

Year 2000

State
Compliance
Efforts
2nd Edition
September 1999

National State Auditors

NSAA Memorandum

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TO: State Auditors and Evaluation Officials

FROM: Ernest A. Almonte, Chair, 1998-99 NSAA Information
Technology Committee

William G. Holland, Chair, 1998-99 NSAA Performance
Audit Committee

DATE: September, 1999

The Performance Audit Committee and Information Technology
of the National State Auditors Association have joined in an effort to
Year 2000 compliance efforts in all states. This document incorporates
results of a second, follow-up survey and provides a view of Year
pliance activities as of June 30, 1999 in the forty responding states.
Year 2000 compliance, like most technological issues, is an extremely
moving target. With less than one-half year left to the inevitable
we believe this document will provide more timely information on the
of compliance within the states.

The primary goal of this document is to assist states in the sharing of
mation and solutions. Therefore, we have included a list of responding
as well as references to related publications and web sites.

An electronic version of this report is available at the Illinois Auditor
General's Web site: www.state.il.us/auditor/y2k.htm.

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Introduction

In January 1999, the Performance Audit Committee and Information Technology Committee of the National State Auditors Association produced a report entitled "Year 2000 State Compliance Efforts."* The report contained information gathered from a state-by-state survey which was to: "provide a snapshot of Year 2000 compliance activities in states, and provide opportunities for the sharing of information and solutions." The report was assembled from the participating states' responses and supplemented with information regarding Year 2000 compliance from several United States General Accounting Office (GAO) reports.

As a result of positive feedback from the January report and continued, accelerated interest in the Y2K subject, the Auditor Generals of the states of Illinois and Rhode Island produced a second survey to follow-up on the progress states are making toward Y2K compliance. This report is compiled from the responses to the second survey. It provides a comparison of progress for those responding to the first survey, and looks at the progress of those states that responded for the first time. We believe the current information contained within the report shows considerable progress in the states' efforts to respond to the Year 2000 problem.

Our report also includes information to enhance the sharing of information: Appendix A contains a copy of the survey and accompanying cover letter; Appendix B contains a list of the responding states and Auditor General Web sites; Appendix C contains GAO's Year 2000 assessment approach; Appendix D contains a list of Year 2000 Internet sites; Appendix E has a listing of newest Year 2000 reports from the GAO and individual states.

* To view an online copy of the January or September 1999 report, go to: www.state.il.us/auditor/y2k.htm

Conclusion and Summary

The survey responses clearly indicate that substantial progress has been made in Year 2000 remediation efforts. To illustrate this point, we compare the survey results to the following question: What was the status of your Year 2000 compliance effort? The January 1999 report stated that 71% of the responding states had completed 50% or less of Year 2000 compliance efforts. The current report states that only 4% of the responding states had completed 50% or less of Year 2000 compliance efforts. In addition, states have devoted considerable effort to make sure *mission critical* systems are up and running January 1st.

Some specific information regarding the current survey follows:

This survey includes responses from fourteen states which did not respond to the January survey. These new states are: Arizona, Arkansas, Connecticut, Hawaii, Idaho, Kansas, Massachusetts, Mississippi, Missouri, North Dakota, Ohio, Utah, Wisconsin, and Wyoming. Minnesota is the only state that was included in our first survey but did not respond to the follow up.

Six states, Florida, Iowa, Kentucky, Michigan, Tennessee and Virginia, are close to 100% Y2K compliance for all computer systems; while

Thirteen states, Florida, Illinois, Iowa, Kentucky, Massachusetts, Michigan, Mississippi, New York, Nevada, Pennsylvania, Tennessee, Virginia and Washington are very near 100% compliance for *mission critical* systems;

Thirty-seven states have standard Y2K compliance methodology for monitoring state agencies;

Projected expenditures for Y2K compliance from the first to second survey were adjusted down in 3 states, adjusted up in 5 states, and the same in 3 states;

All thirty-eight states with a statewide accounting system reported that it was Y2K compliant;

Thirty of the responding states have audited Y2K compliance, with some states starting as early as 1995;

All forty responding states have a governmental body overseeing state agencies' Y2K compliance.

Please Note: All states did not respond to all of the survey questions.

As will be evident from the survey results, although progress has been made, significant work remains. The following article helps support this conclusion.

"U S. state, local, and federal governments still have a lot of work to do preparing and testing for the year-2000 computer problem, according to testimony presented at a congressional hearing on Saturday."

That is not much of a revelation to anyone who has followed U.S. government progress. Overall, there was not much new provided in a written statement of the testimony of Joel Willemssen, director of Civil Agencies Information Systems at the U.S. General Accounting Office (GAO), the watchdog agency of Congress. He testified before the U.S. House of Representatives Subcommittee on Government Management, Information, and Technology Saturday during a hearing in Silicon Valley also attended by various IT company executives.

The year-2000 computer problem is occurring because most older software code was written with a two-digit date field that might interpret the "00" in 2000 as "1900" and therefore either fail or make incorrect calculations. Governments and businesses worldwide have spent billions of dollars to correct errant code or to replace computer systems.

Willemssen's testimony outlined past GAO findings related to year-2000 preparations and planning and offered a compilation of other recent surveys, including one finding that only three of 50 U.S. states have fully tested computer systems and deemed them "compliant."

Iowa, Nebraska, and North Dakota all say that their government systems are completely ready to handle the date change. Other states are in various stages of preparation, with 14 saying that they do not plan to have systems tested until October or after, according to survey results reported by Willemssen. He cited a report released Aug. 3 to the National Association of State Information Resource Executives (see Appendix D) that found 38 states have finished testing 75 percent to 99 percent of computer systems.

Willemssen further outlined progress by local governments, including the status of major U.S. cities, and he provided an overview of what is happening with various federal agencies and cabinet departments. Accurately assessing progress remains difficult because information often is incomplete, he noted. That has been a persistent problem for the GAO and other agencies overseeing progress.

"In summary, while improvement has been shown, much work remains at the national, federal, state, and local levels to ensure that major service disruptions do not occur," Willemssen said in the written statement. "Specifically, remediation must be completed, end-to-end testing performed, and business continuity and contingency plans developed."

Besides Willemssen's testimony, the subcommittee also heard from representatives of IT companies, including Intel and Hewlett-Packard. Those officials said that their companies are ready for the date change, according to published reports.

The subcommittee is headed by U.S. Representative Stephen Horn, a California Republican, who each quarter issues a report card grading the federal

government's progress in year-2000 remediation. The most recent report card gave the government a "B-" and said that 94 percent of mission-critical systems are ready for the date change."

Nancy Weil, InfoWorld Electric, August 16, 1999

Federal Government Status

On July 15, 1999, Joel Willemsen, the GAO's Director of Civil Agencies Information Systems, Accounting and Information Management Division gave the following testimony to the U.S. Senate's Special Committee on the Year 2000 Technology Problem. Note: the complete testimony available from the GAO -- Year 2000 Computing Challenge - Federal Efforts to Ensure Continued Delivery of Key State-Administered Benefits.

The public faces the risk that critical services provided by the government and the private sector could be severely disrupted by the Year 2000 computing problem. Financial transactions could be delayed, flights grounded, power lost, and national defense affected. Moreover, America's infrastructures are a complex array of public and private enterprises with many interdependencies at all levels. These many interdependencies among governments and within key economic sectors could cause a single failure to have adverse repercussions in other sectors. Key sectors that could be seriously affected if their systems are not Year 2000 compliant include information and telecommunications, banking and finance, health, safety, and emergency services, transportation, power and water, and manufacturing and small business.

The following are examples of some of the major disruptions the public and private sectors could experience if the Year 2000 problem is not corrected.

With respect to aviation, there could be grounded or delayed flights, degraded safety, customer inconvenience, and increased airline costs.

Aircraft and other military equipment could be grounded because the computer systems used to schedule maintenance and track supplies may not work. Further, the Department of Defense could incur shortages of vital items needed to sustain military operations and readiness.

Medical devices and scientific laboratory equipment may experience problems beginning January 1, 2000, if their software applications or embedded chips use two-digit fields to represent the year

Recognizing the seriousness of the Year 2000 problem, on February 4, 1998, the President signed an executive order that established the President's Council on Year 2000 Conversion, chaired by an Assistant to the President and consisting of one representative from each of the executive departments and from other federal agencies as may be determined by the Chair. The Chair of the Council was tasked with the following Year 2000 roles: (1) overseeing the activities of agencies, (2) acting as chief spokesperson in national and international forums, (3) providing policy coordination of executive branch activities with state, local,

and tribal governments, and (4) promoting appropriate federal roles with respect to private-sector activities.

Addressing the Year 2000 problem is a tremendous challenge for the federal government. Many of the federal government's computer systems were originally designed and developed 20 to 25 years ago, are poorly documented, and use a wide variety of computer languages, many of which are obsolete. Some applications include thousands, tens of thousands, or even millions of lines of code, each of which must be examined for date-format problems.

To meet this challenge and to monitor individual agency efforts, the Office of Management and Budget (OMB) directed the major departments and agencies to submit quarterly reports on their progress, beginning May 15, 1997. These reports contain information on where agencies stand with respect to the assessment, renovation, validation, and implementation of mission-critical systems, as well as other management information on items such as costs and business continuity and contingency plans.

The federal government's most recent reports show improvement in addressing the Year 2000 problem. While much work remains, the federal government has significantly increased its percentage of mission-critical systems that are reported to be Year 2000 compliant. In particular, while the federal government did not meet its goal of having all mission-critical systems compliant by March 1999, as of mid-May 1999, 93 percent of these systems were reported compliant.

Background Information on Year 2000

State and federal auditors have been reviewing Year 2000 compliance in state and federal government for several years. (See Appendix E for a list of some relevant state auditor and GAO publications.)

The following GAO documents contain basic information which define and explain the Year 2000 problem. The information in this section was primarily derived from:

Year 2000 Computing Crisis: Readiness of State Automated Systems to Support Federal Welfare Programs (November 1998)

Year 2000 Computing Crisis: Potential for Widespread Disruption Calls for Strong Leadership and Partnerships (April 1998)

The GAO offered the following definition of the Year 2000 Problem:

The Year 2000 problem is rooted in the way dates are recorded and computed in automated information systems. For the past several decades, systems have typically used two digits to represent the year, such as "98" representing 1998, in order to conserve electronic data storage and reduce operating costs. With this two-digit format, however, the Year 2000 is indistinguishable from 1900, or 2001 from 1901.

Over the past several years, the term Year 2000 Problem has become increasingly familiar. Correcting this problem, in government as in the private sector, will be labor-intensive and timeconsuming, and must be done while systems continue to operate. Many government computer systems were originally designed and developed 20 to 25 years ago; are poorly documented; and use a wide variety of computer languages. Some applications include thousands, tens of thousands, or even millions of lines of code, each of which must be examined for date-format problems. Other system components, such as hardware, operating systems, communications interfaces, and database software may also be affected by the date problem.

Many data exchanges and interdependencies exist among and within the various levels of government; as well as the private sector, foreign countries, and international organizations. Therefore, systems are also vulnerable to failure caused by incorrectly formatted data provided by external non-compliant sources. Information that once flowed seamlessly between various systems can be stifled by one non-compliant link in the chain. Examples of such data exchanges include the following situations.

Taxes can be paid through data exchanges between the taxpayer, financial institutions, the Federal Reserve System, the Department of the Treasury, and Internal Revenue Service.

States provide data on an individual's medical eligibility for disability benefits to the Social Security Administration which uses this data to support payments to disabled persons.

Medical providers obtain payments for their medical services through data exchanges between the provider, Health Care Financing Administration (HCFA) and its contractors, the Social Security Administration, the Department of the Treasury, the Federal Reserve System, and financial institutions.

Manufacturing systems that rely on "just-in-time" inventory systems that interface with multiple vendors that supply the components to assemble the final product.

The public faces a high risk that critical services could be severely disrupted by the Year 2000 computing crisis. Financial transactions could be delayed, flights grounded, power lost, and routine services affected. A single failure between interdependencies that exist could have adverse repercussions. While managers in the government and the private sector are taking many actions to mitigate these risks, a significant amount of work remains, and timeframes are unrelenting.

Government is extremely vulnerable to the Year 2000 issue due to its widespread dependence on computer systems to process financial transactions, deliver vital public services, and carry out its operations. This challenge is made more difficult by the age and poor documentation of some of the government's existing systems, as well as its lackluster track record in modernizing systems to deliver expected improvements and meet promised deadlines.

On January 1, 2000, many computer systems worldwide could malfunction or produce incorrect information simply because the date has changed. Unless corrected, the impact of these failures could be widespread and costly. For example:

Benefit payments could be severely delayed because systems either halt or produce checks that are so erroneous that checks must be manually processed.

Systems used to track loans could produce erroneous information on loan status, such as indicating that an unpaid loan had been satisfied.

Organizations that cannot sustain their normal level of business due to Year 2000 problems may be forced to temporarily or permanently minimize or halt their operations.

The scope of the problem clearly extends beyond date-sensitive computer applications. The following areas describe the enormous range of the Year 2000 problem and demonstrate the interrelationships and reliance placed on computerized systems.

Critical Computer Systems-- These systems support the basic mission of an organization. Any failure in a critical system will impede the organization's ability to conduct operations and to deliver services.

Computer System Interdependencies-- Data received from external entities increases the risk that external non-compliant data may cause problems in a dependent organization's compliant systems. Monetary transactions that flow through multiple financial institutions could be corrupted or terminated.

Embedded Systems-- There may be problems caused by embedded chips in devices and systems. Computer chips are entrenched in the very fabric of society, residing in everything from thermostats and elevators to phones, smoke detectors, production lines, hospital equipment, energy systems, etc.

Contingency Plans-- The time and resources may not be available to transform all systems by the immovable deadline and some infrastructure and embedded system failures are outside of an organization's control. As a result, contingency plans are needed to ensure that critical services can be provided if systems fail.

Regulatory Agencies-- Organizations that regulate external entities should assess Year 2000 compliance issues to ensure that regulated entities can perform as intended in the new millennium. Entities that regulate and monitor both public and private facilities, such as hospitals, nursing homes, and prisons, must ensure the safety and well-being of the residents.

Survey Responses

Since no state approach is the same, we believe this compilation of information may be helpful to give the reader a "snapshot" of Year 2000 compliance from the forty states replying to the survey. The purpose of this section is to give readers a quick glimpse into the progress of Year 2000 compliance activities from the responding states. Some state auditors have addressed this issue in audits of individual state agencies as early as 1995; however, as the date approaches, more states are issuing global progress reports. As with most reports addressing the Year 2000, a significant amount of resources needs to be allocated to ensure that state governments continue to operate at acceptable levels.

After reviewing the survey results, we identified the questions and answers that lent themselves to summarization. Those that met this criteria are listed below. Please see Appendix B for a list of states answering the survey.

Please note: some survey respondents were unable to provide detailed answers to particular questions; therefore, individual states may be omitted from the corresponding graphics or summaries.

Does your state have a central agency, commission or board to monitor Year 2000 state agency compliance?

1	Alabama	Dept of Finance	www.agencies.state.al.us/y2k/
2	Arizona	Government Information Technology Agency (GITA)	www.gita.state.az.gov
3	Arkansas	Governors Y2K Commission	
4	California	Dept of Information Technology	www.year2000.ca.gov
5	Connecticut	Dept of Information Technology	www.doit.state.ct.us
6	Delaware	State Office of Information Services	http://state.de.us/ois/y2000/welcom1.htm
7	Florida	Year 2000 Task Force & Project Office	http://Y2K.state.fl.us
8	Georgia	State of GA Year 2000 Project Office	www.year2000ga.org
9	Hawaii	Dept of Accounting & General Services	www.state.hi.us/y2k
10	Idaho	Information Technology Resource Management Council	
11	Illinois	Illinois Technology Office	www.state.il.us/y2k
12	Indiana	Data Processing Oversight Commission	www.state.in.us.dpoc
13	Iowa	Year 2000 Project Office	www.state.ia.us/government/its/century/y2ksumm.html
14	Kansas	Year 2000 Awareness Center	http://y2k.state.ks.us
15	Kentucky	Dept of Information Systems	www.state.ky.us/dishome.htm
16	Louisiana	Division of Administration, Year 2000 Coordination Project	www.crt.state.la.us/y2Kla
17	Maryland	Year 2000 Program Management Office	www.y2kmdok.org
18	Massachusetts	Information Technology Division's Year 2000 Program Management Office	www.state.ma.us/y2k/index.htm
19	Michigan	Year 2000 Project Office	www.state.mi.us/dmb/year2000/
20	Mississippi	Dept of Information Technology Services	its.state.ms.us/yr2000
21	Missouri	Office of Information Technology	www.y2k.state.mo.us
22	Montana	Information Services Division Year 2000	www.state.mt.us/isd/year2000
23	Nevada	Dept of Information Technology	
24	New Hampshire	Dept of Administrative Services Division of Information & Technology Management	www.state.nh.us/dat/ditm
25	New Jersey	Office of the CIO	www.state.nj.us/cio.nj2000.htm
26	New Mexico	Chief Information Officer	www.cio.state.nm.us
27	New York	Office for Technology	www.irm.state.ny.us
28	North Carolina	Information Technology Services, Year 2000 Project Office	http://year2000.state.nc.us
29	North Dakota	Office of Management & Budget Information Services Division Year 2000	www.state.nd.us/isd/y2k/
30	Ohio	Year 2000 Competency Center	www.oy2k.state.oh.us
31	Oregon	Statewide Year 2000 Project Office	http://y2k.das.state.or.us

32	Pennsylvania	Office of Information Technology for all agencies under the Governor's jurisdiction	www.pa2k.org
33	Rhode Island	Office of Library and Information Services Year 2000 Project Office	www.year2000.state.ri.us
34	Tennessee	Office of Information Resources	www.state.tn.us/finance/oir/y2k/webindex.html
35	Texas	Dept of Information Resources Year 2000 Project Office	www.dir.state.tx.us/y2k/
36	Utah	Governor's Coalition for Year 2000 Preparedness	www.das.state.ut.us/year2000/index.html
37	Virginia	Century Data Change Initiative	www.cdci.state.va.us
38	Washington	Executive Steering Commission	www.wa.gov/dis/2000
39	Wisconsin	Dept of Administration	y2k.state.wi.us
40	Wyoming	Information Planning & Coordination Office	www.cio.state.wy.us

Does your state have a standard Year 2000 compliance methodology for monitoring or assisting state agencies?

Alabama	Kansas	North Dakota	Of the 40 responding states, 37 states have a standard Year 2000 methodology:
Arizona	Kentucky	Ohio	
Arkansas	Louisiana	Oregon	
California	Maryland	Pennsylvania	
Connecticut	Massachusetts	Rhode Island	
Delaware	Michigan	Tennessee	
Florida	Missouri	Texas	
Georgia	Montana	Virginia	
Hawaii	Nevada	Washington	
Idaho	New Hampshire	Wisconsin	
Illinois	New Jersey	Wyoming	
Indiana	New York		
Iowa	North Carolina		

Did your state agencies provide Y2K Footnote disclosures?

Of the 40 responding states, 37 states provided Footnote disclosures in Either Comprehensive Annual Financial Reports, or in audits. Some states disclosed in Both reports.	Alabama	Louisiana	Ohio
	Arizona	Maryland	Oregon
	Arkansas	Massachusetts	Pennsylvania
	California	Mississippi	Rhode Island
	Connecticut	Missouri	Tennessee
	Delaware	Montana	Texas
	Florida	Nevada	Utah
	Hawaii	New Hampshire	Virginia
	Idaho	New Jersey	Washington
	Illinois	New Mexico	Wisconsin
	Indiana	New York	Wyoming
	Iowa	North Carolina	
	Kentucky	North Dakota	

Please note: there were inconsistencies in the response to this question because some states considered required supplementary information a footnote disclosure, while some states did not.

APPENDIX A

ORIGINAL MEMO

National State Auditors Association

MEMORANDUM

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report
Secretary-Treasurer
BARBARA J. HINTON
Legislative Post Auditor
Kansas

impact
OTHER MEMBERS
provide a

states the
Immediate Past President
information and
R. THOMAS WAGNER, JR.
modified
Auditor of Accounts
Delaware

returning it
RONALD L. JONES
than
Chief Examiner of
Public Accounts
Alabama
you have

5563.

TO: State Auditors and Evaluation Officials

FROM: Ernest A. Almonte, Chair, NSAA Information
Committee

William G. Holland, Chair, NSAA Performance
Audit Committee

DATE: June 1, 1999

The Performance Audit Committee and Information Technology
of the National State Auditors Association have once again joined in an
assess Year 2000 compliance efforts in all states. NSAA released a
report based on a July 1998 survey in January of this year, Year 2000 State
Compliance Efforts. An electronic version is available at:
http://www.sso.org/nasact/NSAA_y2k_PR.htm.

We all have a keen awareness of the "millennium bug" and its potential
on state government operations. We hope this second survey will
provide a progress report of Year 2000 compliance activities in states, afford all
states the opportunity to participate, and provide opportunities to share
information and solutions. With assistance from the General Accounting Office, we've
modified the survey to facilitate easier response and summarization.

We request your assistance in completing the enclosed survey and
returning it to the Illinois Auditor General's Office as soon as possible, but no later
than **August 1, 1999**.

Your cooperation in providing this vital information is appreciated. If
you have any questions or comments, please contact Bill Sampais at 217/785-

RICHARD L. FAIR
send an
State Auditor
electronic
New Jersey

Also, should you desire an electronic version of the survey, please
email message to Bill Sampais (auditor@pop.state.il.us) and an
Version (Word 7.0) will be sent to you.

WILLIAM G. HOLLAND
Auditor General
Illinois

**NSAA Joint Audit
Year 2000 Survey
Directions**

This follow-up survey is being conducted by the NSAA and the Auditor Generals of Illinois and Rhode Island in an effort to collect information related to Y2K efforts in all states. We appreciate your cooperation in completing this questionnaire. Information collected will be published as an update to our January 1999 report. Please feel free to comment throughout the survey if you believe additional information is warranted.

DATA NEEDED Questions in this survey ask for information related to your state's efforts in becoming Y2K compliant and audit work conducted in this area as of **June 30, 1999**. If information provided is estimated, please be sure to indicate such by adding a note.

Please attach information that would help us clarify answers to survey questions, if necessary.

PROPOSED PROJECT The NSAA Performance Audit Committee and Information Technology Committee propose to issue an updated NSAA Joint Audit report on Y2K in September, 1999. The results of this survey and copies of reports you have issued will be used to prepare this report.

DUE DATE Please complete the survey and return it to the Illinois Auditor General's Office as soon as possible, but no later than **August 1, 1999**.

SEND COMPLETED SURVEY TO Y2K Survey/NSAA
Attention: Bill Sampias
Office of the Auditor General
Illes Park Plaza
740 East Ash Street
Springfield, IL 62703-3154
Or
Fax: (217) 785-8222

Phone No. (217) 785-5563
E-mail auditor@pop.state.il.us

Y2K Survey

State: _____ Office Name: _____

Auditor General: _____

Prepared by: _____ Title: _____

Phone Number: () _____ E-Mail Address: _____

Y2K Information

1. Does your state have a law that requires agencies to become Year 2000 compliant?

Yes___ No.

If yes, is there a cutoff date? ___Yes ___No Date___/___/___

If yes, please cite statute: _____

2. Does your state have a central agency, commission, or board to monitor Year 2000 state agency compicance?

Yes___ No.

If yes, please give their name & website: _____

3. Does your state have a standard Year 2000 compliance methodology for monitoring or assisting state agencies? Yes___ No_____

4a. Did your audited state agencies provide Y2K Footnote disclosures? Yes
No___

If yes, check all that apply: Statewide CAFR ___ Individual Agency Audits
Reports _____

4b. Did the Footnote disclosure for the Statewide CAFR disclose the following information about mission-critical computer systems and other electronic equipment: (If yes to either question please submit a copy of the Footnote disclosure(s)).

Yes No
or
period to
compliant?

A description of the stages of work in process completed as of the end of the government's reporting make those systems and equipment Year 200

Yes No
making
compliant?

The additional stages of work necessary for those systems and equipment Year 2000

5. Does your state have Year 2000 liability laws? Yes____ No____

If yes, please cite statute(s): _____

6. As of June 30, 1999, what was the status of your state-wide Y2K compliance effort for *all* systems? Please place the actual percentage on the appropriate line.

Awareness		Assessment		Renovation	
0% - 50%	_____	0% - 50%	_____	0% - 50%	_____
51% - 65%	_____	51% - 65%	_____	51% - 65%	_____
66% - 90%	_____	66% - 90%	_____	66% - 90%	_____
91% - 100%	_____	91% - 100%	_____	91% - 100%	_____

Validation		Implementation	
0% - 50%	_____	0% - 50%	_____
51% - 65%	_____	51% - 65%	_____
66% - 90%	_____	66% - 90%	_____
91% - 100%	_____	91% - 100%	_____

7. As of June 30, 1999, what was the status of your state-wide Year 2000 compliance effort for *mission critical* systems? Please place the actual percentage on the appropriate line.

Awareness		Assessment		Renovation	
0% - 50%	_____	0% - 50%	_____	0% - 50%	_____
51% - 65%	_____	51% - 65%	_____	51% - 65%	_____
66% - 90%	_____	66% - 90%	_____	66% - 90%	_____
91% - 100%	_____	91% - 100%	_____	91% - 100%	_____

Validation		Implementation	
0% - 50%	_____	0% - 50%	_____
51% - 65%	_____	51% - 65%	_____
66% - 90%	_____	66% - 90%	_____
91% - 100%	_____	91% - 100%	_____

8. What are your state's *projected* Year 2000 expenditures? Please place the amount on the appropriate line.

In Millions
 \$0 - \$50 _____
 \$50 - \$100 _____
 \$100 - \$150 _____
 \$150 - \$200 _____
 \$200 - \$250 _____
 \$250 - \$300 _____
 \$300 - > _____

9. What were your state's Year 2000 *actual* expenditures through June 30, 1999? Please place the actual amount on the appropriate line.

In Millions
 \$0 - \$50 _____
 \$50 - \$100 _____
 \$100 - \$150 _____
 \$150 - \$200 _____
 \$200 - \$250 _____
 \$250 - \$300 _____
 \$300 - > _____

10. Do you have a Statewide Accounting System? Yes_____ No_____

- 10a. If yes, is your Statewide Accounting System Y2K compliant*? Yes_____ No_____

* Compliant applications and systems are capable of correct identification, manipulation, and calculation using dates outside the 1900-1999 year range and have been tested as such.

- 10b. If no, please check the percentage of completion and give expected date of completion. Please place the actual percentage on the appropriate line.

0% - 50% _____
 51% - 65% _____
 66% - 90% _____
 91% - 100% _____

Completion Date ____/____/____

11. Is your state's Year 2000 program subject to an independent verification and validation effort? Yes_____ No_____

APPENDIX C

GAO's YEAR 2000 ASSESSMENT APPROACH

To illustrate a basic approach, we used the GAO's Year 2000 Computing Crisis: An Assessment Guide (September 1997). The guide introduced five phases with accompanying project management activities: awareness, assessment, renovation, validation, and implementation. The following are the five phases of Year 2000 implementation and their individual key management activities.

Awareness

It is essential that executive management be fully aware of the Year 2000 problem and its potential impact on the enterprise and its customers. It is the responsibility of management to provide the leadership in defining and explaining the importance of achieving Year 2000 compliance, selecting the overall approach for structuring the organization's Year 2000 program, assessing the adequacy of the existing information resource management infrastructure to adequately support the Year 2000 efforts, and mobilizing needed resources. The GAO guideline targeted the completion of the awareness stage by December 1996, and included the following steps.

- Define the Year 2000 problem and its potential impact on the enterprise
- Conduct Year 2000 awareness campaign
- Obtain support from executive management
- Assess the adequacy of the organization's capabilities
- Develop a Year 2000 strategy
- Establish Year 2000 executive management council
- Establish a Year 2000 program office and appoint a manager

Assessment

Organizations may not have enough resources, skill, or time to convert or replace all of their information systems. They must determine which systems are mission-critical, and which systems support marginal functions. The Year 2000 problem is not just an information technology problem, but is primarily a business problem. Thus, the process of identifying and ranking information systems should not be limited to a simple inventory of applications and platforms, but must include assessments of the impact of information systems' failures on the agency's core business areas and processes. The assessment should also include systems using information technology which operate outside the traditional information resource area, including building infrastructure systems and telephone switching equipment. The GAO guideline targeted the completion of the assessment stage by August 1997, and included the following steps.

- Define Year 2000 compliance
- Assess the severity of an impact of Year 2000-induced failures
- Conduct enterprise-wide inventory of systems for each business area
- Prioritize systems and components to be converted or replaced
- Establish Year 2000 project teams for business areas and major systems
- Identify, prioritize, and mobilize needed resources
- Develop validation strategies, testing plans, and scripts
- Define requirements for Year 2000 test facility
- Address interface and data exchange issues
- Initiate the development of contingency plans for mission-critical systems;
- Identify Year 2000 vulnerable systems and processes operating outside the information resource management area.

Renovation

The renovation phase involves three options: conversion, replacement, or retirement. Renovation involves conversion of an existing application; replacement deals with the development of a new application; elimination focuses on the retirement of an existing application. In all three cases, the process must also consider the complex interdependencies among system interfaces. All changes to systems and their components must be adequately documented and coordinated.

Equally important is the need to assess dependencies and to communicate all changes to all internal and external users. The GAO guideline targeted the completion of the renovation stage by September 1998, and included the following steps.

- Convert selected applications, databases, archives, and related system components;
- Replace selected applications and related system components;
- Document code and system changes;
- Schedule unit, integration, and system tests;
- Retire selected applications and related system components;
- Communicate changes to information systems to internal and external users;
- Share information among Year 2000 projects, including lessons learned and best practices.

Validation

Organizations may need over a year to adequately validate and test converted or replaced mission-critical systems for Year 2000 compliance, and may consume over half of the Year 2000 resources and budget. The length of the validation and test phase and its costs are driven by the complexity inherent in the Year 2000 problem. Tests of Year 2000 compliance of individual applications must encompass the complex interactions between scores of converted or replaced computer platforms, operating systems, utilities, applications, databases, and interfaces. All converted or replaced system components must be thoroughly validated and tested to uncover errors introduced during the renovation phase, validate Year 2000 compliance, and verify operational readiness. The testing should account for application, database interdependencies, and interfaces and should take place in a realistic test environment. This step is further complicated because all variables may not be ready for testing at the same time. Testing procedures and tools should be assessed to ensure that all converted system components meet quality standards and are Year 2000 compliant. The GAO guideline targeted the completion of the validation stage by December 1999, and included the following steps.

- Develop and document test and compliance plans and schedules;
- Develop strategies for managing the testing the data exchanges with external-converted systems;
- Implement Year 2000 test facility;

- Implement automated test tools and test scripts;

- Perform unit, integration, and system testing;
- Track and manage the testing and validation process;
- Initiate acceptance testing.

Implementation

Implementation of Year 2000 compliant systems and their components requires extensive integration and acceptance testing to ensure that all converted or replaced components perform adequately. Because of the scope and complexity of the Year 2000 conversion changes, integration, acceptance, and implementation will likely be a lengthy and costly process. Since not all system components will be converted or replaced simultaneously, the environment may be comprised of a mix of Year 2000 compliant and non-compliant applications. The reintegration of the Year 2000 compliant applications and components into the agency's production environment must be carefully coordinated to account for system interdependencies. The GAO guideline targeted the completion of the implementation stage by December 1999, and included the following steps.

- Develop implementation schedule;
- Resolve data exchange issues and interagency concerns;
- Complete acceptance testing;
- Implement contingency plans;
- Implement converted and replaced systems.

Because each organization has different missions and environments, there is no single approach for solving the Year 2000 problem. Although the methodologies employed at the state level differ, all have similar phases to those outlined in the GAO Assessment Guide. These methodologies are generally designed to assist Year 2000 efforts by:

- providing guidance in assessing the size and scope of the problems;
- providing a consistent approach for project planning, remediation, and reporting;
- promoting cooperation and sharing among organizations; and
- focusing attention on the fact that Year 2000 is as much as a business issue as it is a technology issue and to direct management to give it the highest priority.

APPENDIX D

YEAR 2000 WEB SITES

<http://www.itpolicy.gsa.gov/mks/yr2000/y2khome.htm> - Federal Government's Gateway for Year 2000 Information Directories

www.y2k.gov - President's Council on Year 2000 Conversion

www.gao.gov - Government Accounting Office

www.year2000.com - hosted by technology companies

www.y2klinks.com - includes individual states' reports

www.yardeni.com/y2kreporter.html - Dr. Ed Yardeni's Economics Network includes information on Year 2000 & CyberEconomics

www.amrinc.net/nasire/y2k/ - National Association of State Information Resource Executives, Inc. (NASIRE)

www.y2ktimebomb.com/ - Westergarrd Year 2000

y2k.fts.gsa.gov/ - Y2K telecommunication Web Site

Note: State Auditor Web addresses are listed on pages 24 and 25 and State Year 2000 Web addresses are listed on page 10. However, since Web addresses change frequently, we suggest you use the following Web pages to identify updates for state Web addresses:

<http://www.itpolicy.gsa.gov/mks/yr2000/state.htm#states>

<http://www.amrinc.net/nasire/y2k/>

APPENDIX E

YEAR 2000 DOCUMENTS

General Accounting Office Publications

Guides

Year 2000 Computing Crisis: A Testing Guide. Exposure Draft. (GAO/AIMD-10.1.21., June 1998).

Year 2000 Computing Crisis: An Assessment Guide (GAO/AIMD-10.1.14., September 1997).

Year 2000 Computing Crisis: Business Continuity and Contingency Planning (GAO/AIMD-10.1.19., August 1998)

Reports and Testimonies

Year 2000 Computing Challenge: Important Progress Made, Yet Much Work Remains to Ensure Delivery of Critical Services, by Joel C. Willemsen, Director of Civil Agencies Information Systems Issues (GAO/T-AIMD-99-266, August 13, 1999).

Defense Computers: Management Controls Are Critical to Effective Year 2000 Testing (GAO/AIMD-99-172, June 30, 1999).

Year 2000 Computing Challenge: Delivery of Key Benefits Hinges on States' Achieving Compliance (GAO/T-AIMD/GGD-99-221, June 23, 1999).

GSA's Effort to Develop Year 2000 Business Continuity and Contingency Plans for Telecommunications Systems (GAO/AIMD-99-201R, June 16, 1999).

Year 2000 Computing Crisis: Actions Needed to Ensure Continued Delivery of Veterans Benefits and Health Care Services (GAO/AIMD-99-190R, June 11, 1999).

Year 2000 Computing Challenge: Concerns About Compliance Information on Biomedical Equipment (GAO/T-AIMD-99-209, June 10, 1999).

Year 2000 Computing Challenge: OPM Has Made Progress on Business Continuity Planning (GAO/GGD-99-66, May 24, 1999).

Year 2000 Computing Crisis: Readiness of the Oil and Gas Industries (GAO/AIMD-99-162, May 19,1999).

Year 2000 Computing Challenge: Time Issues Affecting the Global Positioning System (GAO/T-AIMD-99-187, May 12,1999).

Year 2000 Computing Challenge: Labor Has Progressed But Selected Systems Remain at Risk (GAO/T-AIMD-99-179, May 12,1999).

Year 2000: State Insurance Regulators Face Challenges in Determining Industry Readiness.(GAO/GGD-99-87, April 30,1989).

Year 2000 Computing Challenge: Status of Emergency and State and Local Law Enforcement Systems Is Still Unknown (GAO/T-AIMD-99-163, April 29,1999).

Year 2000: Financial Institution and Regulatory Efforts to Address International Risks (GAO/GGD-99-62, April 27,1999).

Year 2000 Computing Crisis: Readiness of Medicare and the Health Care Sector (GAO/TAIMD-99-160, April 27,1999).

Year 2000 Computing Crisis: Status of the Water Industry (GAO/AIMD-99-15 151, April 21, 1999).

Year 2000 Computing Crisis: Readiness Improving But Much Work Remains To Ensure Delivery of Critical Services (GAO/T-AIMD-99-149, April 19, 1999).

Year 2000 Computing Challenge: Federal Government Making Progress But Critical Issues Must Still Be Addressed to Minimize Disruptions (GAO/T-AIMD-99-114, April 14, 1999).

Year 2000 Computing Crisis: Additional Work Remains to Ensure Delivery of Critical Services.(GAO/T-AIMD-99-143, April 13,1999).

Year 2000 Computing Crisis: Readiness of the Electric Power Industry (GAO/AIMD-99-114, April 6, 1999).

Year 2000 Computing Crisis: FAA Is Making Progress But Important Challenges Remain.(GAO/T-AIMD/RCED-99-118, March 15,1999).

Year 2000 Computing Crisis: Readiness of State Automated Systems That Support Federal Human Services Programs (GAO/T-AIMD-99-91, February 24, 1999).

Year 2000 Computing Crisis: Update on the Readiness of the Social Security Administration.(GAO/T-AIMD-99-90, February 24,1999).

Year 2000 Computing Crisis: Readiness Improving, But Much Work Remains to Avoid Major Disruptions (GAO/T-AIMD-99-50, January 20, 1999).

Year 2000 Computing Challenge: Readiness Improving, But Critical Risks Remain (GAO/TAIMD-99-49, January 20, 1999).

Year 2000 Computing Crisis: Readiness of State Automated Systems to Support Federal Welfare Programs (GAO/AIMD-99-28, November 1998)

Year 2000 Computing Crisis: Strong Leadership and Effective Partnerships Needed to Mitigate Risks (GAO/T-AIMD-98-276, September 1, 1998).

Year 2000 Computing Crisis: Actions Needed on Electronic Data Exchanges (GAO/AIMD-98-124, July 1, 1998).

Year 2000 Computing Crisis: Potential For Widespread Disruption Calls For Strong Leadership and Partnerships (GAO/AIMD-98-85, April 30, 1998).

See the GAO Internet site --- www.gao.gov for a current list of Year 2000 documents

STATE REPORTS
Identified in Survey Responses
(Includes Internet source, if applicable, for some reports)

Alabama

Year 2000 Agency Status Report
Status of All State Agencies, September 1998
www.state.al.us/y2k

Arizona

State of Arizona Year 2000 Status Update, August 1, 1999
www.gita.state.az.us

California

Year 2000 Computer Problem: Progress May Be Overly Optimistic and Certain Implications Have Not Been Addressed, August 1998
Year 2000 Computer Problem: The State's Agencies Are Progressing Toward Compliance But Key Steps Remain Incomplete, February 1999
www.bsa.ca.gov/bsa/

Connecticut

State of Connecticut's Status as of July 23, 1999
Status of Connecticut's Top 50 Systems
www.doit.state.ct.us/y2k

Florida

Statewide Assessment, (Report #12850), December 1996
www.state.fl.us/audgen/

Georgia

The Year 2000 Problem --Reported Progress and Self-Assessment, January 1999
www2.state.ga.us/Departments/AUDIT/

Hawaii

Governor's Executive Memorandum Year 2000 Compliance
www.state.hi.us/y2k

Illinois

Year 2000 Technology Task Force Preliminary Report, November 1998

Year 2000 Project Monthly Status Report

www.state.il.us/y2k

www.state.il.us/auditor/y2k.htm

Kansas

Kansas State Agency Status, August 1999

www.y2k.state.ks.us

Kentucky

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

June 1998

Statewide Audit of the Commonwealth of Kentucky, 1997

www.state.ky.us/agencies/apa1.notewort.htm

Audit by Keane on Y2K Methodology

www.state.us/year2000/Keane_report.htm

Louisiana

Louisiana State Government Year 2000 Readiness Reports by Department, July 15, 1999

www.crt.state.la.us/y2kla/summary/zmlinked.htm

Maryland

Year 2000 Review - Special Report, January 1998

Massachusetts

Report on the Preparedness of the Commonwealth of Massachusetts to Address the Year 2000 Computer Date Issue, April 17, 1997 to October 21, 1997

Phase 2 Follow-up Report on the Preparedness of the Commonwealth of

Massachusetts to Address the Year 2000 Computer Date Issue, October 22, 1997 to October 20, 1998

Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 1998

www.magnet.state.ma.us/sao/edp1yr2000.htm

Michigan

Performance Audit of the Year 2000 Issues for Information Systems,

February 1998

Performance Audit of the Year 2000 Issues for Information Systems, May 1999

New Jersey

Office of Telecommunications and Information Systems Year 2000 Compliance Plan, May 1998

www.njleg.state.nj.us/auditor/99147.evy

New York

[New York's Preparation for the Year 2000](#)

[Governor's Task Force On Information Resource Management and Selected State Agencies and Public Authorities](#), October 1997

[New York's Preparation for the Year 2000](#)

[New York's Preparation for the Year 2000: A Second Look](#)

[CUNY: Actions To Address the Year 2000 Challenge](#)

[NYC HHC: Actions To Address the Year 2000 Challenge](#)

[NYC BOE: Actions To Address the Year 2000 Challenge](#)

www.osc.state.ny.us/reports

www.irm.state.ny.us/yr2000

Ohio

[Y2K Survey Results - Counties, Cities, School Districts](#), May 1999

[Report on Survey of Year 2000 Remediation Efforts of Governmental Units in Ohio](#)

Oregon

[Department of Administrative Services Year 2000 Statewide Project Office Review](#),
March 16, 1999

Pennsylvania

[Year 2000 Procedures - Questionnaire: Comments and Recommendations](#) - June, 1996
& 1997

Rhode Island

[Efforts to Resolve the Year 2000 Computer Issue](#), January 1999

Tennessee

[Review of the State of Tennessee's Remediation Efforts for the Year 2000: State Agencies and Higher Education](#), May 1999

www.comptroller.state.tn.us/sa/reports/specprept.htm

Texas

[An Audit Report on Management Controls at the Department of Public Safety](#),
August 1998

[Review of Oversight for the State's Embedded Systems Year 2000 Repair Efforts](#),
August 1998

Virginia

Year 2000 Progress Reports

www.cdci.state.va.us

Year 2000 Readiness Disclosure

This Year 2000 report provides general information about the participating state's Year 2000 compliance efforts. Any information in this report or the January 1999 report provided by participating states as to its Year 2000-readiness is a Year 2000 Readiness Disclosure for purposes of the Federal Year 2000 information and Readiness Disclosure Act.

The information provided in this report is for information sharing purposes only. Neither the participating states nor any agency, officer, or employee of the participating state's warrants the completeness, accuracy, reliability, or timeliness of the information contained herein. The provision of this information by the participating states shall not be construed in any way as giving business, legal, or other advice, or as a guaranty that its use or that reliance upon such information will satisfy the needs or concerns of any person or entity.