#430

Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER)

Report to
the Mississippi Legislature

A Review of County Information Systems

As technology has provided the tools for easily sharing information across geographic and political boundaries, corresponding opportunities have emerged for using the information generated to meet the accountability and access needs of state and local administrators. Taking advantage of such opportunities is limited in Mississippi because current county information systems are a mixture of varying computer operating systems, most with limited ability to meet state information needs in communication and sharing of information resources. State entities and citizens have voiced concerns over the availability and utility of information maintained by county governments.

State agency efforts to implement state/local systems have met with limited success, largely dependent on the degree to which standards were mandated and enforceable and the quality of system design. Similarly, citizen electronic access to public information maintained by the counties is limited due to availability of automated records and non-uniformity in methods of access. Currently, in order to obtain public information, a citizen or state user would have to travel to each county courthouse and try to make sense of a computer system that houses the information, or manually look up information in books.

Pressing needs exist to develop additional state-local systems to provide timely, accurate, and accessible information, which meet minimal communication/processing standards. County and state cooperation is needed to realize economies of scale in developing statewide information and telecommunications systems.

To govern such development, the Legislature should create a Statewide Task Force to be responsible for assessing needs, developing policy and standards for development, formulating funding strategies and providing advice to the Mississippi Department of Information Technology Services (ITS). ITS should be responsible for the central oversight and coordination to guide development of systems to assure user-friendly accessibility, accuracy, and utility of the information captured, and to improve the economy of local system development and implementation by developing and hosting shared information resources.

June 4, 2002

PEER: The Mississippi Legislature's Oversight Agency

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The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

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On June 4, 2002, the PEER Committee authorized release of the report entitled **A Review of County Information Systems.**

Senator William Canon, Chairman

This report does not recommend increased funding or additional staff.

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A Review of County Information Systems

Executive Summary

Citizens and state entities have voiced concerns over the availability and utility of information maintained by county governments. This information is useful to citizens and state agencies involved in the administration of programs at the local level. It is important for agencies to be able to access and share data on a timely basis. Across the state, county information systems have been characterized as lacking uniformity and consistency. Some counties do not have computer systems, while other counties are developing different systems in different offices without planning for an overall computer system. These computer systems are difficult to use without instruction and are created on a computer operating system that is not familiar to the average user.

The state lacks a unified approach to the development of county computer systems that share information with the state. This piecemeal approach has led to the development of county computer systems on different platforms or with different communications networks. This has led to uncoordinated development of many systems in the counties that collect information.

Because of the reported problems, PEER sought to determine the status and capability of county information systems currently in place, including voter registration and other data management functions; whether current systems meet state-level reporting and local citizen needs for information accessibility and accuracy; and, to determine alternatives for development of efficient and practical information systems which will ensure information uniformity, and compatibility among county and state level systems.

Surveys completed since 1998 by state entities indicate wide disparity in county system hardware and software designed to compile, process, and communicate data. Current county information systems are a mixture of varying computer operating systems and have a limited ability to meet state information needs in communication and sharing of information resources. According to the annual survey conducted by the State Tax Commission,

seventy-eight counties use midrange computers, one county uses a mainframe, and three counties use dumb terminals connected to the State Tax Commission to maintain the automated statewide motor vehicle title registration system. The Legislature mandated a study of the uniform standards for electronic filing of court documents. The Administrative Office of the Courts (AOC) determined there were no uniform standards being used in the counties and that most counties were using midrange computer systems for the maintenance of court documents. The Office of the Secretary of State determined that the software structure and record storage formats differ from vendor to vendor, making communication and exchange of data difficult. The Mississippi Association of Planning and Development Districts determined there is no coordination or collaboration in counties in the development of county information systems. They developed a proposal to create a telecommunications network throughout the state to support county government and collected information on the systems in place.

PEER Survey of Mississippi County Information Systems

Currently, in order to obtain public information, a citizen or state user would have to travel to each county courthouse and try to make sense of a computer system that houses the information, or manually look up information in books.

PEER surveyed seven counties and determined that there are different levels of access to public information. In some counties, the user can access all public information by computer. In other counties, computers can access no public information, or only limited information.

In each county, computer systems are used to manage information in various areas of county government operations. For example, some counties have voter registration information on the computer while other counties do not. Each county develops its own computer information system and chooses what information to include on these systems. The lack of uniformity in county information systems impedes the information accessibility. The user would need instruction on how to search the data.

In most county offices, instructions are not visible to help citizen users access data properly. In each county with computers available for public access, there is a search capability. However, the user may not be able to execute the search because of the difficulty of accessing the midrange computer system. The user must know the keystroke commands to access the search function for the

selection of a record. Clerks are available in most offices, if users have questions on the search capability of the computer.

Of the counties surveyed by PEER, most had standard report formats; however, to use the report format, the user needed instruction. Also, of the seventeen county offices with public access computers surveyed, only eight computers had the capability to produce printed reports. The computer systems located in the counties are midrange computers, and keystrokes must be used to print information. However, to use the printer, PEER had to ask for assistance in a few offices in order to get the printer to work. In one office, the clerks did not know how to use the printer in the public access room, and had to ask another citizen user to show PEER how to use the printer. This was not the case in the majority of offices surveyed by PEER.

PEER identified ten counties that have county government web pages, as of April 2002, linked to the www.mississippi.gov website. These ten counties are: Coahoma, Forrest, Harrison, Hinds, Jackson, Lauderdale, Madison, Neshoba, Rankin, and Wayne. The information varies from how to pay taxes online, to a listing of county phone numbers. There are eleven counties providing online payment of vehicle and/or property taxes through two different e-government vendors, and five counties that offer public information online.

Status of State Agency Efforts to Develop State/Local Information Systems and Exchange Data

Agency efforts to implement state/local systems have met with limited success, largely dependent on the degree to which standards were mandated and enforceable and the quality of system design.

State Tax Commission

State law granted authority to the State Tax Commission to set standards and withhold homestead exemption receipts if a county did not comply. This initiative succeeded due to the involvement of the Central Data Processing Authority (predecessor of the MS Department of Information Technology Services) of the state.

In implementing its Automated Tax Roll Initiative in 2001, the State Tax Commission did not develop data format standards, which led to inaccessible information submitted by the counties. The State Tax Commission in 2002 developed and issued requirements for standard data formats to all counties.

Office of the State Auditor

The Office of the State Auditor is currently specifying data exchange media and setting standardized formats for the institution of paperless audits.

Administrative Office of the Courts

The Administrative Office of the Courts began implementation of a court tracking system for civil court cases in 1998. However, the system is not being utilized in all eighty-two counties because the system design was weak due to inherent software problems that required court officers to input information separately from existing systems and methods.

Office of the Secretary of State's Voter Registration Initiative

The Office of the Secretary of State, in 1998, attempted to complete the legislative mandated statewide voter registration record; however, because of the different formats used by the counties, the Office had difficulty with the conversion of the voter registration information. The Office compiled the voter registration record in 1999, but because of untimely processing and poor data quality, the record is of questionable accuracy and usefulness. The Legislature in 2002 provided the Office with the authorization to create a statewide computer system to create a statewide voter registration record.

Lack of uniform data and reporting standards as well as the disparity in county information systems led to implementation problems and difficulty in complying with the legislative mandate of a centralized statewide voter registration record.

In 2002, legislation created a qualified voter system to correct problems that the Office of the Secretary of State had encountered by allowing the procurement, implementation, and maintenance of an electronic information processing system and programs that are capable of maintaining a central database of registered voters.

Geographic Information System (GIS) Development Initiatives

Lack of coordination, collaboration, or communication across the state for development of GIS systems is causing a disjointed and duplicated effort statewide at potentially greater costs than necessary.

GIS is a computer system capable of assembling, storing, manipulating, and displaying geographically referenced information, i.e., data identified according to their locations. There are many different uses for GIS mapping systems. These uses include regional planning, building locations, and site conditions. For example, a community can use GIS information to determine where schools are located and link detailed information on that school (i.e., level of education, number of students, neighborhoods located in the school district).

Several state agencies and local governments are involved in independent initiatives to develop geographic information systems in Mississippi. Several study committees are involved in coordinating GIS initiatives, including the Governor's Advisory Commission on Remote Sensing Technologies that was formed in May 2002. This Advisory Commission is to present recommendations to the Governor by November 2002 for the formation of a uniform clearinghouse of public remote sensing data, including a digital land base computer model of the state.

Mississippi Automated Resource Information System GIS Initiatives

Since 1986 MARIS, the Mississippi Automated Resource Information System has worked to coordinate geographic information.

The MARIS Task Force is also working on the Geospatial Information Initiative (I-Team), which is a joint project of the Office of Management and Budget, the Federal Geographic Data Committee, individual states, and others.

The I-Team Initiative calls for each state to develop an I-Plan, which is a strategic plan that evaluates the status of existing data; identifies the most effective ways to collect, process, and use the data; determines how to build a statewide spatial data infrastructure; and sets a figure on the cost.

Mississippi Statewide Scientific Information Management System (SSIMS)

The Legislature passed legislation to create a council to oversee the development of a strategic plan for scientific information management. However, this legislation will repeal on July 1, 2002.

Department of Environmental Quality GIS Initiative

The Department of Environmental Quality's 2001 legislative appropriation bill mandated that the agency develop a pilot Digital Earth Model for presentation to the

Legislature to determine if this system would be useful as a statewide application.

Local and Private Initiatives

There are many local government and private entities throughout the state developing independent systems and collecting GIS information. For example, private non-profit and for-profit vendors, including the Stennis Institute of Government, are working on development of GIS systems for counties.

MISS. CODE ANN. Section 25-58-1 grants approval authority to Mississippi Department of Information Technology Services for all local government geographic information system plans.

Few Models are Available for Structuring State/Local Information Systems

Currently, no state has coordinated or developed standards for state/local information systems to expedite access to county data. However, many states are working on the development of e-government, voter registration systems, and online court records access. These systems include standards that must be followed by local government entities.

Michigan : State Funded and Supported Voter Registration System

Michigan instituted a Qualified Voter File in 1995 for implementation in 1997. Only election officials can access this file for the proper maintenance and service needed on the file of electors.

Texas : State Coordinated Web Development

The TexasOnline Authority is the controlling body of the Texas e-government initiative. The Authority has local, state, and business representation developing a one-stop approach to Texas government.

Iowa : State Supported Online Court Records

Iowa developed an Online Court record system that allows the user to access court disposition information through the Internet.

Recommendations to Address Concerns and Key Issues

Pressing needs exist to develop additional state-local systems to provide timely, accurate, and accessible information, which meet minimal communication/processing standards. County and state cooperation is needed to realize economies of scale in developing statewide information and telecommunications systems.

Governing development and setting minimum standards for the creation and operation are important to the state because of the current duplication of effort that is occurring statewide on many different projects. To successfully implement such systems, several key issues of primary concern should be addressed by an assessment by a task force to determine:

- centralized oversight and coordination of the system; and,
- responsibility for developing policies and standards.

Centralized Oversight Over State/Local Information System Development

The Mississippi Department of Information Technology Services should be used for the central oversight and coordination needed in order to guide development/evolution of systems and assure accessibility (user-friendliness), accuracy, utility of the information captured, and to improve the economy of local system development and implementation by developing and hosting shared information resources.

Executive and Legislative Sponsorship

In order for the state to be successful in the implementation of a state/local information system, there should be strong sponsorship by all parties.

One of the major components of successful initiatives is strong sponsorship by executive levels. As major stakeholders in the success of state/local information systems, executive officials and legislators within state and county government must have interest and leadership in this area. This could be realized by forming a standing sub-committee of the Electronic Government Oversight Committee, created in 2001, to focus on county e-government implementation.

Creation of Statewide Task Force to Govern Development

The Legislature should create a Statewide Task Force to be responsible for policy development and for providing advice to the Mississippi Department of Information Technology Services (ITS).

The Department should be vested with authority and responsibility over the development, administration, and coordination of all state/local information systems. The Statewide Task Force should develop recommendations and plan for the implementation of all state/local information systems in accordance with Task Force policy and standards. The Department should provide staff support to the Statewide Task Force.

The Department of Information Technology Services should be vested with the authority to carry out all recommendations and plans as developed by the Task Force. All state agencies that are creating state/local information systems should be required to work with the Task Force in the development of the system and utilize the expertise located within the Mississippi Department of Information Technology Services.

The information system plan should include all relevant parts of public access information to the citizen and the state user, including county public access records, voter registration, and geographic information systems. Currently, in order to obtain information a citizen or state user would have to travel to each county courthouse and decipher a computer system or manual books to obtain public information. The new system would provide information in a standard format across all eighty-two counties and be developed by the state users as well as the county clerks who collect this information.

The Task Force should include the agencies that are represented in the state/local information systems, including but not limited to the Administrative Office of the Courts, Office of the Secretary of State, State Tax Commission, Office of the State Auditor, Information Technology Services, Department of Environmental Quality, and MARIS. It also should have representation from local governments, and include representatives from county government such as designates from the Chancery Clerks Association, Circuit Clerks Association, Assessor and Collectors Association, and the Mississippi Association of Supervisors. Also, there should be two non-voting legislative representatives to serve in an advisory capacity to the Task Force.

Assessment of Processing and Communications Needs at the Local and State Levels

In order to accurately gauge needs, it is necessary to assign responsibility to the Task Force to assess current capabilities and future development of state and local entities.

The Task Force should conduct a needs assessment in order to determine the direction and focus of the system design and development efforts. This assessment should encompass state, local, and user needs. This report should be presented to the Mississippi Department of Information Technology Services for implementation of a statewide coordinated state/local information system initiative. Areas that should be considered are:

- telecommunication coordination;
- organization alternatives;
- funding alternatives;
- identification of potential areas of development;
- comparisons of agency and local agency initiatives to avoid duplication;
- identification of ways to minimize costs; and,
- development of polices and standards for the system.

Potential Areas of Development

The Task Force should survey users of state and local information systems to determine what areas should be included in a state/local information system.

The Task Force should determine what areas users feel should be included in the state/local information system. The users of the system, both local and state, should determine the potential areas of the development of this system. For example, users should be surveyed to determine their preferences for paying car tags, or looking up public information, or having geographic information available as an important function of the county or state. These potential development areas should be determined by the user, but could include geographic information systems, voter registration systems, and county court records. The Task Force should take into account federal standards that must be met, but it is important to involve the user to determine the development of a state/local information system.

State and Local Agency Comparison

The Task Force should determine where current information systems are being duplicated in county and state systems, as well as determine the plans of local government information systems.

Currently, state and local governments have implemented many different computer systems. At times these systems

overlap. For example, the Administrative Office of the Courts (AOC) court tracking system was developed to meet certain requirements for the AOC. However, many counties had developed their own reporting system, and must now change their methods to adhere to AOC requirements. Another example is geographic information systems. Currently, there are many state agencies working to develop systems for their own needs, which encompass county data. These systems could be merged to have geographic information for the state that meets the needs of both county and state government without the duplication of effort.

Minimize Cost of Development

In order to show how a state/local information system will benefit the state, the Task Force should show how its development would save the state money.

The Task Force should identify ways to minimize the cost of the separate development of information systems by utilizing a universal information system that meets the information needs of the state and local governments. The Task Force should determine if economies of scale will work to accomplish a statewide information system rather than having independent development without coordination occur in the state at all levels of government.

Telecommunication Coordination

The Task Force should focus resources on development of a standard telecommunication network, in order for counties and state entities to efficiently communicate information and reduce unnecessary costs.

One area that should be considered is a standardized telecommunication network for the counties. For example, many counties are using various Internet Service Providers in different county offices, rather than having a central Internet connection for the county. According to a study conducted by the Planning and Development Districts in 2000, Lee County had twelve Internet Service Providers.

If the counties were offered the opportunity to participate in a statewide telecommunications infrastructure similar to the statewide system developed by ITS for state agencies and universities, economies of scale could be realized. The state could develop a system that would meet the needs of an integrated statewide county information system.

Organization Alternatives

The Task Force should determine how to organize a state/local information system for the state.

Another area that should be determined is how the state will organize and develop a state/local information system. Therefore the Task Force should investigate and recommend organizational structures for the implementation of a successful state/local information system. Some methods that should be investigated include outsourced development, state development, or partnership development.

Outsource

Outsource all or a portion of the development of state/local information system services. A vendor would provide all or a portion of the hardware, software, services, technical expertise, and oversight.

State

Allow the Mississippi Department of Information Technology Services to be responsible for the development and maintenance of the state/local information system hardware, software, technical expertise, and oversight.

Partnership

Develop a request for proposals that would be issued for a vendor with state/local information system development and operations expertise. The vendor would be under contract for a period of time to the leadership group or State, to assist in the development of a state/local information system infrastructure and application development model.

Funding Alternatives

In order for a state/local information system initiative to be successful, the Task Force should develop funding strategies.

An important aspect of the Task Force will be to determine funding alternatives for a state/local information system. This could include coordination of monies currently being spent in different areas in order to complete the goal of development of a successful state/local information system. The Task Force should also investigate and recommend funding alternatives, such as appropriation funding or charging back to the user.

Appropriation

The Legislature would provide through direct appropriation, the funds to develop and implement a state/local information system. This could be carried out in many ways, including specific initiatives for purchasing hardware, software, and communication systems; allowing grants to be given for supplementing development costs; or providing tax incentives to the county and vendor in order to encourage participation from the counties.

Charge Back

The developer of the system, either the state or vendor, could bill the county or state agency for use of the system to recover the costs expended to develop the system.

Coordinate Geographic Information System (GIS) Development

Statewide GIS Development

Since there is a duplication of effort by many different agencies regarding the development of geographic information systems, the Legislature should pass a resolution supporting the work of MARIS with regard to the Geospatial Initiative, and clearly define its responsibilities in developing geographic information systems statewide.

Currently, there are many different state and local entities developing geographic information system data. Therefore the Legislature should clarify which is the guiding force behind geographic information system development. According to the MISS. CODE ANN. Section 57-23-13, the Mississippi Automated Resource Information System (MARIS) is vested with the authority to utilize the resources of Mississippi by making usable resource data and information more readily available and in a format that is consistent throughout state departments, agencies and institutions, and federal and privately generated resource data banks. In order to accomplish this, MARIS should receive all support necessary to achieve this goal, and should be the state data warehouse and facilitator for all geographic information systems, including county and local information. This geographic information should be up-to-date and include the latest geographic information available.

Local Government GIS Development

All local governments should submit GIS plans, bids, and proposals to the Mississippi Department of Information Technology Services for approval and evaluation, in accordance with MISS. CODE ANN. Section 25-58-1(4).

Development and Implementation of Policies and Standards

The Task Force should develop universal policies and standards for the implementation of a state/local information system. The Mississippi Department of Information Technology Services should ensure these policies and standards are followed by all counties and state agencies.

Implement Electronic Record Retention Standards

Each county should be required to retain records in the same standard format.

Currently, public information maintained by counties is not uniform. For example, the vendors of many county information systems have developed formats for the data stored in the system. This has caused the problem the Office of the Secretary of State has had with trying to reconcile voter registration records. While the Office of the Secretary of State may have this problem corrected by the passing of legislation in 2002, there are other areas that should be addressed. For example, there could be a universal format in all counties for the input of a name: first name, middle name, and last name; or a universal format for land records so that each county would have the same information in one format. This would ensure that duplication is not occurring in other areas.

Control Development of Basic Web Services

With the proliferation of personal computers and Internet connectivity, the Task Force should determine if counties should develop web pages and links to public information.

The Task Force should determine if offering electronic government links to public information is necessary. This should include what information all counties should include on their web pages as well as what standards would be needed for the development of these web-based systems.

The Task Force should determine if counties should have a basic web page with county information to include: directory of elected officials, office information, addresses and phone numbers, as well as a link to an online database to include access to public information. This public information could include but is not limited to the following: General Index, Land Rolls, Judgment Roll, Estimated Tax Roll, Index to Federal Tax Liens, General Docket, Civil Docket, and the Criminal Docket.

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A Review of County Information Systems

Introduction

Authority

Pursuant to the authority granted by MISS. CODE ANN. Section 5-3-57 et seq. (1972) the PEER Committee authorized a compliance and efficiency review of the electronic information systems counties have adopted for maintaining public information such as county voter rolls. These information systems are the computers that house public information including judgment rolls and land records, as well as information shared with state agencies, including State Tax Commission vehicle tag and title registration and the Administrative Office of the Courts court records.

Problem Statement

As individual citizens have become increasingly aware of the potential value of well-designed electronic data systems in meeting their information needs, there has been a corresponding increase in the call for easy access to public information at all levels of government. Likewise, as technology has provided the tools for easily sharing information across geographic and political boundaries, corresponding opportunities have emerged for using the information generated to meet the accountability and access needs of state and local administrators. It is within this framework that the PEER Committee authorized a review of concerns regarding the availability and utility of information maintained by county governments.

The complaints received by PEER characterize county information systems as lacking uniformity and consistency. Some counties do not have computer systems at all. Others are developing systems unique to their various offices without planning for needs that extend beyond county boundaries, limiting the ability to compile regional and statewide information. According to complainants, the resulting computer systems are often

difficult to use without specific instruction and are created on computer operating systems and with user interfaces that are not familiar to the average user. In addition, and perhaps most critical to state level information needs, the various county based systems are not storing similar data in standardized formats.

PEER offers two scenarios by way of example to illustrate these basic concerns. In scenario one, suppose a citizen enters a courthouse to search property records. The citizen is directed to a computer where he/she sees a screen with the following menu of options for searching computer records:

1. Landroll Inquiry
4. Mobile Home Inquiry
5. Day Book Inquiry
6. Landroll Receipts Inquiry

The citizen does not have printed instructions or instructions on the screen as how to proceed with a "Landroll Inquiry". Attempts to enter "1" are unsuccessful, because other special keys unfamiliar to the citizen are designated for this purpose. Once the citizen asks for instruction or comes to a conclusion on his or her own as to how to activate the search, the citizen is presented with a new screen to enter the following information:

1. Parcel Number
2. Name
3. New Parcel Number
4. Property Address
5. PPIN
6. Tax District

If the citizen then wanted to look up the name "Smith," he or she would have to know intuitively to use the TAB key to get to the second line and enter "Smith" in the proper field. Attempts to search by NAME could be further complicated because the citizen would have to know to depress a special key to select option "2" and execute the search. Again, there are no instructions on the screen as to the sequential steps in searching, nor is the screen user-friendly to the extent that instructions are not required. In most cases, the citizen has now invested significant time in learning how to use the computer and has yet to retrieve the information sought.

Retrieving records across counties is further complicated because systems vary in design or how special keys are defined from county to county. In one county, information must be entered into all open fields; while in another, attempts to enter information in all open fields may be fruitless because the system will accept only one field at a time. In addition, in the second county the citizen must know to use an "*" after the NAME in order to

execute the search. Again, although clerks are available to assist with such problems in most offices, they may be unfamiliar with all aspects of computer operation. Likewise, written instructions may be cryptic and difficult to understand for the novice user. A primary stakeholder, in this case a citizen, is frustrated in his or her efforts to obtain public information.

In scenario two, the state's interest is to compile information from all counties to meet certain state-level accountability or planning needs. The most obvious example is voter registration information. Under the current fragmented system there is no way, without expensive and time consuming programming, to accomplish common state voter information goals of compiling a statewide voter registration list of all qualified voters. For example, in county "A" the name, John A. Brown, Jr., may be stored in four separate fields of last name, first name, middle initial, and suffix. County "B" may store this same information in only two fields, for example first name: John A.; last name: Brown, Jr. Therefore, if the state tries to compile a voter registration list, John A. Brown, Jr.'s last name would be "Brown" in county "A" and "Brown, Jr." in county "B". The state would be unable to note the duplicate registration because the last name fields are not equal. Additional identifying information such as social security numbers may contain erroneous data or be absent from the record.

This example demonstrates how the state's interests are not met by disparate county systems. This piecemeal approach leads to the development of county computer systems on incompatible platforms or with different communications networks. The result is the uncoordinated development of many systems in the counties that compile and distribute information within a narrowly restricted framework.

Scope and Purpose

Because of the reported problems, PEER sought to determine the status and capability of county information systems currently in place, including voter registration and other data management functions; whether current systems meet state-level reporting and local citizen needs for information accessibility and accuracy; and, to determine alternatives for development of efficient and practical information systems which will ensure information uniformity, and compatibility among county and state level systems.

Method

To assess the condition and the degree of the problems, PEER:

- surveyed recent studies of information systems conducted by other state entities;
- conducted an on-site survey of a limited number of counties to determine the systems being utilized and their ease of use; and,
- examined state agency efforts to develop state/local systems and exchange data.

To address the problems identified, PEER developed alternatives for structuring a system of oversight to govern development by:

- researching models in other states; and
- compiling a list of alternatives based on PEER research and literature review.

Recent State Entities Surveys Regarding Hardware and Software in Use in the Counties

Surveys completed since 1998 by state entities indicate wide disparity in county system hardware and software designed to compile, process, and communicate data. Current county information systems are a mixture of varying computer operating systems and have a limited ability to meet state information needs in communication and sharing of information resources.

Counties use information systems to compile and process data to track tax collections, motor vehicle titles, court case dispositions, voter registration, and other county computer processing needs. Based on interviews and county surveys conducted by various governmental entities, county information systems are currently a diverse collection of systems. According to information collected by the Office of the Secretary of State, voter registration across the state is varied with regard to the data collected, as well as the format in which the data is stored.

A midrange computer acts as a server that stores data files. An example is the IBM AS400.

Most county computer systems are developed using a midrange computer system. The midrange computer acts as a server, which is a computer that stores the programs and data files shared by all users on the network. The user accesses the server through a terminal or terminal emulator, consisting of a keyboard and monitor, connected to the midrange computer. Data is entered using the keyboard. Output data and any instructions are displayed on the monitor. All data processing is completed on the midrange computer. The user must know what key combinations to use to access information. The midrange computer system is a viable system for processing information. However, the average user is not familiar with midrange computers and may have difficulty accessing information without assistance.

A PC (personal computer) is a standalone computer that allows the user to process information.

The average user is more familiar with a microcomputer or PC (personal computer) system. The microcomputer contains a processor and memory, which allows the user to process information on the individual unit. Due to the nature of the programming, PC's may be easier to use because most programs have a graphical user interface. Conversely, most programs on midrange computers have a more complex user interface that requires more user interaction and knowledge. Most individuals are familiar with PC's due to exposure to the computer system at home or work. An individual can sit down at a PC and use a mouse and keyboard to access menus and programs and process information. Unlike the midrange computer, the

user can access information without extensive knowledge or experience with the software.

State Tax Commission

According to the annual survey conducted by the State Tax Commission, seventy-eight counties use midrange computers, one county uses a mainframe, and three counties use dumb terminals connected to the State Tax Commission to maintain the automated statewide motor vehicle title registration system.

In 1980, the Legislature authorized the State Tax Commission to implement an automated statewide motor vehicle title registration system [MISS CODE ANN. Section 63-21-18]. The legislation authorized the State Tax Commission to provide computer terminals and printers so that county personnel could link to a central database and maintain one uniform dataset of registered motor vehicles in the state. (See discussion on page 18.) The State Tax Commission conducts an annual survey to update the list of computers and vendors utilized by counties.

In 2001, seventy-eight county tax offices were using midrange computers with the same two vendors maintaining the system in most of the counties. However, these midrange computers vary in age, model number and operating systems. There is one county using a mainframe system, and three counties connected to the State Tax Commission directly through dumb terminals.

Administrative Office of the Courts (AOC)

The Legislature mandated a study of the uniform standards for electronic filing of court documents. The AOC determined there were no uniform standards being used in the counties and that most counties were using midrange computer systems for the maintenance of court documents.

In 1997, the Mississippi Legislature mandated a comprehensive study of uniform standards, rules, and regulations for electronic filing in the courts and certain county offices [MISS. CODE ANN. Section 9-21-51]. This study was to examine the various court systems and the county offices to determine the types of computer software and hardware being used by courts and county offices, to store records electronically.

The Administrative Office of the Courts was to identify and promulgate standards, rules, and regulations for computer and/or electronic filing and storage of all court records and court-related records maintained throughout the state in courts and in county offices. According to MISS. CODE ANN. Section 9-21-51(1), these standards,

rules, and regulations are to be adopted by the Supreme Court on or before July 1, 1998.

Survey Responses

The AOC determined, from the surveys returned, that the majority of the county court offices are using midrange computer systems to record court documents; however, the AOC recommends a PC based system to implement a court record storage system.

In conducting the mandated study, the AOC surveyed court offices to determine what types of systems were being used.

The responses to the survey by the different court offices were not complete. Within the Chancery Court information collected, only thirty-six offices identified the type of computer systems that were being used. The majority of the systems being used were midrange computer systems. There are two main vendors being used by the Chancery Courts for hardware and software needs. Of fifty-four Circuit Clerk offices responding, thirty-eight were using one brand of midrange computer systems with the others using PC based systems and other brands of midrange computers. There are three main vendors within the Circuit Clerk offices being utilized for hardware and software needs.

While a majority are utilizing midrange computer systems, the Administrative Office of the Courts recommended implementation be achieved through, "a PC based system for courts that are ready to migrate to a less expensive client server system. Courts with large scale AS400 or UNIX [midrange computer brands] based systems could use the Microsoft server [centralized system with a host server controlling the terminals] to connect existing databases to the new system." The report did contain cost estimates; however, the costs depend on the type of systems that are currently in place, the amount of storage capacity on the computers and many other factors that must be included.

Study Findings and Recommendations

The AOC determined there are no standard formats being used for court document storage. They recommended standards be developed for court records.

The 1998 AOC study found that:

- clerk's offices are burdened by an exceptionally high rate of repetitive and manually performed tasks;
- large volumes of paper documents, required to be maintained in perpetuity, are taxing the physical storage limits of many clerks and county offices;

- there is no integrated or consistent method of electronic document or database management from county to county;
- current non-electronic document storage systems impede the ability to search and retrieve documents and data; and,
- there presently is little or no redundancy or backup for critical and irreplaceable paper documents or record in county offices.

The study recommended that the Administrative Office of the Courts should adopt and encourage the use of standards, rules, and regulations for electronic filing, storage, retrieval, and use of court documents and certain non-court documents in clerks' offices and certain county offices throughout the State.

Currently, the Administrative Office of the Courts has not implemented any recommendations from this report. According to the Director, the office is working with the Circuit Clerks Association and the Chancery Clerks Association in order to work on an implementation plan for recommended standards, rules, and regulations.

Office of the Secretary of State

The Office of the Secretary of State determined that the software structure and record storage formats differ from vendor to vendor, making communication and exchange of data difficult.

The Office of the Secretary of State gathered information to determine the compatibility of county systems in place.

The Secretary of State was required by MISS. CODE ANN. Section 23-15-139 to maintain a statewide voter registration record listing all qualified electors of the state by July 1, 1998. The Secretary is also required to receive the list of electors from counties and cross-reference them to identify the names of the deceased and voters who are registered in more than one county. In order to develop an implementation plan and complete this task, the Office of the Secretary of State gathered information from the counties to determine how to structure the system in order to meet the mandate. The Office of the Secretary of State, through the collection of this information, determined that sixty-one counties are using one brand of midrange computer to collect voter registration information. While there are a large number of midrange computers in the state, these systems are up to twenty years old, and include various models, operating systems, and transferable media types. There is also no standard file format within voter registration software; therefore each county's format may not be compatible with the next. These sixty-one counties use two main vendors. Of the

remaining twenty-one counties, the computers being used are other brands of midrange computers with most counties developing voter registration database information using in-house personnel.

There are no standard formats or software being used in Mississippi.

This survey led to a November 2001 report regarding recommendations to implement a statewide voter registration system. (See discussion on page 23.)

Planning and Development District (PDD)

The Mississippi Association of Planning and Development Districts determined there is no coordination or collaboration in counties in the development of county information systems. They developed a proposal to create a telecommunications network throughout the state to support county government and collected information on the systems in place.

The Mississippi Association of Planning and Development District (MAPDD) in 1999 developed a proposal to advance a telecommunications network resource throughout the state in order to support the continued economic development of the ten Planning and Development Districts. This network resource would facilitate communication of information between the ten Planning and Development Districts (PDDs) and county governments. However, for this report only sixty counties responded to the survey from the MAPDD; therefore, some of the information is incomplete.

Seven of the ten PDDs returned completed surveys. The surveys found that most counties use midrange computer servers; however, these computers range in age, model, and operating systems. Some counties are utilizing PC systems for word processing functions. Of the counties that are using midrange computer systems, two vendors are being utilized for hardware and software in the counties. The survey also found that most counties do not host web pages, and few offer email or Internet access to county offices. Other information collected through this survey includes the number of Internet Service Providers (ISPs) being used in counties at the time of the survey. According to information provided in the report, instead of having a central ISP in the county, many county offices are utilizing a separate ISP in each office. For example, Lee County was using twelve different ISP's while Hinds County was using twenty-two different ISP's.

The report also provided funding possibilities as well as alternatives for the development of a network to connect the counties with the PDD's. These alternatives include:

- utilization of local Internet Service Providers to connect the PDD's;
- utilization of Local Area Network and Internet Service Providers to connect the PDD's;
- utilization of independently-contracted Bellsouth leased lines (no use of the state backbone) to connect the PDD's;
- utilization of the state backbone without the option of providing interactive video to connect the PDD's; and,
- utilization of the state backbone with the option of providing interactive video to connect the PDD's.

The MAPDD recommended utilization of the state backbone without the option of providing interactive video to connect the PDD's. While this recommendation was selected, there has been no implementation of any part of this report.

PEER Survey of Mississippi County Information Systems

PEER surveyed seven counties and determined that there are different levels of access to public information. In some counties, the user can access all public information by computer. In other counties, computers can access no public information, or only limited information.

Because of reported problems, PEER sought to independently assess conditions in seven selected counties and determine the computer systems and information available for public access.

Mississippi County Survey Criteria

PEER developed criteria in order to survey seven county computer information systems.

PEER conducted a limited survey of seven Mississippi counties in order to determine what types of computer systems are being used as well as what information is available for public access on the computers. In order to determine the capability of each county computer system and whether information is accessible to users, PEER developed a list of system expectations (Exhibit 1, below), which was used to determine the status of county information systems in the state. These are elements PEER determined to be important to the consistency of computer systems in the state. These elements were used to develop the instrument used to collect information on the county information systems.

Exhibit 1: County Information System Criteria

Data Availability · Do counties use same basic fields statewide?
Data Organization · Do the counties define the fields in the same way? · Are fields structured consistently within the county?
Data Processing · Is search capability uniform?
Data Reporting Capability · Is there a standard report format statewide? · Are there custom report formats available? · Is there the capability to print?

SOURCE: PEER analysis.

Status of Mississippi County Information Systems

Currently, in order to obtain public information, a citizen or state user would have to travel to each county courthouse and try to make sense of a computer system that houses the information, or manually look up information in books.

In each county, computer systems are used to manage information in various areas of county government operations. For example, some counties have voter registration information on the computer while other counties do not. PEER used the criteria discussed (see Exhibit 1, page 11) to conduct a limited survey of seven Mississippi counties.

Availability and Organization of Public Information on Computers

Each county develops its own computer information system and chooses what information to include on these systems.

Each county develops its own system and therefore determines what that county will have available for public access. Therefore, there is no uniform list of information that should be available to citizens. Also, counties may have the same type of midrange computer system, but to access the information the user must know the individual keystroke commands for that county computer system.

For example, in Rankin County the computer in one office is a PC serving as a midrange terminal. In order to access the files, one must know what keystrokes are needed in order to execute a search as well as to exit databases. There are also many counties that do not have any information on computers, or just one office with public access computers. It is important to note that each office was developed independently and therefore contains different databases of information on the computers. For example, PEER was able to access voter registration records in five of the seven counties surveyed. In the other two counties, one did not have computers and the other did not have the system filtered for public access. For example, the system listed social security numbers, which are confidential.

For detailed information on the counties surveyed by PEER and the public access computer systems, see Appendix, page 42.

Counties do not have the same information available on public information computer systems; therefore, the data fields, formats, and information available are not consistent statewide.

The computer systems located in each county surveyed by PEER are structured differently. The counties do not have the same information available on public information computer systems statewide. Each county determines what information will be made available and in what format for public access. Therefore, data fields, formats, and information available are not consistent statewide. For example, in Rankin County, PEER was able to access the same information in three county offices. This information is listed in Exhibit 2, below.

Exhibit 2: Information Located on Rankin County Public Information Computers

Land Roll Inquiry	Circuit Clerk Judgment Roll
Assessor Subdivision	Land Roll Receipt Inquiry (current)
Homestead Exemption Inquiry	Appraisal Inquiry
Land Redemption Display	Solid Waste Billing Inquiry
Personal Property Inquiry	Chancery Court master Inquiry
Land Roll and Property Roll Receipt Inquiry	Marriage License Inquiry
Federal Tax Liens	Voter Registration Inquiry
County Map Street Index	MSAG File Inquiry
Chancery Land Record Index Inquiry	Circuit Court Inquiry
Mobile Home Inquiry	911 Addressing File Inquiry
Chancery UCC Name Inquiry	Justice Court Affidavit Inquiry
Privilege License Inquiry	Chancery Old Index File Inquiry

SOURCE: Rankin County Computer System information.

In other counties surveyed, voter registration and land receipt information were not available for public access. This information can be useful for the average user in order to determine when taxes on land are due as well as the value of the land.

Data Processing/Search Capability

The lack of uniformity in county information systems impedes the information accessibility. The user would need instruction on how to search the data.

In most county offices, instructions were not visible to help citizen users access data properly. In each county with computers available for public access, there was a search capability. However, the user may not be able to execute the search because of the level of difficulty to access the midrange computer system. The user would have to know the keystroke commands in order to access the search function for the selection of a record. Clerks

were available in most offices, if PEER had questions on the search capability of the computer.

Data Reporting Capability

In order to access reporting functions of the county information systems surveyed by PEER, the user would need instruction.

In the counties surveyed by PEER, most had standard report formats. However, to use the report format, the user would need instruction. Also, of the seventeen county offices with public access computers surveyed, only eight computers had the capability to produce printed reports. The computer systems located in the counties are midrange computers, and keystrokes must be used to print information. However, in order to use the printer, PEER had to ask for assistance in a few offices to get the printer to work. In one office, the clerks did not know how to use the printer in the public access room, and had to ask another citizen user to show PEER how to use the printer. This was not the case in the majority of offices surveyed by PEER.

Independent Development Concerns

Because of independent development, many counties have different formats for the same information, causing difficulty to compile complete data.

According to the Office of the Secretary of State, many counties are using different formats in the storage of data in the voter registration databases. For example, in one county the voter may be listed with first, middle, and last name, while in another county the voter is listed just as a name. These two different lists could not be merged because the names would not be compatible. The Office of the Secretary of State provides another example of independent development that would cause some concern. One vendor has used different formats for voter registration in half of the counties it currently serves. Therefore, two counties may have the same vendor hardware and software, but the format of the information is different in the two counties. This causes difficulty in compiling a statewide voter registration list.

Status of State/Local E-Government Initiatives

The State of Mississippi and a few Mississippi counties have developed e-government initiatives online, which allow for payment of county taxes and renewal of car tags. Some counties have also developed online links to public information, including land rolls and judgment rolls.

PEER identified ten counties in April 2002 that have county government web pages linked to the www.mississippi.gov website. These ten counties are: Coahoma, Forrest, Harrison, Hinds, Jackson, Lauderdale, Madison, Neshoba, Rankin, and Wayne. The information varies from how to pay taxes online to a listing of county phone numbers. However, there are eleven counties that are providing online payment of vehicle and/or property taxes through two different e-government vendors.

Mississippi Web Portal

The State of Mississippi offers e-government services online.

The Mississippi Department of Information Technology (ITS) has developed the www.mississippi.gov portal. ITS is constantly upgrading the site to incorporate new information. As of April 2002, many different e-government services are available including:

- Architecture Professional License Renewal On-Line;
- Birth, Death, and Marriage Certificate Copies (Order and pay online);
- Deferred Compensation Online Account Access;
- Deferred Compensation Program Enrollment;
- Landscape Architecture Professional License Renewal On-Line; and,
- Online Boating Registration Renewal.

Another important link located on the website includes links to all available local government websites, as well as listings for some cities within the counties.

In the 2002 legislative session, the Legislature passed House Concurrent Resolution 103 in order to recognize the official website for the state (www.mississippi.gov), and to express the intent of the Legislature that state agencies reduce their costs and improve their services through e-government, by using the state enterprise infrastructure for e-government applications. The resolution also directed coordination of these e-government services through ITS. The Legislature, in this resolution, also encourages state agencies to collaborate with local government entities in the development of e-government activities.

Property Tax and Vehicle Registration Payments

There are eleven counties that offer e-government payment of taxes online.

As of April 2002, eleven counties offer some form of e-government payment of taxes online. A citizen of the county can use the Internet to pay their property tax or their vehicle registration online through a website that is set up by a vendor for a fee. The vendor charges the citizen a "convenience" fee and uses this fee for the maintenance of the service. These fees are $2.50 per transaction. The counties offering services are listed in Exhibit 3, below.

Exhibit 3: County Services Offered by E-Government

	Online Services	
County	**Property Tax**	**Vehicle Registration**
DeSoto		X
Hancock	X	X
Harrison	X	
Hinds	X	X
Jackson	X	X
Lafayette		X
Lauderdale		X
Lee		X
Madison	X	X
Pearl River		X
Rankin	X	X

SOURCE: PEER analysis of county web pages.

Public Information Online

There are five counties that provide public information links online.

Of the ten counties identified by PEER in April 2002 as providing web pages to citizens, five have links to public information databases. These five counties include: Harrison, Hinds, Jackson, Madison, and Rankin. (See Exhibit 4, below.) For example, Rankin County provides the 2001 Land Roll database. A citizen can use this database to look up their property, get a parcel number, and then use the parcel number to look up a GIS map online for boundary limits of their property. Hinds County provides many different databases including the Land Roll, Judgment Roll, and Estimated Taxes for Hinds County residents. Other counties provide some tax information. Jackson County is currently developing the Chancery and Circuit Court dockets online.

Exhibit 4: County Web Pages and Public Information Links

County	Web page	Public Information Link
Coahoma	X	
Forrest	X	
Harrison	X	X
Hinds	X	X
Jackson	X	X
Lauderdale	X	
Madison	X	X
Neshoba	X	
Rankin	X	X
Wayne	X	

SOURCE: PEER analysis of county web pages.

Status of State Agency Efforts to Develop State/Local Information Systems and Exchange Data

Agency efforts to implement state/local systems have met with limited success, largely dependent on the degree to which standards were mandated and enforceable and the quality of system design.

Early Initiative to Implement State/Local Systems

State Tax Commission Vehicle Tag and Title Collection System

State law granted authority to the State Tax Commission to set standards and withhold homestead exemption receipts if a county did not comply. This initiative succeeded due to the involvement of the Central Data Processing Authority (predecessor of the Mississippi Department of Information Technology Services) of the state.

The State Tax Commission and CDPA worked in conjunction to develop standards and penalties for the vehicle tag and title registration system.

The State Tax Commission developed and implemented the tag and title tax collection system through MISS. CODE ANN. Section 63-21-18. In 1980 the Legislature authorized the Bureau of Telecommunications of the Central Data Processing Authority (CDPA, now known as Mississippi Department of Information Technology Services, ITS) to design an automated statewide motor vehicle registration system. The system was to be automated in conjunction with the State Tax Commission's computer tag and title registration file:

> *The CDPA shall provide equipment, training, methodology, and procedure for the implementation, operation and maintenance of the automated statewide motor vehicle registration system by the State Tax Commission.*

The computer terminals and printers were provided to the county tax offices as allowed by CDPA. The county tax collectors were required to participate in the motor vehicle registration system in accordance with rules and regulations developed by the State Tax Commission. If counties had an existing computer system, the county could elect to use their current system as long as the system met all the requirements outlined by the State Tax Commission. If the county fails to establish the title registration system either through the state provided system or the existing county system, the State Tax Commission is authorized to withhold the county's homestead exemption reimbursement monies, except for

school districts and municipalities, until the county complies.

Currently, the tag and title registration system has been implemented statewide. According to State Tax Commission information seventy-eight counties utilize outside vendors to implement the registration system that is connected to the State Tax Commission. While ITS maintains the dedicated telecommunications access to the tax collectors' offices statewide, this system is funded by the Commission. These lines are used only for the transmission of tax registration information to the State Tax Commission.

Recent Initiatives to Implement State/Local Systems

State Tax Commission Automated Tax Roll Initiative

In implementing its Automated Tax Roll Initiative in 2001, the State Tax Commission did not develop data format standards, which led to inaccessible information submitted by the counties. The State Tax Commission in 2002 developed and issued requirements for standard data formats to all counties.

In 2001, the Legislature amended MISS. CODE ANN. Section 27-33-11, to allow the State Tax Commission to receive the supplemental tax rolls on electronic media as prescribed by the Commission. The Commission developed and distributed the technical requirements for county property rolls, county real property rolls, county homestead, and municipal supplement rolls to be submitted on compact disk (CD). However, the Commission did not set standards to require a uniform format for the data. Therefore, there have been irregularities with the data submitted by counties on the CD's. The homestead exemption information is the most widely reported to the State Tax Commission on CD. The Commission has found numerous problems with the uniformity and consistency of the information and data contained on the CD's that are being sent to the Commission.

Since there was no uniformity and consistency in the data being sent to the Commission, the Commission in 2002 worked with the vendors to develop standard formats for the submission of tax roll data. The State Tax Commission now requires that certain fields be included in the data sent. This includes field names, such as parcel number, and values, as well as format length and in what column numbers the information should be located. In order to comply with the State Tax Commission data needs, counties may use any software they want, as long as the

information is in the report format (data format) prescribed by the Commission. MISS. CODE ANN. Section 27-33-35 requires the clerk of the Board of Supervisors to file the tax roll as prescribed by the Commission. Under its general authority, in this section, to promulgate rules and regulations, the Commission is requiring the counties to submit data in a standard format. If counties do not comply, the Commission can withhold reimbursement payments to the counties.

Office of the State Auditor Automated Audit Initiative

The Office of the State Auditor is currently specifying data exchange media and setting standardized formats for the institution of paperless audits.

The Office of the State Auditor (OSA) is working to institute a paperless audit. A paperless audit is an audit in which workpapers are prepared, reviewed, and sorted electronically (computerized). According to the Office of the State Auditor, the goal is to eliminate paper, and make the review and transfer of workpapers occur over the Internet and speed the work of the audit team, as well as to cut down on travel of the team. The Performance Audit Division of the Office of the State Auditor, in April 2001, created an inter-office report, which presented options for the implementation of the paperless audit.

There were many issues to consider with regard to the development of the system. These include: consistent application of workpapers, security issues relating to review and approval of work, transferring information to the final report, transferring information from the county's computer to an auditor's working file, and transferring information from the county's computer via the Internet. Each of these issues has been resolved. For example, in order for the county audit team to download information from the county computer to the audit computer, the OSA allows the county to save the information to compact disk (CD). Also, the Office of the State Auditor created a standardized work paper format for use in a limited number of 2001 audits. Continued development and feedback is being used for the full implementation of standardized work papers for 2002 county audits.

Currently, the Office of the State Auditor is conducting a paperless audit with one county in order to determine which components of the system work and whether problems need to be corrected prior to fill implementation. The inter-office report recommended:

> *During and after testing has been completed, any changes and improvements to the process should be*

made. Once changes have been made, all audits should be phased in over a period of time that has been determined by the project team.

Administrative Office of the Courts Court Case Tracking System Initiative

The Administrative Office of the Courts began implementation of a court tracking system for civil court cases in 1998. However, the system is not being utilized in all eighty-two counties because the system design was weak due to inherent software problems that required court officers to input information separately from existing systems and methods.

An initiative developed by the Administration Office of the Courts (AOC) is the Supreme Court Automated Tracking System (SCATS). In 1993, with the creation of the AOC, the Legislature in MISS. CODE ANN. Section 9-21-3 2(a) authorized the AOC to:

> *work with the clerks of the all youth courts and civil and criminal trial courts in the state to collect, obtain, compile, digest and publish information and statistics concerning the administration of justice in the state.*

The Administrative Office of the Courts collects court case information in order to determine the court docket for the state.

The AOC began manually collecting this data in 1994 from the court clerks. The information was sent to the AOC on paper; therefore, AOC was collecting paper copies from all eighty-two counties. In order to more efficiently collect the information, the AOC in 1998 developed the SCATS program, which provided equipment and training for the court clerks to input civil court case information in an electronic format. The AOC provided computers and software for the trial clerks, beginning in 1998, in the Circuit and Chancery Courts across the state. The AOC utilized state funds to develop this system with an outside consultant. The system is intended for use for the collection of information that is needed by AOC to develop yearly statistics of cases and dispositions of those cases.

These computers were to be used for the county to input court case information that would then be sent back to the AOC central office in Jackson. The SCATS system has been deployed to all eighty-two Chancery Courts, Circuit Courts, and the eighteen County Courts for civil case information. The counties have three options for sending information to the AOC. First, the county can send the information in on paper, which is how most information is received. The AOC receives the case information and inputs the data into their central database. Second, the county can input the information on the computer provided by the AOC and save the information to computer disk and send the computer disk to the AOC, for the retrieval of information

to be saved into the AOC's database. Third, the county may input the information on the computers provided by the AOC and then transmit the information over the Internet to the AOC for the AOC to add to the database.

Problems with the SCATS system

The SCATS system has experienced problems due to clerks not having the resources to input case information, use of different versions of the software, and lack of AOC capability to run error reports. These problems are being corrected.

According to the clerks in the counties surveyed by PEER, there has been some difficulty with the system because some clerks do not have the time and resources to input case information into two computer systems in their counties. There have also been problems with the software. According to some of the clerks and the AOC staff, there have been many different versions of the software and some counties have not installed the new software, so when they send in their information, the central database cannot reconcile the information because of discrepancies in the software versions. The AOC did not have the capability to run an error report to determine what was causing the problems of county information not being correct. Once the AOC developed the error report in the past year, the AOC has been able to determine many of the errors that have occurred. Other problems that have been encountered include the county clerks using their own codes, or leaving off headers that identify the case.

Counties have mixed feelings regarding the use of the procedures. For example, one of the larger counties in the state did not show any new cases for a year. AOC determined that the information was not being compiled for transfer to the state AOC office. The import procedure did not allow the counties to save the court information on the computer and then send it to the AOC through disks or by transmitting the information over the Internet. The AOC has corrected this import procedure by reinstalling the new software version in the county. Many of the clerks interviewed feel that the system is difficult to use and there is a duplication of effort by the court clerks in some counties. For example, one county has developed a computer system that is in use in their Chancery Court. The clerk would like to send his information from his computer system, rather than entering the information into two separate systems. Other clerks interviewed felt the AOC staff has been working to correct problems. According to AOC officials, they are currently updating the software and making the system easier to use.

Low Utilization of SCATS System

According to information provided by the AOC in April 2002, only fifty-eight of eighty-two (70%) Chancery clerks are utilizing the SCATS system. The clerks not utilizing the

SCATS system are sending in paper copies of the case information. In Circuit Clerk offices, only forty-six of eighty-two (56%) Circuit Clerks are utilizing the SCATS system, with twelve not utilizing the system, and the remaining twenty-four offices undeterminable. The AOC was unable to determine if twenty-four Circuit Clerk offices were utilizing the SCATS system or computers, because AOC does not know what courts currently use the system. With regard to the eighteen County Court offices, only four are utilizing the SCATS system. The AOC is unable to determine if the other fourteen offices are using the system or not.

Office of the Secretary of State's Voter Registration Initiative

Non-uniformity of voter registration data gathered in 1998 delayed the production of a unified voter registration record and led to 2002 amendments to create and set requirements for a centralized voter system.

Lack of Consistency and Non-uniformity of County Voter Registration Records

Lack of uniform data and reporting standards as well as the disparity in county information systems led to implementation problems and difficulty in complying with the legislative mandate of a centralized statewide voter registration record.

In 1997, the Mississippi Legislature authorized the Office of the Secretary of State to maintain a statewide voter registration record listing all qualified electors in the state. MISS. CODE ANN. Section 23-15-139 stated that the Secretary shall compile this list from records submitted by the county registrars. The intent of the law was to show that the record be used to identify voters who may have moved, voters who are deceased, and voters that may be registered in more than one county. MISS. CODE ANN. Section 23-15-140 allows the Secretary to prescribe a standard file format for the electronic transmission of voter registration data. This section states that data should include but not be limited to:

> *voter's full name, present address including apartment number and zip code, date of birth, former names registered under including maiden name, and previous address where the voter was registered under those names, his social security number and all additions, deletions and revisions to the voter registration rolls.*

The section also states that the data shall be transmitted electronically via computer or floppy disks in the correct format or via a hard copy, if the data contains not more than one hundred names.

Problems Encountered by the Office of the Secretary of State

In March 1998, the Office of the Secretary of State contacted the Circuit Clerks across the state. This letter requested their voter registration information to be submitted by May 1998. The letter included the various methods for submitting the data including electronic mail (email), disk, or over the Internet. This letter also included the file layout of the information. Very shortly after this information request many Circuit Clerks began contacting their vendor as well as the Office of the Secretary of State to voice complaints about the difficulty of reporting information in the requested format. One vendor with over forty counties utilizing its services for voter registration software claimed wide disparity in developed systems. According to this one vendor, there are "fifteen different systems in use with varying file layouts and data contents." Because there were so many different formats in use statewide, the Office of the Secretary of State had difficulty reconciling the data.

There were many problems with voter registration records across the state, including different formats and missing data. The Office developed a Task Force to study these problems and develop solutions.

According to a status report from October 1998, the Office had received voter registration files from all counties. "However, due to the lack of computer software standards among the counties, we have processed reports for sixty-two of the eighty-two counties of Mississippi into the statewide registry." Later in the report it is stated that the file has social security numbers for less than half of all Mississippi registered voters. "Until more social security numbers are compiled, it will be difficult to identify all cases of duplicate registrations."

After working with vendors, counties, and local election officials, the Office opted to take a phased approach to working with the counties to update the files to a standard format. In February 2000, the Office contacted the first eight counties to be used in Phase I. The information given to the counties included a detailed list of the file format. In the fall of 2000, the Office began comparing some counties voter registration information against the Administrative Office of the Courts information on disenfranchised voters and the Department of Health's Vital Statistics information for death records. There were many problems including large counties with no deaths or crime reports in the previous year. The 2000 national election occurred, which raised many concerns about voter registration systems. Because of this and the problems the Office encountered with the data in the counties, the next step taken by the Secretary of State was to create the Task Force on Election Procedures and Technology in the summer of 2001 to "study the November 2000 election problems in Florida and to ensure that we in Mississippi do everything we can to avoid such problems here" and to

address the central voter registration record. The recommendations include:

- creation of a centralized statewide voter registry to assist with proper maintenance of county voter rolls (which may require changes in current law);
- promulgation of rules by Secretary of State prescribing uniform form and methodology for reporting of county returns; and,
- directing Secretary of State to conduct a pilot program for electronic transmission of election returns.

Currently, there are many different systems in place in the counties collecting state voter registration information. One vendor who is supplying the software in forty-four counties has used many different formats in each county, rather than using the same format.

Establishment of Centralized Statewide Qualified Voter System

In 2002, legislation created a qualified voter system to correct problems that the Office of the Secretary of State had encountered by allowing the procurement, implementation, and maintenance of an electronic information processing system and programs that are capable of maintaining a central database of registered voters.

In the 2002 session, the Mississippi Legislature passed Senate Bill 2366 in order to repeal MISS. CODE ANN. Section 23-15-139 and 23-15-140 and to establish a centralized statewide qualified voter file to be maintained on a centralized voter system that consists of all qualified electors who are registered to vote. The intent of this law was to increase the integrity of the voting process by compiling a single centralized qualified voter file from the county voter roll data that will permit the name of each citizen of this state to appear only once. The Legislature also stated one purpose of the act was,

> *to apply technology and information gathered by principal executive departments of state government, state agencies and local voter registrars in a manner that ensures that accurate and current records of qualified voters are maintained and to secure cooperation among all state and county entities to develop systems and processes that are interfaced with the Centralized Statewide Voter System.*

The Office of the Secretary of State is directed to cooperate with local registrars and election commissioners to procure, implement, and maintain an electronic information processing system. This electronic information processing system includes maintenance of a single, centralized voter file. Each county would manage its own voter registration database with software provided

by the state. The database and software will be hosted by the state on a central server and accessed through a secure network by the counties. Development of the system is to encompass the software and hardware at the state and county level, as well as the software training, data conversion, support, and maintenance of the system. The Statewide Centralized Voter System is to be developed and implemented by the Secretary of State. The Secretary of State, with the assistance of the advisory committee, will develop the standard industry accepted file format for the information to be contained in the voter system.

Geographic Information System (GIS) Development Initiatives

Lack of coordination, collaboration, or communication across the state for development of GIS systems is causing a disjointed and duplicated effort statewide at potentially greater costs than necessary.

GIS is a computer system capable of assembling, storing, manipulating, and displaying geographically referenced information, i.e., data identified according to their locations. MISS. CODE ANN. Section 25-58-1 (a) defines geographic information systems as:

> *a computerized, spatial coordinate mapping and relational data base technology which (i) captures, assembles, stores, converts, manages, analyzes, amalgamates and records, in the digital mode, all kinds and types of information and data; (ii) transforms such information and data into intelligence; and subsequently (iii) retrieves, presents and distributes that intelligence to a user for use in making the intelligent decisions necessary for sound management of private or political affairs.*

There are many different uses for GIS mapping systems. These uses include regional planning, building locations, and site conditions. For example, a community can use GIS information to determine where schools are located and link detailed information on that school (i.e., level of education, number of students, neighborhoods located in the school district).

Several state and local entities are duplicating efforts in working to develop GIS applications, which address the entities' specific needs or general development efforts.

Several state agencies and local governments are involved in independent initiatives to develop geographic information systems in Mississippi. There are several study committees that are involved in coordinating GIS initiatives, including the Governor's Advisory Commission on Remote Sensing Technologies that was formed in May 2002. This advisory commission is to present recommendations to the Governor by November 2002 for the formation of a uniform clearinghouse of public remote sensing data, including a digital land base computer model of the state.

Mississippi Automated Resource Information System GIS Initiatives

Since 1986 MARIS, the Mississippi Automated Resource Information System, has worked to coordinate geographic information. According to the MISS. CODE ANN. Section 57-13-23 (2):

> *The goal of MARIS shall be to facilitate the achievement of state agencies' responsibilities as they relate to the development, management, conservation, protection and utilization of the resources of Mississippi by making usable resource data and information more readily available and in a format that is consistent throughout state departments, agencies and institutions, and, to the extent possible, with federal and privately generated resource data banks.*

MARIS is the state data warehouse.

MARIS receives administrative support from the University Research Center located within the Institutions for Higher Learning (IHL). According to MISS. CODE ANN. Section 57-13-23, MARIS is to be the mechanism within state government for the storing, processing, extracting, and disseminating of useful data and information relating to the state's resources. As such, MARIS is the data warehouse for the state and offers links on their website to state and local data. MARIS is under the supervision and general policy formulations of a policy committee. This committee is comprised of representatives of state departments, agencies, and institutions for the sharing of useful data acquired and generated by state agencies in discharging their individual responsibilities. This policy committee has taken no formal action in seven years.

The MARIS enabling legislation created a task force to facilitate development of the mapping resources. According to information provided by MARIS,

> *the MARIS Task Force is the backbone of MARIS and the principal reason for its success. The Task Force is comprised of program managers and technical personnel within state agencies who meet monthly to discuss a variety of technical, institutional, and organizational issues. Coordination is increasingly important since future directions in computer technology and digital data development encourage more users to acquire geographic information technology within their own agencies. The Task Force also helps determine the scope and direction of work to be undertaken by MARIS.*

In 2002, the MARIS Task Force began work on the Geospatial Information Initiative, which is a joint project

of the Office of Management and Budget, the Federal Geographic Data Committee, individual states, and others. The group, which comprises an Implementation Team or I-Team, is designed to foster the development of high-resolution digital data layers for Mississippi under the guidance of the National Spatial Data Infrastructure and the Federal Geographic Data Committee. The initiative aims to break down the financial and institutional barriers that block nationwide integration and dissemination of geographic information. The goal is to develop common data content standards and effective and efficient business practices, so that the geographic information can be integrated and shared in a nationally consistent way for geographic information including state and local government data.

Digital Orthoimagery – Digital aerial photo that is planimetrically correct, or has all photographic and orthographic distortion removed.

Geodetic Control – Network of location points that have a high degree of accuracy. This uses benchmarks to locate points on a map.

Hydrography – Surface water features for example, creeks, and rivers.

Cadastral Data – Digital tax parcels that show land ownership.

The I-Team Initiative calls for each state to develop an I-Plan, which is a strategic plan that evaluates the status of existing data; identifies the most effective ways to collect, process, and use the data; determines how to build a statewide spatial data infrastructure; and sets a figure on the cost. The I-Plan calls for the gathering of the following data: digital orthoimagery, geodetic control, elevation, hydrography, cadastral data, political boundaries, and transportation. These layers are common components in developing such a system. The Department of Environmental Quality plans to collect the same such information to develop its Mississippi Digital Earth Model. (See DEQ discussion, page 29.) The I-Team has also identified other layers which they believe the state should strive to develop including: geology, GIS infrastructure, critical facilities, cultural, business/industry, soils, telecommunications, socio-economic/demographic, land characterization, environmental, and wildlife and conservation.

The goal of the Mississippi I-Team is to develop a road map for the state to implement a coordinated geographic information system for federal, state, and local users.

The Mississippi I-Team includes many representatives of city, county, state, and federal governments who are geographers and users of the system. This is important to note, because the I-Plan focuses on the development of recommendations for standards for the data to be collected. The representatives are voluntary, and there currently is no substantive authority to control the development of a statewide system. The I-Plan's success will depend on this intergovernmental cooperation and collaboration. The goal is to develop a road map for the state to implement a coordinated geographic information system for federal, state, and local users.

Mississippi Statewide Scientific Information Management System (SSIMS)

The Legislature passed legislation to create a council to oversee the development of a strategic plan for scientific information management. However, this legislation will repeal on July 1, 2002.

The Legislature established the Mississippi Statewide Scientific Information Management System in 1999, which is codified in MISS. CODE ANN. Section 49-37-1 et seq. The Act created the Mississippi Statewide Scientific Information Management System Coordinating Council to oversee the development of a strategic plan for scientific information management and to serve as the coordinating authority for all scientific information management matters. The purpose of the system was to provide a coordinated effort to insure the effective and efficient collection, management, dissemination, and analysis of scientific information available to the state in a user-friendly form. The type of scientific information included within the system is that associated with the management and monitoring of the environment and natural resources. Coordination of the system was to be a responsibility of the Department of Environmental Quality.

The council was to develop a strategic plan for the development and implementation of the system before November 15, 2000, which was amended in 2000 to October 1, 2001. The Legislature appropriated funds to be used for the development of this strategic plan. A request for proposals (RFP) was released in May 2000; however, no contract was awarded. Currently, the law will repeal on July 1, 2002.

Department of Environmental Quality GIS Initiative

The Department of Environmental Quality's 2001 legislative appropriation bill mandated that the agency develop a pilot Digital Earth Model for presentation to the Legislature to determine if this system would be useful as a statewide application.

Currently, the Mississippi Digital Earth Model (MDEM) is in development using Desoto County information. This model will outline seven layers of data through updated satellite imagery and mapping. These seven layers include orthoimagery, governmental units, transportation, cadastral, geodetic control, hydrography, digital elevation models, and contours. This information will be developed into six applications that can be used by developers as well as local governments. These applications include economic development site selection, emergency preparedness, storm water management, transportation corridor and route analysis, environmental protection

floodplain evaluation, and wastewater treatment facilities plan.

The Department of Environmental Quality's FY 2003 appropriation bill stated the following:

> *It is the intention of the Legislature that DEQ shall be the coordinator for all Remote Sensing and Geographic Information Systems within the state, and as such, the lead agency for the State of Mississippi directed to continue the development and coordination of a Digital Land Base Computer Model of the State of Mississippi (MDEM).*

According to DEQ, with the latest mandate from the Legislature, they are attempting to coordinate the collection of the seven layers for their environmental database. While no funding was included with this mandate, DEQ has contacted many agencies in order to coordinate this effort. DEQ will be releasing a report in the summer of 2002, which will detail the MDEM effort to date.

Local Government Initiatives

MISS. CODE ANN. Section 25-58-1 grants approval authority to the Mississippi Department of Information Technology Services for all local government geographic information system plans.

According to MISS. CODE ANN. Section 25-58-1, "the board of supervisors of any county and the governing authorities of any municipality" are authorized to create geographic information systems. Some counties and municipalities have developed their own GIS systems based on this section. For example, Pike County collects the following data:

- tax maps;
- soil;
- contours;
- imagery;
- land use;
- buildings;
- hydrography;
- road center lines;
- census maps;
- administrative boundaries (supervisor's districts, voting precincts, school districts);
- flood zones;
- survey control network (georeferences and benchmarks);
- cultural features (churches, cemeteries, etc.).

According to MISS. CODE ANN. Section 25-58-1(4), the counties and municipalities are to submit geographic information system plans to the Mississippi Department of Information Technology Services for approval. Also, ITS is to evaluate all bids and proposals to determine options of other systems that may be available to that local government. Although this law became effective in 1990, ITS officials claim that few county or municipal plans have been submitted for approval.

Private Initiatives

There are many government entities developing independent systems and collecting GIS information. For example, private non-profit and for-profit vendors, including the Stennis Institute of Government, are working on development of GIS systems for counties.

Few Models are Available for Structuring State/Local Information Systems

Currently, no state has coordinated or developed standards for state/local information systems to expedite access to county data. However, many states are working on the development of e-government, voter registration systems, and online court records access. These systems include standards that must be followed by local government entities.

Michigan : State Funded and Supported Voter Registration System

Michigan instituted a Qualified Voter File in 1995 for implementation in 1997. Only election officials can access this file for the proper maintenance and service needed on the file of electors.

The Michigan Legislature in 1995 required the Office of the Secretary of State to develop a qualified elector's voter file to be maintained at a central location. The qualified voter file consists of the following:

- computer file of elector records;
- electronic network that allows participating designated executive departments, state agencies, and county, city, township, and village clerks to electronically add, change, or delete records contained in the file;
- interactive electronic communication system that allows access to records in the file; and,
- statewide street address index that will accurately identify the city or township of each record and identify the precinct of each record in the file.

Michigan law requires the Office of the Secretary of State to establish and maintain the computer system and programs necessary to the operation of the qualified voter file. The Office of the Secretary of State allows access to the file to each county, city, township, or village in order to verify the accuracy of the names and addresses of registered voters in the file.

In Michigan, all eighty-three counties and local jurisdictions with a voting age population over 5,000 were provided with the hardware and software needed to establish a direct link to the qualified voter file (QVF). Smaller cities and townships have either purchased the hardware and software needed for a direct link, or access the Qualified Voter File through the local county clerk's office. Also, these communities with a voting age population under 5,000 were reimbursed for their assistance with the data validation process, by an amount equal to $0.45 multiplied by the jurisdiction's voting age population.

Texas : State Coordinated Web Development

The TexasOnline Authority is the controlling body of the Texas e-government initiative. The Authority has local, state, and business representation developing a one-stop approach to Texas e-government.

The Texas Legislature created the TexasOnline Authority in 2001. The Authority is to establish a common electronic infrastructure through which state agencies and local governments, including licensing entities, may electronically:

- send and receive documents or required payments;
- receive applications for original and renewal licenses and permits, including occupational licenses, and complaints;
- send original and renewal occupational licenses to persons regulated by licensing entities;
- send profiles of occupational license holders to persons regulated by licensing entities and the public;
- store information; and,
- provide and receive any other service to and from the agencies and local government or the public.

This Authority is in the process of developing policies and standards for the operation of the project as will as considering services to be provided. According to the Texas Government Code the Authority shall assist and coordinate with other governmental entities to include the following:

- assist state agencies and local governments in using the project; and,
- coordinate operations between state agencies and local governments to achieve integrated planning for the project.

Iowa : State Supported Online Court Records

Iowa developed an Online Court record system that allows the user to access court disposition information through the Internet.

The Iowa Supreme Court directed the Judicial Branch to develop Internet access to the statewide case management system that had been instituted in the 1990's. The main reason for the development of the Internet-accessible system was to save money for the county court systems, because of severe budget cuts that affected the ninety-nine counties. The Internet-delivered system has two components, a free service and a fee-based service for more advanced searches. The free section includes the following information:

- current court records;

- historical data;
- statewide index search;
- public access records;
- individual case financial information;
- document events filing;
- case disposition information;
- appellate case information; and,
- probate records.

The fee-service information will include the following information:

- trial court advanced searches;
- schedule searches;
- parties involved;
- property searches;
- judgment/lien information;
- exhibits;
- financial detail;
- bonds;
- service returns; and,
- traffic detail.

This case management system includes information on traffic, civil, criminal, probate, and appellate courts. This case management system is accessible by the court clerks and the judicial branch of the state. While the clerks maintain the information, the state has complete access to the information. This information contains summary data on all filings, the docket, and the disposition of the case including any financial liens.

Recommendations to Address Concerns and Key Issues

Pressing needs exist to develop additional state-local systems to provide timely, accurate, and accessible information, which meet minimal communication/processing standards. County and state cooperation is needed to realize economies of scale in developing statewide information and telecommunications systems.

Governing development and setting minimum standards for the creation and operation are important to the state because of the current duplication of effort that is occurring statewide on many different projects. To successfully implement such systems, several key issues of primary concern should be addressed by an assessment by a task force to determine:

- centralized oversight and coordination of the system; and,
- responsibility for developing policies and standards.

Centralized Oversight Over State/Local Information System Development

The Mississippi Department of Information Technology Services should be used for the central oversight and coordination needed in order to guide development/evolution of systems and assure accessibility (user-friendliness), accuracy, utility of the information captured, and to improve the economy of local system development and implementation by developing and hosting shared information resources.

Executive and Legislative Sponsorship

In order for the state to be successful in the implementation of a state/local information system, there should be strong sponsorship by all parties.

One of the major components of successful initiatives is strong sponsorship by executive levels. As major stakeholders in the success of state/local information systems, executive officials and legislators within state and county government must have interest and leadership in this area. This could be realized by forming a standing sub-committee of the Electronic Government Oversight Committee, created in 2001, to focus on county e-government implementation.

Creation of Statewide Task Force to Govern Development

The Legislature should create a Statewide Task Force to be responsible for policy development and for providing advice to the Mississippi Department of Information Technology Services (ITS).

The Department should be vested with authority and responsibility over the development, administration, and coordination of all state/local information systems. The Statewide Task Force should develop recommendations and plan for the implementation of all state/local information systems in accordance with Task Force policy and standards. The Department should provide staff support to the Statewide Task Force.

The Department of Information Technology Services should be vested with the authority to carry out all recommendations and plans as developed by the Task Force. All state agencies that are creating state/local information systems should be required to work with the Task Force in the development of the system and utilize the expertise located within the Mississippi Department of Information Technology Services.

The information system plan should include all relevant parts of public access information to the citizen and the state user, including county public access records, voter registration, and geographic information systems. Currently, in order to obtain information a citizen or state user would have to travel to each county courthouse and decipher a computer system or manual books to obtain public information. The new system would provide information in a standard format across all eighty-two counties and be developed by the state users as well as the county clerks who collect this information.

The Task Force should include the agencies that are represented in the state/local information systems, including but not limited to the Administrative Office of the Courts, Office of the Secretary of State, State Tax Commission, Office of the State Auditor, Information Technology Services, Department of Environmental Quality, and MARIS. It also should have representation from local governments, and include representatives from county government such as designates from the Chancery Clerks Association, Circuit Clerks Association, Assessor and Collectors Association, and the Mississippi Association of Supervisors. Also, there should be two non-voting legislative representatives to serve in an advisory capacity to the Task Force.

Assessment of Processing and Communications Needs at the Local and State Levels

In order to accurately gauge needs, it is necessary to assign responsibility to the Task Force to assess current capabilities and future development of state and local entities.

The Task Force should conduct a needs assessment in order to determine the direction and focus of the system design and development efforts. This assessment should encompass state, local, and user needs. This report should be presented to the Mississippi Department of Information Technology Services for implementation of a statewide coordinated state/local information system initiative. Areas that should be considered are:

- telecommunication coordination;
- organization alternatives;
- funding alternatives;
- identification of potential areas of development;
- comparisons of agency and local agency initiatives to avoid duplication;
- identification of ways to minimize costs; and,
- development of polices and standards for the system.

Potential Areas of Development

The Task Force should survey users of state and local information systems to determine what areas should be included in a state/local information system.

The Task Force should determine what areas users feel should be included in the state/local information system. The users of the system, both local and state, should determine the potential areas of the development of this system. For example, users should be surveyed to determine their preferences for paying car tags, or looking up public information, or having geographic information available as an important function of the county or state. These potential development areas should be determined by the user, but could include geographic information systems, voter registration systems, and county court records. The Task Force should take into account federal standards that must be met, but it is important to involve the user to determine the development of a state/local information system.

State and Local Agency Comparison

The Task Force should determine where current information systems are being duplicated in county and state systems, as well as determine the plans of local government information systems.

Currently, state and local governments have implemented many different computer systems. At times these systems

overlap. For example, the Administrative Office of the Courts (AOC) court tracking system was developed to meet certain requirements for the AOC. However, many counties had developed their own reporting system, and must now change their methods to adhere to AOC requirements. Another example is geographic information systems. Currently, there are many state agencies working to develop systems for their own needs, which encompass county data. These systems could be merged to have geographic information for the state that meets the needs of both county and state government without the duplication of effort.

Minimize Cost of Development

In order to show how a state/local information system will benefit the state, the Task Force should show how its development would save the state money.

The Task Force should identify ways to minimize the cost of the separate development of information systems by utilizing a universal information system that meets the information needs of the state and local governments. The Task Force should determine if economies of scale will work to accomplish a statewide information system rather than having independent development without coordination occur in the state at all levels of government.

Telecommunication Coordination

The Task Force should focus resources on development of a standard telecommunication network, in order for counties and state entities to efficiently communicate information and reduce unnecessary costs.

One area that should be considered is a standardized telecommunication network for the counties. For example, many counties are using various Internet Service Providers in different county offices, rather than having a central Internet connection for the county. According to a study conducted by the Planning and Development Districts in 2000, Lee County had twelve Internet Service Providers.

If the counties were offered the opportunity to participate in a statewide telecommunications infrastructure similar to the statewide system developed by ITS for state agencies and universities, economies of scale could be realized. The state could develop a system that would meet the needs of an integrated statewide county information system.

Organization Alternatives

The Task Force should determine how to organize a state/local information system for the state.

Another area that should be determined is how the state will organize and develop a state/local information system. Therefore the Task Force should investigate and recommend organizational structures for the implementation of a successful state/local information system. Some methods that should be investigated include outsourced development, state development, or partnership development.

Outsource

Outsource all or a portion of the development of state/local information system services. A vendor would provide all or a portion of the hardware, software, services, technical expertise, and oversight.

State

Allow the Mississippi Department of Information Technology Services to be responsible for the development and maintenance of the state/local information system hardware, software, technical expertise, and oversight.

Partnership

Develop a request for proposals that would be issued for a vendor with state/local information system development and operations expertise. The vendor would be under contract for a period of time to the leadership group or State, to assist in the development of a state/local information system infrastructure and application development model.

Funding Alternatives

In order for a state/local information system initiative to be successful, the Task Force should develop funding strategies.

An important aspect of the Task Force will be to determine funding alternatives for a state/local information system. This could include coordination of monies currently being spent in different areas in order to complete the goal of development of a successful state/local information system. The Task Force should also investigate and recommend funding alternatives, such as appropriation funding or charging back to the user.

Appropriation

The Legislature would provide through direct appropriation, the funds to develop and implement a state/local information system. This could be carried out in many ways, including specific initiatives for purchasing hardware, software, and communication systems; allowing grants to be given for supplementing development costs; or providing tax incentives to the county and vendor in order to encourage participation from the counties.

Charge Back

The developer of the system, either the state or vendor, could bill the county or state agency for use of the system to recover the costs expended to develop the system.

Coordinate Geographic Information System (GIS) Development

Statewide GIS Development

Since there is a duplication of effort by many different agencies regarding the development of geographic information systems, the Legislature should pass a resolution supporting the work of MARIS with regard to the Geospatial Initiative, and clearly define its responsibilities in developing geographic information systems statewide.

Currently, there are many different state and local entities developing geographic information system data. Therefore the Legislature should clarify which is the guiding force behind geographic information system development. According to the MISS. CODE ANN. Section 57-23-13, the Mississippi Automated Resource Information System (MARIS) is vested with the authority to utilize the resources of Mississippi by making usable resource data and information more readily available and in a format that is consistent throughout state departments, agencies and institutions, and federal and privately generated resource data banks. In order to accomplish this, MARIS should receive all support necessary to achieve this goal, and should be the state data warehouse and facilitator for all geographic information systems, including county and local information. This geographic information should be up-to-date and include the latest geographic information available.

Local Government GIS Development

All local governments should submit GIS plans, bids, and proposals to the Mississippi Department of Information Technology Services for approval and evaluation, in accordance with MISS. CODE ANN. Section 25-58-1(4).

Development and Implementation of Policies and Standards

The Task Force should develop universal policies and standards for the implementation of a state/local information system. The Mississippi Department of Information Technology Services should ensure these policies and standards are followed by all counties and state agencies.

Implement Electronic Record Retention Standards

Each county should be required to retain records in the same standard format.

Currently, public information maintained by counties is not uniform. For example, the vendors of many county information systems have developed formats for the data stored in the system. This has caused the problem the Office of the Secretary of State has had with trying to reconcile voter registration records. While the Office of the Secretary of State may have this problem corrected by the passing of legislation in 2002, there are other areas that should be addressed. For example, there could be a universal format in all counties for the input of a name: first name, middle name, and last name; or a universal format for land records so that each county would have the same information in one format. This would ensure that duplication is not occurring in other areas.

Control Development of Basic Web Services

With the proliferation of personal computers and Internet connectivity, the Task Force should determine if counties should develop web pages and links to public information.

The Task Force should determine if offering electronic government links to public information is necessary. This should include what information all counties should include on their web pages as well as what standards would be needed for the development of these web-based systems.

The Task Force should determine if counties should have a basic web page with county information to include: directory of elected officials, office information, addresses and phone numbers, as well as a link to an online database to include access to public information. This public information could include but is not limited to the following: General Index, Land Rolls, Judgment Roll, Estimated Tax Roll, Index to Federal Tax Liens, General Docket, Civil Docket, and the Criminal Docket.

Appendix: PEER Survey of Selected Counties

Desoto County

	Chancery Clerk's Office	Circuit Clerk's Office	Tax Assessor's Office	Tax Collector's Office
Are public access computers available?	Yes	Yes	Yes	Yes
Are Instructions posted?	No	No	Yes	No
Is instruction assistance readily available?	Yes	No*	Yes	Yes
Is there a capability to print information from the public access computer?	No	No	No	No
Is system/keystroke familiarity required?	Yes	Yes	Yes	Yes
Who is the system developer?	County Data Processing	County Data Processing	County Data Processing	County Data Processing

Is the information listed on the computers identical in each county office? No

*The computers are located on a different floor from the main office.

Hancock County

	Chancery Clerk's Office	Circuit Clerk's Office	Tax Assessor-Collector's Office
Are public access computers available?	Yes	Yes	Yes
Are Instructions posted?	No	No	No
Is instruction assistance readily available?	Yes	Yes	Yes
Is there a capability to print information from the public access computer?	Yes	No	Yes
Is system/keystroke familiarity required?	Yes	Yes	Yes
Who is the system developer?	Data Management	Data Management	Data Management

Is the information listed on the computers identical in each county office? No

Humphreys County

	Chancery Clerk's Office	Circuit Clerk's Office	Tax Assessor-Collector's Office
Are public access computers available?	No	No	No
Are Instructions posted?			
Is instruction assistance readily available?			
Is there a capability to print information from the public access computer?			
Is system/keystroke familiarity required?			
Who is the system developer?			

Is the information listed on the computers identical in each county office?

Monroe County

	Chancery Clerk's Office	Circuit Clerk's Office	Tax Assessor's Office	Tax Collector's Office
Are public access computers available?	Yes	Yes	No[1]	No[1]
Are Instructions posted?	No	No		
Is instruction assistance readily available?	Yes	Yes		
Is there a capability to print information from the public access computer?	Yes	No		
Is system/keystroke familiarity required?	Yes	Yes		
Who is the system developer?	Three Rivers PDD*	Delta Computer		

Is the information listed on the computers identical in each county office? No

[1] PEER staff was directed to the Chancery Clerk's Office for public computer access.
*Planning and Development District.

Neshoba County

	Chancery Clerk's Office	Circuit Clerk's Office	Tax Assessor-Collector's Office
Are public access computers available?	No	Yes	Yes
Are Instructions posted?		No	No
Is instruction assistance readily available?		Yes	Yes
Is there a capability to print information from the public access computer?		Yes	Yes
Is system/keystroke familiarity required?		Yes	Yes
Who is the system developer?		Delta Computer	Delta Computer

Is the information listed on the computers identical in each county office? No

Pike County

	Chancery Clerk's Office	Circuit Clerk's Office	Tax Assessor-Collector's Office
Are public access computers available?	Yes	Yes	No[1]
Are Instructions posted?	Yes	No	
Is instruction assistance readily available?	Yes	Yes	
Is there a capability to print information from the public access computer?	Yes	No	
Is system/keystroke familiarity required?	Yes	Yes	
Who is the system developer?	Delta Computer	Delta Computer	

Is the information listed on the computers identical in each county office? Yes

[1] PEER staff was directed to the Chancery Clerk's Office for public computer access.

Rankin County

	Chancery Clerk's Office	Circuit Clerk's Office	Tax Assessor's Office	Tax Collector's Office
Are public access computers available?	Yes	Yes	Yes	Yes
Are Instructions posted?	No	No	No	No
Is instruction assistance readily available?	Yes	Yes	Yes	Yes
Is there a capability to print information from the public access computer?	No	No	Yes	Yes
Is system/keystroke familiarity required?	Yes	Yes	Yes	Yes
Who is the system developer?	Delta Computer	Consultant	Delta Computer	Delta Computer

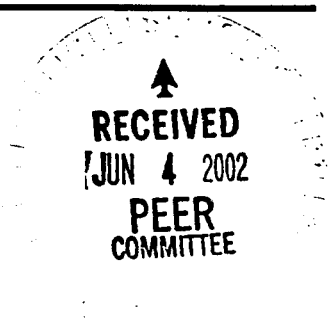
Is the information listed on the computers identical in each county office? No

SOURCE: PEER analysis of surveyed counties.

ITS Mississippi Department of Information Technology Services

David L. Litchliter, Executive Director

Suite 508
301 North Lamar Street
Jackson, MS 39201-1495
Phone: 601-359-1395
Fax: 601-354-6016



June 3, 2002

Dr. Max Arinder, Executive Director
PEER Committee
3rd Floor Woolfolk Building
501 North West Street
Jackson, MS 39201

RE: Department of Information Technology Services (ITS) response to PEER Committee report on County Information Systems

Dear Dr. Arinder:

ITS appreciates the opportunity you have provided for us to respond to PEER's recommendations in the above referenced report. These comments are based on our review of the draft report in PEER's offices and on the information contained in the Executive Summary.

ITS concurs with PEER's conclusion that disparate county information systems across the state of Mississippi are a major concern and limit effective access to critical data at many levels. ITS also concurs that cooperation, coordination, and standardization among the counties and between the counties and their state and local counterparts is essential in resolving these issues.

ITS believes the key to a successful collaboration among the counties and between the counties and state-level entities is strong legislation outlining the desired outcomes, timeframes, and responsibilities of all parties. An adequate funding mechanism for the consulting services, telecommunications resources, and supporting hardware and software that will be needed to implement integrated solutions is an essential component of such legislation. Economies of scale are realized when standards are defined and agreed to as early in the process as possible, before multiple solutions have proliferated. Therefore, time is of the essence in establishing a unified direction and approach to information sharing at the county level.

Implementing the communication structure that will link the counties with each other and with other levels of government is the essential first step in accomplishing the objectives outlined in the PEER report. Careful evaluation of the potential utilization and optimal configuration of this network should be undertaken as soon as possible. One of the first decisions will be whether the state's data network should be expanded to include the counties or if a dedicated network should be built for the counties, with connectivity to the state's network.

To benefit from an integrated county network, each county in the state must first be networked internally. Concurrently with designing and implementing a statewide network for county traffic, the current status of each county's automation must be assessed and upgraded where needed to provide connectivity among the various county offices. Advances in wireless technology provide more affordable alternatives that should make this connectivity feasible for any county, with reasonable financial and technical support.

The majority of Mississippi counties have an IBM AS-400 computer system. This platform is capable of supporting applications with an Internet "look and feel" that can be accessed by standard browsers. Although many of the applications currently running on these machines in the counties have an older user interface that is not designed for use by the casual user, developing a browser-based front end to these applications for citizen

access of information is a reasonable and affordable approach. ITS believes the AS-400 is a viable platform for standardization by Mississippi counties, due to the counties' current investment in this technology, the wide range of government administrative software available for this machine, and IBM's continuing support for this market. Data warehousing and middleware technologies can be evaluated as ways to further leverage the usefulness of the AS-400 platform in a coordinated county information system. In conjunction with the evaluation of the internal connectivity of each county, an assessment of the hardware, operating systems, and applications running in each county will be needed prior to finalizing an approach.

Improved coordination and access to information at the county level doesn't require that every county have the same computer systems or application software if data standards can be cooperatively defined and adhered to. Standard data formats and, potentially, data warehousing at central locations throughout the state, would be applicable to state reporting and could also provide a data source for citizen access via the Internet. The statewide voter registration system legislated during the 2002 session will provide an opportunity to pilot this approach and to develop procedures that will be applicable for other statewide functions.

As described in the PEER report, GIS and E-government applications offer specific opportunities for collaborative solutions among the counties. In each of these areas, the proliferation of multiple systems and solutions in the counties will be expensive in terms of initial costs, ongoing support, and inconsistent presentation and access to information. Counties can potentially save a great deal of money through standardization that leads to volume purchase opportunities. In both GIS and E-government, the consolidation of resources will also permit the development of standard applications and databases that can be shared among the counties. This approach will particularly benefit the counties who don't have the financial or technical resources to develop, implement, and support solutions on their own.

Again, ITS appreciates the opportunity to provide this input and response. We certainly understand that this effort will take a large investment of time and financial resources to meet the objectives of more timely access to accurate information. We also know that this level of coordination and cooperation will involve many issues of authority and control. However, the benefits to be realized across all levels of government and for the citizens of our state make the effort worthwhile. Please contact me if there are any questions about this response or if we need to provide additional information.

Sincerely,

David L. Litchliter

MISSISSIPPI

INSTITUTIONS OF HIGHER LEARNING

Mississippi Automated Resource
Information System (MARIS)

June 14, 2002

Dr. Max Arinder
Executive Director
PEER
501 N. West St.
Jackson. MS 39201

Dear Dr. Arinder:

It is a pleasure to address the recommendation included in the PEER report "Review of County Information Systems" that MARIS continue as the chief coordinating entity for GIS and remote sensing activities in Mississippi. The following discusses how and why we feel qualified to do so. It also recognizes, discusses, and makes recommendations about how MARIS can and should be revitalized.

Contrary to statements that Mississippi lacks coordination and communication in the area of GIS, a real cooperative endeavor has maintained continuity since the early 1980's via the Mississippi Automated Resource Information System (MARIS). MARIS has successfully achieved this mission through the goals of coordination, education, services, geo-data development, and public availability of that data. It continues to be willing and able to maintain the lead role for GIS coordination in the state.

Coordination

An Executive Order of Governor Bill Allain officially established MARIS in 1983. Since that time, MARIS has met and worked monthly with a very active state agency user group (MARIS Task Force). Attendance at meetings of the Task Force average 25-50 people. Users routinely travel to the Task Force meetings from locations throughout the state. Through outreach, the Task Force includes the participation of federal & local government and interested private sector entities.

More importantly, the Task force has been very successful in realizing the principle goals of MARIS. De-facto GIS standards have been achieved to ease the integration of GIS technical resources and GIS data development and dissemination into agency programs. Examples of standards include: data

reporting, applications software, data development and geo-positioning systems. Refinement of standards continues, to better conform to emerging national standards such as the Federal Geographic Data Committee's (FGDC) metadata (data reporting) standards.

Real collaboration has enabled the MARIS community to successfully identify and obtain the major ingredient necessary to the successful application of GIS - new or improved geo-spatial data. An example of data development successes and participating agencies is noted in Attachment A. The Task Force determines data development priorities, costs and resources required, and requests needed support at the executive and policy level. The director of the MARIS Technical Center has usually made these contacts with staff support from the Task Force. Funding has occurred by way of direct appropriations, grants, cost share, and work share.

As a result of its collaborative successes, MARIS received the very prestigious, Exemplary Systems in Government award from the Urban & Regional Information Systems Association (URISA) in 1996. MARIS received a similar award from Environmental Systems Research Institute (ESRI) in 2001.

MARIS presents similar awards annually to the agency and an individual who best exemplify the spirit of MARIS through cooperation and coordination in using GIS to manage the State's resources.

Education

GIS and remote sensing have emerged as powerful and necessary decision support technology since the inception of MARIS. Accordingly, national attention to GIS issues such as database and open systems standards, data warehousing/public access, and spatial data infrastructures has evolved. Federal, state, and local government and private sector interests are involved. In order to better understand these issues, communicate them to interested parties in Mississippi, and influence our particular interests and concerns, MARIS members have served on FGDC and National States Geographic Systems Council (NSGIC) committees, the Executive board of NSGIC, and the Strategic Planning Committee of the Consortium for International Earth Science Information Network (CIESIN).

A more direct focus on GIS/remote sensing technical and policy issues has long been provided to the MARIS community via special in-state forums, workshops, and seminars. Most of these have been arranged and administered by the MARIS Technical Center. The Center also administers all monthly meetings, special committees, and a web page containing links to GIS news and special GIS data and information sites.

Services

As a result of focusing on coordination as well as GIS technology from the beginning, MARIS enabled state agencies to learn about and implement GIS in a fashion that was tailored to their specific needs, but unified with the rest of the MARIS GIS community. This has promoted greater efficiency of data development, sharing, and public dissemination. For example, the MARIS Technical Center has worked closely with the Public Service Commission, Forestry Commission, Department of Environmental Quality, and others to implement GIS capabilities within their agencies in a manner that insured program success. This process continues by way of refining existing state agency GIS programs and planning new programs for agencies with limited or no GIS applications such as the Department of Agriculture and Commerce.

A chief component of MARIS services has been mapping. Hundreds of special mapping projects have been completed by MARIS for use in site suitability, historical, environmental, and socio-economic application requirements. The MARIS web page also contains a first phase Internet Mapping Program for use by the public and private sector.

Perhaps the most significant service provided by MARIS since 1997, is the availability of the state geo-spatial database to all interested parties via the MARIS web site. Between 1996 and 2001 the number of files provided by way of off-line and on-line means, increased from 5,000 to 25,000. In FY 2002 alone, over 500,00 files have been provided by way of CD's and on-line downloads. The majority of requests have come from the private/commercial sector.

Challenges and Recommendations

MARIS has and continues to represent much of what optimum state government should be, but other issues remain that need to be addressed.

1) Revitalized MARIS Legislation: The MARIS legislation needs to be revisited and submitted for attention by the FY2004 legislative session. Items of importance are: membership, including local and private sector interests; revitalization of the Policy Committee (See Number 2 below); and clarification of the role of the MARIS Technical Center.

2) Policy Committee: All that has been achieved in the last ten years has been accomplished by the mid-management and technical level staff of the MARIS Task Force. Only in the early years was MARIS able to take advantage of the input and influence of legislative and policy level interests. Such a cadre of interest must be reintroduced to the activities of MARIS. A truly interested and active Policy Committee will greatly encourage Task Force members to strive for even greater accomplishments.

3) Local/Regional Government: The needs, responsibilities, mandates, and data requirements of local governments are often different from those at the state and federal levels. As GIS technology has become more affordable, local governments have increasingly looked at ways of integrating the technology into their daily operations. This defines a clear role for local government participation in MARIS activities. Although the standard geo-spatial data requirements of local governments can often be coordinated and integrated with such efforts at the state level, certain aspects of local government may require non-standard or more specialized data (tax reappraisal, for example).

4) Data Development/Maintenance: Data development/maintenance is the process of collecting, creating, refining, updating, warehousing, and disseminating data seamlessly and in a shared context, across agency or institutional barriers in a standardized manner. The tangible and intangible returns on investments in GIS data are many, especially when funding arises out of shared coffers. To date, no structured, standardized data development/maintenance program for geo-spatial data exists in Mississippi. A restructured MARIS community must address this issue as soon as possible.

We look forward to assisting further in any manner possible.

Sincerely,

Bobby Smith, Director
MARIS Technical Center

Attachment A

MARIS COOPERATIVE PROJECTS

National Aerial Photography Program

- MARIS Technical Center
- MS Dept of Transportation
- US Geological Survey

Digital Ortho Quadrangles

- MARIS Technical Center
- MS Dept of Transportation
- MS Forestry Commission
- US Geological Survey
- US Department of Agriculture

Digital Raster Graphic (Digital USGS Quads)

- US Geological Survey
- Dept of Wildlife Fisheries and Parks
- MARIS Technical Center

State Outdoor Recreation Inventory

- MARIS Technical Center
- MS Dept of Wildlife Fisheries and Parks
- US Park Service

Hydrologic Units (Watersheds) 1:24000

- Dept of Marine Resources
- Dept of Environmental Quality
- Natural Resources Conservation Service
- US Geological Survey
- US Fish & Wildlife Service
- MARIS Technical Center

Contour Lines (Hypsography) 1:24000

- MARIS Technical Center
- MS Dept of Environmental Quality
- US Geological Survey
- US Forest Service

Public Land Survey System

- MS Dept of Transportation
- Mississippi Legislature
- MS Public Service Commission
- MS Dept of Environmental Quality
- MARIS Technical Center

Updating of Roads

- **MS Dept of Transportation**
- **MARIS Technical Center**
- **MS Forestry Commission**

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