

Approved March 24, 1986  
Date

MINUTES OF THE HOUSE COMMITTEE ON COMMUNICATION, COMPUTERS AND TECHNOLOGY

The meeting was called to order by Representative Jayne Aylward at  
Chairperson

3:30 xxxx a.m./p.m. on February 18, 19 86 in room 522-S of the Capitol.

All members were present except:  
Representative Dean (excused)

Committee staff present:  
Lynne Holt, Legislative Research Department  
Jean Mellinger, Secretary to the Committee

Conferees appearing before the committee:  
Dr. William Hambleton, Director, Kansas Geological Survey, The University of Kansas  
Dr. Ed Martinko, Director, Kansas Applied Remote Sensing Program and Director of Biological Survey, The University of Kansas.

Chairman Jayne Aylward opened the meeting and introduced Dr. Hambleton.

Dr. William Hambleton said he thinks there is some urgency for the State of Kansas to get the information system data base in some kind of order. He said that there are all kinds of information from the beginning making a tremendous quantity of data in a variety of agency files and it is critically important that they begin to focus on how they can locate this and make it accessible. He thinks a system should be adopted that has a strong centralized management but a decentralized actual operation. Some other states have been working on this. (Attachment 1) He said it didn't make any difference where the data are but it was important that the system knows where the data are and can access them. He feels that the DISC system cannot handle everything needed by the state. He and Mr. Martinko had made a rough drawing of a plan but he said they would present a better plan later.

Representative Chronister asked if what he was describing was a distributed processing network which would require basically the same software package to be used by all of the agencies for data. He said the software package could be built into the terminal.

Chairman Aylward asked if they could build that software so that all those different agencies would be able to access it. He said it wouldn't be easy but they could.

Representative Green said there was an abundance of data and asked when it becomes obsolete. Dr. Hambleton said most of the data they use and they do not consider it to be obsolete.

Chairman Aylward asked if they currently charge any kind of a fee for the information. Dr. Hambleton said they don't have a good policy on that. If somebody comes in and wants a lot of information, they sometimes charge for it.

Representative Friedeman said that when they tried to create the Water Database, they thought they had a lot of duplication of information and asked how they can get rid of what is redundant. Dr. Hambleton said some duplication is necessary to make it more useable.

Representative Chronister asked if their suggested plan came up because of the difficulties that seem to be arising in the establishment of the Water Database and was told that was one of the factors.

Dr. Ed Martinko said that the genius for the Commission on Applied Remote Sensing started in 1981 and explained that remote sensing is the detection of information without physical contact which has provided the basis for a lot of new technology. He said that essentially the establishment of information in the computer helps them to do a variety of things. They can take information derived from satellites and establish that information as data in the computer. Data is simply different types of data, but in order to get an information system, you have to combine that data. (Attachment 2) He explained that the Texas system takes information that exists in a variety of agencies and networks that information and

CONTINUATION SHEET

MINUTES OF THE HOUSE COMMITTEE ON COMMUNICATION, COMPUTERS AND TECHNOLOGY,

room 522-S, Statehouse, at 3:30 ~~xxx~~ p.m. on February 18, 1986

has some sort of a centralized point or clearing house similar to their rough plan. The Kansas Applied Remote Sensing program was established in 1972 by NASA. The Commission has also, through the KARS support staff, conducted a survey of data needs; and he distributed an executive summary of the survey information found in their formal report. (Attachment 3) He said they need to create an umbrella under which this information begins to come together.

Representative Chronister asked if a lot of the data users result from interest of local governments in reappraisal and was told that to some extent that was true.

Chairman Aylward asked if he feels that the Division of Property Evaluation is using his agency as much as they could in the cadastral mapping and was told they probably are.

The meeting adjourned at 4:40 p.m.

The next meeting of the Committee will be at 3:30 p.m. on Wednesday, February 19, 1986.



## DESCRIPTIONS OF INFORMATION CENTERS ESTABLISHED IN TEXAS AND MINNESOTA

The Texas Natural Resources Information System (TNRIS) was established within Texas state government to provide maximum availability of natural resources information to state and other governmental agencies, to colleges and universities, and to the public.

TNRIS began in the late 1960's within the Texas Water Development Board as the "Texas Water Oriented Data Bank." By the early 1970's, the Data Bank had expanded into a multidisciplinary information system encompassing not only hydrologic data, but geologic, biologic, meteorologic, socioeconomic, and base (remote sensing and cartographic) data as well. In 1972, the Texas Natural Resources Information System Task Force was formed. Currently, the Task Force is comprised of representatives from each of sixteen state organizations including two ex-officio participants. The Task Force establishes policies and procedures and monitors the System as a cooperative effort among the State's natural resource-related agencies. A staff, known as "Systems Central," has been established within the Texas Department of Water Resources to provide the necessary contact between TNRIS and its users.

### REMOTE SENSING SERVICES AND CAPABILITIES

TNRIS Systems Central provides four types of remote sensing services:

- Determining the availability of remotely sensed data and related products to satisfy user needs.
- Assisting users in ordering and obtaining remotely sensed data and products.
- Providing educational support in the field of remote sensing technology, including advice on the selection of appropriate remotely sensed data for particular applications and coordination of remote sensing short courses.
- Providing technical assistance to state agencies in their analysis of Landsat and other remotely sensed data, in both image and digital formats.

#### Data Availability

The TNRIS has access to numerous sources of remotely sensed data and products, including the EROS Data Center, federal and state agencies, and private aerial survey companies. Periodic inventories of individual holdings are conducted by TNRIS staff to maintain current indexes on the availability of such data.

#### Assistance in Ordering

TNRIS Systems Central staff provides order forms, price lists and other information necessary for obtaining materials from the various data sources.

#### Education/Consultation

TNRIS coordinates educational short courses and seminars on the application and use of remote sensing technology. A four-part series covers the following topics: "Fundamentals of Remote Sensing," "Air Photo Interpretation," "Landsat Image Interpretation," and "Landsat Digital Processing." In addition, special

application courses can be arranged to meet specific State agency requirements.

Within the limits of time and experience, advice on remote sensing data analysis can be provided by TNRIS Systems Central staff. Consultation on mission planning, selection of film type, scale, etc., necessary for a particular application, is an important service provided by TNRIS staff.

#### Technical Assistance For Data Analysis

A group of analytical capabilities known collectively as the Texas Natural Resources Inventory and Monitoring System (TNRIMS) has been established to integrate the remote sensing and computer graphics capabilities of TNRIS Systems Central. TNRIMS consists of three subsystems: (1) The Remote Sensing Information System (RSIS), which provides both manual and computer-assisted methods for the analysis of remote sensing data; (2) the Geographic Information System (GIS), designed to manipulate, analyze, and display map data in graphic form; and (3) the Natural Resources Analytical System (NRAS), which uses data obtained and processed by the other subsystems for developing models and assessment routines.

Increasingly, the remote sensing staff is using the RSIS image processing capabilities to generate data for entry into the automated Geographic Information System (GIS) maintained by TNRIS. The GIS can manipulate mapped data by changing scales, projections, and other map characteristics. Once the data are in the System, the GIS can be used to perform analytical operations for creating products such as maps showing the most appropriate areas for facility siting or for routing highways, pipelines or similar facilities based on user supplied siting criteria.

#### OTHER REMOTE SENSING SERVICES

TNRIS provides several additional services in the field of remote sensing, including:

- Bibliographic searches for specific remote sensing applications,
- Coordination of air photo acquisition after natural disasters and for other special purposes at the request of State agencies,
- Repository for remote sensing data from agencies which prefer to maintain them in a central file, and
- Lending of selected aerial photography and other remotely sensed data.

#### HOW TO INQUIRE ABOUT THESE SERVICES

Persons interested in obtaining remotely sensed data or investigating other TNRIS services should address inquiries to:

TNRIS Systems Central  
P.O. Box 13087  
Austin, Texas 78711  
Phone: (512) 463-8346

( Attachment 1 )  
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## MINNESOTA LAND MANAGEMENT INFORMATION CENTER

Minnesota's Land Management Information Center (LMIC) offers a wide range of technical assistance in the use of computerized information for planning and managing activities.

LMIC staff can help access information such as soils, topography, geology, hydrology, land cover, transportation routes, and population distribution; do analysis with this information such as facility siting, mathematical modeling, land suitability analysis, and comprehensive planning; and produce graphics in the form of computer maps and business graphics in black and white or color.

LMIC data services include:

### REMOTE WORK STATIONS

- can be developed with a minimal investment in equipment
- access to LMIC Prime 850 computer
- dial-up access to an expanding number of statistical data bases and services
- operational costs are very low, consisting of minimal computer costs plus your telephone charge

### PUBLIC

- offers free computer time to examine a growing number of data bases
- "user friendly"
- cost to user limited to your own telephone charge

### INFORMATION AND DATA EXCHANGE (INDEX)

- \*An information network and referral service for environmental and related cultural, social, and economic resources.
- \*Free-text searching computer services, including file design and management, report-writing and printing, and mapping capabilities.
- \*Computerized catalog of information on data collections, research projects, and resource people.

### OFFICE OF LOCAL GOVERNMENT

- The mission of the Office of Local Government is to provide technical assistance, conduct research and special studies dealing with local government issues and opportunities, and administer financial assistance programs.
- These functions are performed by providing information, data, and service.

### ACCESS TO LMIC PRODUCTS AND SERVICES

LMIC serves land managers and planners as:

- \*A data center providing geographic information about Minnesota's natural resources and demographic characteristics.
- \*A computer center that offers rapid and flexible analysis of this information for use in planning and mapping studies.
- \*A graphics center that produces high quality maps as well as statistical summary reports and displays.

LMIC offers a wide range of technical assistance:

- \*Training in the use of LMIC's computer mapping and data analysis capabilities.
- \*Consultation regarding the purchase or use of computer equipment related to geographic analysis and display and large text data bases.
- \*Assistance in using LMIC's free PUBLIC line for remote data retrieval.
- \*Consultation with project managers regarding the application of LMIC information and computer software to your planning/management activities.

LMIC is a service bureau offering a wide range of contract data analysis services such as:

- \*Land use and environmental planning analysis
- \*Statistical analysis
- \*Data base development
- \*Environmental assessment studies

### COMPUTER MAPPING AND ANALYSIS

- \*LMIC maintains the Land Management Information System (MLMIS), a statewide computerized data base of natural resource information (e.g. geology, soils, landform, land cover) and cultural information (e.g. land use, population, infrastructure, political units).
- \*MLMIS data can be mapped and tabulated for site, community, regional, and state-scale studies. Completed and ongoing LMIC studies include:

- Land use planning studies for several metropolitan communities.
- Parcel mapping for the City of Blaine, Anoka Co.
- Mapping and tabulation of 1980 Census data for the Metropolitan Council and other interested state and local agencies.
- Erosion and sedimentation analyses for several important watersheds.
- Sanitary landfill siting study for Itasca Co.
- Master planning for the Minnesota River Valley Wildlife and Fish Refuge.

### OTHER TYPES OF GRAPHICS

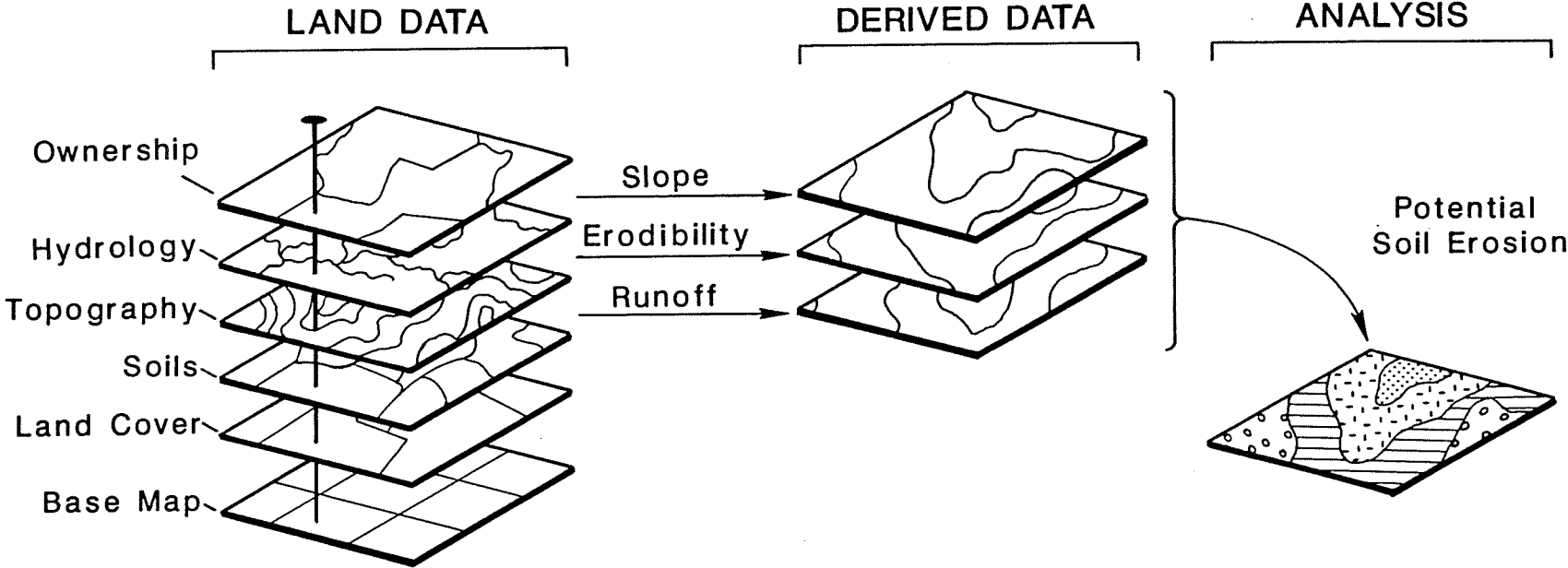
- \*LMIC offers an extensive variety of additional display tools, including:
  - Pie charts
  - Bar graphs
  - Line graphs
  - 3-dimensional perspectives
  - Color slides of maps and business graphics
  - Cross-sectional diagrams

For additional information about LMIC services, contact:

Land Management Information Center (LMIC)  
Room LL45, Metro Square Building  
7th and Robert Streets  
St. Paul, Minnesota 55101  
(612) 296-1211

SOURCE: Minnesota Department of Energy, Planning and Development, "Access to Computer Services and Products"

# GEOGRAPHIC INFORMATION SYSTEM



( Attachment 2 )  
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KANSAS COMMISSION ON APPLIED REMOTE SENSING

-- SURVEY OF KANSAS DATA USERS --

In 1985, the Kansas Commission on Applied Remote Sensing conducted a survey designed to gather information on the level of need for services, capabilities and data which a Kansas geographic information center might provide. The survey consisted of two parts. Part I was designed to gather information on priorities placed on a range of capabilities and services; Part II addressed requirements for geographically-referenced data (e.g., land use, location of wells, distribution of wildlife habitat).

This survey was sent to more than 600 potential Kansas data users (see Table 1) including state and federal agencies, state legislators, the Governor's Office, local governments, institutions of higher education, public environmental groups and private firms. The survey was administered during November and December 1985. By the end of 1985, 156 responses were received (see Table 2).

Some preliminary findings are reported below.

Capabilities and Services Required. One hundred and forty-seven individuals completed Part I of the survey, which addressed capabilities and services required of an information center. More than 50% of the respondents rated the following capabilities and services as having a medium to high priority in their job functions:

• Mapping/Geographic Analysis Capabilities

- Need to measure area (e.g., acreage) on maps or aerial photographs [72%]
- Need to produce a given map at more than one scale (e.g., 1 inch = 1 mile; 1 inch = 8 miles) [66%]
- Need to extract one of several types of information on one map to display as a separate map (e.g., transportation network extracted from a county map) [69%]
- Need to combine information from two or more maps into a single map (e.g., add watershed boundaries to a soils map) [73%]
- Need to interrelate and evaluate data from several different maps having different scales [63%]
- Need to have professional color maps for use at public meetings or for other purposes [58%]
- Need to prepare maps from aerial photography or other remote sensing data (beyond current in-house capabilities) [62%]

( Attachment 3 )

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TABLE 1. KANSAS DATA USERS SURVEYED

1. Commission Members - to distribute within their agencies
2. Anyone who attended past Commission meetings
3. Other State Agencies
4. Governor's Office
5. State legislators
6. Legislative Research Department
7. Legislative Counsel
8. Federal Agencies - U.S. Geological Survey
  - USDA/Soil Conservation Service
  - U.S. Forest Service
  - Corps of Engineers (Tulsa, Kansas City)
  - Bureau of Indian Affairs
9. SCS District Conservationists
10. ASCS State Executive Director, District Offices
11. Local governments (county clerks, appraisers, engineers, commissioners)
12. Regional Planning Commissions
13. Groundwater Management Districts
14. State Colleges/Universities/Junior Colleges (public and private) - Departments of Planning, Geography, Geology, Biology, other
15. Public Environmental Groups - The Wildlife Society, Audubon Society, Kansas Area Watershed Council, Sierra Club, others
16. Private firms - Remote Sensing firms
  - Public Utilities
  - Geology/Exploration firms
  - Engineering/Architectural/Planning firms
  - Santa Fe Railroad



TABLE 2. NUMBER OF RESPONSES RECEIVED TO COMMISSION SURVEY,  
BY GROUP

	SURVEY COMPLETED	OTHER RESPONSE
STATE AGENCIES	32	-
LEGISLATORS	11	2
LOCAL GOVERNMENTS	38	1
FEDERAL AGENCIES	6	1
REGIONAL GOVERNMENTS	6	1
PRIVATE COMPANIES	10	1
INSTITUTIONS OF HIGHER EDUCATION	17	2
UTILITIES	17	1
SOCIETIES/PUBLIC ENVIRONMENTAL GROUPS	10	-
TOTAL RESPONSES	147	9

- Consultation and Data Analysis Services

- Need to be able to consult with experts on developing proposals involving the use of geographic information systems or remote sensing data (for in-house use) [56%]
- Need to be able to consult with experts about computer hardware and software [56%]
- Need to be able to consult with experts about developing cooperative projects with:
  - (a) a state agency [50%]
  - (b) a local level of government [51%]
- Need access to a referral service to identify experts on my topic of interest [57%]

- Locating/Accessing Information

- Need assistance in locating and acquiring aerial photography [54%]
- Need access to an archive of aerial photography and other remote sensing data for Kansas [52%]
- Need assistance in locating maps required for a given need [65%]
- Need access to an archive of maps of Kansas [56%]
- Need assistance in locating and accessing existing data on:

TABLE 3. SUMMARY OF RESPONSES FOR DATA NEEDS

	PRIORITY*							
	5	4	3	2	1	0	NA	NS
LAND USE	55	21	13	9	15	8	2	17
LAND OWNERSHIP	45	16	20	13	14	10	4	18
NATURAL VEGETATION	28	12	20	19	24	16	5	16
SOILS DATA	40	23	19	6	18	10	5	19
SURFACE WATER	33	18	26	11	16	14	5	17

\*Ranges from 5 (high priority) to 1 (low priority); 0 = No response; NA = Not applicable to job function; NS = Required for job function, but priority not specified

- (a) Agriculture [60%]
- (b) Demographic data (e.g., census) [52%]
- (c) Geology [51%]
- (d) Rangeland [54%]
- (e) Soils [65%]
- (f) Topography [64%]
- (g) Water resources [63%]

- Coordination of Mapping/Geographic Data Analysis Activities

- Need a mechanism for coordinating and interfacing with state agencies, regional planning groups, private companies and others on projects requiring geographic analysis and/or mapping [54%]
- Need to be kept informed of new developments in remote sensing/geographic information systems/mapping technologies that may be relevant to my job functions [69%]

Data Needs. One hundred and forty individuals responded to Part II of the survey regarding geographic data needs. A preliminary analysis of responses indicating the priority of various types of geographic data for the users' job functions is included in Table 3. This information was specifically solicited for land use, land ownership, natural vegetation, soils, and surface water data.