

MINUTES OF THE HOUSE COMMITTEE ON COMMUNICATIONS, COMPUTERS AND TECHNOLOGY

The meeting was called to order by Representative Mike Meacham at  
Chairperson

3:30 ~~am~~/p.m. on February 14, 1984 in room 522-S of the Capitol.

All members were present except:

Representative Rolfs (excused)

Committee staff present:

Sherry Brown, Fiscal Staff, Research Department  
Chris Stanfield, Fiscal Staff, Research Department  
James A. Wilson, III, Senior Assistant Revisor  
Betty Ellison, Secretary to the Committee

Conferees appearing before the committee:

Dr. Edward Martinko, Chairman, Kansas Interagency Task Force  
on Applied Remote Sensing

The meeting was called to order by the Chairman.

Dr. Martinko reviewed his memorandum in favor of House Bill 2673. (Attachment 1) It was his opinion that the surface water inventory would not replace or duplicate information in Kansas agencies at this time. Instead, it would provide supplemental information, update surface acreage information (which changes over time), and summarize both locational and surface acreage information. He emphasized that comprehensive up-to-date information of this type from a single uniform source is optimal for planning and policy-making decisions; however, many of the existing data in the Kansas Water Data Base were gathered for a variety of specific purposes. Dr. Martinko stated that the surface water inventory would be in a format that would be readily accessible and that would allow it to be interfaced with the kinds of information in the Kansas Water Data Base. He noted that the major products produced by the surface water inventory would be a complete set of maps and statistical information, as well as digital data; this digital tape would be available to any agency in order to merge this information with their existing water data.

In response to a question from Representative Dean, Dr. Martinko said that much of the information in the Water Data Base was gathered for water appropriations, for water quality biological data, etc., while the purpose of a surface water inventory would be to bring together a spatial display of surface water location which could be combined with water data. This type of location and surface acreage impoundment is not available in that form in the Water Data Base. Representative Dean asked if this information could not be listed in a tabular form, giving longitude and latitude, amount of surface area of each lake, and identify the lake as a centroid. Dr. Martinko said that it could be summarized in a mapping format and statistical summary form.

In answer to a question of Representative Sallee, Dr. Martinko said that the surface water inventory would not determine water depth, but that water depth data would be in the Water Data Base and could be added to the surface water inventory information. He noted that the Water Data Base does not have the total surface area of coverage information which the surface water inventory would provide.

In reply to Representative Friedeman's question regarding federal dams, Dr. Martinko stated that an inventory was made of how much water was impounded in the late 1970's. He said that information could be added, but a more comprehensive and up-to-date inventory is needed because this information can change on an annual basis. He noted that many states update this type of information every three to five years.

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Mr. Dwight Brinkley of the Department of Health and Environment, who testified earlier on the Water Data Base, said that he could only add that the information that KARS is gathering is actually complementary to the Water Data Base. It is digitized by latitude and longitude and can be used with other information that is in the Water Data Base.

Representative Friedeman moved to amend the bill to \$150,000 and pass it out favorably. Representative Adam seconded the motion. The motion was defeated.

Representative Dean moved to recommend the bill favorably. Representative Green seconded the motion. The Chair voted no. The motion was lost. Chairman Meacham said that the Committee would hold on to the bill and bring it back at a later date.

Regarding the Water Data Base recommendation which was an interagency proposal by the Department of Health and Environment, Board of Agriculture, Kansas Water Office, Kansas Corporation Commission and the Geological Survey, the Chairman noted that the Governor would send a budget amendment to fund the \$88,000 that it would cost to integrate this under one plan. He pointed out that the maximum exposure in terms of general fund dollars is about \$60,000 and the rest is fee money; it could be that some of the \$60,000 is federal money.

Representative Chronister, after verifying that it would go to the Ways and Means Subcommittees, moved to recommend favorably the Water Data Base Proposal. Representative Green seconded the motion. The motion carried.

Regarding the \$610,000 matching grant program which was passed last year, Mr. Chris Stanfield of Legislative Research reviewed what the Kansas Advanced Technology Commission had funded over the past year. (Attachment 2) He explained that the Commission adopted the following rules and regulations governing the research matching grant procedures, in that it:

- (1) assessed the long-range goals and capabilities of Kansas institutions of higher education.
- (2) established priorities for the distribution of available money.
- (3) made distribution of moneys among the institutions based upon established priorities.
- (4) has the authority to acquire receipt of matching grants of monies or equipment (this regarding the 150 percent from a non-state school).
- (5) administers the flow of money by the use of individual university structures.
- (6) takes into account the avoidance of unnecessary duplication of research programs, as well as the establishment of Centers of Excellence.

Responding to a question of Representative Aylward regarding Kansas Technical Institute in Salina, Chairman Meacham said that these are fundamentally doctoral level research projects, aimed at a short-range economic impact (three to five years). The idea was to fund some technology transfer from an idea to an actual product.

In response to a question from Representative Roper regarding Pittsburg State University, the Chairman gave the following explanation. This was put together in a series of provisos in a couple of appropriations

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bills last year. The provisos indicated that you had to have an amount in dollars in the research matching grant account at the various institutions. A private match had to be there before the state would release its funds. In the cases of the University of Kansas and Kansas State University, transfers were being made from an account called Sponsored Research Overhead (SRO) to this matching grant account so the dollars would be there that represent the value of the equipment being donated. Sometime during this session, the Legislature has to transfer back the dollars from that research matching grant account to the SRO. In the case of Pittsburg State University, there is a zero expenditure limitation on their SRO account, so it is impossible for them to transfer those funds without either finance council approval, or when the Legislature is in session, legislative approval. Pittsburg State University has only about \$35,000 in the SRO, which is not enough cash to cover the equipment that is being donated to the university under the program. Something still will have to be worked out for Pittsburg State.

Answering a question of Representative Helgerson regarding patent rights, Kevin Carr of the Kansas Department of Economic Development explained that if a company wants the full rights to any technology developed, they must pay 100 percent of the cost associated with the research. He said that by the nature of the program, if the state is paying up to 40 percent of it, they are forfeiting that right and what they will get out of it is a preferential licensing agreement with the university on the technology. Mr. Carr noted that in situations in which a company wants full patent rights, they have to go outside the program, but if they are willing to negotiate with the university for first preference in licensing the new product, they will do that up front. He said that if the product should be a gold mine, the university would typically rake off a good portion of the profit, but they will buy licensing to the company; this follows accepted policy of the universities.

Representative Friedeman moved to approve the minutes of January 26 and January 30. Representative Aylward seconded the motion. The motion carried.

The meeting was adjourned at 4:20 p.m.

The next meeting of the Committee will be held at 3:30 p.m. on February 15, 1984.





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MEMORANDUM

TO : Mike Meacham, Chairperson, House Committee on Communication, Computers, and Technology  
FROM: Edward A. Martinko, Chairperson, Kansas Interagency Task Force on Applied Remote Sensing  
RE : HB 2673 calling for a surface water inventory for the State of Kansas  
DATE: February 14, 1984

*The Kansas Interagency Task Force on Applied Remote Sensing (created by Senate Concurrent Resolution No. 1644) endorsed the need for conducting an inventory of surface water in the State of Kansas. Such an inventory is of general statewide interest in that it would provide an important base of information regarding the locations and surface acres of impounded waters. The Legislature and the Governor's Office have, in the past, expressed a need for summary information on Kansas' water resources that simply does not exist in a single, readily accessible form. This information would also be extremely useful to State and local agencies, the public and private industries in Kansas, who must presently seek existing fragmented information from several agencies.*

The surface water inventory would not replace or duplicate existing information. Rather, it would supplement existing sources, update surface acreage information (which changes over time), and would summarize both locational and surface acreage information for any desired parcel of land and for the State of Kansas as a whole. Comprehensive up-to-date information of this type from a single uniform source is optimal for planning, management and development of water and related resources.

A major use of the inventory relates to identification of potential water supplies in times of drought. Access to a comprehensive source of information on surface water resources is required by the Legislature and Governor's Office to assist in establishing policy directions, and by Kansas' water agencies, to assist in evaluating alternatives with respect to water availability.

Several state agencies have identified specific applications of the surface water inventory for their planning and management efforts. These include the Kansas Fish and Game Commission (wildlife habitat assessment/projection of future recreational water needs); Department of Revenue (verification of tax exempt status of ponds); Department of Health and Environment (supporting information for inventory of publicly-owned lands/development of recommended effluent levels); the Kansas State Board of Agriculture/Division of Water Resources (future supplemental data source for identifying locations of dams not currently documented in their dam inventory); and the State Parks and Resources Authority (recreational planning).

## Projected Costs

The surface water inventory was proposed by the Kansas Interagency Task Force on Applied Remote Sensing, a group comprised of representatives of state agencies, the Legislature, Governor's Office and others. With respect to acquisition of services of the Kansas Applied Remote Sensing (KARS) Program, the Task Force specifically recommended:

THREE MECHANISMS SHOULD BE AVAILABLE FOR FUNDING PROJECTS UNDERTAKEN BY THE KARS PROGRAM ON BEHALF OF STATE AGENCIES:

- The fee fund should be continued so that agencies can transfer money directly to the KARS Program to accomplish projects of interest to individual agencies.
- Agencies could jointly propose projects that are of particular interest to more than one agency, but are not necessarily of general, all-encompassing need.
- Issues of statewide/general importance and/or of importance to the Governor or Legislature could be addressed by bills submitted by interested legislators; funds would not be drawn from any one agency's budget.

*The surface water inventory represents one project that is of statewide/general importance and of importance to the Governor and the Kansas Legislature. Consequently, the Task Force proposed that legislation be developed to conduct a systematic inventory of all impounded surface water in the State of Kansas. The Task Force respectfully requests that interagency cooperative efforts of this nature receive special encouragement and consideration.*

Costs for the proposed surface water inventory are \$200,000. Approximately 50% of this amount would be used to purchase the satellite data and ancillary materials upon which the inventory would be based. Computer costs for processing the tapes and generating maps and statistical products account for approximately one-third of the proposed budget. The remainder would support staff and fringe benefits.

It should be pointed out that the purchase of satellite data -- a one-time expense -- would enable development of future projects by state agencies and others at a reduced cost. Once the data have been acquired, their use is virtually limitless. For example, information about rangeland, cropland, urban areas and woodlands could be extracted from the satellite data, just as surface water features are extracted. Geologists and geohydrologists could use the data for identifying faults, fractures, landforms and related phenomena. Wildlife biologists could map habitats for game species and other animals. Irrigated lands could be readily identified and mapped. In summary, the potential exists for multiple uses to be made of the satellite data. And, because the satellite data are digital, any information extracted from this source can be easily merged with existing computerized data.

## Products

The surface water inventory would be conducted using data acquired from a polar-orbiting satellite known as "Landsat." These data are collected in digital form and are thus amenable to computer processing. Large-area coverage provided by the satellite (more than 13,000 square miles/Landsat scene), combined with routine collection of data (every 16 days), would enable completion of the surface water inventory using data from a single year. The resulting "snapshot" of water resources in the State of Kansas would provide a yardstick against which changes could be observed and monitored.

Major products that would be produced by the surface water inventory include:

- (1) A complete set of maps and statistical data summarizing surface water for the State of Kansas. Surface water features would be illustrated on approximately 1,500 topographic maps; locational and surface acreage data would be summarized by township, section, county and watershed.
- (2) Digital data - Computer tapes produced for the surface water inventory would be available to any state entity. Access to computer tapes would enable state agencies, for example, to merge the surface water data with other water data (e.g., quality, use) or with data on soils, topography and related phenomena. The surface water data base would, in fact, provide a framework upon which to build a statewide land and water resources geographic information system integrating data from multiple sources.

A third product is the satellite data itself, from which the surface water features would be extracted. As previously mentioned, use of this data source is not limited to a single application, but can provide information for a variety of applications. For example, representatives of the Kansas Interagency Task Force on Applied Remote Sensing expressed a need for detailed land cover information for the State of Kansas. Information such as this could also be extracted from the satellite data, providing up-to-date maps and statistical data regarding rangeland, irrigated agriculture, woodlands and urban areas. Because the data are in a digital format, they can be easily integrated with other sources of information (e.g., soils data, topography) to produce a variety of products tailored to meet individual agency needs (e.g., recommendation of conservation practices for agricultural lands with erodible soils; estimates of conversion of rangeland to cropland, or reversion of cropland to rangeland; determination of loss of prime agricultural land to other land uses).

KANSAS ADVANCED TECHNOLOGY COMMISSION  
RESEARCH MATCHING GRANT PROGRAM

STATUS OF PROPOSALS

Project Title	Inst.	State \$	Match \$	Date	Sponsor(s)	Conditions Satisfied	Match Deposit Verified	State Transfer
				(2/10/84) Reviewed				
Composite Materials Testing and development of Microcomputer Software for Analysis and Design	WSU	8,000	12,000	9/30/83	Precision Composites, Inc.			
Flight Test of an Electro-Impulse Ice-Icing System in a General Aviation Aircraft	WSU	26,500	40,900	9/30/83	Cessna Aircraft Co.	12/16/83	1/5/84	1/6/84
Improvement of Wheelchairs Utilizing Microcomputers	KU	20,000	30,000	9/30/83	Kantronics, Inc.	11/11/83	11/21/83	11/29/83
Computer-Assisted Design of Peptidomimetic Drugs	KU	50,000	75,000	9/30/83	TRIPOS Associates	2/9/84		
Robotics Research	KSU	47,292	70,938	9/30/83	International Robomation/ Intelligence Motorola, Inc. Armco Steel Co.	11/11/83	11/21/83	11/29/83
Quality Parameter Monitoring System for Control in Grain Handling and Processing Industries	KSU	73,000	111,407	9/30/83	Technical Industrial Systems Hewlett-Packard	12/12/83	1/3/84	1/4/84
Computer Controlled Microwave Food Processor for Defrosting and Baking of Bakery Products	KSU	12,000	18,000	9/30/83	Bettendorf Stanford, Inc.	12/30/83	1/17/84	2/1/84
High Capacity Modulation Methods for Communication Satellites	KU	50,000	75,000	9/30/83	Hughes Aircraft, Inc.	1/3/84	1/25/84	2/1/84

Attachment 2 2/14/84

House Communications, Computers and Technology



KANSAS ADVANCED TECHNOLOGY COMMISSION  
RESEARCH MATCHING GRANT PROGRAM  
STATUS OF PROPOSALS

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				<u>Reviewed</u>	<u>                    </u>				
Computer Control of Tractor Engines and Continuously Variable Transmissions	KSU	42,708	73,000	11/11/83		Catepillar Tractor Co. Hesston Corp. Funk Manufacturing			
Development of Ground-Probing FM Radars	KU	24,000	36,073	11/11/83		Kohlman Systems Research, Inc.	1/3/84		
Simulation of Petroleum Reservoir Behavior	WSU	18,000	27,000	12/16/83		WSU Geology Advisory Council	1/10/84		

BREAKDOWN BY INSTITUTION

<u>Institution</u>	<u># of Grants</u>	<u>State FY 84 Allocation</u>	<u>State \$ Awarded</u>	<u>State \$ Remaining</u>	<u>Matching \$ Received</u>	<u>State \$ + Match</u>
KU	4	\$220,000	\$144,000	\$ 76,000	\$216,073	\$360,073
KSU	4	175,000	175,000	-0-	273,345	448,345
WSU	3	130,000	52,500	77,500	79,900	132,400
PSU	0	85,000	-0-	85,000	-0-	-0-
<b>TOTAL</b>	<b>11</b>	<b>\$610,000</b>	<b>\$371,500</b>	<b>\$238,500</b>	<b>\$569,318</b>	<b>\$940,818</b>