THE YEAR 2000

The Commonwealth's Status in Meeting the Year 2000 Compliance Deadline

JUNE 1998 – PERFORMANCE AUDIT

EDWARD B. HATCHETT, JR.
AUDITOR OF PUBLIC ACCOUNTS

The Auditor Of Public Accounts Ensures That Public Resources Are Protected, Accurately Valued, Properly Accounted For, And Effectively Employed To Raise The Quality Of Life Of Kentuckians.

EDWARD B. HATCHETT, JR.
AUDITOR OF PUBLIC ACCOUNTS

June 3, 1998

To the People of Kentucky
The Honorable Paul E. Patton, Governor
Crit Luallen, Secretary
Governor's Executive Cabinet
Aldona K. Valicenti, Chief Information Officer
John P. McCarty, Secretary
Finance and Administration Cabinet
Stephen N. Dooley, Commissioner
Department of Information Systems

Re: Performance Audit of the Commonwealth's Status in Meeting the Year 2000 Compliance Deadline

Ladies and Gentlemen:

We present our report on the status of state government's efforts to become Year 2000 compliant. As a result of our audit, we conclude that insufficient attention has been paid to this matter, and progress toward compliance has been inadequate. At the current rate of progress, not all cabinets will complete Year 2000 compliance efforts by December 31, 1999. We are particularly concerned that accurate Year 2000 budgets do not exist; thus, raising concerns that adequate funding has not been committed to assure government-wide compliance.

We recommend the Governor establish Year 2000 compliance as the state's highest information technology priority and require all cabinets to submit prioritized inventories of computing systems and components. We also suggest the Commonwealth's Chief Information Officer undertake coordination of all Year 2000 compliance projects.

Once the respective offices have advised us that the recommendations have been implemented, they will be considered closed. We will be happy to discuss with you at any time this audit or the services offered by our office. We appreciate the cooperation our staff received from officials in the various cabinets and state agencies.

Very truly yours,

Edward B. Hatchett, Jr.
Auditor of Public Accounts

144 CAPITOL ANNEX
FRANKFORT, KY 40601-3448
TELE. (502) 564-5841
FAX (502) 564-2912
hatchett@apa1.aud.state.ky.us

AN EQUAL OPPORTUNITY EMPLOYER M/F/D

2439 U.S. 127 SOUTH
FRANKFORT, KY 40601-8939
TELE. (502) 564-7494
FAX (502) 564-7741

Executive Summary

As we approach the next century, the Commonwealth of Kentucky is facing an increasing risk of information system failures caused by the inability of some computers to process year-date data beyond the year 1999. For many years, computer programs were designed to conserve data storage space by using two digits to depict the year-date. When the year 2000 occurs, "00" will present an ambiguity that prevents such systems from distinguishing between 1900 and 2000. The Year 2000 problem threatens the information systems upon which the state relies to conduct its programs and deliver services to its citizens. Despite the technical nature of the issue, the Year 2000 crisis is primarily a management problem. Managers must inventory their existing non-compliant systems, prioritize the work on those systems, allocate the resources necessary to bring non-compliant systems into compliance, and develop contingency plans to protect service delivery and cabinet operations from system failures.

Our work revealed that senior management of the executive branch cabinets has not taken the necessary steps to address the risk of information system failure at the turn of the century. As of March 1998, only two cabinets, Tourism Development and Economic Development, have reported completing the necessary Year 2000 renovations of legacy systems.[1] Legacy systems, however, have generally received more attention than non-legacy systems. No cabinet has reported completing renovation of all its at-risk assets, which include internal and external systems, as well as hardware components and business facilities. Complete budgets for compliance work do not exist and contingency plans have often not been developed.

The Department of Information Systems (DIS) Year 2000 oversight and reporting mechanisms have not been as effective as necessary in supporting the efforts of cabinet information resource managers. At the same time, some cabinets have not responded to information requests by the DIS in a complete or timely manner. Consequently, management information necessary to fully assess the state's risk is unavailable. As in many other states, no standards have been developed for use in the verification of system compliance. Because cabinets may not complete Year 2000 renovation measures for all enterprises in time, choices regarding which computing systems and infrastructure components to repair or replace—and which to shut down or repair at a later date—will have to be made.

We recommend that the Governor assign the highest priority to the resolution of the Year 2000 problem. Additionally, the Chief Information Officer should disapprove any cabinet's information technology projects unless that cabinet has made satisfactory progress toward resolving its Year 2000 problem. Finally, the DIS should provide additional assistance to each cabinet and work with it to prioritize which systems, statewide, should be given highest priority. The Department should also undertake independent testing and verification of Year 2000 compliance for mission-critical systems.

[1] Legacy systems are those agency-owned systems that have been developed by the Department of Information Systems or an outside vendor and are running on the Commonwealth's mainframe.

Contents

Transmittal Letter

Executive Summary i

Introduction 1

What is the Year 2000 Problem? 1
Year 2000 Oversight Responsibilities 1
Kentucky's Approach to Resolving the Year 2000 Problem 3
Audit Objective 4

Are State Cabinets Taking Sufficient Action To Prepare for the Year 2000 Computing Problem? 5

Legacy System Environment Simplifies Year 2000 Efforts 5

Year 2000 Progress Inconsistent in Cabinets 5

Year 2000 Is A Management Problem 7
Management Action Required 7
Accurate Year 2000 Budgets Do Not Exist 8
Year 2000 Not the Priority in State Government 9
Fixing the Problem, Testing, and Implementation 10

State Needs to Ensure Continuity of Mission Critical Systems That Directly Affect Citizens 11

Statewide Oversight Ineffective in Supporting IRMs 12
More Technical Assistance Is Needed 12
No Compliance Standards Have Been Developed Nor Independent Verification Undertaken 13

Recommendations 13

Response to Agency Comments 15

Appendices

I. **Scope And Methodology** 16

II. **Status of Legacy Systems** 17

III. **Agency Comments** 19

IV. **Auditor of Public Accounts Information** 30

Abbreviations

CIO	Chief Information Officer
DIS	Department of Information Systems
IRM	Information Resource Manager
KIRM	Kentucky Information Resource Management
MMIS	Medicaid Management Information System

Introduction

What is the Year 2000 Problem?

Because of the potential for widespread information system failures on January 1, 2000, commercial airlines are considering grounding their fleets on that day. Electric power plants are at significant risk of failure, and Defense Department weapon systems are in jeopardy. Information technologists have estimated the worldwide cost of fixing the Year 2000 problem to be as much as $600 billion. The General Accounting Office is concerned that, at the current pace, not all mission-critical systems in the federal government will be Year 2000 compliant in time. We believe Kentucky faces similar risks. With only 18 months until December 31, 1999, the turn of the century could be marked by the failure of some state government operations and services.

The Year 2000 problem is a “computer bug" with global implications. In the past, systems generally used two digits to depict the year-date, such as “98” for 1998. This approach to programming year-date data conserved data storage space and operating costs. In the two-digit format, the year 2000 is depicted by “00.” Many systems will not interpret "00" as the year 2000, instead reading the date as 1900. Year-date sensitive applications that perform arithmetical calculations, comparisons of one year to another, or sorting of year-date fields, may produce incorrect results when processing data for the year 2000 and beyond. If they contain computer chips with embedded date codes, computer hardware and other devices may simply stop operating.

Year 2000 Oversight Responsibilities

CABINET SECRETARIES

Within state government, cabinet secretaries are responsible for assuring that all information systems and technology components are Year 2000 compliant. As of May 12, 1998, this included at least 403 legacy systems and 1400 internal and external systems. The Department of Information Systems (DIS) has identified legacy systems residing on the state's mainframe computer; however, state cabinets must identify their information systems that are indigenous to the cabinet, including mid-range or mini-computer systems, personal computer, workstation or network systems, and systems developed and maintained by vendors or third parties. Devices such as routers, security badge readers, telephone systems, elevators, pagers/beepers, etc. are also included in the systems cabinets must inventory.

DIS groups technology systems and components into the following categories:

- **Internal Systems**. These are software systems that have been developed internally by the agency and are operated by the agency.

- **External Systems.** These are software systems that were developed by an outside organization or vendor, and the vendor has the responsibility for changes and enhancements.

- **Legacy Systems.** These are software systems that have been developed by DIS or an outside vendor and are running on the Commonwealth's mainframe at DIS.

- **Infrastructure Components.** These are the hardware components that run the systems. They contain embedded chips or micro-controllers and are directly related to information technology processes. They may be computers (mainframe, midsize, personal, laptop, hand-held, etc.), servers, network devices (hubs, switches, etc.), channels, controllers, scanners, etc.

- **Business Facilities.** These are hardware components that contain embedded chips or micro-controllers that are not normally associated with information technology or data processing. They may include badge readers, vaults, elevators, environmental systems, security systems, faxes, VCRs, copiers, telephone systems, pagers, etc.

KENTUCKY INFORMATION RESOURCE MANAGEMENT COMMISSION (KIRM)

The KIRM Commission is an independent agency of state government traditionally responsible for overall leadership, policy direction, strategic planning, and coordination of information resources within the Commonwealth. KIRM reviews and approves biennial information resources plans from each executive branch agency. KIRM's most recent evaluation of these plans disclosed that senior cabinet level managers are not fully aware of the magnitude of the Year 2000 problem, and that departmental systems and programs are at risk of failing because adequate plans and resources have not been directed at the agency-level problem. While KIRM approves the information resource plans, the commission provides no oversight or monitoring of the implementation of the approved plans.

DEPARTMENT OF INFORMATION SYSTEMS

DIS is responsible for providing technical support to all executive agencies of government in the application of information technology. As part of its Year 2000 Impact Assessment Project, DIS has selected an approach for state cabinets to follow in solving the Year 2000 problem. Executive branch cabinets, however, have the responsibility of implementing the plan and ensuring that their systems are Year 2000 compliant. The Impact Assessment Project includes a timeline for the submission of reporting templates by each cabinet. These templates report Year 2000-associated inventory, assessment, and high level planning information.

CHIEF INFORMATION OFFICER (CIO)

On April 7, 1998, the Governor signed new legislation confirming a new, consolidated information technology oversight function within state government. The state's CIO is the Commonwealth's single point of contact and spokesperson for all matters related to information technology and resources, including policies, standard setting, deployment, strategic and tactical planning, acquisition, management, and operation. The CIO has authority to grant or withhold approval to initiate any large information technology project.

Kentucky's Approach to Resolving the Year 2000 Problem

The Year 2000 issue has a significant business impact and an immovable project deadline. DIS's approach for cabinets to follow in its Year 2000 projects is similar to strategies recommended by information technology consultants and in use by public and private sector organizations. The strategy involves breaking the Year 2000 project into the following phases: Awareness, Inventory, Assessment, Planning, Modification, Testing, and Implementation. (See Table 1 for a brief explanation of the seven-phase DIS strategy.) Corrective actions must be prioritized based on the timing of projected failure dates and the anticipated impact of the failure. The project plan states: "After the Year 2000 is made a priority in the agencies, the most important activities are to identify, measure the impact and plan the solution for all projects. This is the only way to insure success and prevent failures due to the century change." Corrective actions must be prioritized based on time-projected failure dates, and enough time must be allocated to modify, test, and monitor all high priority systems.

Table 1: **DIS Year 2000 Project Phases**

Phase	Tasks to be Completed	DIS Requested Completion Date
Awareness	Assure that all cabinet staff are aware of the Year 2000 issue and that publicly broadcast sponsorship and management commitment is in place.	The Secretary of the Governor's Cabinet officially notified all Cabinet Secretaries on February 27, 1997 that they needed to establish Cabinet level Year 2000 coordinators.
Inventory	Produce a complete list of the systems and applications operated by a cabinet and provide some basic information on these systems.	May 7, 1997
Assessment	Identify which business practices and/or systems need to be modified, enhanced, or replaced to be Year 2000 compliant.	June 10, 1997
Solution Design and Planning	Develop the cabinet's Year 2000 solution(s), plan the detailed activities, and identify the overall project costs and schedule.	Completion dates are dependent upon each system or component and overall planning of priorities and resources for compliance work.
Development and Modification	Execute the plans developed for each project within the time and cost estimates.	
Testing	Ensure projects and/or systems are tested thoroughly and accepted by user management.	
Implementation	Integrate the project and/or system into the business practice.	July 1, 1999

Source: DIS

Audit Objective

During the course of this audit, the Office of the Auditor of Public Accounts performed the following procedures:

- Surveyed the 15 executive branch cabinets in order to determine the status of their Year 2000 compliance,
- Compared Year 2000 compliance efforts of other state governments, the federal government, and private sector firms,
- Reviewed the 1998-2000 Information Resource Plans for the 39 large agencies, and
- Interviewed officials from DIS, KIRM, and selected cabinet-level information resource managers.

Our audit was limited to examining whether cabinets have taken adequate steps to become compliant. We did not test or verify actual compliance for systems that officials have stated are compliant. Additionally, we confined our audit to executive branch cabinets and did not include judicial, legislative, or public university assets in our review.

The following question was addressed:

Are state cabinets taking sufficient action to prepare for the Year 2000 computing problem?

The audit was conducted in accordance with generally accepted government auditing standards. Appendix I contains a complete discussion of the scope and methodology of this audit.

Are State Cabinets Taking Sufficient Action To Prepare for the Year 2000 Computing Problem?

Summary

A lack of priority for resolving the Year 2000 problem has led to inconsistent results and insufficient actions, increasing the risk that the state will not be prepared for the change of the century. While DIS has a centralized management structure to oversee the legacy environment, cabinet secretaries have the ultimate responsibility for ensuring their agencies' systems are Year 2000 compliant. We found, however, that the leadership of some cabinets lack sufficient commitment to solving the problem. Additionally, centralized management of the state's efforts needs improvement. DIS has been unable to obtain complete information from several cabinets. Cabinet officials told us that the reporting requirements imposed by DIS are too burdensome and only serve to slow their ability to resolve the problem. Cabinet officials also told us that technical assistance in dealing with the Year 2000 problem has been insufficient.

Legacy System Environment Simplifies Year 2000 Efforts

Compared to some states, Kentucky has one advantage in Year 2000 compliance efforts. Kentucky has centralized the maintenance and administration of the state's legacy systems at the state's DIS data center. This centralization allows DIS to more efficiently inventory, assess, renovate, and test the legacy systems than would be possible if the systems were disbursed among state agencies. Consequently, DIS officials believe Kentucky's cost to renovate the legacy systems will be much less than other states without a centralized legacy environment.

According to DIS, approximately half of the state's 403 legacy systems had completed Year 2000 renovation efforts as of March 1998. DIS estimated the total cost of legacy system renovation to be approximately $9 million. While roughly $5 million of the effort has yet to be completed, DIS believes it has the personnel to complete the work by its July 1, 1999 deadline. Appendix II contains a listing of those legacy systems that, as of March 1998, had not yet begun renovation efforts. In comparison, Tennessee, which has a similar legacy environment to Kentucky, has budgeted $9.6 million, is seventy percent completed with the 233 applications on their legacy mainframe, and estimates that they will be completed by the end of 1998.

Because cabinets are responsible for budgeting the funding for the renovation of their legacy systems within their own information technology budgets, work orders are needed prior to DIS beginning renovation. While DIS believes they will have no problem obtaining the work orders, we believe the CIO and DIS should have the authority to unilaterally begin work and bill the cabinets if necessary. Because of the large number of systems and resource constraints that will only increase at DIS as the Year 2000 approaches, DIS must be able to appropriately schedule this work instead of waiting for cabinet approval.

Year 2000 Progress Inconsistent in Cabinets

The Year 2000 problem, however, is not confined to legacy systems. Cabinets must also complete Year 2000 renovation efforts for non-legacy information resources, which include internal systems, external systems, infrastructure components, and business facilities. Approximately 1,400 non-legacy systems are operating in the executive cabinets, either developed internally by the cabinets or by outside vendors. These systems can range from very small, personal computer-based systems, to very large, complex systems. For example, the MMIS is the vendor-operated system that provides data for most aspects of the

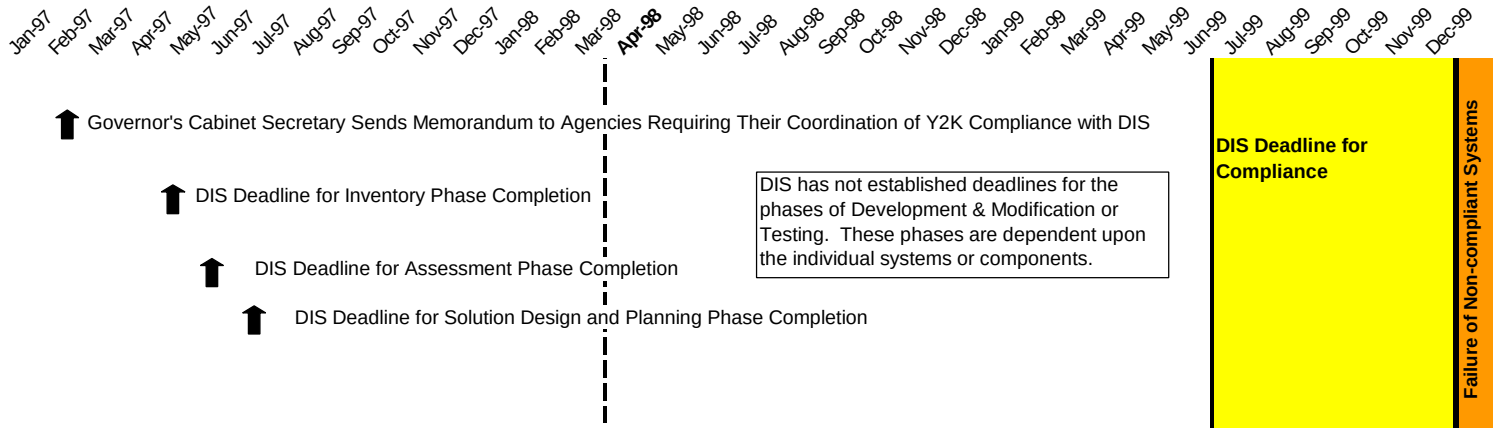
administration of the Medicaid assistance program of the state. This program provides benefits to over 600,000 citizens and expends over 20 percent (approximately $2.5 billion) of the state's budget. The Department for Medicaid Services has said its total mission is dependent on the successful operation of this system. However, as of April 1, 1998, MMIS was not yet under contract to be made Year 2000 compliant.

Additionally, cabinets must inventory infrastructure components and business facilities. These are hardware components that contain embedded chips or micro-controllers and include items such as computer hardware, telephone systems, security systems, medical devices, and computer network devices. Because of the variety of components containing embedded computer chips, and the uncertainty surrounding the Year 2000 status of each chip, the Commonwealth's CIO indicated that these myriad items are now the biggest concern. Technical staff within the cabinets must painstakingly evaluate all systems and related components in order to ensure compliance.

In December of 1997, the Secretary of the Governor's Executive Cabinet noted that several agencies were delinquent in reporting cabinet specific information on inventories, assessments, and compliance plans. DIS requested that cabinet reports on inventories be submitted by May 7, 1997, that assessment effort reports be reported by June 10, 1997, and that reporting on the high-level planning of system solutions be completed by July 10, 1997. Some cabinets, such as Revenue, Finance and Administration, and Families and Children, are significantly late in completing these phases of the plan. As of April 1998, these cabinets had not yet submitted the complete high-level planning information DIS had requested.

As of April, several cabinets had yet to submit complete inventory, assessment, and planning information.

Kentucky's Timeline For Year 2000 Compliance



Source: DIS Year 2000 Impact Assessment Project

Year 2000 Is A Management Problem

Because the total scope of the Year 2000 problem is still unknown, the cost to resolve the problem remains uncertain. Moreover, the risk of failure increases as the time remaining grows shorter. To address the problem, senior policy makers and managers must understand and vigorously support efforts to resolve the issue. Without unqualified support from management, all Year 2000 efforts will be at risk, and securing the resources necessary to solve the problem will be more difficult. This was recognized at the federal level by the General Accounting Office, which stated: "Preparing for the year 2000 is much more of a management challenge than a technical one.[2]" Other states, such as California and New York, have established central offices for the oversight of Year 2000 projects. Some other states will not consider any new information technology project unless the Year 2000 planning requirements of the departments meet approval. In New York, the governor declared Year 2000 compliance to be the state's number one technology priority and imposed a moratorium on all new technology initiatives which might negatively impact a cabinet's ability to achieve Year 2000 compliance.

Management Action Required

Management must take the steps outlined in the DIS plan to resolve the problem within a time frame that cannot be extended. Cabinets will have to choose which systems they will modify first, which they will defer for modification or retire, and those they simply will not be able to fix in time. To decide rationally upon a course of action, we believe the following steps are essential for the management of any cabinet's successful completion of its Year 2000 program. Senior management of the cabinet should ensure that these actions are taken.

- **Complete Inventories**: Each cabinet must complete an inventory of its non-compliant computing systems and technology assets before the full scope of the Year 2000 problem can be assessed and properly addressed.

- **Prioritize Systems**: Cabinets must prioritize their non-compliant information systems. Systems must be prioritized according to the impact of their non-compliance upon the ability of the cabinet to deliver services, especially those effecting the life, health, and safety of citizens. Information on the projected failure dates and the time needed to modify, test, and monitor all high priority systems should be developed.

- **Prepare Budgets**: A number of cabinets have not budgeted for year 2000 renovation efforts. When we examined the cabinet information resource plans for 1998-2000 we found that only five cabinets or agencies had specifically included Year 2000 renovation costs. The Year 2000 renovation cost estimated by the five cabinets or agencies totaled $8.7 million. We are concerned that adequate funding may not be available to all cabinets, and other programs or services may have to be curtailed in order to fund Year 2000 renovation.

[2] United States General Accounting Office, Year 2000 Computing Crisis: Time is Running Out for Federal Agencies to Prepare for the New Millennium, GAO/T-AIMD-97-129, July 10, 1997, p. 7.

- **Assign Resources**: Because Information Resource Managers (IRMs) must deal with the ongoing operations of the cabinets, undertaking the tremendous additional burden of Year 2000 compliance may be overwhelming without addition personnel. Each cabinet will need to determine what resources are necessary to complete Year 2000 compliance, either through internal allocation of resources or through outside contracting.

- **Monitor Progress:** Senior managers should monitor progress no less than monthly in order to assure themselves that resources are appropriately focused on the problem and delays do not occur.

- **Develop Contingency Plans:** Because the consequences of systems failure can be very high, contingency plans must be prepared so that core business functions will continue to be performed, even if systems have not been made Year 2000 compliant.

Accurate Year 2000 Budgets Do Not Exist

As of May 12, 1998, DIS estimated the total cost of Year 2000 conversion for all state agencies, both legacy and non-legacy systems, to be approximately $24 million. Even this amount may not be sufficient to complete all Year 2000 conversion efforts because some agencies have not yet completed assessing their existing systems and the estimate is based only upon detailed agency inventories. Over one-third of all items reported to the DIS inventory database have not yet been assessed and therefore have no cost estimate for conversion. Additionally, of those which have been assessed as non-compliant, 8 legacy systems and 39 non-mainframe systems have no estimated conversion cost. According to the Commonwealth's CIO, the true cost of Year 2000 compliance is likely to be closer to $34 million. Also, the $24 million estimate is limited to executive branch agencies for which DIS's Year 2000 project has oversight responsibility. The estimate excludes the cost to solve the Year 2000 problem for the legislative and judicial branches of government, and the state's universities, which we did not review as part of this audit.

Each cabinet has line items in their budget for information technology personnel, hardware, and software. Unfortunately, Year 2000 conversion costs, as opposed to normal information technology operations, are not specifically differentiated. Agencies were informed as early as 1995 that Year 2000 costs were to be funded from their budgets. The state must rely on each cabinet to have budgeted for the expenditures within their information technology line items. The state must also rely on each cabinet to have budgeted elsewhere for replacement of business facility items such as electronic locks, sprinklers, telephones and telephone switches, facsimile machines, and any other device with non-compliant embedded chips.

In addition to budgeting for Year 2000 conversion, each cabinet must have funds available for contingencies. As we have noted, there will be items the cabinets will not be able to convert in time, as well as items that are simply missed in inventory and assessment. Funds will be needed to replace those critical components or fund the additional personnel, outsourcing, or new services that will be needed to keep operations running until compliance is achieved.

Officials from different cabinets have stated a belief that funds allocated to EMPOWER Kentucky, the state's program for reengineering many core government processes, will resolve Year 2000 problems. This is, unfortunately, not the case for most cabinets. EMPOWER funding is for the reengineering of business processes. While some EMPOWER funds have and will continue to be used to purchase new desktop computers and other new hardware and software, many of the EMPOWER projects cannot be guaranteed to be implemented by January 1, 2000. Therefore, cabinets cannot solely rely on new EMPOWER projects to correct Year 2000 compliance. For instance, the statewide accounting and reporting system is scheduled to be replaced as part of the Management Accounting and Reporting System (MARS) EMPOWER project. Nonetheless, the Finance and Administration Cabinet has requested that the current legacy accounting system be made Year 2000 compliant by DIS and has set a date to begin work on the current reporting system if complete assurance cannot be made that MARS will be operational before January 1, 2000.

Each cabinet must first inventory its technology components, assess which are compliant, estimate the cost of compliance, and then determine where in their budgets those compliance costs, plus a contingency amount will come from. Cabinets may have EMPOWER funding to pay for some compliance work, such as new desktop computers, but other cabinets may have no such additional funding or funded EMPOWER projects that will not be operational by January 1, 2000. Until the inventory, assessment, estimating, and budgeting are completed, no cabinet, nor the state as a whole, will have a full understanding of the potential magnitude of the Year 2000 problem on the state's budget.

Year 2000 Not the Priority in State Government

Kentucky state government has not yet given appropriate priority to the Year 2000 problem. The Strategic Information Technology Plan developed by KIRM in conjunction with EMPOWER Kentucky recognizes that, "The Year 2000 problem presents a very serious management risk and the Commonwealth must be aggressive in addressing these problems. If significant Year 2000 problems arise, significant resources may have to be diverted from other projects.[3]" However, the plan falls short of recognizing the Year 2000 issue as the state's top information technology priority. Similarly, a number of agencies within the state have listed Year 2000 compliance as only one of a number of competing priorities. This consequently increases the risk that their organizations will not be ready for January 1, 2000.

Several cabinets have assigned a higher priority to EMPOWER projects than to resolving the Year 2000 problem. Both the state CIO and the commissioner of DIS told us that the EMPOWER projects will not provide a remedy for the Year 2000 problem. We are concerned that there is no statewide apparatus in place to make rational selections among projects and priorities of the different cabinets. Without adequate funding earmarked for compliance work, the resources needed to solve the Year 2000 problem must compete with other projects.

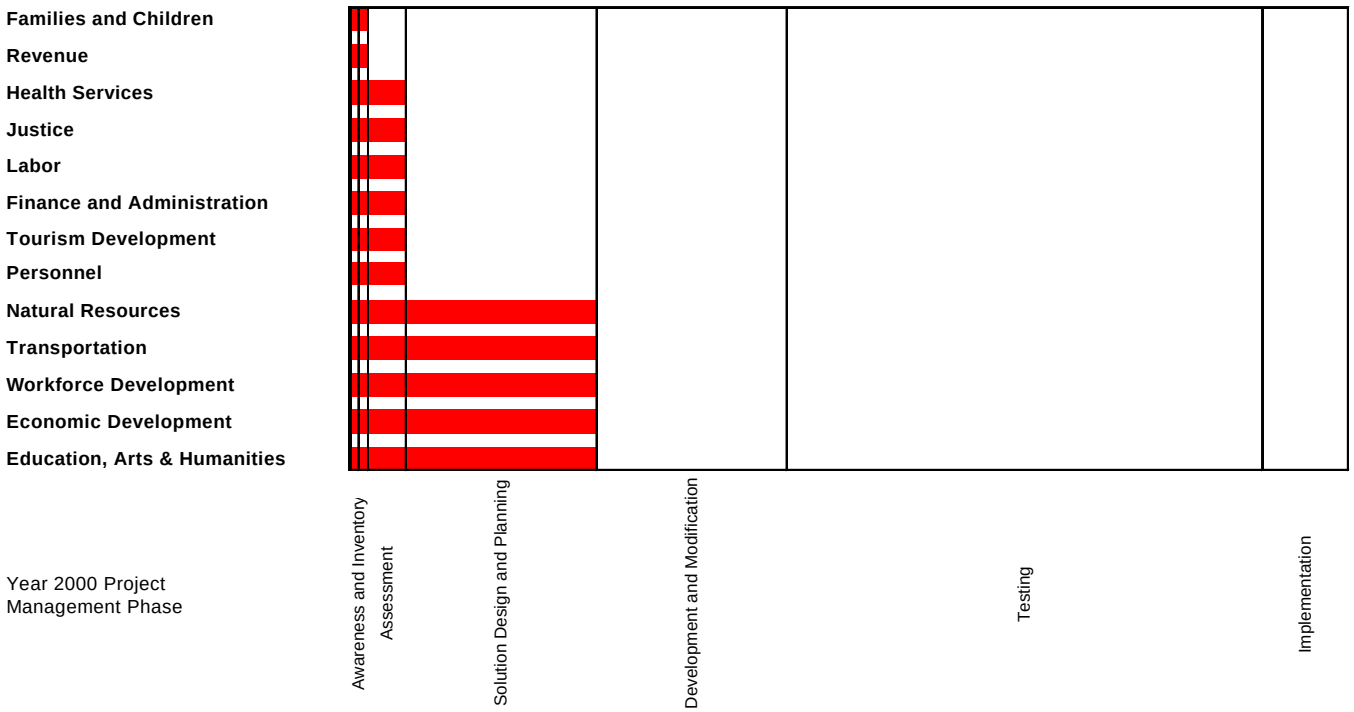
[3] Kentucky Information Resources Management Commission, EMPOWER Kentucky: Strategic Information Technology Plan, July 1, 1997, p. 32.

Fixing the Problem, Testing, and Implementation

After completing the necessary planning and budgeting steps for Year 2000 conversion, the actual work of replacing the item or conversion of the item and testing of the changes remains to be done. DIS reports that testing alone may take up to 50 percent of the entire renovation effort. Furthermore, for non-legacy systems, DIS has no role in system modification, system testing, and implementation of the Year 2000 solutions, unless specific requests are made for assistance by the cabinets. DIS is primarily focused on the renovation and testing of legacy systems. Non-legacy systems and infrastructure items, such as information systems internal to specific agencies, desktop computers, alarm systems, communication systems, and certain medical devices, are reliant upon the efforts of the individual cabinets. We are concerned that absent greater progress during the early phases of the effort, some of the highest priority items in state government are at risk of not meeting the Year 2000 deadline.

The chart below depicts completed phases of the various state cabinets as reported to us by the cabinets. Many cabinets have some systems undergoing work, which equates to the development and modification, testing, and implementation phases. But, as noted, few have completed the planning phase for all computer systems and components.

Year 2000 Status by Cabinet (as of March 1998)



Source: Cabinet response to APA survey[4]

[4] This chart reflects only those cabinets that have completed an Information Resource Plan (IRP) by KIRM. The agencies within the Public Protection and Regulation Cabinet and the General Government agencies submitted individual IRPs.

The width of each phase in the chart is proportional to the time estimated by the Gartner Group (a noted information technology consulting firm) for Year 2000 compliance. Hence, testing takes approximately half the width of the chart and half of the work of Year 2000 compliance.

Many cabinets are behind schedule for successful Year 2000 renovation according to the survey responses. For most cabinets, Testing, the most extensive phase in the effort, remains to be completed. With development and modification, testing, and implementation phases remaining, we are concerned that progress toward meeting the Year 2000 compliance is insufficient.

State Needs to Ensure Continuity of Mission Critical Systems That Directly Affect Citizens

Throughout the Commonwealth, citizens rely on state government to provide a variety of services. Some of these services directly impact the life, safety, and health of the citizenry. Other services provide essential benefits, such as worker's compensation benefits or welfare payments, or provide direct customer support through services to citizens. A centralized effort has not been made to prioritize the systems and infrastructure components at risk of failure that have the greatest impact on citizens. Additionally, individual cabinets must ensure that entities providing essential services that are regulated by the cabinet, such as hospitals, utility companies, and financial institutions, are taking the steps necessary to protect the interests of citizens. We believe statewide prioritization, not just prioritization within respective cabinets, is essential to ensure that those systems with the greatest potential impact continue to function properly after the turn of the century.

It is likely that some of the state's information resources will not be made Year 2000 compliant before the turn of the century. In fact, officials involved in the DIS assessment effort have told us they do not believe all of the state's enterprises will be Year 2000 compliant before the turn of the century. Which items will not be prepared for the year 2000 is still unknown, but without a centralized effort to prioritize and concentrate on key mission critical systems, scarce budget and personnel resources may be expended by the cabinets and DIS on lower priority systems. Currently, only a limited pool of state-level Year 2000 contingency funds exist; $6.7 million was set aside in the fiscal year 1998-2000 budget. No plans for the use of these funds have been developed, and each cabinet is responsible for funding its own Year 2000 efforts, including contingencies.

The majority of mission critical information systems are legacy systems, and the progress DIS has made in identifying, assessing and renovating legacy systems underscores the effectiveness of a centralized management approach. We believe such a coordinated approach is essential for non-legacy systems as well, considering both the needs of the citizens and the priorities of the individual cabinets. Without a consolidated list of the state's most important information technology resources, we cannot be assured that all of the most essential items will be renovated, tested, and implemented in time. Examples of processes reliant on potentially at-risk technology that we believe should be considered high priority include:

- Life, Health, and Safety (state police communication system, prison time locks and alarms, medical devices, and disaster assistance systems)

- Benefits (workers' compensation payment system, welfare and Medicaid payments, and retirement systems payments)

- Other Direct Customer Support (agriculture extension services, vital records, bank examiners, lottery, licensing)

Statewide Oversight Ineffective In Supporting IRMs

While we are encouraged by the recent creation of a state CIO to serve as a single focal point for the state's information technology, the state needs to improve the oversight and assistance it provides to the cabinets and agencies within state government. The implementation of the state's Year 2000 renovation efforts, with the exception of legacy systems, has been decentralized, with each cabinet responsible for its own inventory, assessment, planning, modification, testing and implementation. While the DIS Impact Assessment Project has raised awareness in every cabinet and provided a standard methodology for cabinets to follow, recent efforts have not provided the management information or the technical assistance necessary for a project of this scope.

Cabinet IRMs told us that the status reports issued by the DIS Year 2000 Impact Assessment Project management are inaccurate and that they were making much more progress than reflected in the DIS reports. The status reports, however, were generated from reports provided by those same cabinets, many of which have not submitted complete inventory or assessment information. As of May 12, 1998, the database DIS is using for this purpose is tracking 21,029 individual items. Over 7,000 of these items (34 percent) have not yet been assessed for Year 2000 compliance by the cabinets. The Cabinet for Families and Children, for example, has submitted an inventory list of 3,295 items. The cabinet has not yet submitted assessment information on 3,244 of those items.

Officials from a number of cabinets told us that submitting information on inventory, assessment, and planning is difficult and very labor intensive. They indicated they simply do not have time to continually update the numerous entries in the database. In some cases we concur. Where cabinets are replacing large numbers of computers within a short period of time, creating inventories and assessments of the equipment to be replaced would seem unnecessary. On the other hand, state agencies should already have inventories of their information technology assets. DIS may wish to take a more tailored approach to working with each cabinet in order to correct the incomplete flow of data.

More Technical Assistance Is Needed

Cabinet level Year 2000 coordinators also told us they have received little, if any, assistance from DIS or other state organizations in conducting their Year 2000 renovation efforts. Responding to these comments, the commissioner of DIS stated that only one cabinet, Revenue, had requested any help from DIS. Additionally, the Commonwealth's CIO told us that the DIS methodology, aside from raising awareness, also provides the agencies with guidance on becoming compliant. Some of the cabinet officials we surveyed agreed, noting the assistance provided through the Impact Assessment Project and subsequent instructions for PC testing. However, over 70 percent of the cabinets we surveyed reported they had received no technical support from DIS.

The Impact Assessment Project statewide coordinator is in the process of meeting with cabinet management and year 2000 coordinators; however, only limited assistance can be offered. As of April 1998, the statewide coordinator characterized his DIS office as a "one-man shop" and noted that he did not have the resources to devote extensive assistance to any single cabinet. We believe the state must devote more resources to providing technical assistance given that the year 2000 is such a significant problem.

No Compliance Standards Have Been Developed Nor Independent Verification Undertaken

As with a number of other states, Kentucky has developed neither a statewide definition for Year 2000 compliance nor minimum testing standards. Standard setting, now part of the responsibility of the CIO, was formerly undertaken by DIS and KIRM. Without such standards, different systems engineers and IRMs may assess compliance in different manners without fully assuring that the system or component will in fact function on January 1, 2000. Testing of software does not ensure a system is compliant unless the operating software, hardware, and other related components are tested. For instance, many state agencies exchange data with other agencies, the federal government, and the private sector. Unless all parties to any exchange are Year 2000 compliant, the coding embedded in non-compliant systems may contaminate information in compliant systems and databases. To avoid this, agencies must inventory and assess all internal and external data exchanges, make appropriate notification, and, if necessary, develop appropriate bridges or filters to maintain the integrity of compliant systems and the data within them.

Our review of the state's oversight of the Year 2000 process also noted that no attempt is being made to verify the information reported to DIS by the cabinets. Without standard definitions, or minimum testing standards, misunderstandings could affect the reliability of the information submitted. The Impact Assessment Project statewide coordinator again told us that he did not have the resources to verify information submitted by the cabinets. Still, without some minimal level of verification of the information being reported, the true status of the state's Year 2000 preparations may not be accurately reported.

Recommendations

In order to effectively manage the Year 2000 problem within the cabinets of Kentucky state government, and provide reasonable assurance to the citizens of the state that critical government operations will not be diminished, we make the following recommendations.

We recommend that the Governor:

1. Issue an Executive Order declaring the Year 2000 issue to be the top information technology priority in state.

2. Issue an Executive Order requiring all cabinet Secretaries to submit a prioritized listing, by June 30, 1998, of all mission critical information systems in need of Year 2000 conversion within their cabinet. The listing should include a statement of whether budget and personnel are designated for both the conversion work and contingency planning.

3. Assign oversight authority for the Year 2000 compliance to the CIO with the assistance of DIS.

Additionally, we recommend that the CIO:

4. Regardless of whether cabinets have submitted work orders, direct DIS to schedule and initiate the renovation of all DIS maintained legacy systems and bill agencies appropriately. The only exception to DIS initiating work would be submission by the cabinet and approval by the CIO of completed, detailed compliance, and contingency plans which preclude renovation of the legacy system.

5. Withhold approval of technology-related expenditures for any cabinet which the CIO has determined is not making satisfactory progress toward Year 2000 compliance.

6. Have DIS prioritize the top statewide mission critical systems that directly affect citizens and customers of the Commonwealth. Have DIS ensure that those systems and related technology components:
    - Remain on schedule toward compliance.
    - Receive whatever resources are necessary to bring them into compliance and ensure continuity of operation.
    - Have adequate contingency plans in place for unexpected Year 2000 related failures.

We also recommend that DIS:

7. Develop and disseminate standards delineating what constitutes certified Year 2000 compliance for a computing system or component and minimum testing criteria to ensure Year 2000 compliance has been achieved.

8. Provide personnel to assist the Year 2000 Impact Assessment Project statewide coordinator with the oversight and verification of project status within cabinets and agencies. Assign teams of DIS and Project personnel to conduct random testing and verification of Year 2000 compliance.

9. Assign teams of DIS and Project personnel to visit and assist cabinets and agencies with completion of their:
    - Inventory
    - Assessment
    - Solution Design and Planning (Especially with regard to prioritization)
    - Testing and Verification

10. Provide the CIO, governor, cabinet secretaries, and constitutional officers with monthly status reports for each prioritized mission critical system showing:
    - Overall system and infrastructure compliance status by phase.
    - Year 2000 budget estimate, funds available, and funds needed to complete Year 2000 renovations.
    - Personnel resources necessary, available, and needed to complete Year 2000 renovations.

Response to Agency Comments

We strongly reaffirm our finding that Kentucky's response to the Year 2000 computer crisis is inadequate, and that state government agencies face an increasing risk of information system breakdowns. To ensure the uninterrupted delivery of essential services, we again urge the adoption of our recommendations.

Scope and Methodology

Appendix I

Scope

The fieldwork for this audit was designed to determine the progress of the Commonwealth's Year 2000 compliance project. Our audit objective was to answer the question, "Are state cabinets taking sufficient action to prepare for the Year 2000 computing problem?"

We relied, in part, on the written responses, data submissions, interviews, and survey responses of officials from executive branch cabinets and agencies. We did not perform testing to verify missing inventory or determine whether systems believed to be compliant by cabinet officials were actually compliant. The scope of our audit was limited to cabinets of the executive branch. We did not review the legislative or judicial branches or higher education institutions. We conducted our work in accordance with generally accepted government auditing standards between September 1997 and April 1998.

Methodology

We reviewed the progress of state government's Year 2000 Impact Assessment Project. This project was designed to identify, assess, and plan for the compliance of hardware, software, and all other computer systems (non-mainframe) existing within the agencies. We also reviewed DIS schedules for all legacy systems that reside on the mainframe computer and their progress toward Year 2000 compliance.

We interviewed the DIS Year 2000 Assessment Impact Project statewide coordinator and DIS and KIRM officials to obtain an understanding of their projects and oversight responsibilities.

We reviewed legislation and statutes relating to the CIO, DIS, and KIRM to determine organizational structures and responsibilities.

In order to obtain a statewide perspective on all major agency planning and budgeting for Year 2000 conversion work, we reviewed the 1998-2000 Information Resources Plans for the 39 large agencies reporting to KIRM. For purposes of ascertaining conversion costs, we reviewed the 1998-2000 Executive Budget, Surplus Expenditure Plan, Budget in Brief, and Capital Construction Budget for all funding sources related to Year 2000 financing.

We sent Year 2000 Information Requests to the 39 large agencies to obtain confirmation from each agency about the status of progress toward Year 2000 compliance.

We also reviewed Year 2000 compliance efforts undertaken by other state governments, the federal government, private sector firms, and reports on Year 2000 progress from government agencies in Canada.

Status of Legacy Systems

Appendix II

The following list represents legacy systems residing on the Commonwealth's mainframe computer for which no work order had been issued to make the systems Year 2000 compliant, as of March 1998.

General Government
Election Night Tally
State Bar Association
Board of Accountancy
Board of Pharmacy
Payment Tracking
Federal Tracking
Supplies
Inventory Tracking

Public Protection
Boiler Inspection System
Banking & Securities
Elevator Inspection System
Alcohol Beverage Control
General Inspection System
Racing Commission License
Insured Fire Losses System
Plumbing Permits System
Plan Review System
Fire Marshalls System for Housing

Health Services
Sanitation Certification
Childhood Lead Poisoning Program
Genetic Counseling Reports
Kentucky Physicians
Maternal & Child Health
Milk Control Program
Travel Expense Voucher
Vital Statistics Micrographic

Transportation
Kentucky Accidents Reporting System
Federal Aid Project Status
Transportation Accounting and Budgeting System

Revenue
Business Tax System
Revenue Collection System Interface
Revenue Collection System
Revenue Journal Voucher
Taxes Paid (Coal Tax)

Families & Children
KASES-KY Automated Support & Enforcement
Beneficiary & Earnings Data Exchange
Food Stamp Employment and Training*
Long Term Care
Public Assistance System
KAMES - Integrated Claims System
Facts: Family Activity Client Tracking System*
Home Care Services*
Adult Protection Service*

Workforce Development
Current Employment Statistics
Employment Services Potential
Job Bank
National Data Systems
Online Data Entry and Display
Occupational Employment Statistics
One - Stop Reporting
Equal Employment Opportunity Report
SESA Automated Management
U I Employer Tax Accounting*
U I Benefits and Claims*
U I Referee Hearing*
Validity Generalization System
Wage Records

Natural Resources
Continuous Emissions Monitoring System
Kentucky Multiple Accomplishments System

Finance
Annual Financial Reports
Statewide Accounting & Reporting System*
Budget Request System
Contract Management System
Communications Networks Billing
Central Service Cost Allocation
Data Entry Utilization
Energy Usage Reporting
Old Accounting System
Local Depository Banks
Federal Bond Indebtedness
Boiler Inspection
Occupations & Professions
Budget
Carpool
County Fees
Engineering
Commerce
Finance Fiscal & Personnel
Boards & Commissions
Financial Systems Section - Miscellaneous
County Property Tax
Motor Vehicle Inventory
Capital Construction Projects
Budget Status Report
Governmental Services System
Kentucky Automated Purchasing System
Project Control Status
Physical Plant Management System
Personal Service Contract File Maintenance
Real Property Inventory
Utility Name & Address
Vendor Name & Address
Financial (Imprest)
Planning (IRP)
County & Municipal Tax Distribution System

- Indicates a partial work order received

Cabinet Summary – Legacy Mainframe Systems

As of March, 1998

Cabinet	Number of Systems Completed	Number of Systems In Modification	Number of Systems To Be Modified*	Percent Completed	$ Cost Remaining
Revenue	14	9	5 (1)	50.00%	$1,184572.60
Transportation	18	16	3 (1)	48.65%	$ 559,387.40
Finance and Administration	10	2	36 (3)	20.83%	$ 980,756.00
Families and Children	38	17	9 (0)	59.38%	$ 557,819.00
Health Services	18	15	8 (1)	43.90%	$ 494,561.00
Natural Resources and Environmental Protection	2	4	2 (1)	25.00%	$ 483,745.00
Workforce Development	38	13	14 (2)	58.46%	$ 192,207.50
Personnel	2	15	0	11.76%	$ 196,177.00
Justice	7	8	0	46.67%	$ 170,284.10
Education, Arts, & Humanities	30	1	0	96.77%	$ 19,000.00
Economic Development	2	0	0	100.00%	0
Tourism Development	5	0	0	100.00%	0
Labor	0	2	0	0.00%	$ 87,525.00
Public Protection and Regulation	8	1	10 (6)	42.11%	$ 119,047.00
General Government	13	0	8 (7)	61.90%	$ 21,111.00
Totals (403)	**205**	**103**	**95 (22)**	**50.87%**	**$5,066,192.60**

***Note** : This column is for those systems that have not yet begun modification work. Numbers in parentheses are those systems for which DIS has not assessed a cost estimate or performed any work.

PAUL E. PATTON
GOVERNOR

COMMONWEALTH OF KENTUCKY
OFFICE OF THE GOVERNOR
OFFICE OF CHIEF INFORMATION OFFICER
493 CAPITOL ANNEX
FRANKFORT, KY 40601
(502) 564-2611
FAX: (502) 564-7882

ALDONA K. VALICENTI
CHIEF INFORMATION OFFICER

TO: Edward B. Hatchett, Jr.
Auditor of Public Accounts

FROM: Aldona K. Valicenti AKV
Chief Information Officer

DATE: June 2, 1998

SUBJECT: Response to the Year 2000 Performance Audit

We appreciate receiving a draft of your Year 2000 performance audit. In general, we believe the report does not reflect the significant amount of planning or the commitment of time and resources that have gone toward progress on the Year 2000 issue. In fact, the progress on Year 2000 compliance is on par with other states facing this challenge. Our comments on the audit report were addressed with you in a meeting on June 1. Our comments from that meeting and review of the report are detailed below.

Executive Summary: The summary is not reflective of the data presented and discussed in the body of the audit report. The actual report cites examples, methodologies and practices being pursued by the private sector and various states and followed by the Commonwealth.

The summary also fails to state that in remediating and paying attention to the legacy systems first, the Commonwealth of Kentucky is taking care of its most critical systems. The majority of the state's mission critical systems are being maintained and remediated by the central organization, the Department of Information Systems (DIS).

The Year 2000 project approach and DIS' support to the agencies has been cited as ineffective. Again, the body of the audit report states very clearly that the project is using similar strategies recommended by information technology consultants and in use by private and public sector organizations. Progress cited in the report is not reflected in the summary.

In recognition of improving the management of information technology and specifically issues like the Year 2000, the Governor has implemented the CIO position to address and focus on the issues cited by this report. The audit report leverages heavily on the CIO position but fails to cite it as key accomplishment in the summary.

The audit report also presents several opportunities for improvement which are being evaluated or implemented.

Recommendations: All recommendations stated in the report will be carefully reviewed and given consideration for action. But it is important to note that in several cases the recommendations are already working or being put in practice. These practices will be cited and added to the formal project methodology and publicized to the Executive Cabinet and Information Resource Managers.

Legacy Systems Compliance: We agree that that the CIO should have the authority to begin work and bill cabinets. It is important that mission critical systems not be delayed by waiting on an agency requesting service. The CIO and the cabinet secretaries have discussed this issue and it is her intent to begin the work as needed.

The majority of the mission critical systems for the Commonwealth of Kentucky are being renovated as part of the legacy systems compliance work and the work is on schedule.

Year 2000 Management Problem: California and New York have been singled out as states with central control or with a Governor declaring Year 2000 a top priority. These states are probably not the best examples to follow. Both of these states will have serious problems making their systems compliant. Better examples might have been Washington, Nebraska, or Minnesota who have taken a very centralized approach to the Year 2000 remediation.

In addition, the CIO discussed the Year 2000 project with five other states and has found that the approach and progress to date is very similar for all states with a decentralized computing environment.

The Commonwealth's approach and project organization has also been discussed with the State of Colorado's Year 2000 Project Manager. Kentucky and Colorado have similar computing and organizational environments and can leverage learnings and practices. There will be periodic meetings to exchange practices and experiences.

Budgeting: Agencies were notified as early as 1995 that Year 2000 compliance and its issues were to be funded from their operating budgets and have planned toward this goal. This was not a mandate from the CIO or the Governor's Executive Cabinet Secretary. It is very difficult to examine an agency budget and determine where they expect to expend

funds for their Year 2000 effort since it is not line item identified. In some cases agencies may have budgeted for the Year 2000, but it was not specifically identified. Awareness to Year 2000 problems was addressed with the agencies in 1996, through direct contact and vendor presentations. The need to give their agency projects high priority and plans for funding, were emphasized. A contingency budget of $6.7 million was established during the 1998 legislature to fund any mission critical systems that may exceed the capabilities of an agency-operating budget. The $24 million for renovation contained in your report is correct for current agency reporting. However, we believe this figure will reach $34 million when all agencies are included, which is more in line with initial estimates provided by DIS and the individual Cabinets. These funds are available in the individual Cabinet budgets and in the contingency fund. In addition any new systems being implemented will be Year 2000 compliant that are being funded by the EMPOWER initiative.

EMPOWER: There is some confusion between EMPOWER and the Year 2000 when discussing priorities and funding. EMPOWER was never intended to solve the Year 2000 issue. In some coincidental cases the completion of an EMPOWER project may also eliminate a Year 2000 problem. We agree that statewide priorities for Year 2000 projects have not been established. The CIO, working with the cabinets and DIS, will review mission critical systems and components, and establish priorities that will assure Year 2000 compliance.

Key administrative systems are being addressed by EMPOWER which include finance, budgeting, and payroll. We have recognized that for these critical systems our Year 2000 issues must be resolved by July 1, 1999. This early date was not recognized in the report.

Supporting the Information Resource Managers: We will review our current project reporting process to determine areas that can be streamlined without eliminating its effectiveness. We will work with the cabinets in project areas that are labor intensive and adopt an approach that will satisfy their needs.

More technical assistance is needed: DIS has responded to every request for assistance. We have approached agencies in an effort to provide support and were told that assistance was not needed. Prior to the current project, DIS offered to do statewide assessment or to prepare a bid on a statewide basis, but the offers were rejected. DIS is responsible for and totally supports development and modifications to the legacy mainframe systems. DIS also has developed and supports many internal systems for the agencies. DIS has worked with the agencies to determine priorities for renovation toward Year 2000 compliance, projected the system modification timelines, and supplied sufficient resources to complete the projects.

We agree that the Year 2000 project staff would benefit from more resources. The staff is currently being expanded from within DIS and may be supplemented with outside

contractors. This will allow us to be more proactive and have more face to face with the agencies. A coordinator may also be placed in the CIO's office.

Year 2000 Status Figure (pg. 10): Please note that this figure does NOT include legacy systems which are being remediated by the Department of Information Systems.

Statewide definition of compliance: We agree that a statewide definition for Year 2000 compliance should be developed. Many states are beginning the definition process now. We are currently working on this task and reviewing this definition with other states. We have previously reported agency status based on the various project phases, inventory, assessment, planning, estimating, and delinquent target dates. Part of the definition for compliance will include a method to rate agencies based on combinations of these phases.

Validation and verification: An effort, at even a minimal level, should be made in each agency to obtain an independent verification and validation of systems and components for Year 2000 compliance. The scarcity of internal resources may determine the amount of auditing that can be performed. Outside contracting will be explored to make resources available.

General comment: Any comments made by members of this project regarding items not becoming compliant prior to the Year 2000, were in no way referring to any specific system or component. Rather it was a general reference to any Year 2000 project. There are risks. It is our task to mitigate the risks.

Status of Legacy Systems

We have appended a complete list of legacy systems and indicated their present status in the Year 2000 remediation process.

In summary, the Commonwealth is well positioned to continue progress toward compliance with Year 2000 issues and we are confident we will meet the deadline successfully. We appreciate the review and recommendations of the state auditor and will find this information useful as we proceed with our efforts.

C: Secretary Crit Luallen
Secretary John McCarty
Ron Bingham, Empower Chief Project Manager
Commissioner Stephen N. Dooley
John Tomlinson, Year 2000 Project Manager

Attachment

STATUS OF MAINFRAME LEGACY SYSTEMS

Legacy mainframe systems have been in all phases of a renovation cycle to become YR2000 compliant since April 1996. Current schedules indicate total renovation by 7/1/1999. Many systems have been completed and placed back into production. Other systems are in the development phase, while others according to priorities are planned for renovation and implementation. The following table indicates the status of the mainframe systems.

Y2K COMPLIANT, RETIRED/REPLACED	CURRENTLY UNDER RENOVATION	PLANNED
Intangible Property Tax	Individual Income Tax	Election Night Tally
Corporation Tax	Sales and Use Tax	Gaming Tracks Bingo
Accounts Rec. Posting	Business Tax	Surface Mine Permitting
Misc. Tax System	Omitted Prop. Tax	Ambient Air Monitoring
Appl. Access System	Interface System	Emissions Monitoring
File Req. System	Accounts Receivable	Compliance Tracking
Revenue GIS	Revenue Tire Tax	Aut. Lic. And Tax. System
Federal State Match	Rec. and Compliance	Aut. Time Reporting
Rev. General Ledger	Rev. Collections System	Budget Request
Tangible Prop. Tax	Rev. Journal Voucher	Central Ser. Cost Alloc.
Coal Tax	Tax Amnesty System	Old Acctg. System
Withholding Tax	Ad Valorem	Local Depository Bank
Coal Tax Refund	Usage Tax	Occup. & Professions
Apportioned Vehicle	Boat Ad Valorem	County Fees
Tax Amnesty	Concealed Weapons	Finance Misc. Systems
Asbestos Monitoring Sys.	Domestic Violence	Utilities Name & Address
Articles of Incorporation	Driver Testing	KHEAA SLIMS
Mail Room	Law Enforcement	HSB Utility Programs
Cabinet Liaison	Offenders Record	IRP Planning
Boards and Commission	Orion Security	Acct. & Municip. Tax Dist.
Higher Ed. Bd. & Comm.	State Police Veh. Inv.	Boiler Inspection System
Transition	Accident System	Elevator Inspection System
Scheduling	KY Accident Rep. System	ABC Licensing
New Employee	Vehicle Titling/Reg.	General Inspection System
Capitol to Counties	Boat Titling/Reg.	Racing Com. License
Invitation/Res.	Project Auth. System	Arson Info. Network
Motor Voter	Maintenance Mgmt.	Current Employment Stats.
Ky. Leg. Review	Bridge Inventory	Employment Serv. Potential
State Bar	Equipment Mgmt. System	Job Bank
Bd. Of Accounting	Computer Billing	National Data Systems
Bd. Of Pharmacy	Annual Fin. Reports	On-Line Data Ent. & Disp.
Payment Tracking	STARS	Occup. Employm. Stats.
Federal Tracking	KAPS	ES Reports & Statistics
Supplies	HSB Utility Programs	EEO Report

Y2K COMPLIANT, RETIRED/REPLACED	CURRENTLY UNDER RENOVATION	PLANNED
Inventory Tracking	Annual Reporting	SESA Automated Mgmt.
Justice Personnel	Workers' Comp. Claims	UIA Replace V/370
Residential Services Tr.	Special Fund Pay. System	UIB Replace V/370
Criminal History	Dislocated Worker Prog.	UI Higher Education
Sex Offender	Expo-202	UIR Replace V/370
Inmate Class.	ES204 Reporting System	UI Audit Cross Match
Terminal Statistics	UI Employer Accounts	Validity Generalization Sys.
KSP Inventory	UI Claims and Benefits	WRX Replace V/370
KY Law Enforcement	UI Higher Education	BENBEX
Statewide Reporting	UI Labor Market	FST Replace V/370
Personnel	UI ICON	KAMES Info. Mgmt.
Payroll	UI Quality Control	Long-Term Care
Building Inventory	UI Referee System	KAMES Int. Claims System
Salary Bulletin	Personnel Payroll	BSS Replace V/370
Degree Analysis	Personnel On-line Payr.	HCS Replace V/370
Growth Factor	P-1 Processing	ICV Replace V/370
LEA Annual Financial	Position Control System	SAP Replace V/370
LEA Rec/Exp. Bulletin	Org. Heading	TWIST
Pub. School Fin. Analysis	Applicant Testing	FC Travel Exp. Vouchers
Biennium Fin. System	Merit Register System	Sanification Cert.
Profiles of Public Schools	Suggestion System	Genetic Counseling Reports
Staff Insurance	FC Payroll	Induced Term. Of Preg.
Title I	FC Time Distribution	KY Physicians
Student Loan	FC Personnel History	Maternal & Child Health
Voc. Ed. Property Inventory	FC Personnel	Milk Control Program
Statistical Report	FC Accounting	Vital Stat. Microg. Mgmt.
Central Office Staff	FC Automated Telephone	HS Travel Expense Vouc.
Teacher Certification	FC Birth Cert. Inquiry	
School to Work	Food Stamps Emp. & Tr.	
Family Day Care	Income Verific. System	
Health Insurance	Public Asst. Reports	
Prof. Staff Data	Local Office Contract	
SCN Agreement	Child Abuse/Neglect	
School & Comm. Nutrition	Foster Care Imp. Csh. Vou.	
SCS Claims	Records Mgmt. Unit	
SCS Eligibility	Adult Protective Services	
Student Data File	Video V-Print	
Student & Dist. Trans. Pl.	HS Payroll	
Historical Soc. Directory	HS Time Distribution	
Arts Com. History	HS Personnel History	
Forestry Accompl. System	HS Personnel	
Compliance Data Rep.	HS Accounting	
Dynamic Air Pol. Monit.	HS Automated Telephone	

Y2K COMPLIANT, RETIRED/REPLACED	CURRENTLY UNDER RENOVATION	PLANNED
Cont. Emission Monitoring	Birth Certificates	
U-Drive-It	Death Certificates	
Handicapped Placards	Divorce Certificates	
Temporary Tags	Divorce Statistics	
Apport. & Allotment	Marriage Certificates	
Traffic Vol. Info. System	Marriage Statistics	
Preconstruction	Sexually Transmitted Dis.	
AVIS Inv. & Accounting	Women, Infants, & Child.	
Payroll	Medical Transp. Payment	
Personnel		
Traffic Inventory		
Imprest Cash		
Hwy. Information System		
Drivers License		
KDLIS – UNI		
Traffic Collection System		
Roadway Design System		
Contractor Pay Est. Sys.		
Annual State Mileage		
Materials Testing		
Bid Analysis Mgmt. Sys.		
Toll Road System		
Bid Tabulation		
Hwy. Perf. Monitoring		
Federal Billing		
Federal Aid Project Status		
TABS		
Real Property		
Workman's Comp.		
Bridge Design System		
Customer Tracking		
Vehicle Tracking		
CHR Accts. Payable		
Contractor Mgmt. System		
Comm. Netw. Billing		
Central Stores Inv.		
Data Entry Utilization		
Energy Usage		
Finance Boiler Insp.		
Budget		
Carpool		
Engineering		
Commerce		

Y2K COMPLIANT, RETIRED/REPLACED	CURRENTLY UNDER RENOVATION	PLANNED
Fin. Fiscal and Personnel		
Boards and Commissions		
Accounting Property		
Motor Vehicle Inventory		
Budget Status Report		
Governmental Services		
Project Control Status		
Personal Serv. Cont. File		
Real Property Inventory		
Social Security		
Vendor Name & Address		
KHEAA Grants		
Human Services Br. Sftw.		
Capital Project Reporting		
DIS Fin. Mgmt. System		
Time Mgmt. System		
DIS Resume System		
Federal Bond Indebtedness		
Minor Tr. Ed. Certificate		
HVAC Licenses		
Electrical Licenses		
Hazardous Mat. Licenses		
Manuf. Housing Licenses		
Fire Protection Licenses		
Fire Training		
Housing UMB. Linking		
Banking & Securities		
Insured Losses System		
Plumbing Permits		
Plan Review System		
Fire Marshall's System		
Tourism Payroll		
Tourism Accounting		
Tourism Labeling		
Tourism Inventory		
SFP Payroll		
UI Journal Entries		
Teachers' Retirement		
Voc. Rehab. Applicant		
Tracks Accidents		
Personnel S/36		
Vacants S/36		
Industry Training S/36		

Y2K COMPLIANT, RETIRED/REPLACED	CURRENTLY UNDER RENOVATION	PLANNED
Jobs S/36		
Co-op Training		
WF Payroll		
WF Personnel		
WF Form Inventory		
School Accident Reporting		
WFD Inventory System		
Adult Ed. Enrollment		
GED		
Performance Measurement		
One-Stop		
Monthly Statistics		
Qty. Statistics		
Yearly Statistics		
Case Mgmt. Specials		
DPS 6 Case Mgmt Sys.		
Case Management		
Employment Relations Sys.		
KY Tech. Co-op Systems		
WES Enterprise Systems		
Automated Labor Exchg.		
Common Intake NSD/UIB		
Document Search		
ES203 Reporting Systems		
Food Stamp Training		
IRS Tax Data		
JTPA		
Lex. Housing Authority		
National Parent Loc.		
Perm. Mass Layoff		
UI Micrographics		
UI Transferred Wages		
Health Insurance Processing		
Deferred Comp.		
Payroll Time and Labor		
Payroll On-line Transaction		
Manual Pays		
Classification Title		
Personnel Misc.		
Exam Analysis		
Name & Address		
Suggestion System		
CAN Replace V/370		

Y2K COMPLIANT, RETIRED/REPLACED	CURRENTLY UNDER RENOVATION	PLANNED
Communic. Control System		
Equipment Inventory		
Disk Space Management		
IMS Inquiry Applications		
IMS Inquiry Statistics		
Inventory Control System		
Labels		
On-Line IMS Menu System		
Supply Inventory System		
KASES Tracking		
Bridge-the-gap Child Care		
Enumeration		
Contract Audit Tracking		
Food Stamps		
Home Energy Asst. Prog.		
Integrated Client System		
Sys. Tr. Emp. Ability Prog.		
KAMES Aut. Tracking		
Claims Tracking System		
Supplemental Data Exchg.		
Trans. Child Care		
Revenue Intercept System		
Jeff. Co. Child Prot. Serv.		
Home Care Services		
TWIST Defect Tracking		
FC Time Distribution		
FC Personnel History		
FC Personnel		
CHR Accounting		
FC Automated Telephone		
FC Accounts Payable		
FC Equipment Inventory		
FC Payroll		
Residential Services Tr.		
RST Replace V/370		
Equipment Inventory		
Birth Surv. Registry		
Correspondence Tracking		
KY HealthCare		
Foster Grandparents		
MH/MR Patients		
Substance Abuse		
Supl. Buy-in Med. Ins.		

Y2K COMPLIANT, RETIRED/REPLACED	CURRENTLY UNDER RENOVATION	PLANNED
Medical Mgmt. Info. Syst.		
HS Time Distribution		
HS Personnel History		
HS Personnel		
HS CHR Accounting		
HS Auto. Telephone		
HS Accounts Payable		
HS Payroll		
WIC Vendor Monitor Sys.		

Auditor of Public Accounts Information

Appendix IV

Contributors To This Report

Edward B. Hatchett, Jr., Auditor of Public Accounts

James A. Rose III, CPA, CGFM, Director, Division of Performance Audit
Thomas C. Hewlett, Performance Auditor
William W. Moore, CFE, Performance Auditor
Wallace Haddix, CISA, Performance Auditor
Candace Kalisz, CISA, Performance Auditor

Obtaining Audit Reports

Copies of this report or other previously issued reports can be obtained for a nominal fee by faxing the APA office at 502-564-2912. Alternatively, you may

order by mail: Report Request
Auditor of Public Accounts
144 Capitol Annex
Frankfort, Kentucky 40601

visit : 8 AM to 4:30 PM weekdays

email: Hatchett@apa1.aud.state.ky.us

browse our web site: http://www.state.ky.us/agencies/apa

Services Offered By Our Office

The staff of the APA office performs a host of services for governmental entities across the state. Our primary concern is the protection of taxpayer funds and furtherance of good government by elected officials and their staffs. Our services include:

Performance Audits: The Division of Performance Audit conducts performance audits, performance measurement reviews, benchmarking studies, and risk assessments of government entities and programs at the state and local level in order to identify opportunities for increased efficiency and effectiveness.

Financial Audits: The Division of Financial Audit conducts financial statement and other financial-related engagements for both state and local government entities. Annually the division releases its opinion on the Commonwealth of Kentucky's financial statements and use of federal funds.

Investigations: Our fraud hotline, 1-800-KY-ALERT (592-5378), and referrals from various agencies and citizens, produce numerous instances of suspected fraud and misuse of public funds. Staff conduct investigations in order to determine whether referral of a case to prosecutorial offices is warranted.

Training and Consultation: We conduct training sessions and offer consultation services for government officials across the state. These events are designed to assist officials in the accounting and compliance aspects of their positions.

General Questions

General questions should be directed to Donna Dixon, Intergovernmental Liaison, or Ed Lynch, Director of Communications, at (502) 564-5841 or the address above.