more units or changing previous soil line placement. Some areas may require remapping to accurately reflect current soil and landscape concepts.

Production soil mapping will be done using black and white NAPP orthophotography at a scale of 1:12,000, supplemented with color infrared photography. Soils will be examined to depths of at least 80 inches with data collected and soil boundaries compiled on an orthophotographic basemap. The soil maps will be correlated and checked for accuracy by the NRCS as part of the quality assurance program. Mapping that is not approved will be identified and the contractor will be required to correct the deficiencies so that the mapping will meet NCSS standards.

Products: A hard copy soil map suitable for distribution to the public.
<<<Production soil mapping has been stopped to allow for completion of the descriptive legend.>>>

V. DISSEMINATION: As products are developed and approved by the NRCS, they will be marked "advanced copy", and may be used and distributed by NRCS and project cooperators without restriction.

VI. CONTEXT: The soil survey update of Fillmore county is a subset of the soil survey updates of Major Land Resources Areas (MLRA) 104 and 105. This project is intended to update the existing published county soil survey to a standard common to other modern soil surveys in MLRA 104 and 105. Most soil surveys in MLRA 104 and 105 were published in the 1960's or 1970's at a map scale of 1:15,840 or 1:20,000. Typically, the fieldwork was completed about five years prior to publication of the reports and reflect what was known about the soils and at the time of the survey. The older reports remain an excellent source of information, but became outdated as new information about soils became available and as land use intensified. There is a need to build on existing soil surveys and develop a coordinated database so that local, regional, and national concerns can be better addressed. This need is evidenced by the demand for more comprehensive soil data for managing agricultural land, protecting water quality and quantity, improving and maintaining forestlands and pasture, developing wildlife habitat, and preparing watershed and urban plans. The update will contribute to the computer soil attribute database for MLRAs 104 and 105. The database will include map unit legends, map unit interpretations, and soil properties.

B. Time: The phase of the multi-year project will be completed on or before December 31, 1999.

C. Budget Context: This is the first appropriation for this project. Future LCMR funding will be sought for subsequent phases of this project. There were no prior expenditures on this project.

January 1997-January 2000	**January 2000-June 2001**
Proposed expenditures on this project	**Anticipated future expenditures on this project**

1. LCMR	**$130,000**		**$65,000**
2. Other State	**$0**		**$0**
3. Non State Cash	**$130,000**		**$65,000**
Total	**$260,000**		**$130,000**
Budget:			
Personnel:	$0		
Equipment:	$0		
Acquisition:	$0	All equipment will be furnished by the contractor	
Development:	$0		
Other:	$260,000	Aerial photography and map finishing materials such as orthophotographic imagery will be purchased by the county (estimated cost = $20,000). The balance of the funds will be used to hire a contractor. The contract will be conveyed and administered by Fillmore County, using LCMR funds passed through the Board of Water and Soil Resources.	

<<A computer was purchased for $2975.45 with the County match portion of the grant. This computer will be used for data input into the NRCS data system and the computer will be used during the next phase of the project. Since the effective life of a computer is 2-3 years, we feel that the end of the project will have exceeded the computers effective life. The contractor has furnished all other equipment.>>

VII. COOPERATION: The following personnel from federal and state agencies and the University of Minnesota – Department of Soil, Water and Climate are cooperators in this project: Joe McCloskey and other NRCS personnel (20%) of time); Jay Bell and other University of Minnesota personnel (10%) of time); Greg Larson, BWSR (5%) of time); Kevin Scheidecker, Fillmore Soil and Water Conservation District (10%) of time) and the contractor hired for the project (100%) of time). Of these people, only the contractor will be paid from LCMR project funds.

VIII. LOCATION: This project will occur in western Fillmore County in MLRA 104. Information from this project will have applicability to MLRA 104.

IX. REPORTING REQUIREMENTS: A final work program report and associated products will be submitted by January 1, 2000

X. RESEARCH PROJECTS: Not applicable