STATE OF KANSAS

Strategic Management Plan
for Geographic Information Systems Technology

Kansas Geographic Information Systems
Policy Board

July, 1997

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SECTION 1
EXECUTIVE SUMMARY

This document is the strategic management plan for Geographic Information Systems (GIS) in Kansas. The plan was developed by the GIS Strategic Management Planning Committee of the Kansas Geographic Information System Policy Board with input from state agencies and the broad GIS user community of cities, counties, federal agencies, and the private sector.

Geographic Information Systems, or GIS are complex tools that combine computerized maps and databases to solve problems and to assist in information analysis and decision making. These tools are being used by many government agencies, utilities, and private sector entities.

Kansas GIS applications initially focused on the mapping and analysis of natural resources such as soils, aquifers, and contaminated sites. Other state applications have included legislative reapportionment, highway planning, and utility mapping. Local governments are using GIS for emergency response, city and county planning, economic development marketing, and property appraisal. GIS technology enables managers and users of geospatial data to achieve higher levels of information integration and to perform complex analysis quickly and efficiently.

The Geographic Information System Policy Board (Policy Board) was created in 1989 by the executive directive of Governor Hayden. Its existence has been affirmed by subsequent governors including most recently that of Governor Graves. Governor Graves' executive order tasks the Policy Board with the biennial preparation of this strategic management plan. It also gives the Policy Board the responsibility of developing policies, standards, and strategies that emphasize cooperation and coordination among agencies, organizations, and government entities in order to maximize the cost effectiveness of GIS. The Policy Board is charged with creating public and private partnerships throughout Kansas to maximize value and to minimize costs in the implementation of GIS. It is also responsible for coordinating, reviewing, and providing recommendations on GIS programs and investments as well as providing assistance with dispute resolution among GIS partners. **The primary purpose of the GIS Policy Board is to save Kansas taxpayers dollars by making state and local entities more efficient and effective.**

The Geographic Information Systems Strategic Management Plan emphasizes the use of representative processes in designing a Kansas data framework, developing GIS standards and promoting these standards. The Plan recognizes the interdependence among entities in the development and maintenance of geospatial data. It also proposes strategies to facilitate the formulation of partnerships that enable all levels of government and private agencies to develop GIS and to share geospatial data in coordination with each other.

To accomplish these ends, this plan delineates four parallel, but related, management tracks. The tracks are: Database, Services, Management, and Information Access.

The objectives of the Database Track are to continue the process of developing clear and accepted data standards, enhancing the standards process to more fully involve end-users, and developing a state geospatial data framework.

The objectives of the Services Track are to support the application of GIS technologies by state agencies and local governments, continue the clearinghouse role for core databases, expand to include Kansas' framework databases, provide metadata and locational pointers for other GIS databases, monitor and report standards including metadata standards, define and establish mechanisms for user support, and encourage the implementation of GIS technologies and the sharing of geospatial data by all users.

The objectives of the Management Track are to spur the definition of the roles and responsibilities for government and private entities in the development of GIS databases, establish models and procedures for developing partnerships among various levels of government and private entities, and to encourage government and private entities to include GIS funding as an ongoing budgetary component.

The objectives of the Information Access track are to provide guidance on the legal issues regarding the creation and release of GIS data and to begin the process of modernizing laws and regulations relating to digital information.

The plan is designed to maximize the greatest benefit from GIS technology for the citizens of Kansas.

SECTION 2
BACKGROUND

In 1988, the Kansas Water Data Committee (KWDC) developed a multi-agency GIS proposal to facilitate implementation of the Kansas Water Plan, as well as other programs of state government. The proposal, entitled "Kansas Geographic Information Systems Initiative", recommended the implementation of a state GIS data network and the establishment of a state GIS policy board to oversee management of the network. In 1989, Governor Mike Hayden, by executive directive, established the Kansas Geographic Information Systems Policy Board. The original 1989 objectives of the Kansas GIS Initiative were to:

1. Coordinate the implementation and use of GIS technology by participating agencies.

2. Provide an opportunity for prompt access to GIS technology by all participating agencies and other potential users.

3. Promote compatibility and standards for geographic information.

4. Promote sharing of computerized, geographically referenced data.

5. Reduce the costs that would be involved if each agency developed its own GIS capabilities independently and networking did not take place.

6. Enhance the information analysis and decision making process of participating agencies through the use of GIS technology.

7. Promote the development of a state data directory and statewide digital cartographic standards.

8. Provide coordination by establishing a GIS Policy Board.

The multi-agency Kansas GIS Policy Board (Policy Board) and the Technical Advisory Committee (TAC) were established shortly after Governor Hayden's order. The Policy Board members represent various categories of GIS users, including natural resources, revenue and taxation, transportation, health, emergency preparedness, academic institutions, information and computer management, social services, and agriculture. The TAC consists of members representing local, state, and federal agencies, academic institutions, and the private sector.

The position of State GIS Coordinator was created in 1989 and is housed within the Kansas Water Office. The State GIS Coordinator is responsible for the day to day coordination, information dissemination, and development activities of the Board and the TAC. The

Coordinator has also overseen the development of standards and database creation. The Coordinator's Office is funded through an annual grant from the Kansas Water Plan.

An initial "Strategic Management Plan for Geographic Information Systems Technology" was adopted by the Policy Board in September 1990. Four concurrent management tracks were established in the plan. They were: Database Track, Services Track, Technology Transfer Track, and Management Track.

The objectives of the Database Track were to establish and make available to the GIS community in state government a core database of geographic information to be held and maintained in common as a continuing asset, and to encourage development, maintenance, and dissemination of thematic databases built on the core database foundation.

The objectives of the Service Track was to encourage use of GIS technology and geographic data resources in state government by providing practical support in the form of GIS-related services to current and potential user agencies.

The goal of the Technology Transfer Track was to inform supervisors, managers, and other professionals in user agencies and state government at large about GIS technology, and its potential and capabilities in state government.

The goal of the Management Track was to assure the continuity of GIS planning and coordination.

Although there were several accomplishments from this 1990 plan, perhaps the most significant development was the creation of the Data Access and Support Center (DASC). The DASC is housed in the Kansas Geological Survey, located at the University of Kansas. The DASC is the physical support center for the core Kansas GIS databases and provides distribution services for these databases. Like the GIS Coordinator, funding for DASC is from the Kansas Water Plan. Funding is renewed annually in competition with other water and natural resource projects.

In 1993, Governor Joan Finney formally affirmed executive branch support for the "Governor's Geographic Information Systems Initiative." Governor Finney's affirmed objectives were very similar to the original objectives and directed specific attention toward:

- Establishing policies relating to the management and development of geographic information standards and information access authorization.
- Establishing priorities for state-wide geographic data acquisition.
- Establishing priorities for state-wide geographic information development.
- Coordinating system support activities of the statewide GIS initiative.
- Coordinating the efficient sharing and use of geographic information developed by the GIS Policy Board, individual State agencies, and others.

The Strategic Management Plan was updated through a process beginning in late 1992 and culminated in adoption in March of 1993. The plan retained and updated the four strategic task series adopted in 1990: Database Track, Services Track, Technology Transfer Track, and Management Track.

The objectives of the Database Track were to more clearly define and specify the existing and proposed content of the core database, to establish a database maintenance program that will ensure appropriate maintenance of the core database components, to encourage and support a high-speed data communications network that will eventually permit electronic dissemination and sharing of geographic data on a statewide basis, and encourage development, maintenance, and dissemination of thematic databases created from the core database foundation.

The objectives of the Services Track were to encourage use of GIS technology and geographic data resources in state government by providing practical support in the form of GIS-related services to current and potential user agencies, and encourage expansion of geographic data sharing between the state and local governments and between the state and federal government.

The objective of the Technology Transfer Track was to inform supervisors, managers, and other professionals in user agencies and state government at large about GIS technology, and its potential and capabilities in state government.

The objective of the Management Track was to assure continuity of GIS planning and coordination.

The Policy Board has accomplished much work since the adoption of the 1993 Strategic Management Plan. This work was specifically reviewed by the 1997 GIS Strategic Management Planning Committee as it began its process of updating the GIS Strategic Management Plan.

Accomplishments in the Database Track included:

- Development of a metadata standard for GIS that was adopted by the Kansas Information Resources Council and issued as a Kansas Information Technology Policy.
- Establishment of the Kansas GIS Standards Taskforce -- a group with broad representation and the role of developing consensus on technical standards.
- Cooperation with the Federal Geographic Data Committee and adoption of the concepts of the National Spatial Data Infrastructure.
- Addressing database maintenance needs through contractual arrangements.
- Developing the DASC World Wide Web site, which allows downloading of databases via the Internet.
- Beginning the development of memorandums of understanding (MOU's) with localities on metadata standards.
- The DASC began archiving local and state metadata files.

Accomplishments in the Services Track included:

- Expanding the DASC's services into technical and application development.
- The DASC began providing limited GIS services for state and local governments including custom map plotting and report generation.
- Increased use of the DASC by local and state government organizations.
- The Policy Board and Kansas GIS officials interactions with other state officials, local officials, and Federal agencies in the statewide development of GIS activities.

Accomplishments in the Technology Transfer Track included:

- Active Policy Board participation in the Mid-America GIS Symposia.
- Coordination with and provision of training through the Geographic Research, Applications, and Information Laboratory (GRAIL) at the University of Kansas, the Geographic Information Systems/Spatial Analysis Laboratory (GISSAL) at Kansas State University, and the Kansas Department of Health and Environment.
- Publishing the semi-annual *Kansas GIS News* - a widely distributed newsletter on the Geographic Information Systems Initiative of Kansas.
- Annual organization of GIS Awareness Day and the "Rotunda Show" in the State Capitol.

Accomplishments in the Management Track included:

- Performance of a benefit/cost analysis comparing coordinated vs. non-coordinated approaches to GIS development.
- Defining through executive order the organizational structure of the GIS Policy Board and its relationship to the Kansas Information Resources Council.
- Established liaison groups with the Standards Task Force and the Kansas Association of Mappers.
- Added local government representation to the GIS Policy Board.

Governor Bill Graves affirmed the GIS Policy Board by executive order in December 1995. Significantly, the executive order administratively established the Kansas Geographic Information Systems Policy Board as a permanent standing committee of the Kansas Information Resources Council (KIRC). The executive order requires annual reporting of the Policy Board's activities to and coordinating of activities with the KIRC.

Governor Graves' executive order provided four directives to the GIS Policy Board. The order states:

(1) The Kansas Geographic Information Systems Policy Board shall:

> (a) Establish a strategic management plan to guide the development and implementation of geographic information systems technology for the best value and benefit of the citizens of Kansas and update the plan biennially;

(b) Develop and maintain policies, standards, guidelines, and strategies which emphasize cooperation and coordination among agencies, organizations, and government entities developing and implementing geographic information systems in order to maximize the cost effectiveness of geographic information systems and their value to the state;

(c) Establish public and private partnerships throughout Kansas to maximize value, minimize cost, and avoid redundant activities in the development and implementation of geographic information systems; and

(d) Coordinate, review, and provide recommendations on geographic information systems' programs and investments and provide assistance with dispute resolution among geographic information systems partners.

SECTION 3
STRATEGIC PLANNING PROCESS

The 1997 Kansas Geographic Information Systems Strategic Management Planning Process was designed to maximize user input, to build on past accomplishments, and to assess a changing technological and expanding user environment. The GIS Strategic Management Planning Committee (Committee) included five members from the Policy Board, five members from the Policy Board's Technical Advisory Committee (TAC), and five at-large members from the GIS users community. The Committee's efforts were supported with facilitation from the Docking Institute of Public Affairs at Fort Hays State University (Docking Institute).

The role that the members of the Committee performed in this process included: 1) direction of the planning process; 2) identification and determination of strategic GIS issues; 3) formulation of management strategies to address these policy issues; and 4) update the Policy Board, the TAC, and other key organizations on the planning process and to accurately represent these groups in discussions and decisions recommended by the Committee.

The Committee began its planning process by reviewing Governor Grave's executive order which affirmed and re-organized the Policy Board. The Committee reviewed the Kansas Information Resources Council (KIRC) 1997 Strategic Information Management Plan (SIM-Plan), and the 1993 Kansas Geographic Information Systems Strategic Management Plan. The Committee assessed the accomplishments of the Policy Board, cooperative agency efforts, the State GIS Coordinator, and DASC since 1993.

The SIM-Plan is designed as a policy document for all Kansas state agencies. The SIM-Plan discusses the mosaic of state services and activities and identifies GIS as one of the primary information management tools used to help citizens, businesses, policy makers, and those carrying out essential government services to operate effectively. The Committee's planning effort is aimed to fill in a portion of the overarching SIM-Plan framework.

At an early stage, the Committee reviewed GIS efforts and policy initiatives of other states and also those of the federal government. States are in varying stages as they attempt to develop and coordinate GIS usage in state agencies. Kansas has taken deliberate actions to make GIS data available to state and local users by establishing the DASC and putting DASC databases on the World Wide Web. The DASC model is being emulated in other states who are in the process of setting up data distribution systems for dissemination via tape, CD-ROM, and World Wide Web FTP file transfer.

The Committee identified current conditions and defined the strategic issues currently framing GIS in Kansas. Through the grouping and prioritization of these conditions and issues, the

Committee prioritized four focus group topic areas for in-depth input from the Kansas GIS user community. At the direction of the Committee, the Docking Institute facilitated four focus groups. These focus group topics areas were:

Focus Group 1

Topic: What are the appropriate roles and responsibilities among federal, state, local, and private agencies in setting of standards and in the development of databases?

Focus Group 2

Topic: What principles should guide GIS policies when it comes to issues of individual privacy and the protection of sensitive data?

Focus Group 3

Topic: What should be the policies, priorities, and standards in the development of a data framework in Kansas?

Focus Group 4

Topic: Should the GIS Coordinator's Office and/or DASC offer and charge for consulting services and training? What are the proper charges for GIS data and products? Should state services compete with the private sector?

The Committee invited a broad range of GIS users representing private entities and federal, state, and local governments. The names of those who attended are listed at the end of each focus group report in Appendix A. The Committee examined the input of the focus groups and evaluated its initial strategic issues in light of this input. Using its breadth of representation and the input of the focus groups, the Committee developed its Vision Statement for GIS in Kansas.

One of the key hallmarks of strategic management planning is the recognition that resources are limited and must be prioritized to best address needs and opportunities. Based on this principle, the Committee prioritized the strategic issues. Using a planning structure which mirrors the structure of the SIM-Plan, the Committee created goals for each of the strategic issues.

As the plan facilitator, the Docking Institute used the Planning Committee's Statement of Conditions, Vision Statement, Goals, and Committee discussion as well as the focus group reports to create a "strawman" strategic management proposal. The strawman served as a tool for the Committee's discussion and for management plan development.

The strawman and a draft time line for implementation were presented to the Committee for discussion and modification. These documents were also presented to the Policy Board to allow

input and critique from all members of the Policy Board.

This final plan incorporates the directives and consensus of the Committee and the Policy Board. Authority to approve this plan, the *State of Kansas, Strategic Management Plan for Geographic Information Systems,* is vested by Executive Order No. 95-180 with the Kansas Geographic Information System Policy Board.

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SECTION 4
CRITICAL ISSUES

In its discussions and deliberation, the Committee identified critical issues impacting GIS implementation in Kansas. The Committee defined and prioritized five issues for importance: Standards, Data Framework, Services, Partnerships, Permanence of GIS Program, and Information Access.

Standards

The development of standards that will guide the diffusion of GIS technologies continues to be a critical issue. In 1995, the GIS Policy Board endorsed the formation of the GIS Standards Task Force to: 1) sort through issues regarding metadata standards and the characteristics of thematic data sets and their associated data fields, 2) develop a consensus about these standards, and 3) make policy recommendations to the GIS Policy Board. To date, the Standards Task Force has recommended and the GIS Policy Board has approved a GIS Metadata Standard for Kansas. Although this progress is significant, the standards development process has more to achieve. The standards development process will have to overcome a number of complex conditions that have a tendency to slow the process. These conditions include:

- The uncertainty of the standards setting process at the national level. Although a number of standards can be developed independently in Kansas, many standards need to take into account standards that are presently being developed at the national level in order to assure compatibility with geospatial data from federal agencies and data from other states. An example of standards which are unsettled are the portability standards for geospatial data sets.
- Confusion concerning which issues should be addressed in the standards process. Some state and local entities view the standards process as one that should entail recommending software and hardware specifications. These entities can point to a number of examples of when they invested heavily in hardware and software for a new technology, only to find that their choices were incompatible with standards that emerged once the technology became established.
- The lack of knowledge of state and local entities regarding the existence and the purpose of the Standards Task Force. Despite efforts of the GIS Policy Board to inform the emerging GIS community, many entities remain unaware of the process to develop GIS standards. If organizations, such as local governments, do not know of the process, they are unable to provide input or follow GIS standards as they develop their own geospatial databases.
- The difficulty of developing a consensus about standards as the standards themselves become more specific for data themes.

As GIS technologies spread to more local and private entities, the Standards Task Force will need to balance the demands of entities who are moving quickly and demand “standards immediately,” with the need to develop standards in a thoughtful and deliberate way. Standards development

requires input from the broad GIS community and consideration of the developing national standards. This management plan encourages an evaluation of the standards development process through gaining greater involvement of stakeholders and widely distributing the deliberations and recommendations of the Standards Task Force.

Data Framework

At the national level, a group comprised of local, regional, state, and federal representatives developed and published a proposal in 1995 for a framework of geographically referenced data. Their proposal was developed in response to Presidential Executive Order 12906, *Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure.* The proposal envisions a specific set of data themes that would be developed and maintained locally by the organizations that produce and use data in particular geographic areas across the nation.

These data development themes are:

Geodetic Control
Cadastral (Property)
Administrative Government Boundaries
Transportation
Digital Ortho-imagery
Elevation
Hydrology
Infrastructure (Utilities)

The purpose of a geospatial data framework is to help data producers locate their information in its correct position and provide a means to integrate this information with other geographically referenced data. In this sense, the data framework:

- *provides a geospatial foundation to which an organization can add detail and attach attribute information,*
- *provides a base on which an organization can accurately register and compile additional themes of data,*
- *orients and link the results of applications to the landscape.*

Ideally, the design of the framework considers the needs of the geospatial data community: federal, state, regional, local, and tribal governments; the private sector; non-governmental organizations; academia; and others.

The critical questions surrounding the development of data framework for Kansas that this management plan addresses are: 1) How closely does this national data framework fit the needs

of the GIS community in Kansas? 2) What, if any, adjustments should be made to the data framework to fit Kansas' unique circumstances and data needs? And, 3) what process should be engaged to make decisions about a data framework in Kansas?

Services

Services to the GIS community in Kansas have come from two sources. The first source is the Data Access and Support Center. Although DASC handles requests from any entity, ***it focuses on providing what it calls "primary" and "secondary" support services to tax supported agencies*.** The primary services provided by DASC consist of web site, CD-ROM, and tape distribution of in house databases as well as limited technical assistance with the loading of databases. The charges for primary services are limited to replication and distribution costs. About 80-90% of DASC's time goes to delivering these primary services.

A much smaller portion of DASC time is consumed by secondary services. Secondary services include projecting information to a different coordinate system, combining databases from several counties, converting data formats, tiling, clipping, photographic production, and cartographic services. Fees for secondary services are charged at a rate of $35 per hour (1997 rates). Secondary services are performed primarily on a first-come, first-serve basis and are performed only after primary services have been completed.

Private providers represent the second source of GIS services. As GIS has spread throughout local governments and private entities, so has the number of private consultants and companies providing GIS services. However, most of these private providers are concentrated in the major metropolitan areas of the state where the demand for geospatial data has traditionally been greatest, projects tend to be larger (compared to rural communities), thus allowing for economies of scale, and where there are greater resources.

The critical questions surrounding the growing demand for GIS services throughout Kansas addressed by this management plan are: 1) Should DASC services be expanded? 2) To whom should DASC be providing services and what should be their priorities for who receives services? and 3) Do mechanisms of support need to be developed to enhance the even spread of GIS technologies in urban and rural Kansas communities?

Partnerships

Governor Graves' executive order charges the Policy Board with establishing public and private partnerships to maximize value, minimize cost, and avoid redundant activities in the development and implementation of GIS systems. As the use of geospatial data increases, so does the corresponding need to coordinate and channel the development activities of the growing GIS community. Partnerships can encourage the adherence to standards, allow the development of and responsibilities for each type of entity for thematic data sets, and foster an environment where geospatial data are widely shared. Although there are a number of statutory and regulatory means

available to GIS policy-makers to force cooperation, this type of forced cooperation rarely works because stakeholders resent being told what to do (even if they were going to do it in the first place).

Rather than forcing entities to act through mandates, the Policy Board prefers to encourage the wide-spread use of partnerships to facilitate the efficient development of geospatial data. Partnerships provide a flexibility that enable agreements among entities across levels of government and the private sector based on need, potential uses, and available resources. Using a partnership model avoids the one size fits all prescription that often leads to policy disasters.

Unfortunately, there are impediments that hamper the development of partnerships. First, existing partnerships among local levels of government (county, cities, school districts) tend to be limited in nature and scope, and in some areas, do not exist. This means that there are a lack of strong precedents for the development of local partnerships. Second, partnerships between levels of government (state and local levels or national and state level) might be colored by past interactions that have included broken promises and mandates. The management plan attempts to address these critical issues by developing and finding models of partnerships that can be adapted to Kansas and that will overcome these impediments.

Permanence of GIS Program

GIS is an information tool that cuts horizontally across organizational boundaries. Because of this, the GIS Program within state government does not fit neatly into organizational structures, or budgets, that are based on vertically defined agencies. The GIS Program is funded through a grant from the State Water Plan Fund and administratively managed through the Kansas Water Office. However, the GIS Program is not recognized as a line-item in the state's budget. Although the Kansas Water Office recognizes and supports the use of Water Plan resources to enhance the development of GIS throughout state and local government, this represents a significant commitment of funds without corresponding support from other state agencies and local governments that benefit from the GIS Program. There is a long-term question relating to the continued funding of the GIS Program exclusively from grants from the State Water Plan Fund. This management plan addresses this issue by recommending a study to determine options for permanent funding, and the appropriate organizational location, for the GIS Program.

Information Access

GIS is a powerful tool that allows its users to integrate and analyze data from a variety of sources. Unfortunately, laws that are on the books at the state and federal levels are oriented toward printed and published data, as opposed to digital data. Thus, these present laws are difficult to apply to issues revolving around digital information technology. In this sense, the present laws need to be revised to:

- Clearly assign situations and conditions under which an entity is liable for errors in databases.

- Define parameters entailing the legitimate access and use of sensitive data (e.g., endangered species) and private information.

The management plan encourages developing partnerships with other information technology agencies to begin the process of revising these statutes and regulations.

SECTION 5
SHARED VISION OF GIS IN KANSAS

The Kansas Geographic Information System Policy Board envisions a future where GIS is recognized as an integral and indispensable information tool for governments and businesses, serving the integrated information needs of citizens and customers, respectively. A broad contingent of GIS users will have open access to complete and accurate framework databases as well as associated databases, which have appropriate guidelines protecting individual privacy and other sensitive information.

GIS will become a transparent technology that is used routinely by local and state governmental entities to archive, manage, and analyze data to support business practices and policy making. Common standards will provide the foundation that assures the efficient, steady flow of high quality data. Partnerships, within and among levels of government and private entities, will provide the basis for assigning roles and responsibilities to entities for the development and maintenance of data themes.

SECTION 6
SCOPE OF NEW PLAN

The 1997 Kansas Geographic Information Systems Strategic Management Plan reinforces past efforts to encourage, promote, coordinate, and provide support services for the development and enhancement of Geographic Information Systems throughout Kansas government. GIS is viewed by the Policy Board as a critical tool for more efficiently serving the information needs of Kansans.

The plan acknowledges the important role that cities, counties, state, national, and private entities are playing in the development and application of geographic information in Kansas. The plan also recognizes the interdependence among these entities in the development and maintenance of geospatial data. The plan supports the development of representative processes to design a data framework in Kansas and to develop a consensus on GIS standards and promote these standards. In addition, this plan proposes strategies to facilitate the formulation of partnerships that enable all levels of government and private agencies to develop GIS and to share geospatial data in coordination with each other. Significantly, this plan and its proposed processes are not designed to mandate to local governments and private businesses how each entity should proceed, but rather, through leadership and coordination, the plan provides state and local agencies and private users the opportunity to participate in GIS as partners and decision-makers.

SECTION 7
STRATEGIC MANAGEMENT PLAN

The GIS Policy Board will operate the management plan in four parallel but related tracks: Database, Services, Management, and Information Access. The tracks are composed of closely related task series that can be implemented with some degree of independence from one another. They are however, interrelated and at times dependent upon each other for further development. A time line has been developed for the implementation of the strategies in all four planning tracks.

Database Track

The objectives of the database track are to 1) continue to develop clear and accepted data standards, 2) enhance the current technical standards process to more fully involve end-users, and 3) develop a complete, accurate, and well defined geospatial data framework that users are aware of and commonly accept.

Task Series D1: Standards

Goal: GIS users will know and widely adopt GIS standards related to the basic characteristics and associated fields for selected thematic data sets, the on-going custodial maintenance of these data sets, and the transfer of geospatial data among users.

- D1.1: Re-examine procedures and the informal and formal structures in the development of geospatial data standards to assure proper representation of end-users, to formalize its procedures for decision making, and to institutionalize the process.
  Responsible Parties: Coordinator, Policy Board, TAC, and Standards Task Force
  When: September 1997 to April 1998

- D1.2: Accelerate the development of broadly accepted standards through the refinement of the standards development process.
  Responsible Parties: Coordinator, Policy Board, TAC, and Standards Task Force
  When: September 1997 to December 1999

- D1.3: Involve end users and stakeholders in the standards development process by providing information and participatory opportunities. Use local libraries, the publications of the League of Municipalities, the Kansas Association of Counties, Extension Service newsletters, the Policy Board's newsletter and other types of targeted forums, to make announcements, allow for feedback, and to promote opportunities to participate in the standards development process.
  Responsible Party: Standards Task Force
  When: On-going

Task Series D2: Geospatial Data Framework

Goal: Kansas GIS community will know and widely accept the shared geospatial data framework, which identifies the essential GIS database themes and associated attributes that are necessary for the development of other GIS databases and that allows for the seamless integration of databases across themes so that users can easily share and analyze geospatial data.

- D2.1: Initiate a process and assign responsibilities for defining a shared data framework that reflects the needs of the Kansas GIS community. Recommended tasks include but are not limited to 1) completing a survey of user needs, 2) proposing and analyzing various alternative geospatial data framework options, 3) preparing a summary report with recommendations for the GIS Policy Board.
  Responsible Party: Coordinator
  When: September 1997 to March 1999

- D2.2: The GIS Policy Board will approve final recommendations (modify if it deems necessary) and implement policies, guidelines, and practices necessary to establish the shared geospatial data framework.
  Responsible Party: Policy Board
  When: March 1999 to August 1999

Services Track

The objectives of the services track are to 1) support the application of GIS technologies by state agencies and local governments, 2) continue DASC's clearinghouse role for core databases, expand its role to include Kansas' framework databases, and provide metadata and locational pointers for other GIS databases, 3) monitor and report standards including metadata standards, 4) define and establish mechanisms for user support, and 5) encourage the implementation of GIS technologies and the sharing of geospatial data by all users.

Task Series S1: DASC Clearinghouse Role

Goal: DASC will continue to be a clearinghouse (a repository and provider) for "core" databases and selected databases within the Kansas Geospatial Data Framework. In addition, DASC will continue to provide metadata information, with references to other geospatial data from all sectors of the GIS community.

- S1.1: The Policy Board will attempt to negotiate agreements with agencies developing the geospatial data framework that will allow DASC to become the repository and provider of selected framework databases and continue to archive and disseminate core databases.
  Responsible Parties: DASC, TAC, Coordinator, Partner
  When: On-going

- S1.2: The Policy Board and GIS Coordinator will attempt to negotiate agreements with members of the GIS community that will assure these entities will follow the metadata standard and provide metadata and references for the DASC archives.
  Responsible Parties: DASC, TAC, Coordinator, Partner
  When: On-going

Task Series S2: Data Sharing

Goal: GIS databases will continue to be widely shared at the minimum possible cost to the user.

- S2.1: The Policy Board will consider adopting the policy that in developing agreements among entities to develop and provide data, one of the guiding principles for sharing geospatial data within the GIS community will be reciprocity.
  Responsible Parties: Policy Board and DASC
  When: September 1997 to April 1998

- S2.2: The Policy Board will consider adopting the policy that in developing agreements for data sharing, the Kansas Geospatial Data Framework themes will continue to be available for cost of distribution for all users.
  Responsible Parties: Policy Board and DASC
  When: September 1997 to April 1998

Task Series S3: DASC Services

Goal: DASC will provide support services for the expanded application of GIS technologies for the GIS community.

- S3.1: DASC will perform a cost study of its services to determine the cost of providing each service.
  Responsible Parties: DASC and TAC
  When: September 1997 to April 1998

- S3.2: Policy Board will develop and adopt a fee structure for the delivery of DASC services.
  Responsible Party: Policy Board
  When: May 1998 to August 1998

- S3.3: DASC will develop short course curricula to facilitate GIS use and data sharing.
  Responsible Parties: DASC and TAC
  When: September 1999 to July 2002

- S3.4: Policy Board will attempt to provide permanent resources and full time personnel necessary to assure the continuity of DASC services.
  Responsible Parties: Policy Board
  When: On-going

Task Series S4: Educate decision makers and general public on the benefits and uses of GIS technology

Goal: GIS technologies will become widely used and accepted in state, local, and private agencies. State and local government agencies will be knowledgeable about the activities of the Policy Board.

- S4.1: Encourage integration of GIS technologies into major programs through organizations like the Kansas Information Technology Advisory Board (ITAB) and the Kansas Information Resources Council (KIRC).
  Responsible Parties: Coordinator, Policy Board, and DASC
  When: On-going

- S4.2: Maintain a liaison role with other professional organizations involved in GIS.
  Responsible Parties: Coordinator, Policy Board, and DASC
  When: On-going

- S4.3: Sponsor and participate in GIS related forums, conferences, and demonstrations that promote and educate policy makers about GIS.
  Responsible Parties: Coordinator, Policy Board, and DASC
  When: On-going

- S4.4: Continue to publish and distribute a GIS Newsletter on a biannual basis and circulate widely.
  Responsible Parties: Coordinator, Policy Board, and DASC
  When: On-going

- S4.5: Support research and development of GIS related cutting edge technologies for interagency projects and applications.
  Responsible Parties: Coordinator, Policy Board, and DASC
  When: On-going

Management Track

The objectives of the management track are to 1) spur the definition of the roles and responsibilities for government and private entities in the development of GIS databases, 2) establish models and procedures for developing partnerships among various levels of government and private entities, and 3) encourage government and private entities to include GIS funding as a ongoing budgetary component.

Task Series M1: Partnerships

Goal: The Policy Board and GIS data developers will be engaged in partnerships that delineate mutual and individual roles and responsibilities for geospatial data development. These partnerships will assure the adherence to standards, avoid the duplication of data, promote the efficient use of scarce financial and human resources, and assure the sharing of the developed GIS databases.

- M1.1: Based on Kansas Geospatial Data Framework, develop a template for which types of entities have the primary responsibility for developing each major GIS data theme.
  Responsible Parties: Coordinator and TAC
  When: September 1999 to March 2000

- M1.2: Use existing relationships in the GIS community (the KIRC, vendors, and the GIS network of consultants working in Kansas), to actively seek those government, nonprofit, and private entities developing GIS databases.
  Responsible Parties: Coordinator and TAC
  When: September 1999 to July 2002

- M1.3: Negotiate agreements with GIS data developers designed to achieve the stated goals.
  Responsible Parties: Coordinator, Policy Board, and DASC
  When: September 1999 to July 2002

- M1.4: Promote partnerships among GIS data developers through studying and providing models of partnerships that have worked in various development environments.
  Responsible Parties: Coordinator and Policy Board
  When: September 1997 to August 1998

- M1.5: Promote or facilitate the development of partnerships among local governments to develop GIS technologies and provide essential development services.
  Responsible Parties: Coordinator and Policy Board
  When: On-going

Task Series M2: GIS State Coordinator's Office

Goal: The State GIS Coordinator will be the leader of efforts to expand, efficiently develop, and maintain GIS technologies and data themes.

- M2.1: Review position, staffing, and budget of the state GIS management structure to assure that resources are sufficient to meet responsibilities.
  Responsible Parties: Coordinator, TAC, and Policy Board
  When: September 1997 to March 1998

Task Series M3: GIS Program and Management Structure

Goal: The state GIS program and management structure will become institutionalized in state government.

- M3.1: Study and examine current and future options for funding for state GIS office.
  Responsible Parties: Coordinator and Policy Board
  When: September 1997 to March 1998

- M3.2: Study organizational location of the GIS program management and operations to assure stability and continuity. This study should produce a recommended course of action to achieve the stated goal.
  Responsible Parties: Coordinator and Policy Board
  When: March 1998 to May 1998

- M3.3: Engage in actions and structure the management organization to enhance the position of the GIS program for providing agency-to-agency consulting and services (see section 3.4.3 of SIM-Plan).
  Responsible Parties: Coordinator and Policy Board
  When: September 1997 to May 1998

Information Access Track

The objectives of the information access track are to 1) provide guidance on the legal issues regarding the creation and the release of GIS data, and 2) begin the process of modernizing laws and regulations relating to digital information.

Task Series IA1: Modernize IT Laws

Goal: Citizens' privacy rights and information relating to endangered species, historical sites, archeological finds, and other sensitive information, will be protected from unauthorized, unscrupulous and/or commercial abuse of GIS databases through legal restrictions and GIS community norms.

- IA1.1: Pursue avenues through appropriate agencies to modernize the Kansas Open Records Act for GIS data and other digital data. Suggested changes include:
  1) Expand the current exception in the Kansas Open Records Act for "information that would reveal the location of an archeological site" to protect historical, paleontological, and sites that would reveal the location of endangered or threatened species.
  2) Through laws and norms of practice, assure that records that are private in a traditional "hard copy" format retain that status when transformed into an electronic format.
  3) Clarify the legal issue of who is the custodian of an electronic record if a record is created in one agency, but maintained or modified in other agencies.
  4) Re-examine the fines levied for violations of the Kansas Open Records Act.
  Responsible Parties: Policy Board and Attorney General Office
  When: September 1999 to August 2001

Task Series IA2: Liability Issues

Goal: Data developers of geospatial data will not have any legal liability for unintentional human errors in the creation of databases and providers of geospatial data will not have legal liability for the distribution of geospatial data with errors.

- IA2.1: Instruct agencies sharing GIS databases to include in the metadata for each database, any restrictions that exist on release of data from the database under state or federal law.
  Responsible Parties: TAC, DASC, and Partners
  When: On-going

- IA2.2: Seek guidance from the Attorney General's Office regarding agency liability issues involving errors in databases that are created or distributed by government agencies.
  Responsible Party: Attorney General Office
  When: March 1999 to February 2000

- IA2.3: Recommend necessary changes in IT laws and regulations to assure that there is no legal liability for unintentional human errors in the creation of databases.
  Responsible Parties: Policy Board, other IT agencies, and Attorney General Office
  When: March 2000 to August 2000

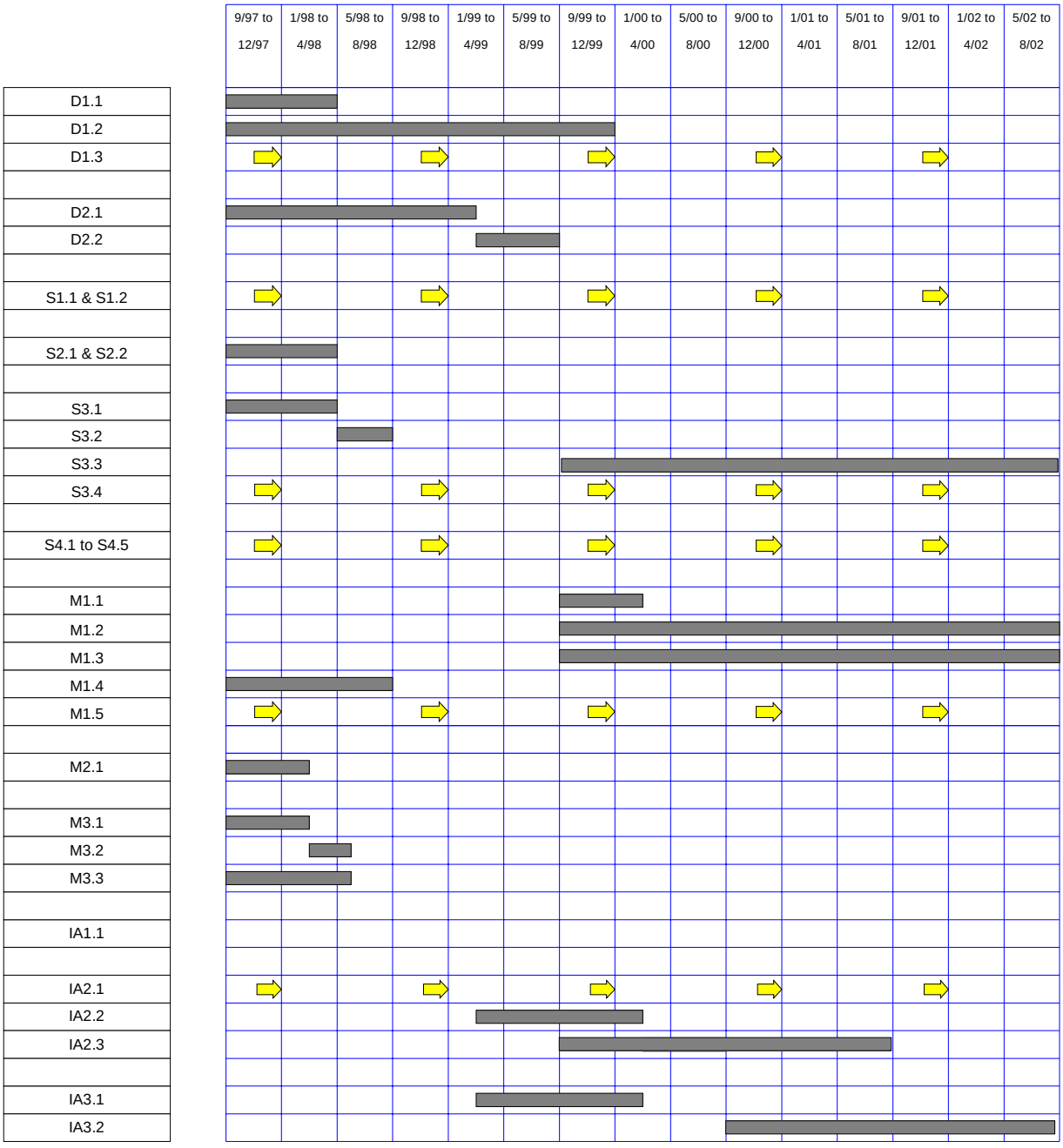
Task Series IA3: Educating the GIS Community

Goal: The GIS community will be aware and abide by laws and norms regarding the protection of privacy and sensitive information.

- IA3.1: Encourage legal community to help develop guidance for legal issues on data liability.
  Responsible Parties: Coordinator and Attorney General Office
  When: March 1999 to March 2000

- IA3.2: Policy Board will disseminate information regarding legal liability to GIS community as it is developed by the legal community.
  Responsible Parties: Coordinator, DASC, and Policy Board
  When: September 2000 to August 2002

TIME LINE FOR TASKS



APPENDIX A
FOCUS GROUP REPORTS

GIS Strategic Planning: Focus Group 1 Report

Focus Group 1: March 14, 1997, 9:00 a.m. to noon, in room 106 of the Landon State Office Building, Topeka, KS.

Facilitators: Joseph A. Aistrup, Ph.D., Hongmian Gong, Ph.D., and Terry Bruce

Summary of the Meeting

Topic: What are the appropriate roles and responsibilities among federal, state, local, and private agencies in setting of standards and in the development of databases?

The meeting began with the facilitators providing 1) a brief summary of the Federal Geographic Data Committee's (FGDC) "National Spatial Data Infrastructure" suggestions for the roles and responsibilities of federal, state, and local governments, and the private sector, 2) a review of the FGDC's data development themes, and 3) a description of some of the issues surrounding GIS standards.

Comments on GIS Standards Task Force

A number of the participants, who are also members of the standards task force, noted that the task force is a grass roots group that is focusing on developing standards for metadata (done) and the characteristics of thematic data sets and its associated data fields. However, the standards task force is not delving into questions involving software or hardware. In addition, the task force is not attempting to address spatial data transfer standards because the national level is addressing this issue. Members of the standards task force also noted that the work of the task force was slow because as one attempts to develop standards below metadata, it is difficult to develop a consensus about what the standards should be.

Some participants suggested that the task force process should consider standards that extend to end users to address some of the grounded issues revolving around software and portability. Other participants noted that it was important for end users to feel comfortable with standards task force and that the task force should do a better job of informing small private users. Some participants suggested that a guide book would be useful for those without Internet access.

One of the participants asked "How to involve end users" in the standards development process? Especially those people who don't see GIS as being relevant. Participants suggested that the task force work through local libraries, which are becoming major public access points for electronic information, the League of Municipalities and county association magazines, which are read by local officials, the extension service newsletter, and other types of locally based newsletters to make announcements and to promote meeting times. Another participant then commented that the usefulness of GIS could be promoted to county and city governments by emphasizing its importance for land management.

The consensus among the group was that there are built-in incentives for users to follow standards because of their desire to obtain, match, and compare data from higher level agencies and peer agencies. Thus, the desire to share with other agencies would create incentives for users to follow GIS standards. Later in the focus group, a participant noted that if necessary, the reception of block grants (localities) could be tied to acceptance of GIS standards, however, there was a general antipathy toward mandates of any type.

Database Development Themes

When asked about the roles and responsibilities of each level for the development of database themes, the response of the group was that it "seemed automatic." Agencies with expertise and a direct interest in the data should develop the GIS database and then share that database with other users. These lower levels of government and private agencies look to the state to:

- Set or codify standards that have been created vis-a-vis heavy input from local and private agencies. These standards should be compatible with federal standards.
- Develop geodetic control themes or in the words of the participants, "put the points on the ground."
- Facilitate the building of partnerships to lower the cost of GIS development.

Local governments are hesitant to jump into GIS and invest money because of the changing technology, lack of standards, and problems with incompatibility. Local governments want to know the lowest common denominator (resolution) that will best suit their needs and allow the state to build its maps based on local data. Local and private agencies would like the state to act as soon as possible to set these standards and promote these standards so that local and private agencies can begin to develop GIS databases with greater security.

There was a strong consensus among participants that the major responsibility of city and county governments should be the development of cadastral themes. Because this theme will be locally used, participants believed that local and private agencies will have minimal problems funding its development. However, if standards change, or if state and/or federal governments want more kinds of information, then the level demanding the data should pay for the collection of the data. Local governments are especially worried about unfunded mandates.

In the area of ortho-imagery, the discussion turned to the building of partnerships to share the costs of fly-overs. Participants noted that most partnerships between levels of governments were built informally. Sometimes, the contractor (like M.J. Hardin) facilitated the building of these partnerships. In other instances like Osage and Johnson counties, governmental entities have formed these partnerships. In Osage County, the county government, in cooperation with the Natural Resources Conservation Service have taken the lead to build these partnerships. In Johnson County, the partnership involving ortho-imagery is facilitated through a subscription rate paid by governmental agencies.

Some participants noted that some communities and counties do not have the resources to form local partnerships that will have the financial muscle to build GIS databases. In these instances, the state may have to provide supplemental funding. Other participants noted that the Kansas Open Records Act was a barrier to building partnerships since all data collected is open to the public. This leads to a problem with free-riders who take advantage of the open information.

While local governments applaud the state's effort to fund ortho-imagery (3' of resolution), the state also needs to coordinate higher resolution fly overs for cities and counties. Local entities emphasize that with digital ortho-imagery, they can overlay the cadastral level. In return for the ortho-imagery, the state can have access to the database created by the local agencies.

For the theme of Administrative/Governmental boundaries, there was some consensus among local units of government. Each taxing or administrative entity should be responsible for its own GIS boundaries database. In this sense, cities and counties believe that the state should bear most of the burden because state statute creates these various taxing and service districts, and by state statute, the boundaries must be recorded with the Secretary of State. Cities and counties also note that many of these administrative districts cross multiple city and county boundaries.

The last topic to be discussed related to the question of custodial responsibility: Who should define how often data should be updated and who should update the data? Most participants felt that this is a standards question, however, participants did say that custodial responsibility should be with those who develop databases. If it is a local database, then the locals should do it, while the state should make the metadata available.

Conclusion

Although the participants did not address who has responsibility for each theme, it was clear from the discussion that the agency that primarily uses the data theme, should be the level that develops, maintains, and funds that theme's GIS database. The consensus among participants is that the state should set standards based on input from the local level, develop the geodetic database, subsidize ortho-imagery fly-overs, and develop and maintain themes for which it has primary responsibility.

However, even though these principles seem straight forward, the devil still remains in the implementation of these details. For example, cities need ortho-imagery digital photos at 1' level of resolution to properly mark property lines and other characteristics. In rural areas, most counties need ortho-imagery at the 3' level. The state subsidizes these 3' level photos. Although the counties also need city ortho-imagery at the 1' level for the purposes of the county appraiser, some counties have decided that they are unwilling to help cities with the greater expense of the 1' accuracy. This type of situation does not facilitate an environment that is friendly toward the creation of partnerships or the sharing of data. Unfortunately, this is but one example of the many details that are still to be worked out before the development of GIS can reach its fruition.

List of Those in Attendance

Wayne Page
Kyle Juracek
Bob Wiseman
Hannes Zacharias
Scott R. Willbrant
David Oliver
Gregg Noland
Mark Green
Lori Wilkerson
Chris Dunn
Terry Bruce
Kerry Wedel
Cy Smith
Scott Tabb
Tim Spencer
John Radenberg
Bob Carslon
John Divine
Jamsheed Mehta
Travis Rome
Kathleen Murphy
Mike Dealy
Chris Chappell
Hongmian Gong
Ken Brooks

GIS Strategic Planning: Focus Group 2 Report

Focus Group 2: March 14, 1997, 9:00 a.m. to noon in room 106 of the Landon State Office Building, Topeka, KS.

Facilitators: Mark Bannister, J.D., Susan Myers, J.D. and Ken Neuhauser, Ph.D.

Summary of the Meeting

Topic: What principles should guide GIS policies when it comes to issues of individual privacy and the protection of sensitive data?

The meeting began with a presentation by Steve Phillips of the Kansas Attorney General's Office on the Kansas Open Records Act. Phillips outlined the Act, its general presumption that all state records are open, and key exceptions to the Act. The facilitators provided focus group members with the NSGIC State Summary for Kansas, highlighted the distribution policy of the Data Access and Support Center (DASC), and discussed the fact that the Kansas Core GIS databases are public records.

The overall theme of the focus group was that the needs of the public must be the utmost concern of local governments and state agencies. Focus group participants expressed the uniform opinion that the Kansas Open Records Act needs to be updated to reflect GIS and other electronic technologies. This process of updating should be carefully thought out and the rule of thumb of "educate before you legislate" should be followed. Focus group participants expressed general concern about responsibility for confidential data as data move from local organizations to state agencies or from state agency to state agency. Related to the legal issues of opening and closing records, many local and state agencies are concerned about potential legal liability for the use or misuse of GIS data.

DASC and Open Records

Members of the focus group were in general consensus that any record or database provided to DASC should be "totally open." There was concern about potential joint and several liability for the organizations providing databases to DASC for improper releases of data that might be inaccurate. Some focus group participants believe that the GIS Policy Board should review and approve each database before it is placed with DASC, while others are concerned that the greater the responsibility that the Policy Board takes in assuring the quality and content of the databases, the more likely it is to be held responsible for a database's contents. [Consultant's Recommendation: Just as the GIS Policy Board sought and received assistance from the Attorney General's Office in creating the current DASC disclaimer, the Board should seek additional guidance from the Attorney General's Office regarding these organizational liability issues.]

Recommendations to Policy Board and Strategic Planning Committee

The focus group made three action recommendations to the GIS Policy Board. The first is a policy. The second is the recommendation that the Policy Board work with the Attorney General's Office on a series of data base liability issues. The third recommendation is that an educational program for GIS practitioners on Open Records should be conducted.

Policy

- Organizations sharing GIS databases should include in the metadata for each database, any restrictions that exist on release of data from the database under state or federal law.

Database Liability Issues

A reoccurring theme during the focus group was the concern of local governmental organizations and state agencies regarding liability. The first concern is that governmental organizations or private firms may rely on GIS data that are created by a local government entity or a state agency and use that data in a manner that is inappropriate; creating a legal liability for the original organization. For example, an agency may develop a map at a plus or minus five meter level and another organization might overlay that map intending to produce a map with a resolution of plus or minus two feet.

Another concern is that governmental GIS data may have inaccuracies and that the legal liability might arise from use of such data. Focus group participants emphasized that the statutes created an **open records act, not a correct records act** and that agencies should be held to a high standard if data or analysis is created and sold for an expected use. However, agencies are concerned about being held responsible for the quality of data that are provided free and perhaps used in manners not intended by the creators of the database. [Consultant's Recommendation: This topic area should be part of discussions between the Policy Board and the Attorney General's Office.]

Education

The members of the focus group strongly agreed that "education is the key" concerning the Open Records Act and its application to local and state agencies. GIS practitioners need to be educated through seminars about the Act so that they can comply with its provisions. Information on legal restrictions should also be incorporated by universities into the curriculum of future GIS practitioners.

Important areas of education include:

- The general application of the Act and its exceptions.
- The need for separation of open and private data.
- Handling requests from the public -- methods of request and time lines.

- Statutory and Governor's Executive Orders regarding charges that can be collected for a copy of records. There is a difference between providing access to records and creating a new record. The difference is in the recovery of costs.
- Understanding how to handle studies in progress in order to prevent premature exposure of data.
- Understanding the prohibition against commercial solicitation using names and addresses derived from public records and the ability of an agency to protect the agency and staff from liability by requiring written certification from persons obtaining data.

Statutory Recommendations

The process of examining the Kansas Open Records Act and adapting it to an electronic age needs to begin. However, at this point the focus group was prepared to endorse only limited statutory changes:

- The current exception for "information that would reveal the location of an archeological site" should be expanded to protect historical and paleotological sites. (Expanding the current archeological site exception).
- An exception to the Open Records Act should be established for information that would reveal the location of endangered or threatened species.
- Records that are private in a traditional "hard copy" format should retain that status when transformed into an electronic format.
- The legal issue of clarifying who is the custodian of an electronic record if a record is created in one agency, but maintained or modified in other agencies needs to be considered in depth.
- Agencies are concerned about a record losing its exempt status if exempt data are referred to in summary or used to build a database that has public access.
- There is a concern for farmers voluntarily seeking assistance with conservation or waste water retention from an agency and that the records--voluntarily provided by the farmer--being used (through the Open Records Act) by an enforcement agency that may penalize farmers who are actively trying to address problems. This may chase farmers away from assistance programs.

Additional work and careful consideration should occur as Kansas examines its Open Records Act in light of GIS and other electronic technologies.

Commercial Solicitation and Public Records

Kansas statutes prohibit commercial solicitation using names and addresses obtained from public records. Focus group participants discussed this issue and held mixed views. Some participants believe that the current maximum fine of $500 for violations of the act should be substantially increased to discourage misuse. Persons advocating this position believed that with the current fine, the use of records for commercial solicitation can be considered a low-risk activity. Other focus group participants believe that there is no way to enforce the provision and it should be

eliminated. Some participants pointed out that names and addresses exist on multiple commercial lists and these are routinely used for solicitation and that state protection of records does little to protect privacy. One person suggested that perhaps people have the ability to "opt out" and prevent their names and addresses from being generally available from state lists. Many participants were unaware that an agency could require certification of persons requesting lists, that these records will not be used for commercial solicitation. This provides an agency and its staff statutory protection against liability. Some participants felt that the *status quo* provides a sense of protection to the public and should be retained. Overall, there are many thoughts and little consensus on this issue.

Conclusion

The balance of the importance of public access to records and the demand for individual privacy is difficult. The needs of the public should be the first consideration weighed in any policy changes. All databases placed with DASC should be "totally open." Data bases shared between agencies should list any restrictions on use in its metadata. The GIS Policy Board should work with the Kansas Attorney General's Office to clarify several database liability issues. The Policy Board should initiate training for GIS practitioners regarding the Open Record Act. There are some specified areas that the focus group reached consensus regarding recommendations on statutory changes to the Open Records Act. The prohibition on commercial solicitation using names and addresses gathered from public records raised substantial discussion, but no recommendations or consensus.

List of Those in Attendance

Steve Phillips	Steve Hurst	Steve Thompson
Wayne Lukert	Lloyd Stullken	Kathy Peckman
Keith Sexson	Steven Johnson	Mark Bannister
A.J. Thomas	Richard Hager	Jim Parker
Brian Logan	Nancy Mattson	
Dennis Albers	Susan Myers	
Ken Neuhauser	Ivan Weichert	
Al LeDoux	Tim Blevins	

GIS Strategic Planning: Focus Group 3 Report

Focus Group 3: March 14, 1997, 1:00 p.m. to 4.00 p.m., in Suite 300, 109 S.W. 9th str., Topeka, KS.

Facilitators: Joseph A. Aistrup, Ph.D., Hongmian Gong, Ph.D., and Terry Bruce

Summary of the Meeting

Topic: What should be the policies, priorities, and standards in the development of a data framework in Kansas?

The focus group began with the facilitators providing 1) a brief summary of the results of focus group #1, 2) a description of the issues surrounding the development of a data framework in Kansas, and 3) a review of the FGDC's data development themes and the present core databases stored at DASC.

Comments on Defining a Data Framework in Kansas

One of the participants reduced the questions about a data framework in Kansas to this: What are the essential GIS database themes and associated attributes that will serve as a framework from which other GIS databases can be developed? The goal is to create a framework that will allow for the seamless integration of databases (developed by a multitude of users) across themes so that users can easily share and analyze geospatial data. There was a strong consensus within the groups that only a shared data framework in Kansas would accomplish this goal.

The first question addressed by the participants was "are FGDC's data development themes relevant for Kansas? If not, what are the additional themes that are important for Kansas?" The participants noted that there were a number of topologies that are particularly important in Kansas? These topologies include: soils, one meter digital ortho-imagery, public lands, Tiger-census file, oil and gas, land use, weather patterns, water rights, and social-economic characteristics.

In developing a data framework for Kansas, participants noted that there are a number of factors that need to be taken into consideration:

- Users need to know limitations.
- Builders of databases need to know the standards before they begin.
- Databases range from being extremely dynamic to very static. In most cases, databases are dynamic.
- The need to update databases will be pitted against the cost of updating.
- The data framework is not static.

Participants noted that the database development themes in Kansas have been developed

based on available funding and what was logical. Most participants felt that the data framework should be based on structure or use logic. That is, the data framework should represent database themes that represent the foundation for other more detailed and specific databases. In this respect, a priority for developing a data framework in Kansas is the need to tie into the federal HARN, so that all databases in Kansas will be built with a common set of geospatial coordinates. Thus, the state should develop the geodetic theme first, which will then facilitate the development of other themes.

The Process of Defining a Data Framework in Kansas

Participants were asked, what type of process they would recommend to facilitate the definition of a data framework in Kansas? The group recommended that the process should include:

- Doing a survey, perhaps building off of FGDC survey, to determine opinions and user needs.
- Analyzing proposed data framework themes in terms of a cost/benefit analysis.
- Focusing the process of defining the data framework on servicing the needs of the end user; this is who the Policy Board should primarily listen to.
- After the GIS Policy Board has obtained this input, it has the responsibility of defining the framework and of initiating a process to update the framework when necessary.

A number of the participants noted that the Policy Board, because of its broad representation, is best suited to go beyond any perceived contradiction between money and policies to properly weigh constitute needs in defining a data framework for Kansas.

The Role of the GIS Coordinator and Policy Board

There was a strong consensus among participants that the GIS Policy Board, its coordinator, and associated organizations, need to be institutionalized in the state government. GIS should have its own line item, adequate funding, statutory authority, and full-time equivalent positions. The GIS coordinator and Policy Board should be the primary promoters of GIS and the data framework in the state.

Participants suggested an expanded role for the GIS coordinator and Policy Board. First, GIS information and communication flowing into the state, especially from federal sources, should be directed to the coordinator's office. Second, the coordinator's role should go beyond the boundaries of state agencies to direct GIS in the state of Kansas. Third, the GIS coordinator and Policy Board might have more legitimacy to affect GIS policies statewide if it moved out of the Water Office.

Participants were then asked that if the GIS coordinator and Policy Board expanded its role in this way, would the Policy Board need to be reconfigured to expand representation? Most participants felt that its present representational scheme builds legitimacy, however, some participants suggested that the Policy Board may want to follow the example of local planning

commissions, where members are appointed by various constituency groups and governmental bodies, and the coordinator implements the policies of this board.

The Sharing of Databases

Participants where asked what principles should guide users when sharing GIS databases? Several of the participants promoted the idea that data sharing should occur through a "gateway system." This gateway system does not physically store the data, but connects the user to a server where the database is stored. In this respect, this gateway system should be a repository for metadata files and pointers to where each respective database is located. The consensus was that DASC should be the gateway system.

The perspective that should guide the sharing of data is that it will be shared; it may not be free, but it won't be hoarded. Participants noted that there are a number of factors that condition the situation where one user shares databases with another.

- When the state is sharing data with the federal level, sharing should be based on a system of reciprocity.
- Rudimentary data, which is part of the data framework, should be made available for cost of distribution.
- For non-rudimentary data, users might pay additional fees to cover the collection of the more detailed information.
- For data in which there are a limited number of prospective users, fees should be higher.

Conclusions

There was a strong consensus in the focus group that the data framework should begin with the state developing the geodetic theme. Participants noted that the establishment of HARN in Kansas will do much toward establishing geospatial coordinates for the building and overlaying of data themes. A data framework in Kansas should be decided through a process of surveying users and an analysis of costs and benefits. The Policy Board should make the final decision on a shared data framework in Kansas. There was also a strong consensus that the GIS Policy Board and coordinator need to be institutionalized and both should have a broader role in the establishment of a GIS data framework. Finally, participants agreed that users must have access to GIS databases, but charges must be assessed based on reciprocity, whether the database is part of the data framework, and the extensiveness of its use.

List of Those in Attendance

Ken Brooks	Walt Aucott
Cy Smith	A.J. Thomas
Kathleen Murphy	Terry Bruce
Gregg Noland	Fred Boesch
Travis Rome	H.L (Sy) Seyler
Jamsheed Mehta	Bob Carlson
Ivan Weichert	Mike Dealy
Tim Spencer	

GIS Strategic Planning: Focus Group 4 Report

Focus Group 4: March 14, 1997, 1:00 p.m. to 4:00 p.m., in Suite 300, 109 S.W. 9th str., Topeka, KS.

Facilitators: Mark Bannister, J.D., Ken Neuhauser, Ph.D., Susan Myers, J.D.

Summary of the Meeting

Topic: Should the GIS Coordinator's Office and/or DASC offer and charge for consulting services and training? What are the proper charges for GIS data and products? Should state services compete with the private sector?

Docking Institute Background Note: States vary considerably in methods of distributing GIS data. These methods range from licensing fees and restrictive use agreements to free distribution of data via free file transfer protocol and the World Wide Web. The dominant trend appears to be in the direction Kansas has taken; developing a web site with free file transfer and minimal charges to cover reproduction and mailing expenses for CD-ROM distribution. The focus group participants were provided materials outlining state GIS database distribution policies.

The overall theme of the focus group is that DASC clients are satisfied with its services. Service clients include both agencies desiring distribution of data and organizations using data. The current policy of free and inexpensive data distribution was highly supported. There was considerable caution regarding DASC expanding secondary services. There was a strong consensus that DASC and the Kansas GIS coordinator need a more reliable source of funding and expanded staff simply to handle primary duties.

Current Operations and Funding of DASC

Ken Nelson, Acting Director of KGS/DASC provided the focus group with a background of the charges and services currently available at DASC. Services are classified as "primary" and "secondary." Different charges and priority of services are applied depending on each service's classification.

The majority of DASC activities involve the delivery of primary services (80-90%). Primary services consist of web site and CD-ROM distribution of DASC databases. Limited technical assistance with the loading databases is also considered a "primary service." Charges for primary services are limited to replication and distribution costs. The current goal is to make data available for the lowest possible cost.

A much smaller portion of DASC time is consumed by secondary services. Secondary services include projecting information to a different coordinate system, combining databases from several counties, converting data formats, tiling, clipping, photographic production, and

cartographic services. Fees for secondary services are charged at a rate of $35 per hour. Secondary services are performed primarily on a first-come, first-serve basis and are performed only after primary services have been completed.

DASC has three full-time employees. It is funded primarily through the state water plan. DASC generated approximately $8,000 last year from fees. DASC is physically located at the Kansas Geological Survey. The DASC web page is located on the Information Network of Kansas.

Funding of DASC

Focus Group participants felt strongly that DASC and the GIS coordinator need a permanent source of funding. DASC is funded through a competitive grant from the Kansas Water Plan for the amount of approximately $132,000. The coordinator's office is also funded from the Water Plan. This source of funding is insecure because there is strong competition for water plan funding.

Although, natural resources originally dominated Kansas GIS databases, broad application of GIS tools in many other agencies and organizations has extended the development of databases beyond natural resource themes. This trend suggests that funding for GIS will probably need to come from the general fund.

Most DASC databases were developed though funding from the Water Plan. To build statewide databases for subjects like economic development, funding from other sources will be required. It is important to inform legislators of the inherently governmental functions of the GIS Office and DASC. There is not a private sector alternative for these functions. In addition, private as well as public entities benefit.

Focus group participants attribute the rapid turnover of DASC personnel to the uncertain nature of funding and to somewhat low salaries.

A focus group participant suggested that it is time to analyze the costs and benefits of GIS for Kansas citizens. While this was attempted approximately four years ago, at that time, most GIS applications were in the planning stage and hard data was scarce. Today, data should exist that will allow documentation of benefits and costs. Focus group participants were unanimous in their support of this action. Demonstrating the benefits of GIS in a tangible manner will be very important in successfully seeking resources from the general fund. Focus group members agreed that all agencies and local government organizations that use GIS will need to actively support a general fund line item for GIS if this legislative effort is to be successful.

A participant suggested that Kansas should point to its GIS efforts when recruiting businesses to the state. DASC should be considered a state economic development asset. Focus group participants supported this view.

Funding Via Agency Contributions

When the focus group participants where asked whether each state agency placing data with DASC represented a source of funding, the response was no. Participants felt that "agencies are strapped with funding their own missions and are trying to do more with less." Agencies may believe that GIS is important, but statewide databases benefit tax payers and organizations at many levels and the costs should be shared broadly.

DASC Fees

Should DASC seek to be self funded through fees? Focus group participants pointed out that Kansas is often acknowledged as a national leader in GIS applications at both the state and local level. One of the reasons for this lead is the broad distribution and exchange of data. The state's provision of low cost data has been a key factor in counties and local entities initiating GIS. The focus group participants uniformly agreed that the current fee policy for distribution of data should be maintained. Data downloaded via Internet ftp should remain free. Data provided to governmental and not-for-profit organizations should be provided for the cost of replication and distribution (media and postage).

Focus group participants agreed that all services directed toward for-profit entities should be at a cost-recovery level, regardless of whether the service is a primary or secondary one.

Focus group participants generally agreed that DASC should recover costs for secondary services provided to governmental entities. There was some dissention about this point because of concerns about competition with private entities. However, because DASC's practice is to provide secondary services after primary services, the waiting time and lack of intent to promote these services do not represent direct competition with private firms.

Focus group participants suggested that DASC undertake a cost study to determine its actual costs in providing services. The study would have two benefits: It would assure that costs are fully recovered and it would prevent unfair or subsidized competition with private sector entities.

Advertisement on DASC Web Page

The idea of generating additional revenue by allowing commercial GIS companies to advertise their services on the DASC web page was presented by a focus group member. Focus group members rejected this idea because of legal reasons, concerns for fairness, concerns for any implicit endorsement of a providers services, and the distraction of staff from core services. Currently, DASC staff declines to even give advice on hardware or software purchases. Participants felt that this practice should be continued. However, focus group members agreed that a list of hyperlinks to GIS consultants and services--listed free of charge--would be a helpful

service to both communities and commercial providers. The group agreed that the page should clearly express that DASC did not warrant or recommend providers, but provided the listing simply

as a service to viewers.

Expansion of Services

A majority of focus group members believed that DASC should not provide vender specific training such as ArchView training. Focus group members were in consensus that DASC should provide general education on GIS, but overall should maintain its focus on primary services.

Focus group participants believe that GIS use is growing rapidly. More counties, cities, and multi-organization partnerships are "getting into GIS." Additional databases and uses are developing. One participant stated that "just doing more of the same" is going to take a substantial amount of time as more users and databases are added. Focus group members agreed that based on foreseeable demands, DASC staffing should grow to five staff persons and based on current work load, the GIS coordinator's office needs another person immediately.

Building GIS Into Major State Projects

Many critical state projects such as welfare reform would benefit substantially from GIS based data. The consensus of the focus group participants is that these large scale projects should routinely include the development and maintenance of GIS databases into its budget. The group agreed that the GIS coordinator should actively encourage the development of this frame of mind through the Information Technology Advisory Board (ITAB).

Upgrade of State GIS Coordinator Position

When the focus group was asked whether there were any additional issues that participants would like to address, a participant stated that the GIS coordinator's salary in Kansas is almost half the amount paid similar positions in some other states. Many members of the group quickly expressed their opinions that the position is substantially under-funded and yet is critical for Kansas. Focus group members unanimously supported the upgrade of the coordinator's salary.

Conclusion

The theme of this focus group was "stay the course, but prepare to do much more of what you are doing now." There was strong agreement that DASC and the GIS coordinator are valuable resources that need to be supplemented to handle the volume of demand. Current distribution, service, and charge methods are supported. However, the focus group would limit the type and amount of secondary services offered. A cost and benefit study should be conducted to document current costs and to assure full cost recovery for services provided for-profit entities and for secondary services.

The funding base for the GIS coordinator and DASC should be moved from the water fund to the general fund. A cost and benefit study should be performed to document benefits of GIS and the services provided by these entities. Agency and local government users will need to strongly

support the effort to shift funding if this effort is going to be successful.

List of Those in Attendance

Brownie Wilson	Lloyd Stullken
Wayne Lukert	Kathy Peckman
Keith Sexson	Chris Chappell
Steve Johnson	Bob Wiseman
John Radenberg	Dennis Albers
Scott Tabb	Chris Dunn
Wayne Page	Scott R. Willbrant
David Oliver	Richard Hager
Steve Thompson	Susan Myers
Kerry Wedel	Ken Nelson
Tim Blevins	

APPENDIX B
DISCUSSION OF GEOSPATIAL DATA FRAMEWORK

Defining Geospatial Data Framework

At the national level, a group comprised of local, regional, state, and federal representatives developed and published a proposal in 1995 for a framework of geographically referenced data (geospatial data). Their proposal was developed in response to Presidential Executive Order 12906, *Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure.* The proposal envisions a specific set of data themes that would be developed and maintained locally by the organizations that produce and use data in particular geographic areas across the nation. Furthermore, the proposal for a national geospatial data framework proposes a series of technical, operational, and institutional arrangements that should be made to enable the framework.

The geospatial data framework should be a basic, consistent set of digital geographically referenced data and supporting services that will:

- *provide a geospatial foundation to which an organization can add detail and attach attribute information,*
- *provide a base on which an organization can accurately register and compile additional themes of data,*
- *orient and link the results of applications to the landscape.*

Given Kansas' close adherence to national guidelines, some advocate that the geospatial data framework for Kansas should closely follow the national framework model, with adjustments to fit our unique circumstances and data needs.

The Purpose and Requirements of a Geospatial Data Framework

The purpose of a geospatial data framework is to help data producers locate their information in its correct position and provide a means to integrate this information with other geographically referenced data. The design of the framework should consider the needs of the geospatial data community: federal, state, regional, local, and tribal governments; the private sector; non-governmental organizations; academia; and others.

To make the geospatial data framework widely used and widely useful, the geospatial data framework should:

- *Contain data that complies with established standards.*
- *Contain the best data available, incorporating the high resolution data collected by the geospatial data community.*
- *Contain consistently generalized, lower resolution data needed for regional, statewide, or national studies.*
- *Represent real world features and positions, not cartographic symbols and offsets.*

- *Enable users to integrate framework data and updates to these data, into their applications and still preserve their existing investment in attribute and other information.*
- *Be a reliable and dependable source of data; the technical demands for using framework data should be minimal and stable.*
- *Be available to users at the least possible cost. There should be no restrictions on the use of data obtained from the framework. Value-added products generated from framework data should be encouraged.*

The geospatial data framework should encourage many organizations to contribute to its construction and maintenance. Thus:

- *The framework should place minimal additional technical and other demands on contributors. The means of contributing data should be stable. The Framework should be able to incorporate data from many sources.*
- *The framework should accommodate the contributions of a large number of geographically distributed organizations, taking into account the different missions, goals, resources, and schedules of each.*
- *The framework should facilitate contributors' plans to provide value-added information and services for their data.*

The framework will be operated and maintained by participants who agree to provide digital geospatial data that meet various accepted geospatial data standards.

Previous Efforts for Defining a Geospatial Data Framework in Kansas

The Kansas Geospatial Data Compatibility Guidelines, ver. 2.1, published in August 1996 by the Kansas GIS Standards Task Force and adopted in November 1996 by the Kansas GIS Policy Board, describes the technical and operational context and the data characteristics of the Kansas Geospatial Data Framework. In summary, the technical and operational context of the Kansas Geospatial Data Framework is described as follows:

- *Data Environment - Access to a published version of distributed geospatial data sets by information networks and digital media should be supported by storing metadata about all framework data in a central data clearinghouse.*
- *Reference Systems - The use of a single consistent datum for referencing coordinate information should be supported.*
- *GPS Technology - Global Positioning System technology and efforts to densify the Kansas geodetic control network should be supported.*
- *Integration of Themes - Geospatial data should be integrated across various data themes.*
- *Encoding - Geospatial data should be encoded using vector or raster spatial data models as appropriate to theme and feature content.*

- *Resolution - Geospatial data at varying resolutions should be supported and, where practical and appropriate, lower resolution data sets should be produced by generalizing from higher resolution data sets.*
- *Accuracy - Accuracy of a particular data set should be appropriate for the applications for which it is being used and should be documented in the metadata.*
- *Edge Matching - Geometric seamlessness within a data theme is desirable, provided it can be achieved without compromising the positional accuracy of the geospatial data to be integrated from various sources.*
- *Feature Identification Codes - A consistent method of identifying units and features of geospatial data should be supported.*
- *Attributes - Attributes that further describe geospatial data features should be supported.*
- *Transactional Updating - Transactional updating to allow users to only process changes should be supported.*
- *Records Management - Past versions of geospatial data should be retained for historical and process studies.*
- *Metadata - Metadata detailing the characteristics and quality of the geospatial data must be provided.*

In addition to these technical guidelines, the data characteristics section of the GeoData Compatibility Guidelines describes the information content of the Kansas Geospatial Data Framework. The commonly shared and necessary data themes identified as part of the framework are:

- *Geodetic Control*
- *Cadastral Data*
- *Administrative/Governmental Boundaries*
- *Transportation*
- *Addressing*
- *Digital Orthoimagery*
- *Elevation*
- *Hydrography*
- *Infrastructure*

Geospatial Data Framework Issues to Resolve in Kansas

The current geospatial data framework in Kansas reflects an evolutionary process based on state government policy needs, federal guidelines, available funding, and areas of use that were pioneering the use of GIS. As GIS expands it purview beyond the original user base to local and private agencies, some on the planning committee believe it is necessary to explore the additional needs of this expanded user base. For example, the following data themes were proposed as part of the Kansas Geospatial Data Framework in a recent focus group: soils, public lands, Tiger-census file, oil and gas, land use, weather patterns, water rights, and social-economic characteristics. Significantly, some on the committee believe that the status quo is sufficient.