

**Getting Federal Computers Ready for 2000**  
**Report of the U.S. Office of Management and Budget**  
**February 6, 1997**



**Getting Federal Computers Ready for 2000**  
**Report of the U.S. Office of Management and Budget**  
**February 6, 1997**

The year 2000 computer problem is a seemingly simple one: assuring that computers will recognize the correct year when the year 2000 arrives. If software programs are not prepared to handle the change of date on January 1, 2000, there is a risk to government information systems and the programs they support.

This report responds to 1997 appropriations language which directs OMB to submit to the House Committee on Appropriations, the House Committee on Government Reform and Oversight, and the House Science Committee a report which includes: a cost estimate to ensure software code date field conversion by the year 2000; a planned strategy to ensure that all information technology, as defined by the Information Technology Management Reform Act of 1996, purchased by an agency will operate in 2000 without technical modifications; and, a time table for implementation of the planned strategy.

The report is to be submitted with the President's 1998 budget. (Committee Report accompanying Public Law 104-208.)

## BACKGROUND

People often use short hand to describe the year. When asked what year it is, we answer "97". When we fill in the date on paper forms we write 2/2/97. The same approach was used in designing many computer systems.

With the arrival of the year 2000, people

will know that the year "00" stands for 2000. However, the hardware and software in many computer systems will not understand this new meaning. Unless they are fixed or replaced, they will fail at the turn of the century in one of three ways:

- they will reject legitimate entries, or
- they will compute erroneous results, or
- they will simply not run.

Many systems which compare dates to decide which is earlier will no longer work. Comparisons of dates permeate Federal computer systems -- they are how inventories are maintained (e.g., last in, first out), how the order of filings is handled (e.g., first come, first served), and how eligibility is determined (e.g., an applicant must have filed before a certain date).

Systems which calculate length of time also may not compute accurately. Computations of length of time are common in Federal computer systems -- they are how benefits are computed (e.g., based on length of time), how eligibility is determined (e.g., based on length of service), and how expiration dates are calculated (e.g., expires after three years).

There are other possible effects of the date change in computer software, depending on the assumptions made and programming technique used by the designer of the software. For example, information relevant to a year could be found by using the year to find the

whatever action is necessary to address the problem once they are aware of its potential consequences. Those consequences would, after all, directly affect their ability to carry out the agency's essential functions.

Second, there can and will not be a single solution. Solving this problem requires technicians and engineers to write or revise software code and to replace hardware. A "silver bullet" is a logical impossibility. There is only a need for hard work, strategically directed, and plenty of it.

Third, given the limited amount of time, emphasis will be on mission critical systems. In many agencies such systems are large and complex, which means they will require the most time and be the most challenging to fix.

The Federal strategy relies on the newly established CIOs to direct that work and to follow industry's best practices. Those best practices include five phases:

- raising management *awareness* of the problem.

- *assessing* the scope of the problem by inventorying systems and deciding which ones to change, replace or discard,
- *renovating* the systems to be changed,
- *validating* and testing the changed systems, and
- *implementing* the revised systems (including developing a contingency plan).

Detailed steps in each phase have been developed by the interagency working group on the year 2000 and are available for agencies on a GSA sponsored year 2000 home page at <http://www.itpolicy.gsa.gov>.

## SCHEDULE

OMB, in consultation with the CIO Council, has set government-wide milestones (shown below) for completion of the *majority* of the work in each phase of agency year 2000 activities. These phases, while sequential, overlap. For example, the awareness phase continues throughout the entire process.

Government-wide Year 2000 Milestones		
Phase	Completion Measure	Completion Date
Awareness	Agency Strategy Approved by CIO	12/96
Assessment	Inventory and Scope Completed	3/97
	System Plans & Schedules Approved by CIO	6/97
Renovation	Coding Completed	12/98
Validation	Management Sign-off	1/99
Implementation	Integrated Testing Completed	11/99

come into the government during 1997. The recent inclusion by the General Accounting Office of year 2000 on its list of "high risk" areas will also assist in focusing attention to the immediacy of the problem.

## *2. Sharing Expertise*

Some Federal agencies have considerable experience working on this problem. The Social Security Administration, for example, has been actively engaged since 1989. The interagency working group is taking advantage of such experience and promoting the sharing of expertise and solutions across agencies.

The interagency working group has also developed a list of products that are being used by Federal agencies, along with information about whether they will work through the year 2000. That list is available on the year 2000 World Wide Web page for Federal managers' use. The Defense Information Systems Agency has developed a similar list of generally available products, which is also available from the year 2000 Web page. This information is invaluable to managers as they evaluate the extent of the year 2000 problem in their systems.

The President's budget includes resources to establish a dedicated year 2000 program office at GSA. Such an office will provide a core of expertise government-wide to assist agencies in formulating approaches and evaluating options to solve the problem in their systems.

## *3. Acquire Only Products that are Year 2000 Compliant*

At the recommendation of the CIO Council and the interagency working

group, agencies have stopped acquiring information technology that will not work in the year 2000. Regulatory language to effect this strategy was developed by the interagency working group on the year 2000 and the CIO Council, approved by the Federal Acquisition Regulation Councils, and published in Federal Acquisition Circular 90-45 (December 1996).

That language defines year 2000 compliant to mean

"information technology that accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries and the years 1999 and 2000 and leap-year calculations. Furthermore, year 2000 compliant information technology, when used in combination with other information technology, shall accurately process date/time data if the other information technology properly exchanges date/time data with it."

Finally, GSA is revising its Multiple Award Schedule contracts to assure that products on those schedules identify whether they are, or when they will be, year 2000 compliant. This will help agencies to acquire only year 2000 products from those schedules.

## *4. Removing Barriers*

Solutions to the year 2000 problem in operational systems require technicians to undertake the time-consuming work of analyzing and fixing systems. There are, however, things that can be done to speed this work. The interagency working group is helping to identify such measures, and

## Agency Progress and Plans for Achieving Year 2000 Compliance

Agency	Awareness	Assessment		Renovation	Validation	Implementation
		Scope	Schedule			
Agriculture	11/96	4/97	6/97	9/98	9/99	10/99
Commerce	8/96	12/96	3/97	12/98	1/99	10/99
Defense	12/96	3/97	12/97	12/98	6/99	11/99
Air Force	6/96	3/97	5/97	1/98	7/98	12/99
Army	12/96	3/97	3/97	9/98	12/98	10/99
Navy	12/96	3/97	12/97	12/98	6/99	11/99
Education	12/96	2/97	6/97	9/98	9/98	3/99
Energy	6/96	1/97	1/97	1/99	1/99	12/99
HHS	11/96	1/97	6/97	12/98	1/99	11/99
HUD	11/96	4/97	6/97	12/98	7/99	11/99
Interior	12/96	4/97	7/97	12/98	1/99	11/99
Justice	3/96	9/96	9/96	12/99	12/99	12/99
Labor	12/96	3/97	6/97	12/98	6/99	12/99
State	6/96	12/96	6/97	9/98*	10/98*	8/99*
Transportation	12/96	8/97	12/97	12/98	1/99	11/99
Treasury	5/96	4/97	7/97	12/98	12/98	11/99
VA	1/97	1/98	2/98	11/98	12/99	12/99
AID	11/96	3/97	6/97	11/98	7/99	7/99
EPA	12/96	3/97	6/97	12/98	1/99	11/99
FEMA	12/96	3/97	6/97	12/98	1/99	11/99
GSA	11/96	3/97	6/97	12/98	1/99	10/99
NASA	1/97	2/97	3/97	6/99	7/99	12/99
NSF	9/96	1/97	6/97	6/98	12/98	12/99
NRC	6/96	6/97	9/97	3/99	4/99	11/99
OPM	12/96	3/97*	6/97*	12/98	11/99	12/99
SBA**	4/96	6/96	9/96	12/98	12/98	12/98
SSA	3/96	3/96	5/96	11/98	12/98	11/99

\* - Applies to Mission-critical systems only

\*\* - Data migration to client/server environment

**ESTIMATED AGENCY YEAR 2000 OBLIGATIONS**  
(Dollars in Millions, by Fiscal Year)

Agency	1996	1997	1998	1999	2000	TOTAL
Agriculture	2.6	20.0	34.3	26.6	5.7	89.2
Commerce	2.3	16.2	33.6	28.3	9.3	89.7
<b>Defense</b>						
Air Force	0.0	96.5	259.7	14.8	0.0	371.0
Army	0.0	87.0	87.0	44.0	0.0	218.0
Navy	3.0	24.0	26.0	22.0	15.0	90.0
Defense - Other	N/A	N/A	N/A	N/A	N/A	290.6
Education	0.0	0.2	3.0	4.0	0.0	7.2
Energy	1.8	21.2	44.7	43.5	16.9	128.1
HHS	27.7	42.9	14.5	5.6	0.0	90.7
HUD	0.7	11.0	35.0	15.0	6.2	67.9
Interior	0.2	2.6	4.5	2.2	1.8	11.3
Justice	0.3	2.5	8.9	10.3	0.2	22.1
Labor	1.7	5.3	4.6	2.2	1.5	15.2
State	0.5	47.6	56.4	29.1	1.6	135.2
Transportation	0.2	12.4	22.1	39.7	6.1	80.4
Treasury	1.3	55.0	102.0	119.1	41.0	318.5
VA	4.0	49.0	49.0	42.0	0.0	144.0
AID	0.0	0.2	1.0	0.0	0.0	1.2
EPA	0.8	3.3	6.8	5.6	2.3	18.8
FEMA	3.8	4.4	3.0	3.2	1.2	15.6
GSA	0.2	0.6	0.6	0.2	0.0	1.6
NASA	0.0	6.6	14.4	10.6	1.1	32.6
NSF	0.0	0.2	0.3	0.1	0.0	0.6
NRC	N/A	2.6	2.9	2.9	0.9	9.3
OPM	1.7	0.3	0.9	0.6	0.2	3.7
SBA	2.7	2.3	1.9	0.0	0.0	6.9
SSA	2.2	15.4	9.5	6.0	0.0	33.1
<b>TOTAL</b>	<b>57.7</b>	<b>529.1</b>	<b>826.4</b>	<b>477.6</b>	<b>110.9</b>	<b>2292.4</b>

**Notes:**

1) The estimates cover the costs of identifying necessary changes, evaluating the cost effectiveness of making those changes (fix or scrap decisions), making changes, testing systems, and contingencies for failure recovery. They do not include "obligations for upgrades or replacements that would otherwise occur as part of the normal system lifecycle." (OMB Circular A-11, Section 43.2(c))

2) These are preliminary estimates only. More accurate estimates will become available after agencies complete the assessment phase. These estimates do not include the Federal share of the costs for state information systems that support Federal programs. For example, the Agriculture total does not include the potential 50 percent in Federal matching funds to be provided to states by the Food and Consumer Service to correct year 2000 problems. Similarly, while Labor's FY 1998 President's Budget includes \$200 million for the states to correct year 2000 problems in State unemployment insurance systems, that amount is not included here.

3) N/A means "not available."

# Getting Federal Computers Ready for 2000

## Progress Report



U.S. Office of Management and Budget

May 15, 1997

**Getting Federal Computers Ready for 2000**  
Progress Report of the U.S. Office of Management and Budget  
May 15, 1997

The Administration and the Congress are both working to address the year 2000 computer problem. On February 6, 1997 OMB sent a report to the Congress entitled "Getting Federal Computers Ready for 2000," which outlines the Federal government's strategy to address the year 2000 computer problem in its systems. That strategy includes assuring agency accountability. To assist in that effort, OMB required agencies to report quarterly on their program on the fifteenth of February, May, August, and November. (See OMB Memorandum M-97-13, "Computer Difficulties Due to the Year 2000 -- Progress Reports" - May 7, 1997).

This summary report is based on the first agency reports due to OMB on May 15, 1997. Those reports:

1. describe the organizational responsibilities for addressing the problem,
2. include a status of agency efforts to address the problem,
3. estimate the cost of addressing the problem in fiscal years 1996 through 2000, and
4. report on any systems that fall behind schedule.

Analysis

The February report established the schedule against which to measure progress and provided initial cost estimates. This report provides the first measures of progress and updated cost estimates. It shows that most agencies are in the assessment phase, that agencies now estimate they will spend \$2.8 billion fixing this problem, and that of the 7,649 mission critical systems identified (excluding the Social Security Administration, which reported modules):

- o 4,493 (59%) are being repaired,
- o 673 (9%) are being replaced,
- o 621 (8%) are being retired,
- o 1,598 (21%) are already year 2000 compliant, and
- o 264 (3%) are still to be evaluated.

This report includes four tables which array and summarize information provided by agencies. No systems were reported behind schedule.

Table 1, "Agency Progress and Plans for Year 2000 Compliance of Mission Critical Systems," provides the schedules for agencies to complete the phases of the government-wide best practices. It shows that 18 of the 24 agencies were still in the assessment phase as of May 15, 1997.

Table 2, "Agency Year 2000 Mission Critical Systems," provides a snapshot as of May 15, 1997 of the size of the year 2000 problem and the results of "repair, replace, or retire" decisions made thus far. Agencies have identified 7,649 mission critical systems (excluding the Social Security Administration which has identified 29,139 modules).

Table 2 also shows that agencies are planning to repair the majority (59 percent) of their systems, replace 9 percent and retire 8 percent. Twenty one (21) percent of agency mission critical systems are already Year 2000 compliant. Decisions are pending for 3 percent.

Table 3, "Status of Agency Year 2000 Mission Critical Systems Being Repaired," shows that, as a weighted percentage, the government is 65 percent complete with its assessment, and 17 percent complete with renovation of the systems to be repaired.

Table 4, "Agency Year 2000 Cost Estimates as of May 15, 1997," shows the estimated costs for fixing the problem by agency. Agencies estimated it will cost \$2.8 billion to fix the year 2000 problem. That includes an estimated expenditure of \$758 million in FY 1997 and \$1.1 billion in FY 1998.

The estimates cover the costs of identifying necessary changes, evaluating the cost effectiveness of making those changes (fix or scrap decisions), making changes, testing systems, and preparing contingencies for failure recovery. They do not include the costs of upgrades or replacements that would otherwise occur as part of the normal systems life cycle. They also do not include the Federal share of the costs for state information systems that support Federal programs. The figures provided by agencies continue to be preliminary estimates.

## Evaluation

As the first quarterly report, this report provides the first measure of progress in the Executive Branch. Based on the reports, agencies have made a good start in addressing the year 2000 problem. Most agencies are on schedule and have completed or will shortly complete their assessment of the problem. In the interim, many have begun renovating systems. No mission critical systems are reported behind schedule.

However, as the summary tables show, much work remains to be done. As of today, 21 percent of the agency mission-critical systems are reported as already compliant. An additional 8 percent are being retired and need not be fixed. That leaves 71 percent of the 7,649 mission critical systems reported that must be repaired or replaced.

As expected, our estimate of the government-wide cost (\$2.8 billion) is higher than the \$2.3 billion estimate that we reported in February, because agencies have progressed through their assessments of the problem. Indeed, even since the May 15 date of this report, some departments and agencies have revised their estimates, such as the Internal Revenue Service. We expect that the next quarterly report will provide a better, and likely higher, cost estimate as most agencies complete their assessments in June.

## Action

Agencies continue to place a high priority on fixing this problem. However, we are continuing to interact with senior officials in those agencies that are not scheduled to complete their assessment or renovation phases as early as most other agencies. In addition, where plans are not complete or progress is slower than previously promised, we are bringing the issue to the attention of senior agency management to ensure their continued involvement.

TABLE 3

Status of Agency Year 2000 Mission Critical Systems Being Repaired  
(May 15, 1997)

<u>Agency</u>	<u>Number of Systems</u>	<u>Assessment % Complete</u>	<u>Renovation % Complete</u>	<u>Validation % Complete</u>	<u>Implementation % Complete</u>
Agriculture	469	41%	0%	0%	0%
Commerce	162	75%	7%	5%	5%
Defense	2,752	64%	23%	5%	8%
Education	7	30%	0%	0%	0%
Energy	61	100%	8%	8%	8%
HHS	177	99%	15%	17%	16%
HUD	115	50%	2%	0%	2%
Interior	38	90%	41%	0%	0%
Justice	118	52%	2%	1%	0%
Labor	24	86%	19%	19%	13%
State	14	71%	0%	0%	0%
DOT	132	50%	10%	0%	0%
Treasury	66	80%	17%	15%	8%
VA	10	85%	32%	12%	6%
AID	2	80%	0%	0%	0%
EPA	16	80%	20%	20%	20%
FEMA	17	92%	47%	26%	26%
GSA	23	99%	40%	5%	5%
NASA	211	75%	2%	1%	1%
NSF	12	0%	17%	0%	0%
NRC	n/a	-	-	-	-
OPM	67	100%	0%	0%	0%
SBA	0	100%	25%	25%	25%
SSA <sup>1</sup>	7,730	100%	65%	55%	50%
Total <sup>2</sup>	4,493	65%	17%	5%	6%

<sup>1</sup> Reported and tracking modules rather than systems.

<sup>2</sup> Excludes SSA which reported modules; percentages are weighted averages.

TABLE I

Agency Progress and Plans for Year 2000 Compliance of Mission Critical Systems  
(May 15, 1997)

<u>Agency</u>	<u>Assessment</u>	<u>Renovation</u>	<u>Validation</u>	<u>Implementation</u>
Agriculture	6/97 <sup>1</sup>	9/98	9/99	10/99
Commerce	3/97	12/98	1/99	10/99
Defense	12/97	12/98	6/99	11/99
Education	6/97	9/98	9/98	3/99
Energy <sup>2</sup>	1/97	9/98	2/99	7/99
HHS	6/97	12/98	1/99	11/99
HUD	6/97	12/98	7/99	11/99
Interior <sup>2</sup>	3/97	12/98	1/99	11/99
Justice <sup>2</sup>	6/97	7/98	10/98	1/99
Labor	6/97	12/98	1/99	11/99
State	6/97	9/98	10/98	8/99
DOT <sup>3</sup>	12/97	12/98	12/99	12/99
Treasury	7/97	12/98	12/98	11/99
VA <sup>2</sup>	1/98	11/98	1/99	12/99
AID <sup>3</sup>	8/97	TBD	TBD	TBD
EPA	6/97	12/98	1/99	11/99
FEMA	6/97	12/98	1/99	11/99
GSA	6/97	12/98	1/99	10/99
NASA	3/97	6/99	7/99	12/99
NSF	6/97	6/98	12/98	12/99
NRC	9/97	3/99	4/99	11/99
OPM	6/97	12/98	11/99	12/99
SBA	9/96	12/98	12/98	12/98
SSA	5/96	11/98	12/98	11/99

<sup>1</sup> Two digits are used for the year since all dates occur before the year 2000

<sup>2</sup> Dates are earlier than those reported in February 1997.

<sup>3</sup> Dates are later than those reported in February 1997.

TABLE 2

Agency Year 2000 Mission Critical Systems  
(May 15, 1997)

Agency	Total Number	Number Compliant	% of Total	Number Being Replaced	Number Being Repaired	Number Being Retired	Number Undecided
Agriculture	684	80	12%	43	469	87	5
Commerce	484	111	23%	110	162	3	98
Defense	3,962	582	15%	473 <sup>1</sup>	2,752	487	141
Education	24	10	42%	6	7	1	
Energy	261	73	28%	119	61	8	
HHS	566	251	44%	132	177	6	
HUD	206	32	16%	36	115	23	
Interior	85	35	41%	10	38	2	
Justice	190	61	32%	10	118	1	
Labor	58	6	10%	28	24	0	
State	58	12	21%	29	14	0	3
DOT <sup>2</sup>	166	18	11%	16	132	0	
Treasury	86	13	15%	7	66	0	
VA	11	1	9%	0	10	0	
AID	64	20	31%	30	2	0	12
EPA	61	28	46%	12	16	0	5
FEMA	38	17	45%	3	17	1	
GSA	42	16	38%	2	23	1	
NASA	453	205	45%	37	211	0	
NSF	16	0	-	4	12	0	
NRC <sup>3</sup>	n/a	n/a	n/a	n/a	n/a	n/a	
OPM	94	17	18%	9	67	1	
SBA	40	10	25%	30	0	0	
SSA <sup>4</sup>	29,139	20,426	71%	975	7,730	8	
Total <sup>5</sup>	7,649	1,598	21%	673	4,493	621	264

<sup>1</sup> Not included in the total systems -- entries in this figure may have been reported twice.

<sup>2</sup> Does not include FAA -- will be provided after assessment is completed.

<sup>3</sup> Information will be provided after assessment is completed.

<sup>4</sup> Reported and tracking modules (units of computer code that when compiled/assembled and executed perform a specific business function) rather than systems.

<sup>5</sup> Excludes SSA which reported modules.

*2nd Report*

## **Progress on Year 2000 Conversion**



**U.S. Office of Management and Budget**

**August 15, 1997**

**Progress on Year 2000 Conversion**  
Report of the U.S. Office of Management and Budget  
as of August 15, 1997

The Administration is working to avert the problems that could occur if systems are not able to correctly process the year 2000. On February 6, 1997, OMB sent a report to the Congress entitled "Getting Federal Computers Ready for 2000," which outlines the Federal government's strategy to address the year 2000 computer problem in its systems. That strategy is predicated on assuring agency accountability. To assist in that effort, OMB required agencies to report quarterly on their progress on the fifteenth of February, May, August, and November. (See OMB Memorandum M-97-13, "Computer Difficulties Due to the Year 2000 - Progress Reports" - May 7, 1997). This report summarizes those plans and describes other actions being taken to assure success.

The Federal government's strategy is based on the five phases of agency best practices for addressing the problem: Awareness, Assessment, Renovation, Validation, and Implementation<sup>1</sup>. With advice from the CIO Council, OMB set government-wide milestones for the completion of work in each of the phases. Agencies then established plans for when they would complete the work in each phase. The quarterly reports which are summarized here are used to measure progress against those plans.

On June 23, OMB sent the Congress a summary of the first agency quarterly reports, and made it available to the public. This second summary report is based on the second agency progress reports which were due to OMB on August 15, 1997.

### **Government-wide Progress**

#### Analysis

The February report established the schedule against which to measure progress and provided initial cost estimates. This report provides the second measure of progress and again updates cost estimates. It shows that:

- many agencies have completed their assessment of the problem and are renovating code;
- others have not made substantial progress;
- agencies now estimate they will spend \$3.8 billion fixing the problem;

---

<sup>1</sup> While there are five phases, the work in them overlaps. It is not necessary, for example, for the assessment of all systems to be completed before renovation of systems begins.

- the number of mission critical systems that agencies have identified has increased to 8,562 (excluding the Social Security Administration, which reported modules); and,
- of those mission critical systems:
  - o 5,332 (62%) are being repaired,
  - o 1091 (13%) are being replaced,
  - o 390 (5%) are being retired, and
  - o 1646 (19%) are already year 2000 compliant.

This report includes four tables which array and summarize information provided by agencies.

Table 1, "Agency Progress and Plans for Year 2000 Compliance of Mission Critical Systems," provides the agencies' schedules for completing the five phases of the government-wide best practices. It shows that 20 of the 24 agencies were scheduled to have completed the assessment phase by August 15, 1997.

Table 2, "Agency Year 2000 Mission Critical Systems," provides a snapshot of the size of the year 2000 problem and the results of "repair, replace, or retire" decisions made thus far. Agencies have now identified 8,562 mission critical systems (excluding the Social Security Administration which has identified 29,139 modules), which is 913 more than the 7,649 identified in the May report.

Table 2 also shows that agencies are repairing the majority (62 percent) of their systems, replacing 13 percent, and retiring 5 percent. Nineteen (19) percent of agency mission critical systems are already Year 2000 compliant. In May agencies reported that they would repair 59 percent, replace 9 percent, and retire 5 percent of their mission critical systems, and that 21 percent were already compliant.

Table 3, "Status of Agency Year 2000 Mission Critical Systems Being Repaired," shows that, as a weighted percentage, the government is 56 percent complete with its assessment, and 12 percent complete with renovation of the mission critical systems to be repaired. These reductions in the percentages from the May report (65 percent and 17 percent respectively) are due to the agencies' identifying 839 more systems being repaired than were reported in May.

Table 4, "Agency Year 2000 Cost Estimates as of August 15, 1997," shows the estimated costs for fixing the problem by agency. Agencies now estimate it will cost \$3.8 billion to fix the year 2000 problem, which is \$1 billion higher than the \$2.8 billion reported in May. That includes estimated expenditures of \$850 million in FY 1997 and \$1.7 billion in FY 1998.

The estimates cover the costs of identifying necessary changes, evaluating the cost effectiveness of making those changes (fix or scrap decisions), making changes, testing systems, and preparing contingencies for failure recovery. They do not include the costs of upgrades or replacements that would otherwise occur as part of the normal systems life cycle. They also do not include the Federal share of the costs for state information systems that support Federal programs. The figures provided by agencies continue to be preliminary estimates.

### Evaluation

Based on the reports, some agencies are making good progress in addressing the year 2000 problem. Most are on schedule and have completed their assessment of the problem; many have also begun renovating systems. However, as the summary tables show, most of the work remains to be done. As of today, 75 percent of the 8,562 agency mission-critical systems identified must be repaired or replaced.

While progress has been made overall, it has not been uniform across the agencies. The reports are disappointing in several of the agencies and we will therefore increase our oversight of their activities. (See the agency evaluation discussion below.)

As expected, our estimate of the government-wide cost (\$3.8 billion) is higher than the \$2.8 billion estimate that we reported in May, because agencies are progressing through their assessments of the problem. The primary sources of the increase are the Treasury Department (\$736 million), the Transportation Department (\$173 million), and the Department of Defense (\$92 million). We expect that the next quarterly report will provide a better cost estimate as agencies complete the assessment phase and gain more experience about how much it costs to renovate their systems.

### Government wide Issues

#### Validation

As agencies move into renovating code, proper validation of changes made will be critical to success in fixing this problem. These two activities will happen sequentially for each system, but their schedules will overlap within an agency, because different systems will be at different stages of being fixed. Table 1 includes a schedule of when agencies will complete the renovation and validation of all of their mission critical systems. Over the coming months OMB will meet with those agencies with the latest scheduled completion of the validation phase and discuss the adequacy of those dates.

As part of those meetings, we will discuss the preparedness of communications interfaces with systems external to the Federal government, including State and local governments and the private sector. The CIO Council has established a working group to specifically look at ways to streamline the interfaces between the Federal government and State and local governments.

Among that group's accomplishments are establishing points of contact for the States in each Federal agency, and work on a State-Federal summit, to be held in October, to discuss electronic data interfaces between the States and the Federal government.

### Auditing

The year 2000 problem represents a threat to systems that are critical to the functioning of the government. Therefore, it is important to be sure that the problem has been or is being fixed. Auditors can provide an independent validation of progress in addressing this problem. *Accordingly, OMB is revising its system audit guidelines to request that agency auditors report on Year 2000 progress from now through 2000.*

### Planning for Contingencies

Where a mission critical system is not fixed in time, it is essential that a contingency plan be in place. Agencies are to develop such plans in accordance with the government-wide best practices endorsed by the CIO Council. To assure that such planning has occurred for systems in danger of not being repaired on time, we have asked for a summary of the contingency plan for any mission critical system that is reported behind schedule in two consecutive quarterly reports. We will identify and summarize any such plans in future reports to the Congress.

### Other Government-wide Systems

We have identified and are working on three government-wide areas where the year 2000 problem occurs in other than computer systems: telecommunications, bio-medical devices and laboratory equipment, and facilities. In these areas, the problem occurs in commercial products that have computers or computer chips inside. We have established inter-agency working groups, chaired by the key programmatic agency in each of these three areas, to raise awareness and to work with manufacturers to assure that products are fixed. Should other government-wide areas be identified, we will organize similar inter-agency efforts to address them.

### Agency-Specific Progress

#### Agency Evaluation

While most agencies appear to be making progress in addressing this problem, a number are not. Slippage in agency schedules is not an option. Therefore, we are identifying agencies in one of three categories depending on whether there is sufficient evidence they are making adequate progress in addressing this problem.

The following criteria helped form our evaluation of the information received from the agencies:

- Status of the assessment of the problem
- Measurable improvement from previous reports
- Schedule for completion of the phases of best practices
- Dramatic changes in previously reported information or other indications of concern

The first category is agencies where there is insufficient evidence of progress. The agencies in the first category are: Agriculture, Education, Transportation, AID.

The Department of Agriculture missed its completion date for the assessment of its problem and reports that it is only 38 percent complete with its assessment. Because of this lack of progress, the Secretary of Agriculture has imposed several stringent measures on the components of the Department, including a moratorium on the purchase of new information technology until the assessment is completed.

Of the Department of Education's 24 mission critical systems, 10 are already compliant, 6 are being replaced, 1 is being retired, and 7 are being repaired. The Department missed its completion date for the assessment of its systems to be repaired, and reported that 5 mission critical systems were already two months behind schedule. Of the 7 needing repair, 3 of the 4 systems directly relating to student financial aid delivery have been assessed or are undergoing assessment. The remaining student financial aid system needing repair, and 3 other systems, had not begun assessment as of the August report. The Department currently reports that it has begun all assessments and is taking action to assure that work on the systems is accelerated so that problems found will be corrected in time.

The Department of Transportation will not complete its assessment until December 1997. Based on the first part of the assessment, however, the Department has increased its estimate of the work required to fix the problem by 3-fold. In addition, the Department does not plan to complete its validation until December 1999. The Deputy Secretary has increased the executive level attention to this problem within the Department.

The Agency for International Development has not provided a schedule for its efforts. Based on its recently completed assessment of its corporate systems, however, it found that its newly implemented suite of systems contained year 2000 vulnerabilities. The Administrator will update its report in November.

*For these agencies we are establishing a rebuttable presumption going into the FY 1999 budget formulation process this Fall that we will not fund requests for information technology investments unless they are directly related to fixing the year 2000 problem.*

For agencies in the second category, we see evidence of progress, but also have concerns.

Many have strong year 2000 programs which we expect will continue to show progress. The agencies in the second category are: Commerce, Defense, Energy, HHS, Interior, Justice, Treasury, EPA, FEMA, NASA, OPM, and SBA. A summary of concerns and progress for these agencies appears at Table 5.

*For these agencies, we will discuss their year 2000 program with them during the Fall, but will forbear applying the rebuttable presumption concerning funding until we receive their November 15th quarterly report. We will, however, put them on notice that FY 1999 funding for information technology investments will be contingent on continued progress in addressing the Year 2000 problem.*

The remaining agencies -- HUD, Labor, State, VA, GSA, NSF, NRC, and SSA -- appear to be making progress. For these agencies, our approach will be as follows:

*Technology investments of these agencies will be treated in accordance with OMB's normal budgetary review criteria, which include a requirement that the investment "reflect the agency's year 2000 compliance plan. (See OMB Memorandum M-97-02, "Funding Information Systems Investments.").*

*All agency progress will be re-evaluated upon receipt of their November 15 reports.*

#### Exception Report on Systems.

OMB requires agencies to report on any mission-critical systems for which year 2000 efforts have fallen more than two months behind schedule.

The Department of Energy reported that a number of its sites had not identified any mission critical systems, and that they were, therefore, behind schedule on the assessment phase. Senior management in the Department has taken action to assure that those sites identify their mission critical systems and assess whether they are year 2000 compliant. The Department reports that there will be some additions to their number of mission critical systems in future reports.

The Department of Education reported three systems that are behind schedule in completing their assessment, due to contractual problems. They also report that those contractual problems have been resolved and that the schedules have been adjusted for those systems to assure they will be year 2000 compliant in time.

#### **Conclusion.**

Overall progress continues, and agencies continue to place a high priority on fixing this problem. However, a number of potential problem areas are apparent, and OMB is taking action to assure that these areas receive the proper attention.

TABLE 1

Agency Progress and Plans for Year 2000 Compliance of Mission Critical Systems  
(August 15, 1997)

<u>Agency</u>	<u>Assessment</u>	<u>Renovation</u>	<u>Validation</u>	<u>Implementation</u>
Government-wide Goal	6/97 <sup>1</sup>	12/98	1/99	11/99
Agriculture	6/97	9/98	9/99	10/99
Commerce	3/97	12/98	1/99	10/99
Defense	12/97	12/98	6/99	11/99
Education	6/97	9/98	9/98	3/99
Energy	1/97	9/98	2/99	7/99
HHS	6/97	12/98	1/99	11/99
HUD	6/97	12/98	7/99	11/99
Interior	3/97	12/98	1/99	11/99
Justice	6/97	7/98	10/98	1/99
Labor	6/97	12/98	1/99	11/99
State	6/97	9/98	10/98	8/99
DOT	12/97	12/98	12/99	12/99
Treasury	7/97	12/98	12/98	11/99
VA	1/98	11/98	1/99	10/99 <sup>2</sup>
AID	8/97	TBD	TBD	TBD
EPA	6/97	12/98	1/99	11/99
FEMA	6/97	12/98	1/99	11/99
GSA	6/97	12/98	1/99	10/99
NASA	3/97	6/99	7/99	12/99
NSF	6/97	12/98 <sup>3</sup>	1/99 <sup>3</sup>	11/99 <sup>2</sup>
NRC	9/97	3/99	4/99	11/99
OPM	6/97	12/98	11/99	12/99
SBA	9/96	12/98	12/98	12/98
SSA	5/96	9/98 <sup>2</sup>	12/98	1/99 <sup>2</sup>

<sup>1</sup> Two digits are used for the year since all dates occur before the year 2000

<sup>2</sup> Date is earlier than reported in May 1997

<sup>3</sup> Date is later than reported in May 1997

TABLE 2

Agency Year 2000 Mission Critical Systems  
(August 15, 1997)

Agency	Total Number	Number Compliant	% of Total	Number Being Replaced	Number Being Repaired	Number Being Retired	Number Undecided
Agriculture	1,239	126	10%	37	932	144	
Commerce	503	133	26%	118	158	3	91
Defense	3,695	652	18%	267	2,593	183	
Education	24	10	42%	6	7	1	
Energy	399	99	25%	170	122	8	
HHS	434	115	26%	146	166	7	
HUD	231	51	22%	45	108	27	
Interior	89	19	21%	15	49	6	
Justice	190	58	31%	11	118	3	
Labor	60	9	15%	29	22	0	
State	72	24	35%	36	12	0	
DOT	430	0	0%	19	408	3	
Treasury	320	39	12%	42	239	0	
VA	11	1	9%	0	10	0	
AID	64	20	31%	30	2	0	12
EPA	61	33	54%	7	21	0	
FEMA	38	17	45%	3	17	1	
GSA	58	29	50%	17	11	1	
NASA	457	184	40%	46	225	2	
NSF	16	0	0%	4	12	0	
NRC	7	0	0%	3	4	0	
OPM	124	17	14%	10	96	1	
SBA	40	10	25%	30	0	0	
SSA <sup>1</sup>	29,139	23,456	80%	975	21,884 <sup>2</sup>	8	
Total <sup>3</sup>	8,562	1,646	19%	1,091	5,332	390	103

<sup>1</sup> Reported and tracking modules (units of computer code that when compiled/assembled and executed perform a specific business function) rather than systems.

<sup>2</sup> Includes 17,184 modules where renovations are completed

<sup>3</sup> Excludes SSA which reported modules.

TABLE 3

Status of Agency Year 2000 Mission Critical Systems Being Repaired  
(August 15, 1997)

<u>Agency</u>	<u>Number of Systems</u>	<u>Assessment % Complete</u>	<u>Renovation % Complete</u>	<u>Validation % Complete</u>	<u>Implementation % Complete</u>
Agriculture	932	37%	8%	4%	4%
Commerce	158	80%	15%	6%	5%
Defense	2,593	43% <sup>1</sup>	14%	5%	0%
Education	7	30%	0%	0%	0%
Energy	122	80%	10%	10%	5%
HHS	166	100%	28%	10%	10%
HUD	108	100%	9%	2%	1%
Interior	49	100%	43%	0%	0%
Justice	118	100%	1%	1%	0%
Labor	22	100%	15%	11%	7%
State	12	100%	25%	0%	0%
DOT	408	66%	0%	0%	0%
Treasury	239	77%	6%	5%	5%
VA	10	85%	51%	28%	13%
AID	2	80%	0%	0%	0%
EPA	21	80%	33%	28%	28%
FEMA	17	88%	35%	35%	24%
GSA	11	100%	21%	14%	13%
NASA	225	96%	8%	7%	2%
NSF	12	100%	33%	25%	0%
NRC	4	100%	0%	0%	0%
OPM	96	100%	3%	0%	0%
SBA	0	100%	35%	35%	30%
SSA <sup>2</sup>	21,884	100%	78%	67%	62%
Total <sup>3</sup>	5,332	56%	12%	5%	2%

<sup>1</sup> Of Defense's 3,695 total mission critical systems, 60% have completed assessment

<sup>2</sup> Reported and tracking modules rather than systems.

<sup>3</sup> Excludes SSA which reported modules; percentages are weighted averages.

TABLE 4

## AGENCY YEAR 2000 COST ESTIMATES AS OF AUGUST 15, 1997

(Dollars in Millions, by Fiscal Year)

Agency	1996	1997	1998	1999	2000	TOTAL
Agriculture *	5.0	24.6	49.6	25.3	9.0	113.5
Commerce *	2.6	11.5	28.0	25.8	6.6	74.5
Defense * 1	10.6	389.2	659.8	281.1	7.1	1409.5
Education	0.1	0.6	3.4	4.4	0.2	8.7
Energy	1.8	30.6	54.5	53.2	20.4	160.5
HHS	9.2	25.0	42.9	20.1	0.0	97.2
HUD **	0.7	7.6	35.0	15.0	6.2	64.5
Interior **	0.2	2.7	5.3	3.9	1.6	13.7
Justice *	1.5	8.0	11.5	3.1	0.3	24.4
Labor *	1.7	5.3	6.9	3.4	1.1	18.4
State	0.5	47.6	56.4	29.1	1.6	135.2
Transportation *	0.6	18.7	107.9	107.4	30.1	264.7
Treasury *	1.3	192.5	518.0	265.0	128.9	1105.7
VA *	4.0	53.0	58.0	47.0	0.0	162.0
AID	0.0	0.2	0.5	0.3	0.0	1.0
EPA	0.8	3.3	6.8	5.6	2.3	18.8
FEMA	3.8	4.4	3.0	3.2	1.2	15.6
GSA	0.2	1.0	1.0	0.1	0.0	2.3
NASA **	0.1	8.5	20.5	12.1	2.2	43.4
NSF	0.0	0.5	0.8	0.1	0.0	1.4
NRC	0.0	2.6	2.9	2.9	0.9	9.3
OPM	1.7	2.1	0.3	0.3	0.3	4.7
SBA	1.7	3.3	2.0	0.0	0.0	7.0
SSA	2.2	15.4	9.5	6.0	0.1	33.2
TOTAL	50.4	858.1	1684.5	914.3	220.2	3789.2

## Notes:

These estimates do not include the Federal share of the costs for State information systems that support Federal programs. For example, the Agriculture total does not include the potential 50 percent in Federal matching funds provided to States by Food and Consumer Services to correct their Year 2000 problems. Similarly, the HHS total does not include the Medicaid baseline costs for the Federal share of state systems. And, while Labor's FY 1998 appropriation request includes \$200 million for States to correct Year 2000 problems in State unemployment insurance systems, that amount is not included in this estimate.

\* Agencies for which total estimate increased by more than \$1 million from the May report.

\*\* Agencies for which total estimate decreased by more than \$1 million from the May report.

1 Defense total estimate includes 61.7 million that was not allocated by year.

**TABLE 5**  
Concerns and Progress for Second Category Agencies  
 (August 15, 1997)

<u>Agency</u>	<u>Principal Concerns</u>	<u>Evidence of Progress</u>
Commerce	Missed its assessment completion date	Progress in assessment and renovation of mission critical systems
Defense	Large number and variety of systems and interfaces. Substantial number still being assessed	Department remains on its schedule, Y2K is a top information technology priority
Energy	Missed its assessment completion date	Progress in renovating mission critical systems
HHS	Omitted several key systems in its first two reports	Progress in renovating mission critical systems
Interior	Little progress in validating systems, dramatic change in reported information	Assessment complete
Justice	Little progress in renovating and validating systems, concern about schedule	Assessment complete
Treasury	Missed assessment completion date, had dramatic changes in reported information	Substantially restructured program to assure accountability across the Department
EPA	No progress in the assessment of its mission critical systems	Progress in renovating and validating systems
FEMA	Has not completed assessment of mission critical systems	Progress in renovating and validating systems
NASA	Completion dates are later than the government wide goals	Progress on all phases of repairing a large number of complex mission critical systems

TABLE 5

Concerns and Progress for Second Category Agencies (cont.)  
(August 15, 1997)

<u>Agency</u>	<u>Principal Concerns</u>	<u>Evidence of Progress</u>
OPM	Completion dates are later than the government-wide goals	Found and assessed new mission critical systems, began renovation
SBA	Roughly 1/3 of production lines of code remain to be reviewed	Migrating its systems to a client-server environment by the end of 1998 and concurrently fixing its year 2000 problem

**3rd Report**

**Progress on Year 2000 Conversion**



---

**U.S. Office of Management and Budget**

**As of November 15, 1997**

**Progress on Year 2000 Conversion**  
Report of the U.S. Office of Management and Budget  
as of November 15, 1997

The Administration is continuing to work on averting the problems that could occur if systems are not able to correctly process the year 2000. On February 6, 1997, OMB sent a report to the Congress entitled "Getting Federal Computers Ready for 2000," which outlines the Federal government's strategy to address the year 2000 computer problem in its systems. That strategy is predicated on assuring agency accountability. To assist in that effort, OMB required agencies to report quarterly on their progress on the fifteenth of February, May, August, and November. (See OMB Memorandum M-97-13, "Computer Difficulties Due to the Year 2000 -- Progress Reports" - May 7, 1997). This report summarizes the agencies' progress and describes other actions being taken to assure success.

The Federal government's strategy is based on the five phases of the best practices for addressing the problem: awareness, assessment, renovation, validation, and implementation. With advice from the Chief Information Officers (CIO) Council, OMB sets government-wide milestones for the completion of work in each of the phases. Agencies then establish plans for when they would complete the work in each phase. While there are five phases, they are not necessarily consecutive. For example, renovation of some systems can be undertaken before the assessment of all systems is completed.

This is the third quarterly report, summarizing the progress reports the agencies sent to OMB on November 15, 1997.

---

### **Results in Brief**

While all agencies have shown progress, the extent of that progress is mixed. Three agencies (DOE, HHS, and OPM) were added to the four (USDA, Education, DOT, and USAID) that were categorized as making insufficient progress in OMB's August report; two others (VA and Labor) were added to the group of agencies for which there is progress but also concerns; and, two agencies (EPA and SBA), which had been in that category were reclassified to the category of those demonstrating sufficient progress. Total estimated costs are essentially unchanged since the previous report, but OMB continues to believe that some agencies' costs may still be underestimated. In order to assure that funding is available to each agency to remedy the year 2000 problem, OMB has taken actions through the budget process that are described below in the section on agency specific progress. In addition, after considering the critical need to assure that agencies have sufficient time to test their mission-critical systems in production settings, the government-wide milestones are being accelerated from December 1998 to September 1998 for completion of renovation, and from November 1999 to March 1999 for implementation.

## Government-wide Progress

This summary report shows that:

- Almost all agencies have completed their assessment of the problem, and all are renovating code.
- Agencies now estimate they will spend \$3.9 billion fixing the problem.
- The number of mission critical systems that agencies have identified (8,589) is essentially unchanged.
- Of those mission critical systems: 2,296 (27 percent) are now year 2000 compliant; 4,700 (55 percent) are still being repaired; 915 (11 percent) are still being replaced; and 381 (4 percent) will be retired. This compares with 19 percent reported compliant in the previous report.

This report includes four tables which array and summarize information provided by the agencies.

Table 1, "Progress and Plans for Year 2000 Compliance of Mission Critical Systems," provides the agencies' schedules for completing the four remaining phases of the government-wide best practices. It shows that 21 of the 24 agencies were scheduled to have completed the assessment phase by November 1997. (It does not reflect the acceleration in government-wide dates discussed below.)

Table 2, "Mission Critical Systems," provides a snapshot of the size of the year 2000 problem and the results of "repair, replace, or retire" work thus far. Agencies have now identified 8,589 mission critical systems, which is slightly more than the 8,562 identified in the August report. This change occurred in part because the Social Security Administration, which previously counted modules, is now counting systems and has identified 308 mission-critical systems. Because agencies know their systems and are responsible for assuring that agency programs continue to function across the date change, OMB has given agencies discretion to define which of their systems are mission-critical. Several agencies have increased or decreased their numbers of mission-critical systems as they complete their assessments.

Table 2 also shows that agencies are still repairing the majority (55 percent) of their systems, replacing 11 percent, and retiring 4 percent. Twenty-six (27) percent of agency mission critical systems are now year 2000 compliant. In August, agencies reported that they were then repairing 62 percent, replacing 13 percent, and retiring 5 percent of their mission critical systems, and that 19 percent were already compliant. Some agencies have adjusted their figures based on applying a more rigorous definition of what constitutes compliance.

Table 3, "Mission Critical Systems Being Repaired," shows that, as a weighted percentage, the government is 95 percent complete with its assessment and 34 percent complete with renovation of the mission critical systems to be repaired. In August, the figures were 56 percent and 12 percent respectively.

Table 4, "Year 2000 Cost Estimates," shows the estimated costs for fixing the problem by agency. Agencies now estimate it will cost \$3.9 billion to fix the year 2000 problem, which is \$100 million more than the \$3.8 billion estimated in August. That total includes estimated expenditures of \$783 million in FY 1997 and \$1.8 billion in FY 1998.

The estimates cover the costs of identifying necessary changes, evaluating the cost effectiveness of making those changes (fix or scrap decisions), making changes, testing systems, and preparing contingencies for failure recovery. They do not include the costs of upgrades or replacements that would otherwise occur as part of the normal systems life cycle. They also do not include the Federal share of the costs for state information systems that support Federal programs. The estimates provided by agencies will continue to change as work progresses.

### Evaluation

Based on the reports, many agencies are making good progress in addressing the year 2000 problem. Most are on schedule and have completed their assessment of the problem; all have begun renovating systems, and almost all have completed implementation of some mission-critical systems. However, as the summary tables show, most of the work still remains to be done. As of November 15, 67 percent of the 8,589 agency mission-critical systems identified must still be repaired or replaced.

Progress has been made overall. In particular, progress on renovation (34 percent complete) and overall system compliance (26 percent complete) is encouraging. However, results are disappointing in several of the agencies, and OMB is therefore increasing its oversight of their activities. (See the agency-specific discussion below.)

As expected, our estimate of the government-wide cost (\$3.9 billion) is slightly higher than the \$3.8 billion estimate that OMB reported in August. The primary sources of the increase are the Treasury Department (\$77 million) and the Department of Health and Human Services (\$34 million). OMB expects that future quarterly reports will continue to refine cost estimates as agencies gain more experience about how much it costs to renovate their systems.

### **Government-wide Issues**

#### Accelerated Goals

Although the agency reports demonstrate good progress in some areas, overall it is clear that a vast amount of work remains. The original government-wide goals did not provide much room for slippage. In addition, it is important to assure that agencies have sufficient time to run

fully implemented systems in a production environment. Finally, the sense of urgency should be clear to both our private sector suppliers and to those with whom we exchange data. *Accordingly, OMB has accelerated the government-wide target for completion of renovation from December 1998 to September 1998, and the target for completion of the implementation phase from November 1999 to March 1999.*

Although OMB expects that agencies will make every effort to meet the March 1999 target, OMB also expects that some systems will not meet this target. *Accordingly, OMB will ask agencies to identify in their February reports any mission-critical systems that agencies do not expect to be fully implemented by March 1999, along with the steps they are taking to develop contingency plans for those systems.*

### Independent Verification

Some of the private sector firms that have completed most of their work in fixing this problem have advocated the importance of independent verification that systems have actually been fixed. The agencies have been receptive to this advice and are requiring that systems be certified as year 2000 compliant and independently verified. In most agencies, inspectors general have taken an important and active role in assuring that agencies are performing proper verification activities. Agencies are also relying on existing processes for independent verification. *OMB will ask agencies to report on their independent verification activities in their next quarterly report.*

---

### Planning for Contingencies

As stated above, OMB will ask agencies to describe in their February reports the steps they are taking to establish contingency plans for any system that is not expected to complete implementation by March 1999. In addition, agencies are to have in place a contingency plan for any mission critical system that is reported to be behind schedule in two consecutive quarterly reports and provide a summary of the plan to OMB. *OMB has tasked the CIO Council to develop government-wide best practices in this area. OMB will continue to identify and summarize any such plans in future reports to the Congress.*

### Data exchanges with States and other partners

The Federal government exchanges data with foreign, State, and local governments, and with private entities. Of particular importance is the Federal relationship with the States, because the States operate many important Federal programs. Therefore, year 2000 compliance of data exchanges with the States is of great importance to both the Federal government and the States. To help assure compatibility, the CIO Council has established a working group specifically to focus on the exchanges between the Federal government and State governments. Already, that group has established points of contact for the States in each Federal agency. In addition, a State-Federal summit was held on October 28, 1997, to identify specific issues and develop a

strategy for assuring that electronic data exchanges between the States and the Federal government will not fail.

An important piece of that strategy -- using a 4-digit contiguous format in year 2000 compliant data exchanges -- was agreed to at the summit, and recently promulgated in a joint letter from OMB and the National Association of State Information Resource Executives. In addition, policy and technical coordination groups have been established to address specific issues as they arise. *These groups have set targets for when agencies will have inventoried their data exchanges with States (2/1/98), and when they will have communicated with the States regarding both the precise format of their data exchanges and the timing of their change to the new format (3/1/98). This same approach will be used for all other exchanges. OMB will ask agencies to report on progress in this area in their February reports.*

#### Other Government-wide Systems

OMB has identified and is working on three government-wide areas where the year 2000 problem occurs in other than computer systems: telecommunications, bio-medical devices and laboratory equipment, and facilities. In these areas, the problem occurs in commercial products that have computers or computer chips inside them, and, at least for newer systems, needs to be fixed by the manufacturers of those products. OMB has established interagency working groups, each chaired by a key program agency in each of these three areas, to raise awareness and to work with manufacturers to assure that products are fixed. Each group has developed a work plan and set concrete objectives for the coming months. The bio-medical devices and laboratory equipment group, for example, plans to establish a web site populated with compliance information about such products early next year. The approach used for these three government-wide areas will be used for others as they are identified.

#### Agency-Specific Progress

##### Agency Evaluation

While many agencies appear to be making good progress in addressing this problem, some are not. As part of monitoring agency progress, OMB has categorized agencies into one of three tiers based on the sufficiency of the evidence of adequate progress in their reports.

The following criteria were used in OMB's evaluation of the information received from the agencies:

- Status of the assessment of the problem – Has the agency missed its target date, or is it likely to?
- Measurable improvement from previous reports – Is there measurable and adequate progress on renovation, and indications of progress on validation and implementation?
- Schedule for completion of the phases of best practices -- Is the schedule realistic? Is the overall progress (including non-mission critical and non-IT systems) credible?
- Dramatic changes in previously reported information or other indications of concern.

The first tier consists of agencies in which there is insufficient evidence of adequate progress. The agencies in the first tier are: the Departments of Agriculture, Education, Energy, Health and Human Services, and Transportation, as well as the U.S. Agency for International Development and the Office of Personnel Management.

**Agriculture.** The Secretary of Agriculture and the Chief Information Officer have dramatically increased senior management attention to this issue and taken strong management action. The Secretary has established a Senior Executive level position for managing year 2000 issues Department-wide. In addition, each bureau-level Administrator has also appointed a Year 2000 Senior Executive who reports directly to the Administrator and has established year 2000 project teams. During FY 1997, the Secretary issued a procurement moratorium requiring CIO approval of any IT procurements over \$25,000; under this moratorium, purchases will only be approved on an emergency basis or when the acquisition is directly related to year 2000 remediation. This moratorium will remain in place throughout FY 1998 and FY 1999 to assure that the year 2000 is the Department's number one information technology priority. Although the Department has completed the assessment phase, the pace on renovation, validation, and implementation continues to be slower than necessary to meet the Department's schedule.

**Education.** The Department of Education has begun making progress in addressing its year 2000 problem. It has established a schedule for its year 2000 work, developed a detailed plan for fixing its mission critical systems, and has hired a consultant to assist with key project management and technical tasks to assure that the problem is adequately addressed. However, the Department remains behind the government-wide schedule, having just completed the assessment of its mission critical systems and only having begun renovating code.

**Energy.** The Department has just completed its assessment of mission-critical systems at all of its government and contractor sites. In its November report, the Department identified 69 new mission critical systems. Renovation is 13 percent complete, and progress in the other phases is minimal. In response to these concerns, the Department will require program officials to certify

to the CIO that adequate progress is being made in achieving year 2000 compliance prior to receiving IT funds. In its February report, the Department plans to provide OMB a detailed breakout of progress at each site.

**Health and Human Services (Health Care Financing Administration).** Although the Department of Health and Human Services (HHS) as a whole is making progress, the Health Care Financing Administration (HCFA) has concerns about the 74 mission-critical systems of its external contractors, such as Medicare fiscal intermediaries and carriers. A little more than half of these contractors have completed their Year 2000 assessments. Furthermore, HHS and HCFA have limited ability under current law to influence these contractors. HHS is developing specific actions, including a legislative proposal, that can be taken to assure that these systems will work smoothly through the year 2000.

**Transportation.** Although the Secretary of Transportation has greatly strengthened senior management attention to this problem, the Department of Transportation continues to be at high risk of system failure in the year 2000, in large part because of poor progress by the Federal Aviation Administration (FAA). The FAA has completed assessments on only 38 percent of its systems. This does not include an additional 245 systems the FAA has just identified as mission critical, but has not assessed. Moreover, it is likely that additional mission critical systems will be identified. The rest of the Department is also behind schedule, having completed only 91 percent of its assessment. Progress within the other phases has been minimal since the last report, and DOT is unlikely to meet its milestones. Because the Department has not completed its assessment, it is likely that it has underestimated its costs.

---

**Agency for International Development.** USAID is taking the correct management action in addressing its Year 2000 problem. It has delayed its modernization effort pending year 2000 work and plans to reprogram at least \$16.9 million in FY 1998 for year 2000 costs, mostly from the funds that were intended for the modernization effort. AID remains a concern pending demonstrated progress as a result of these steps.

**Office of Personnel Management.** The Office of Personnel Management (OPM) completed its assessment in February 1997, but has only renovated 9 percent of its mission-critical systems and has not validated or implemented fixes to any of them. In August OPM issued a contract for the renovation of 79 mission-critical systems that support its retirement programs. That contract is expected to produce substantial progress in the Spring of 1998.

#### Other Agencies

For agencies in the second category, we see evidence of progress, but also have concerns. Many have strong year 2000 programs that we expect will continue to show progress. The agencies in the second category are: Commerce, Defense, Interior, Justice, Labor, Treasury, VA, FEMA, and NASA. A summary of progress and concerns for these agencies appears below.

Agency	Progress	Continuing Concerns
Commerce	Overall, appears to be on-schedule; assessment of telecommunications is underway.	Need for progress in Census, NOAA and PTO; need for centralized management oversight; need for greater attention to bureau level detail.
Defense	Substantial progress toward completing assessment and renovating mission-critical systems.	Assessment not yet complete; has a tight schedule for meeting a massive Year 2000 challenge.
Interior	Ahead of schedule for renovation of mission-critical systems; has program to find non-IT problems.	Little improvement in renovation of systems since previous report.
Justice	Named senior non-IT officials responsible for Year 2000 in components; hiring IV&V contractor.	Need greater progress in renovating mission-critical systems.
Labor	Plans to accelerate implementation of late systems; completed documentation of all external interfaces.	Need greater progress in renovating mission-critical systems.
Treasury	Increased management oversight; significant progress on renovation phase. Good management oversight at IRS.	Assessment is still incomplete at FMS, OCC, and OIG.
Veterans Affairs	Good progress on renovation, validation, and innovation; schedule is on target; some progress on assessment of bio-medical systems.	Assessment still incomplete at VHA, but expect completion by 1/98 with substantial proportion of assessed systems turning out to be compliant.
FEMA	Ahead of schedule for renovating mission-critical systems.	Little progress in renovation since previous report.
NASA	Senior management attention; accelerating its schedule; has detailed plan in place.	Size and complexity of systems requires continued close scrutiny; modest progress since previous report.

The remaining agencies -- HUD, State, EPA, GSA, NSF, NRC, SBA, and SSA -- appear to be making satisfactory progress.

#### OMB Action

The previous report indicated that OMB would take budget action to assure that agencies are devoting adequate resources to fixing the year 2000 problem. In particular, OMB announced that FY 1999 funding for non-year 2000-related information technology investments would be contingent upon agency progress on the year 2000 problem. The FY 1999 President's Budget, which will be transmitted in February, will reflect that policy. In addition, using OMB's apportionment authority in accordance with the Clinger-Cohen Act (the Information Technology Management Reform Act of 1996), OMB is apportioning information technology funds for some agencies in FY 1998.

OMB will continue to monitor agency progress on a quarterly basis and use appropriate budgetary and management tools to assure continued progress.

## Exception Report on Systems

OMB requires agencies to report on any mission-critical systems for which year 2000 efforts have fallen more than two months behind schedule.

The Department of Defense reports 23 of its 2,741 non-compliant systems are behind schedule. The Department will provide more detailed explanations of the mission-critical systems behind schedule in a separate report in December.

The Department of Health and Human Services reports that the Health Care Financing Administration's external Medicare local carriers, fiscal intermediaries, and shared systems are behind schedule and in some instances have provided unrealistic schedules.

The Department of Transportation has not completed the assessment phase for a number of its mission critical systems, including the FAA's Air Traffic Control (ATC) systems. Since the last report, the FAA identified 245 mission critical systems that must still be assessed. For those systems other than ATC, the Department had completed a preliminary assessment, but on September 19, 1997, the Department issued more stringent criteria for measurement of completion of work. Those systems are now being re-assessed under the new criteria. The Department expects to complete this reassessment by December 1997.

Treasury listed two systems that have fallen behind agency milestones; both systems are on schedule with respect to the government-wide guidelines. The initial schedule for all the components of the Automated Commercial Service (ACS) indicated that the system would be completed by June 1999. Although some non-mission-critical components of the system will not meet that schedule, all 142 mission-critical components of ACS are on schedule to be renovated, validated, and implemented with respect to the year 2000 problem by October 1, 1998. The same holds for the Treasury Enforcement Communications System (TECS). The initial TECS schedule indicated completion for all (mission-critical and non-mission-critical) components of the system by May 1999. For TECS, all 48 mission-critical components are expected to be renovated, validated, and implemented by October 1, 1998.

The Environmental Protection Agency has two systems that are being repaired and are more than two months behind the agency's milestone for assessment completion. Both systems have completed draft assessments and are on a schedule to complete final assessments by the end of November and to meet the remaining agency milestones. The systems have been proceeding under a schedule that preceded the establishment of the agency milestones. The agency does not anticipate any problems in meeting the remaining milestones, but will continue to closely monitor these systems.

### Changes in required reporting

OMB will work with the agencies and the Congress to assure that the right information is being provided for oversight purposes and to keep the public informed. This effort will be designed so as to keep the reporting burden at the minimum level necessary, so as to avoid unnecessarily diverting agency resources from fixing the problem. In addition to the reporting changes mentioned above, additional information may be requested on progress on non-mission-critical systems and on other government-wide systems. In addition, some other reporting requirements will be clarified.

TABLE 1

**Progress and Plans for Year 2000 Compliance of Mission Critical Systems**  
 (As of November 15, 1997, and before any adjustments for accelerated milestones)

	Assessment	Renovation	Validation	Implementation
Gov't-wide Goal	6/97	12/98	1/99	11/99
Agriculture	11/97	9/98	9/99	9/99*
Commerce	3/97	12/98	1/99	10/99
Defense	12/97	12/98	6/99	11/99
Education	11/97	12/98	9/98	3/99
Energy	1/97	9/98	2/99	7/99
HHS	6/97	9/99	10/99	12/99
HUD	6/97	12/98	7/99	11/99
Interior	3/97	12/98	1/99	11/99
Justice	6/97	7/98	10/98	1/99
Labor	6/97	12/98	1/99	11/99
State	6/97	9/98	10/98	8/99
Transportation	12/97	12/98	7/99*	10/99*
Treasury	7/97	12/98	12/98	11/99
VA	1/98	11/98	1/99	10/99
AID	11/97	6/99	8/99	9/99
EPA	6/97	12/98	1/99	11/99
FEMA	6/97	12/98	1/99	11/99
GSA	6/97	12/98	1/99	10/99
NASA	8/97	12/98*	1/99*	11/99*
NSF	6/97	12/98	1/99	11/99
NRC	9/97	12/98*	1/99*	4/99*
OPM	6/97	12/98	1/99*	6/99*
SBA	9/96	12/98	12/98	12/98
SSA	5/96	9/98	12/98	1/99

Note: Bold dates are later than dates shown in the August 15, 1997 report; dates with asterisks are earlier than the dates shown in the August report.

TABLE 2

## Mission Critical Systems

	Total Number	Number Compliant	Compliant as Percent of Total	Number Being Replaced	Number Still Being Repaired	Number Being Retired
Agriculture	1341	210	16%	58	947	126
Commerce	513	273	53%	83	119	38
Defense	3143	672	21%	203	2140	128
Education	19	7	37%	6	5	1
Energy	468	137	29%	157	161	13
HHS	487	159	33%	126	194	8
HUD	195	62	32%	35	77	21
Interior	92	26	28%	10	51	5
Justice	192	51	27%	13	125	3
Labor	61	10	16%	27	24	0
State	69	27	39%	30	12	0
Transportation	516	36	7%	29	149	5
Treasury	296	49	17%	23	220	4
VA	11	1	9%	0	10	0
AID	65	7	11%	8	31	19
EPA	61	36	59%	5	18	2
FEMA	48	21	44%	11	14	2
GSA	58	29	50%	17	11	1
NASA	459	211	46%	51	194	3
NSF	16	0	0%	4	12	0
NRC	7	1	14%	3	3	0
OPM	124	17	14%	12	94	1
SBA	40	10	25%	0	30	0
SSA	308	244	79%	4	59	1
TOTAL	8589	2296	27%	915	4700	381

TABLE 3

**Mission Critical Systems Being Repaired  
(Percentage Complete)**

	Number	Assessment	Renovation	Validation	Implementation
Agriculture	947	100%	12%	6%	7%
Commerce	148	100%	30%	23%	22%
Defense	2140	93%	44%	16%	2%
Education	5	100%	20%	0%	0%
Energy	168	100%	13%	11%	4%
HHS	194	81%	36%	21%	16%
HUD	157	100%	45%	27%	22%
Interior	64	94%	20%	20%	20%
Justice	125	100%	18%	11%	6%
Labor	24	100%	16%	12%	7%
State	12	100%	25%	25%	0%
Transportation	154	80%	9%	5%	2%
Treasury	240	80%	44%	8%	8%
VA	10	90%	61%	38%	25%
AID	34	95%	9%	9%	9%
EPA	30	100%	50%	40%	40%
FEMA	14	100%	29%	29%	21%
GSA	11	100%	25%	18%	17%
NASA	218	100%	14%	11%	11%
NSF	12	100%	50%	42%	0%
NRC	4	100%	25%	25%	25%
OPM	94	100%	9%	0%	0%
SBA	30	100%	63%	60%	59%
SSA	289	100%	80%	74%	69%
TOTAL	5124	95%	34%	17%	10%

TABLE 4

## AGENCY YEAR 2000 COST ESTIMATES

(Dollars in Millions, by Fiscal Year)

Agency	1996	1997	1998	1999	2000	TOTAL
Agriculture **	4.8	18.4	50.0	26.2	9.7	109.1
Commerce *	2.6	12.4	32.9	28.6	6.9	83.4
Defense **	14.6	370.8	711.6	274.7	30.8	1402.5
Education	0.1	0.6	3.4	4.4	0.2	8.7
Energy**	1.6	24.2	42.1	44.3	17.9	130.1
HHS*	9.0	29.5	72.3	20.1	0.0	130.9
HUD **	0.7	6.2	19.5	15.0	6.2	47.6
Interior *	0.2	2.8	10.6	3.0	0.7	17.3
Justice	1.5	7.3	12.5	3.3	0.3	25.1
Labor	1.7	5.3	6.9	3.4	1.1	18.4
State	0.5	47.6	56.4	29.1	1.6	135.2
Transportation [1]	0.4	17.2	109.8	109.6	29.5	267.7
Treasury * [1]	7.1	174.8	581.3	287.7	122.4	1182.7
VA *	4.0	22.0	71.0	67.0	2.0	166.0
AID*	1.1	3.0	7.7	1.9	0.0	13.7
EPA	0.8	3.3	6.8	5.6	2.3	18.8
FEMA	3.8	4.4	3.0	3.2	1.2	15.6
GSA	0.2	1.0	1.0	0.1	0.0	2.3
NASA *	0.1	8.2	20.9	13.5	2.3	45.0
NSF	0.0	0.5	0.8	0.1	0.0	1.4
NRC	0.0	2.6	2.9	2.9	0.9	9.3
OPM	1.7	2.1	0.3	0.3	0.3	4.7
SBA	1.7	3.3	2.0	0.0	0.0	7.0
SSA	2.2	15.4	9.5	6.0	0.1	33.2
<b>TOTAL</b>	<b>60.5</b>	<b>782.8</b>	<b>1835.2</b>	<b>950.2</b>	<b>236.5</b>	<b>3875.8</b>

## Notes:

These estimates do not include the Federal share of the costs for State information systems that support Federal programs. For example, the Agriculture total does not include the potential 50 percent in Federal matching funds provided to States by Food and Consumer Services to correct their Year 2000 problems. Similarly, the HHS total does not include the Medicaid baseline costs for the Federal share of state systems. And, while Labor's FY 1998 appropriation includes \$200 million for States to correct Year 2000 problems in State unemployment insurance systems, that amount is not included in this estimate.

\* Agencies for which total estimate increased by more than \$1 million from the August 1997 report.

\*\* Agencies for which total estimate decreased by more than \$1 million from the August 1997 report.

[1] Treasury total includes \$9.4 million in FY 2001. Transportation total includes \$1.7 million in FY 2001.

VP / EB  
Sum. from We  
in our gov't plan

9-28-98

'98 SEP 25 PM 6:40

THE WHITE HOUSE  
WASHINGTON  
September 25, 1998

copy ed  
VP  
Bowles  
COS

cc: Podesta  
Lew  
Koskinen

MEMORANDUM TO THE PRESIDENT

FROM: John A. Koskinen  
Jacob J. Lew

*John A. Koskinen*  
*Jacob J. Lew*

SUBJ: The Year 2000 Problem

Executive Order 13073, which created the President's Council on Year 2000 Conversion (the "Council"), requires the Council Chair and the OMB Director to report to you at least quarterly on the year 2000 (Y2K) computer problem. This is our third report.

While more organizations are becoming aware of, and mounting efforts to address, the year 2000 problem in the wake of the speeches you and the Vice President gave at the National Academy of Sciences in July, we continue to believe that there are serious risks of system failures in three basic areas: small and medium-sized businesses, State and local government, and international activities. Growing public concern about the possibility of such failures may cause people to overreact, which, by itself, could create significant economic difficulties.

This memo outlines our concerns and some of the steps being taken to address the Y2K problem, and also provides an update on Federal agency year 2000 progress.

Assessment: Non-Federal

We continue to monitor closely year 2000 progress in key infrastructure areas such as energy and transportation. However, widespread failures in the following more general areas could have an adverse effect on the Nation's economic health.

**Small and Medium-Sized Businesses**

We continue to receive indications that one of our biggest possible exposures to year 2000-related disruptions is among small and medium-sized businesses. As you noted in your July 14 address, surveys indicate that only half of small and medium-sized businesses aware of the problem intend to do anything about it. This inactivity will likely result in many business failures, which would have a negative effect not only on employees and their families but on the economy as a whole.

On September 8, Secretary Daley and the Council Chair hosted a meeting of representatives from major business organizations, including the U.S. Chamber of Commerce, the National Retail Federation, and the American Business Council. They echoed our concerns about preparedness and called for a concerted effort to focus the attention of the Nation's businesses on the year 2000 problem.

The Small Business Administration (SBA) has mounted an aggressive Y2K public awareness campaign and, through its web page and other outlets, is distributing information to business owners about the importance of assessing their own exposure to the year 2000 problem and steps they can take to prepare their systems for the new millennium. SBA is now planning a "Y2K Action Week" next month, in which SBA field offices across the country would hold Y2K seminars for the owners of small and medium-sized businesses. The Council Chair is exploring options for broadening the focus of the week to include participation by multiple Federal agencies, along with the business organizations mentioned above, to encourage increased action on the year 2000 problem among small and medium-sized businesses. This may present an opportunity for you and the Vice President to reemphasize your concern about this matter.

### **State and Local Government**

Given the American people's heavy reliance upon States and localities for many important services, we are very concerned about progress in this area. Unfortunately, there continues to be little activity on the problem among many small and medium-sized counties and cities, and weak lines of communication and support exist between most States and the local governments within their jurisdiction. As a former governor, you know that widespread failures among State and local governments could mean disruptions in very important services ranging from unemployment insurance to water treatment to emergency services.

We have worked to encourage States and localities to focus on the problem. In late July, Council members participated in a two-day National Governors' Association Y2K conference with year 2000 representatives from 45 States. The conferees had frank and productive discussions about how the Federal Government and the States could best work together to overcome shared challenges in areas such as transportation, environment, and finance. As a result of this conference, the Council Chair now holds monthly conference calls with the State year 2000 representatives to discuss cooperative year 2000 efforts between the Federal Government and the States and how States can help each other to address year 2000 challenges. The Council has also now created a State, Local, and Tribal Government working group, chaired by Mickey Ibarra, which, in addition to focusing on State and local government Y2K efforts, is working with Tribal governments to review the impact of the problem on their communities.

Also in July, the Council Chair met with county executives from across the country at the National Association of Counties annual meeting in Portland, Oregon. He encouraged them to increase the level of their activities and to work closely with State year 2000 officials to ensure that vital State and local services continue without interruption.

Federal agencies are also actively working with the States to ensure that Federal-State data exchanges used to carry out important programs such as unemployment insurance and Medicaid will be ready for the year 2000. Unfortunately, while most Federal agencies and States have now inventoried all of their data exchange points and are exchanging information with one another about whether they are year 2000 compliant, a number of States are reporting difficulties in locating all of the exchange points at their level. We will provide these States with whatever assistance we can so that they are able to complete their inventories.

### International Activities

We have little control over other countries' year 2000 efforts and, as such, feel least comfortable about progress in this area. Although more countries have begun to take notice of the issue, too few are mounting aggressive efforts to address it. While Japan has improved its response in recent weeks with the adoption of a national Y2K action plan, we remain concerned about the level of activity in the rest of Asia, as well as in most South American countries, and all of Central America. There is a growing awareness to the seriousness of the problem in Europe, but Germany and Italy continue to lag behind.

As you know from your summit meeting with Prime Minister Obuchi, the Japanese Government is interested in stepping up its efforts to address Y2K. The Council Chair has agreed, as was reflected in the meeting's U.S.-Japan Y2K Cooperation Statement, to meet in Japan at the end of this month with senior government officials and business leaders. We hope to encourage them to take a leadership role in encouraging other APEC nations to attack the year 2000 problem vigorously.

With 15 percent of our gross domestic product dependent upon international trade and commerce, we are especially concerned about the status of international year 2000 preparations in key infrastructure areas such as transportation, telecommunications, power, and finance. Concerns about progress in other countries are already starting to spill over into the transportation industry, where some maritime shipping companies are developing plans to keep their ships at sea in the days preceding and immediately following January 1, 2000. Such action could pose problems for supplies of critically needed imports such as oil.

There is some progress to report on increasing awareness of the problem in the international community. Following its adoption of a Y2K action resolution in late June, the United Nations distributed to its member states guidelines for how to address the year 2000 problem. These guidelines, which the President's Council helped draft, are intended to help countries focus on the problem from a national perspective, emphasizing the importance of preparations in key infrastructure areas. The OECD has just completed a survey of its 29 member nations on the state of their year 2000 preparations. And the World Bank, which will receive a \$12 million U.S. contribution, is continuing its efforts to increase awareness of the problem among developing nations with a series of international conferences on the issue.

Assessment: Public Perception

We are becoming increasingly concerned that the public's perception of the problem and its possible outcomes on January 1, 2000 may cause people to overreact. Fed by the so-called "doomsday scenarios" that envision system failures causing the world to grind to a halt, overreaction by millions of Americans could create many self-fulfilling prophecies. For example, if people believe year 2000-related disruptions will create shortages on grocery store shelves, even though the evidence may suggest that the food supply chain will be unaffected, and rush out to buy canned goods, their hoarding behavior alone will create shortages. Similarly, the withdrawal by millions of individuals of relatively modest amounts of funds from the stock market and financial institutions would create major economic difficulties.

The most direct response to this potential problem is to encourage all organizations to provide the public with accurate information over time about what works and what is still a challenge, along with information about related back-up or contingency plans. The public responds well to the possibility of natural disasters like hurricanes because they have confidence in our emergency response system. We need to help them develop similar confidence in our ability to deal with the year 2000 problem.

Assessment: Federal

Federal agencies continue to make progress in preparing their mission-critical systems for the year 2000. The latest OMB summary report shows that 50 percent of the Government's systems are now year 2000 compliant, up from 40 percent in May. At the same time, many agencies continue to face significant challenges in their year 2000 efforts. The seven agencies that comprise OMB's Tier 1 -- those making insufficient progress -- are: Defense, Education, Energy, Health and Human Services, State, Transportation, and the Agency for International Development. These agencies must increase their overall progress if they are to meet the March 1999 goal for completing year 2000 work on mission-critical systems.

On September 2, two days before the release of the latest OMB summary report, we joined Vice President Gore in a meeting with senior officials from the Tier 1 agencies and reinforced the message that you and he delivered to the Cabinet in January: the year 2000 problem must be every agency's top management priority. The Vice President requested that the Tier 1 agencies report back to him next month on the obstacles they face to improving their progress and on how they plan to overcome them.

Of the Tier 1 agencies, those of most concern are HHS, Defense, and Energy.

**Health and Human Services.** HHS' Health Care Financing Administration (HCFA) remains a serious concern as a result of its internal and external systems remediation schedule and escalating cost estimates. As of the August quarterly report, only 56 percent of HCFA's

internal systems and 14 percent of external contractor systems had been renovated (the Government-wide average is 71 percent). Achievement of the HHS and Government-wide milestones will require an extraordinary acceleration of the remediation process in the last three months of 1998, leaving very little margin for error to deal with unanticipated problems. HCFA's cost estimates for Y2K remediation have increased dramatically in the last quarter due to a more comprehensive assessment of contractor systems, and new contingency/continuity of business planning efforts.

*Defense.* The Defense Department faces a massive year 2000 challenge that must be accomplished on a tight schedule. It has 40 percent of the Government's mission-critical systems, many of which have date-sensitive embedded chips that must be examined. Defense has improved its rate of progress in addressing the challenge (the percentage of mission-critical systems that are now compliant stands at 42 percent up from 29 percent in May), but the pace remains too slow to complete the work in time. The Department has, however, recently acted to bolster its internal structure for addressing the year 2000 problem. On August 7, Secretary Cohen ordered greater effort by the Unified Commanders-in-Chief with regard to the Y2K problem and created an expanded management team to address the issue.

*Energy.* The number of year 2000 compliant systems at the Energy Department has increased to 40 percent, from 36 percent in May, and modest progress has been made in the other phases. However, Energy has not yet identified all mission-critical systems at its government and contractor sites, and assessment of the Department's embedded chips and lab equipment continues. Energy remains behind the Government-wide schedule for completing work by March 1999. Although the Department has defined 411 systems as mission-critical, it has yet to set explicit priorities for, and allocate resources among, those systems. The Department's independent Office of Oversight Review has recommended that Energy "focus management attention on complex, critical systems that face moderate to significant risk."

### Other Issues

After several weeks of discussions and negotiations with a wide range of industry groups and House and Senate staffers, we were able to develop a year 2000 consensus bill to encourage companies to share information about their experiences with products, fixes to their systems, testing protocols and results, and their general state of readiness. This so-called "good samaritan" legislation, first proposed in your July 14 speech, would protect companies from liability for such disclosures as long as they were made in good faith. While enactment during this session is still a long shot -- some have suggested we are seeking a miracle -- passage would provide a major boost to our efforts to deal with the year 2000 problem around the world.

We see an increasing need for moratoriums on regulatory and legislative changes that might hinder year 2000 progress. As you know, as a result of bipartisan cooperation, the IRS Reform Bill you signed last month delayed the implementation dates for several provisions that

would have hindered the IRS's efforts to prepare its systems for the year 2000. But this issue also extends to entities outside the Federal Government. In July, the Council of State Governments publicly called on the Government to avoid imposing new regulatory or policy changes upon the States in the months leading up to the year 2000. The Securities and Exchange Commission, the Transportation Department, and the Federal Reserve Board, have either announced, or are planning to announce, "year 2000 moratoriums" to avoid hindering the progress of those whom they regulate.

### **Next Steps**

Over the next few months, the Council will begin to monitor and assess the private sector's year 2000 progress to determine where failures are likely to occur and to begin to develop appropriate contingency plans. As discussed earlier, we will also communicate to the public what we know about the likelihood of economic failures and the Government's plans to address them.

We will also continue to work to increase awareness of the problem internationally. The Council Chair has now met with his counterparts from Great Britain, Canada, South Africa, and Mexico and has held discussions with representatives of the Organization of American States about the possibility of holding a hemispheric conference on the problem. Additionally, the Council Chair is working with the United Nations to convene a summit of the world's year 2000 coordinators in New York before the end of the year.

**STATEMENT OF JACOB J. LEW  
DIRECTOR, OFFICE OF MANAGEMENT AND BUDGET  
BEFORE THE COMMITTEE ON APPROPRIATIONS  
AND THE SENATE SPECIAL COMMITTEE ON THE  
YEAR 2000 TECHNOLOGY PROBLEM**

**June 22, 1999**

Good morning, Chairman Stevens, Chairman Bennett, Senator Byrd, and Senator Dodd. I am pleased to appear before the Committees to discuss the Federal Government's progress in addressing one of the most complex management challenges it has ever faced, the year 2000 problem. The Federal Government is not alone in addressing this challenge, as the Senate wisely recognized last year when it formed the Senate Special Committee on the Year 2000 Technology Problem. This is a problem with potentially enormous implications for our Nation. Every sector of our economy and all organizations large and small must work together so that we can, as the President said in his State of the Union Address, make sure that the Y2K computer bug will be remembered as the last headache of the 20th century, not the first crisis of the 21<sup>st</sup>.

Today, I would like to address three topics. First, I will describe Federal progress in addressing the Y2K challenge. Second, I will discuss Federal agency costs and funding for these efforts. Third, I will describe our next steps to assure that Federal programs that people depend upon will not be disrupted. These next steps include focusing on completion of individual systems, ensuring the readiness of Federal programs, and completion of business continuity and contingency plans.

**FEDERAL PROGRESS**

As you know, the Federal Government has been working for more than three years on this problem. Last week, I sent to Congress OMB's ninth quarterly report on Federal agency progress in addressing the Year 2000 problem. That report shows that Federal agencies continue to make excellent progress in addressing this challenge. In particular, it shows that 93 percent of the Federal Government's mission critical systems are now compliant, an increase from 79 percent reported in February.

Fourteen of the 24 major Federal departments and agencies now report that 100 percent of their mission critical systems are Y2K compliant. These agencies are: the Departments of Education, Housing and Urban Development, Interior, Labor, State, and Veterans Affairs; the Environmental Protection Agency, the Federal Emergency Management Agency, the General

Services Administration, the National Science Foundation, the Nuclear Regulatory Commission, the Office of Personnel Management, the Social Security Administration, and the Small Business Administration.

In addition, two agencies, Commerce and NASA, report that 99 percent of their mission critical systems are compliant and that they expect to be finished soon. Three agencies, the Departments of Agriculture, Energy, and Health and Human Services, are between 96 and 97 percent compliant. Four agencies report that between 90 and 94 percent of their mission critical systems are compliant, including the Departments of Justice and Transportation at 92 percent. The Department of Defense reports that 87 percent of its systems are compliant, while the U.S. Agency for International Development has completed implementation of three of its seven mission critical systems.

From a base of 6,190 mission critical systems at this time, 410 mission critical systems remain to be finished, down from 1,354 in the last report. The compliant systems include those that have been repaired or replaced as well as systems that were already compliant. Of the mission critical systems that remain to be finished, 87 (82 percent) are being repaired, 35 (10 percent) are being replaced, and 24 (eight percent) are being retired. We are monitoring the completion of each remaining system through monthly reports from the agencies.

This progress is a tribute to the hard, skillful, and dedicated work of thousands of Federal employees and contractors. Moreover, the rapid availability of funds through the contingent emergency reserve has been key to ensuring progress. I would like to thank the Committees for helping to ensure that Federal agencies will not fail to meet the Year 2000 deadline because of lack of adequate funding.

While much work remains to be done, we fully expect that all of the Government's mission critical systems will be Y2K compliant before January 1, 2000. For some time, fixing the Year 2000 problem has been the agencies' number one information technology (IT) priority, as other IT projects are being delayed until the Y2K work is done. This action has been managed throughout OMB's budget process.

Additionally, agencies are minimizing any kind of changes to their systems unrelated to Y2K in order to ensure that they will be able to maintain the schedules they have set for completion of their work. Changes not only divert resources from fixing the Y2K problem, but may also undo Y2K fixes. Based on guidance I issued on May 14, 1999, "Minimizing Regulatory and Information Technology Requirements," (M-99-17), agencies are using change management processes to ensure that new IT requirements or changes to IT systems are minimized.

Again, this effort will ensure that agencies set realistic goals for the completion of their work and will enable them -- and us -- to measure their progress against their own goals. Agencies are working hard to finish fixing their systems, and we are confident that every mission critical system will be ready for the year 2000.

## Y2K COSTS AND FUNDING

First and foremost, I want to recognize that the transition into the Year 2000 has posed a unique challenge. Formulating the Federal response has required a great deal of attention, hard work, and flexibility. In advance of my more detailed comments on this subject, let me thank you for all of your work and leadership in helping to ensure that sufficient funds are available in a timely manner to address Y2K remediation. As we have scrutinized agency requests and funded the most critical ones, the utility of this funding mechanism has been proven many times. Simply put, without such a fund, many Federal agencies would not be nearly as far along in their efforts as they are today.

I would also like to emphasize that the Administration's strategy for monitoring Government-wide progress on Y2K has been predicated on agency accountability. We have systematically monitored agency progress using a range of performance measures -- compliance of mission critical systems, status of mission critical systems being repaired, progress on high impact programs, etc., as well as agency Y2K cost estimates. These measures are linked, and together provide the most accurate picture of the Government's overall readiness. On a quarterly basis (or more frequently, if needed), agencies have been required to update OMB on their Y2K progress and to explain all significant changes in these measures.

We have tried to strike the appropriate balance to ensure agency accountability without diverting vital resources from Y2K compliance activities to reporting requirements. In addition, the Administration has tried to be as forthright as possible in sharing information about Y2K readiness. OMB has directed that agency quarterly reports and detailed spending plans be forwarded to Congress, and we have appreciated your input as we have worked together to address the challenge posed by Y2K.

As you know, last September the Administration requested an FY 1998 supplemental appropriation for \$3.25 billion in contingent emergency funding to address urgent, emerging needs associated with Y2K conversion activities. This request was consistent with Senate action to that point. The Omnibus bill provided contingent emergency funding of \$2.25 billion for non-defense activities and \$1.1 billion for defense-related activities for Y2K computer conversion. As you also know, OMB is responsible for allocating the non-defense contingent emergency reserve. To date, \$1.768 billion has been allocated from the non-defense reserve, and \$14 million has been returned to the reserve at the request of the House Appropriations Committee. Therefore, \$496 remains in reserve for unforeseen requirements. Of the \$1.1 billion provided for defense-related activities, \$935 million has been released and \$165 remains in reserve.

In order to determine how to best utilize all available non-defense funding for Y2K -- both base appropriations and emergency funding -- OMB has worked with agencies on an ongoing basis to evaluate total Y2K requirements. First, OMB made certain that agencies received funding for activities that were requested in the President's FY 1999 Budget, but were directed to be funded from the contingent emergency reserve. Since then, agencies have been asked to forward requests for contingent emergency funding on an as-needed basis. These

requests are then reviewed by OMB examiners from both the Resource Management Offices (RMOs) – liaisons to the individual agencies – and analysts from our Information Policy and Technology Branch. In combination, they review these requests to ensure that requested funding is:

- Y2K-related and is the most cost-effective option to facilitate compliance.
- Addresses an unforeseen need, not one accounted for within existing agency plans.
- Cannot be accommodated within appropriated levels for FY 1999.
- Cannot be addressed using unobligated balances of Y2K emergency funding.

In some cases, funds have also been requested to support outreach to non-Federal entities in support of the efforts of the President's Council on Year 2000 Conversion.

Once reviewed and discussed with the affected agency, OMB staff make recommendations to OMB policy officials. These levels are then finalized and included in an emergency release. As you know, pursuant to the Omnibus Act, detailed information on each affected agency's spending plan, as well as an account-by-account breakdown of the request as a whole, is provided to the Congress. The funds in the release are not made available to the agencies until 15 days after the transmittal.

Once the funds are allocated, each OMB Resource Management Office has been tasked with tracking the Y2K-related expenditures for the agencies it oversees, including emergency expenditures. At a minimum, the RMOs review the agency quarterly report to confirm that appropriate progress is being made and that each agency can cogently explain its cost levels and cost changes. Then, depending on an agency's status, RMOs have used different methods to track Y2K-related spending. All agencies that have received emergency funding have forwarded data on obligations to date to their RMOs. This data has informed our consideration of subsequent emergency requests, and has resulted in several reprogramming requests rather than additional releases. For example, in the Department of Health and Human Services, we recently reprogrammed funds from HCFA to the Administration for Children and Families. More reprogramming proposals may be forthcoming as agencies further refine their estimates for FY 1999 and 2000.

In addition, some RMOs monitor Y2K-related obligations and/or outlays on a more regular basis, and require detailed information on the expenditure of both base and emergency resources. Finally, because of their unique period of availability (FY 1999 - FY 2001), emergency funds are very transparent in terms of budget execution. The RMOs have been given discretion in terms of treatment of both base and emergency funds in the apportionment process, as is OMB's general policy.

Your Committees have asked me to focus on the cost increases since the 1<sup>st</sup> OMB Y2K Quarterly Report, which was issued February 1997. In that report, the five year (FYs 1996 - 2000) Federal cost of Y2K was reported estimated at \$2.3 billion. However, it is now clear that in the first quarterly report, we were not fully aware of the magnitude of the year 2000 problem. Initially, it was thought that fixing the problem would primarily involve mainframe computers and legacy applications.

As we and others learned in the course of remediation, the problem was far more complex, involving desktop personal computers, embedded chips, and telecommunications components. Cost increases from the 1<sup>st</sup> to 4<sup>th</sup> OMB Quarterly Report (through March 1998), totaling \$2.4 billion, resulted from a better understanding of the scope of the problem and increasing agency attention on the cost estimates. It is important to note that until FY 1999, agencies funded their year 2000 costs exclusively out of base appropriations. Prior to the availability of emergency funding, all cost increases were absorbed within agency operating budgets.

Since the broader universe of Y2K remediation was clearly established, costs have remained within a more predictable band. From the 4<sup>th</sup> OMB Quarterly Report (March 1998) to the 9<sup>th</sup> OMB Quarterly Report (June 1999), costs reported for FYs 1996 - 1998 changed by \$164 million, or 4.7 percent of the three-year total. Of this, estimates for Defense have changed by \$128 million, or 3.6 percent of the three-year total. Since last March, then, cost estimates for non-defense agencies for FYs 1996 - 1998 for have changed by a little more than one percent.

The increase in FY 1999 funding, \$2.8 billion between the 4<sup>th</sup> and 9<sup>th</sup> OMB Quarterly Reports, has supported activities that have been subjected to the rigorous policy review that I have discussed. Most of the cost increases can be attributed to specific activities: remediation for information technology systems, testing to ensure that systems are Y2K compliant, replacement of embedded computer chips, and creation and verification of BCCPs. I am confident that this funding has helped to ensure that important Federal programs will have a smooth transition into the year 2000. FY 2000 costs, which have increased by \$509 million over the same period, are primarily for Y2K project offices to manage and monitor the transition into 2000, as well as for retesting and recertifying contingency plans. The details of agency spending plans continue to be made available for your review as this process moves forward.

I would now like to turn to another issue that I have been asked to address: the difference between agency estimates and actual costs. I believe that this question stems from the cost table in each OMB Quarterly Report. In that table, past years (FYs 1996 - 1998) are characterized as estimates even though, as you know, the budgetary data for those years reflects actual expenditures. With OMB's approval, agencies have refined the universe of Y2K-related costs since FY 1996. As an activity is added to the Y2K universe, we want to make certain that we are capturing the five-year cost of that activity. For example, a Department may not have reported embedded chip replacement as part of their initial Y2K estimate. However, they later received guidance to do so. In such a case, OMB has worked with the Department to verify that the multi-

year cost of embedded chip replacement was being reported. If this required changing an estimate in a past fiscal year, agencies did so with OMB approval. At the same time, future year estimates may have been adjusted to account for newly recognized activities. Thus, although the budget data for FYs 1996 - 1998 are actuals, since recognition of the scope of the Y2K problem has changed over time, OMB has not asked for or characterized costs for those years as actuals.

Another component of this issue is that Y2K-related expenses can be aggregated at a level below or above budget accounts. Y2K-related expenses are embedded in broader operating budgets. We have worked to ensure that we are capturing Y2K-related costs and that agencies are making defensible and standardized assumptions about these costs. Conversely, we are trying to filter out activities that were wholly planned for and would have been implemented regardless of Y2K.

## NEXT STEPS

As I stated earlier, now that most of the work on fixing mission critical systems is completed, OMB will shift its focus from aggregate figures for system readiness to ensuring the readiness of individual systems. In addition, OMB and the agencies are beginning to focus on two new priorities.

- Ensuring the readiness of Federal programs, particularly 43 high impact programs that we have identified.

- Planning for business continuity and contingencies.

### Ensuring the Readiness of Federal Programs

While we have made excellent progress in preparing our systems, we are not yet done. We must make sure that Federal programs, particularly those that have a direct and immediate affect on the health, safety, and well-being of the public, function smoothly. As I have just related to you, we are confident that critical systems will be ready. But because Federal programs partner with other entities, including other Federal agencies; State, Tribal, and local governments; banks; contractors; vendors; and other entities; it is critically important to ensure that all partners are working together to ensure that the program they support will be ready. The critical task is to make sure that not just systems, but the programs they support, will be ready.

Accordingly, on March 26, 1999, I asked agencies to take this next step. I also identified 42 "high impact" Federally supported programs and directed Federal agencies to take the lead on working with other Federal agencies, State, Tribal, and local governments, contractors, banks, and others to ensure that programs critical to public health, safety, and well-being will provide uninterrupted services. Examples include Medicare and Unemployment Insurance. The list was subsequently revised to include the National Crime Information Center at the Department of Justice, bringing the total to 43.

Agencies have also been asked to help partners develop year 2000 plans if they have not already done so to ensure that these programs will operate effectively. Such plans are to include end-to-end testing, developing complementary business continuity and contingency plans, and sharing key information on readiness with partner organizations and with the public. Agencies are reporting to us monthly and will demonstrate the readiness of each program by September 30, 1999. A table of the programs, including the partners agencies are working with is included last week's quarterly report.

### Business Continuity and Contingency Planning

Although we expect all Federal mission critical systems to be ready by January 1, 2000, and although we are prepared to demonstrate the readiness of a number of critical programs, it is still important that every agency, no matter how well prepared, have a business continuity and contingency plan (BCCP) in place.

Agencies have identified their core business functions and are using these as a basis for developing business continuity and contingency plans, which will ensure that these core business functions will operate smoothly, no matter what glitch may occur in an agencies' systems or with an agencies' partners. While we are confident that the measures taken for Y2K compliance are sound, the chance remains that, despite testing, a bug may still slip through. Furthermore, elements beyond an agency's control are at risk from the Y2K problem as well. For example, bad data from a data exchange partner or the inability of a vendor to provide key supplies could disrupt work at an agency.

Let me make it clear that we do not anticipate any disastrous consequences as a result of year 2000 computer problems in Federal systems. It is possible, and even likely in some situations, that there will be glitches in systems that result in minor disruptions to the ways that agencies operate. Accordingly, for each core business function and its associated systems, agencies have identified risk factors, and assigned them a probability rating as well as an impact rating. The agencies use these ratings to prioritize functions and systems. Work-arounds and back-up plans are established as contingencies.

Although we do not expect any disasters, it is always wise to prepare for the worst. Since the 1970s, agencies have been required to have in place Continuity of Operations plans (COOP plans), to address such emergencies. In the event of a disaster, whether related to Y2K or to a national emergency, such as a terrorist attack or regional weather emergency such as a tornado or violent snowstorm, agencies are using their COOP plans to ensure that the agency will continue to function. I also asked agencies to ensure that the development of their BCCP was coordinated with pending revisions to each agency's COOP plan. Again, although we do not expect any kind of Y2K disaster, agencies are developing plans, in coordination with their BCCPs, to address this contingency.

On May 13, 1999, I issued guidance on this subject, "Business Continuity and Contingency Planning for the Year 2000," (M99-16). This memorandum asked all agencies, including small and independent agencies, to submit to OMB by June 15 their business continuity and contingency plans (BCCPs). This memorandum also identified a number of infrastructure areas for which agencies should make common assumptions, such as electric power, financial services, and public voice and data communications. This common assumption is that there will be no nation-wide disruptions within these infrastructure services.

By setting these risk areas aside from agencies' business continuity and contingency planning, agencies are able to focus on ensuring that their core business functions and affiliated systems will work. In the extremely unlikely event that a catastrophic emergency occurs that damages local infrastructure, communications, or the agency building itself -- whether caused by Y2K, or by a natural disaster, terrorism, or war -- the agency's COOP plan will address these contingencies.

On the international side, the State Department is leading a working group of those agencies with employees overseas in order to develop risk assumptions and appropriate responses, to be used in the development and refinement of those programs' BCCPs.

BCCPs are an increasingly important component of agency progress. Like a good insurance policy, a sound plan is important, no matter how well you have taken care of your systems. To ensure quality and consistency, I have directed agencies to use the General Accounting Office's (GAO) guidance on this subject in preparing their plans. Additionally, many agencies are working closely with their Inspectors General and/or expert contractors in the development and testing of these plans. Finally, OMB is reviewing the high-level BCCPs of agencies, which were due June 15, and will provide feedback and guidance to the agencies on an individual basis.

### Prepayment

As part of their contingency planning, some agencies have explored the possibility of making some payments in December that would otherwise be due in January to beneficiaries, contractors, and others. However, the Administration has determined that such actions are not necessary at this time, given the level of readiness of agency payment systems and agency business continuity and contingency plans. Moreover, the extensive downside risk to prepayment mitigates strongly against implementing this contingency plan in all but the most exceptional circumstances.

First, and most importantly, issuing such payments early would require reprogramming of payroll and other financial management systems. I have previously stated that any changes to systems should be minimized as they not only divert resources from fixing the Y2K problem, but also may undo Y2K fixes. It would be highly irresponsible to implement a contingency plan that could worsen the year 2000 problem.

Second, making early payments would have tax implications for individuals and businesses. Undoing any tax implications would require legislative changes for the Internal Revenue Service, which in turn would be required to make changes to the tax code and to their systems. All of these actions would be both costly and time-consuming.

Third, such actions could easily be interpreted by the public as an overall sign of lack of confidence in the ability of the Government to make its payments after January 1. Such a signal could prove disastrous for the national economy as panicked citizens turn to withdrawing their currency in anticipation of a currency shortage. This sort of panic is a self-fulfilling prophecy. Public panic and overreaction is a problem far larger than the technology problem and something we are very concerned about.

Finally, even allowing prepayment in extremely limited areas increases pressure to provide early payment for everyone.

Any uncertainty about the readiness of agencies to make benefits payments should be mitigated by continuing to focus on fixing and testing systems. Agencies should also consider alternative contingency plans that do not introduce such high levels of Y2K risk into systems or that could propagate public panic.

Despite these concerns, however, there may be a few rare instances in which early payment is the best option. In any such instances, agencies may request authority from OMB to pay certain benefits early if certain criteria are met. These include demonstration that there will be substantial harm to individuals from not getting a timely payment, a high likelihood that timely payments (either by normal program operation or through a contingency) will not be made, assurance that early payments made will be targeted only to those recipients who would be harmed, and that early payment will substantially mitigate the harm. The agency must also be willing to make a public announcement of these decisions and to work with the Department of Treasury so that adequate cash management practices are maintained. Throughout the remainder of the year, we will continue to review this matter with agencies.

## CONCLUSIONS

In conclusion, during the 192 days remaining before the year 2000, we plan to:

Complete work on remaining mission critical systems and on other Federal systems.

Conduct end-to-end testing with the States and other key partners, placing special emphasis on ensuring the readiness of programs that have a direct and immediate impact on public health, safety, and well-being.

Complete and test business continuity and contingency plans as insurance against any

disruptions related to Y2K failures.

Promote Y2K awareness with State, local, and Tribal governments, with the private sector, and with other nations.

Thank you for the opportunity to allow me to share information with you on the Administration's progress. The Administration continues to treat this challenge with the direct, high-level attention it deserves. The additional focus on the year 2000 problem by the President, Congress, and the public has resulted in agencies focusing management attention on the issue and taking a close look at their resource needs. The Year 2000 contingent emergency reserves have helped ensure that agencies have access to funds to facilitate their work. OMB remains committed to working with the Committees and Congress on this critical issue. I would be pleased to answer any questions you may have.