DATE OF REP( ): July 1, 1993

LCMR WORK PROGRAM 1991

I. Statewide Land Use Update of Minnesota

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Stewardship in the Red River Basin
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A. ML 1990, Cht.254, Article 1, Sect. 14, Subdivision 10 (d)
This appropriation is to the commissioner of administration for a grant to The International Coalition to complete a state-wide land use update of all land and water resources outside the Twin City metropolitan area.

Appropriation: $338,000.00
Balance: $ -0-

B. Compatible Data: During the biennium ending June 30, 1993, the land use data for the agriculture and transition zones except the metro area, Wadena, Southern Mille Lacs and Southern Pine has been completed. This data resides at LMIC in a compatible form with other state data and in a form usable by local users. The data will be supplied to local users through the Board of Water and Soil Resources Water Interface program. The interpreted quadrangle sheets that have not yet been scanned reside with The Department of Natural Resources GIS Program.

C. Matching Requirement: None

II. Narrative:

This project enhances and allows further interpretation and digitization of the current 1:24,000 scale LCMR funded Land Use Project. The current project has 1017 of the 1644 full or partial state quads interpreted and 801 quads digitized. This project continued interpretation and digitization of the quads that have more than 400 polygons per quad sheet. The digitized data is stored so that local users can easily access and use the data without significant additional cost.

III. Objectives:

Continuation of Land Use Digitization

A. Narrative: additional quads, over 400 polygons per sheet, were in eted and digitized to complete the Land Use Project in the agriculture and most of the transition zone. The average number of polygons per sheet has ranged from 1800-3500 so the number of polygons interpreted has been above projections but the area completed is less.

B. Procedures: The 1969 LMIC categories and classifications were adhered to in doing a 1:24,000 quad sheet size land use update. The land use was interpreted from aerial photography, U.S. fish and Wildlife mylars, and satellite photography. The data was then digitized and scanned into computer, with appropriate quality control. The data will be field tested for verification with Soil and Water Conservation District assistance. The data was transferred to LMIC via the Department of Natural Resources in a form compatible with the state data. The digitized quads were edge matched so that the quad corners match.

C. Budget: LCMR Funds
- Amount budgeted: $338,000.00
- Balance: $ -0-

D. Timeline:

	July 1991	June 30, 1993
Interpretation	———	
Digitization	———	
Scanning		———
Verification	———	

E. Status: Fourth status report due June 30, 1993.

1. Interpretation. The project has interpreted a total of 1017 full or partial quandrangle maps out of a total of 1733 maps statewide. In addition, 166 quadrangle map equivalents have been similarly typed from other sources (Clearwater and Beltrami from Bemidji State University Geography Department, Olmsted by the county, and the Twin Cities Metropolitan Area by the Metropolitan Council). This leaves 550 maps from the transition and forested zones of the state to complete.

2. A detailed manual describing the project techniques has been developed to facilitate replication, use of the data, and the eventual updating of it. The manual is designed to be updated and improved in an ongoing basis. The manual serves as the final report and includes a detailed description and costs of alternatives for completion of the state and updating.

3. The Land Use Advisory Committee and LMIC have set standards for data transfer that the project can now meet. Since January 1992, 760 quads have been transferred to DNR. The data was sent to DNR, where an inter-agency effort, consisting of DNR and PCA staff, processed the maps on a voluntary basis to meet the state standards.

4. Date Conversion. The International Coalition continued to explore alternative methods of data conversion to increase efficiency of conversion. The project has developed a method of scanning interpreted maps and is able to develop files of superior quality at approximately 1/2 the cost of the present process. This process no longer requires DNR intervention. 41 maps have passed through this process. Benton County has been converted using this technique. Eleven quads were converted to finish off parts of six additional counties so data can be utilized in the water planning process. Additional funds from BWSR were obtained to convert 17 more quads in Goodhue County. Resources were diverted away from interpretation at the request of the Land Use Advisory Committee into data conversion, to make more information available for use and to further devlop new data input techniques.

5. LMIC has developed with project money a process to convert and make compatable county generated land use/cover files for Olmsted County. The project will allow for integration of Olmsted County into the surrounding counties land use/cover information easily when a user needs the information.

F. Benefits: Benefits are new interpreted land use data for the agriculture and most of the transition zones. This data is now being utilized in local and state agency planning programs. The agriculture zone and all of the transition zone in The Red River and Minnesota River Basins are converted to computer format allowing for automated use of the data. In addition two valuable by products were developed.

1. A much more efficient system of entering data which should be tranferrable to other types of information throughout state government. This product is documented in detail in the manual, along with detailed cost estimates to complete the state.

2. Movement of the state of the art technoloby of automatic interpretation into Minnesota from Canada. This project is documented in detail in the manual, along with detailed cost estimates to complete the forest and remaining transition zones.

IV. Evaluation

The Land Use Project can be evaluated by its production of interpreted, converted, and verified USGS quad sheets and polygons on the quad sheets. Evaluation can also be done by the integration of the data in a form compatible with the state data base at LMIC, so that local users have access to it. A state committee has been established to assist in this process, as well as, to make linkages with the Land Use Project and other state projects and to develop a strategy to maintain a current land use once this project is completed. To encourage use, the data is being incorporated into The Local Water Interface Program coordinated BWSR. They will help finance development of methods o e in local and state programs.

V. Context:

A. This project updates the 1969, 40 acre land use to current information and a more detailed scale of 1:24,000, 2 1/2 acre. This project will provide current information on land use, which will need to be updated and maintained to avoid another 20-year gap between updates. One of the goals of the state land use committee is to develop an updating process cooperatively with state agencies and other organizations.

B. This project will compliment the other data projects being recommended for the 1991-1993 biennium. It will also continue the land use project begun in the 1989-1991 biennium.

C. Red River Valley Use: 15 counties, LCMR 89-91 Land Use
At the present time, the project will be able to complete interpretation of the agriculture and most of the transition zones. The interpretation methods presently used are not optimum in the Forest zone. Three pilot studies are under to develop alternative methods. The forested area cover types are mapped in many uncoordinated places. There are three choices; 1) re-map the area, using existing inventories when possible, or 2) develop a plan and begin implementation to coordinate all forest area mapping and develop, in an appropriate place, a forest area data coordinating center or 3) develop a new method using automated techniques developed by the province of Manitoba utilizing automated interpretation techniques. A pilot in Kittson County is completed.

VI. Qualifications

A. Program Manager
Karla Parkinson, Interim President/CEO, The International Coalition
Current Project Manager for LCMR funded Land Use Project is George Orning.

B. Cooperators/other investigators
State Land Use Committee of the following agencies: LCMR, LMIC, DNR (water and forestry), CURA, BWSR, Ag, PCA, MNDOT, and the University of Minnesota.

VII. Reporting Requirements

Semi-annual status reports will be submitted no later than July 1, 1992, January 1, 1993, and a final status report by June 30, 1993.