

September 2008

INFORMATION
MANAGEMENT

The National Archives
and Records
Administration's
Fiscal Year 2008
Expenditure Plan





Highlights of [GAO-08-1105](#), a report to congressional committees

Why GAO Did This Study

To preserve and provide access to all types of electronic records, the National Archives and Records Administration (NARA) has been developing an Electronic Records Archive (ERA), including a base system for federal records and a separate system for presidential records, known as the Executive Office of the President (EOP) system. As mandated by the Consolidated Appropriations Act, 2008, NARA must submit an expenditure plan to the Congress that satisfies six conditions. GAO was asked to determine the extent to which NARA's fiscal year 2008 expenditure plan satisfies the conditions and provide any other observations about the plan and the ERA acquisition. To do this, GAO reviewed the expenditure plan, interviewed NARA and contractor officials, and reviewed additional documentation.

What GAO Recommends

GAO recommends that NARA develop a mitigation plan in case the EOP system is not complete in January 2009 and include summary measures of project performance in future reports to the Congress. Commenting on a draft of the report, the Archivist stated that the agency had begun including these measures and that there was no noteworthy risk that the EOP system will not be complete. However, in light of the mission-critical nature of the function and ongoing uncertainty about data format and volume, GAO continues to believe that a risk mitigation plan is needed.

To view the full product, including the scope and methodology, click on [GAO-08-1105](#). For more information, contact Linda D. Koontz at (202) 512-6240 or koontzl@gao.gov.

INFORMATION MANAGEMENT

The National Archives and Records Administration's Fiscal Year 2008 Expenditure Plan

What GAO Found

NARA's fiscal year 2008 expenditure plan satisfies five of the six legislative conditions and partially satisfies the remaining condition. NARA satisfied the conditions that the plan follow capital planning and investment controls established by the Office of Management and Budget (OMB); comply with NARA's enterprise architecture; comply with the acquisition rules, requirements, guidelines, and system acquisition management practices of the federal government; be approved by NARA and OMB; and be reviewed by GAO. NARA partially satisfied the remaining condition: that ERA conform to the agency's enterprise life cycle methodology. This methodology requires, among other things, that the agency identify, communicate, and mitigate program risks. NARA has identified numerous project risks and reported them to OMB and the Congress, including the risk that it will not have the capability to process the Bush administration's presidential records at the time of the January 2009 presidential transition. However, the agency has not yet developed a plan to mitigate this significant risk. Instead, the agency intends to develop a mitigation plan at the end of 2008, when it expects to know more about the types and volumes of presidential records that it is to receive. This proposed schedule, however, will leave NARA little time to prepare for and implement the plan, decreasing the assurance that it will be adequately prepared to meet the requirements of the Congress, the incoming President, and the courts for information contained in the previous administration's records.

In addition, GAO observed that monthly ERA status reports that NARA has been providing to the Congress since January 2008—while including useful information on the project's activities, expenditures, and risks—do not include summary measures of the project's performance against cost and schedule estimates—information that NARA does provide to OMB. According to agency officials, such measures are not included in the monthly reports because the reports follow an agreed-upon format. However, these measures provide an important perspective on project progress not otherwise available. If future reports do not include such measures, the Congress may be hampered in its ability to effectively oversee the program.

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Abbreviations

CPI	cost performance index
EOP	Executive Office of the President
ERA	Electronic Records Archive
EVM	earned value management
IOC	initial operating capability
NARA	National Archives and Records Administration
OMB	Office of Management and Budget
SA-CMM	Software Acquisition-Capability Maturity Model
SEI	Software Engineering Institute
SPI	schedule performance index

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United States Government Accountability Office
Washington, DC 20548

September 26, 2008

The Honorable Richard J. Durbin
Chairman
The Honorable Sam Brownback
Ranking Member
Subcommittee on Financial Services and General Government
Committee on Appropriations
United States Senate

The Honorable José E. Serrano
Chairman
The Honorable Ralph Regula
Ranking Member
Subcommittee on Financial Services and General Government
Committee on Appropriations
House of Representatives

As required by law, the National Archives and Records Administration (NARA) submitted its fiscal year 2008 expenditure plan in December 2007 to the congressional appropriations committees, seeking the release of \$38.3 million of multiyear funds for the Electronic Records Archive (ERA).¹ ERA is a major information system that is intended to preserve and provide access to massive volumes of all types and formats of electronic records, including presidential records, independent of their original hardware or software. NARA plans for the system to manage the entire life cycle of electronic records, from their ingestion through preservation and dissemination to customers.

Because of the system's complexity, NARA awarded a contract to Lockheed Martin to develop ERA in phases, or increments, the first of which was originally scheduled for completion in September 2007. In response to schedule delays, NARA and Lockheed Martin agreed to a revised schedule and strategy, consisting of a two-pronged development approach as follows:

¹ERA's fiscal year 2008 budget authority totaled \$63.3 million which includes \$4.4 million carried over from multiyear funds and \$800,000 from recoveries of prior year unpaid obligations.

-
- First, they agreed to continue development of the original system but delayed certain capabilities to later increments. According to NARA, initial operating capability for this system, now referred to as the “base” ERA system, was achieved in June 2008 as planned under the revised schedule.
 - Second, NARA is conducting parallel development of a separate system dedicated initially to receiving electronic records from the outgoing Bush administration in January 2009. This new system, referred to as the Executive Office of the President (EOP) system, uses a different architecture from that of the ERA base; it is being built on a commercial product that is to provide the basic requirements for processing presidential electronic records, such as rapid ingestion of records and the ability to search content. NARA believes that if it cannot ingest the Bush records in a way that supports search and retrieval immediately after the transition, it may not be able to effectively respond to requests from the Congress, the new administration, and the courts for these records—a critical agency mission.

The Consolidated Appropriations Act, 2008, requires that NARA develop an expenditure plan for ERA that satisfies six conditions, including a review by GAO.² Our objectives in reviewing the plan were to (1) determine whether the plan satisfied the conditions specified in the act and (2) to provide any other observations about the expenditure plan and the ERA acquisition.

To assess compliance with the legislative conditions, we reviewed NARA’s fiscal year 2008 exhibit 300 submission³ to the Office of Management and Budget (OMB), reviewed data on the agency’s enterprise architecture efforts, determined the status of an external assessment of ERA, reviewed the agency’s development life cycle methodology, reviewed OMB’s approval of the expenditure plan, and analyzed the expenditure plan itself. To develop observations on the ERA expenditure plan and acquisition, we analyzed the cost and schedule information contained in the expenditure plan, reviewed agency and contractor documents, and interviewed NARA and Lockheed Martin officials.

²See the Consolidated Appropriations Act, 2008, Pub. L. No. 110-161, div. D, title V, 121 Stat. 1844, 2006 (Dec. 26, 2007).

³Agencies develop an exhibit 300, also known as the Capital Asset Plan and Business Case Summary, to justify each request for a major information technology investment. OMB sets forth requirements for the exhibit 300 in Circular A-11, Part 7, Planning, Budgeting, Acquisition, and Management of Capital Assets.

We conducted this performance audit from February 2008 to September 2008, at NARA's College Park, Maryland, location in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

In July 2008, we transmitted our briefing slides to your staffs on the results of our review. This report transmits those materials and includes the recommendations that we made to the Archivist of the United States. The full briefing materials, including our scope and methodology, are reprinted as appendix I.

In summary, we made the following major points:

- NARA's fiscal year 2008 expenditure plan satisfied five of the six legislative conditions and partially satisfied the remaining condition.
 - NARA satisfied the conditions that the plan follow capital planning and investment controls established by OMB; comply with NARA's enterprise architecture; comply with the acquisition rules, requirements, guidelines, and system acquisition management practices of the federal government;⁴ be approved by NARA and OMB; and be reviewed by GAO.
 - NARA partially satisfied the condition that ERA conform to the agency's enterprise life cycle methodology. This methodology requires, among other things, that the agency identify, communicate, and mitigate program risks. NARA has identified numerous project risks and reported them to OMB and the Congress, including the risk that it will not have the capability to process the outgoing administration's records at the time of the January 2009 presidential transition. However, the agency has not yet developed a plan to mitigate this significant risk. Instead, the agency intends to develop a mitigation plan at the end of 2008, when it expects to know more about the types and volume of the presidential records that it is to receive. This proposed schedule, however, will leave NARA little time to prepare for and implement the plan, decreasing the assurance that it will be adequately

⁴We did not review the program's compliance with the Federal Acquisition Regulation.

prepared to meet the requirements of the Congress, the incoming President, and the courts for information contained in the previous administration's records.

- Pursuant to a congressional mandate, NARA has been providing monthly status reports on ERA to the Congress since January 2008. These reports, which are intended to update the expenditure plan, have included useful information on the project's activities, expenditures, and risks. However, these reports do not include summary measures of the project's performance against cost and schedule estimates—information that NARA provides to OMB. According to agency officials, such measures are not included in the monthly reports because the reports follow an agreed-upon format. However, these measures provide an important perspective on project progress not otherwise available. If future reports do not include such measures, the Congress may be hampered in its ability to effectively oversee the program.

When we transmitted the briefing slides to your staffs, NARA and Lockheed Martin were in the process of negotiating the scope and timing of the EOP system proposal. Agency and contractor officials subsequently reached agreement on this proposal in late July 2008. This agreement calls for NARA to pay the contractor \$38.9 million to complete the EOP system by November 21, 2008.

Recommendations for Executive Action

To ensure that NARA can fulfill its critical responsibilities during the upcoming presidential transition, we recommend that the Archivist develop a mitigation plan for indexing and searching the electronic records from the outgoing Bush administration in the event that the EOP system is not complete. The plan should be completed in time to be fully implemented for the January presidential transition.

To enhance oversight of the ERA project, we recommend that the Archivist ensure that summary measures of project performance against ERA cost and schedule estimates are included in future monthly reports to the Congress.

Agency Comments and Our Evaluation

In written comments on a draft of this report, which are reprinted in appendix II, the Archivist of the United States stated that he was pleased to note the recognition of the progress made toward implementing the recommendations provided in GAO's previous reports. He also stated that information regarding the ERA project's performance against cost and

schedule was added to the report sent to the Congress in August and will continue to be included in subsequent reports.

Regarding our finding that NARA had not yet developed a plan to mitigate the risk that the ERA system will not have the capability to process the outgoing administration's records at the time of the January 2009 presidential transition, the Archivist stated that the development of ERA is on track to deliver, by the end of November, a system capable of bringing in, storing, and retrieving the expected volume of presidential records. He added that there is no noteworthy risk related to this development. The Archivist acknowledged the risk that there will be some data formats that ERA will not be able to ingest and index in a reasonable amount of time and stated that developing definitive plans for alternative processing for these records requires obtaining detailed specifications from the EOP.

We disagree with the Archivist's assessment of the ERA development risk. As outlined in our briefing, because of the mission-critical nature of the task, performance of the development team, and ongoing uncertainty about the format and volume of records to be transferred, we believe the risk of not having a fully functional system by January 2009 is significant enough to warrant a mitigation plan that addresses alternatives to using the ERA system. The development of a more comprehensive mitigation plan that addresses alternatives for accommodating the Bush administration records (such as recreating the administration's systems currently in use) would not require NARA to wait for technical specifications for particular types of records. Further, developing the plan before the transition would ensure that NARA has adequate time to implement the alternatives, if needed, and helps ensure that NARA will be prepared to quickly respond to critical requests for these records from the Congress, the new administration, and the courts.

We are sending copies of this report to the Archivist of the United States. We also will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions concerning this report, please contact me at (202) 512-6240 or at koontzl@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix III.



Linda D. Koontz
Director, Information Management Issues

Appendix I: Briefing to Staff of Congressional Committees on NARA's Fiscal Year 2008 Expenditure Plan



Review of the National Archives' Fiscal Year 2008 Electronic Records Archive Expenditure Plan

Briefing for Staff Members of the
Subcommittee on Financial Services and General Government,
Senate Committee on Appropriations
and the
Subcommittee on Financial Services and General Government,
House Committee on Appropriations

July 24, 2008



Outline of Briefing

Introduction
Objectives, Scope, and Methodology
Results in Brief
Background
Legislative Conditions
Observations on the ERA Expenditure Plan and Acquisition
Conclusions
Recommendations
Agency Comments



Introduction

Since 2001, the National Archives and Records Administration (NARA or the Archives) has been working to develop a modern Electronic Records Archive (ERA). This major information system is intended to preserve and provide access to massive volumes of all types and formats of electronic records, including presidential records, independent of their original hardware or software. NARA plans for the system to manage the entire life cycle of electronic records, from their ingestion through preservation and dissemination to customers. It is to consist of

- infrastructure elements, including hardware and operating systems;
- business applications that will support the transfer, preservation, dissemination, and management of all types of records and the preservation of and online access to electronic records; and
- a means for public access via the Internet.

Because of the system's complexity, NARA awarded a contract to Lockheed Martin to develop ERA in phases, or increments, the first of which was originally scheduled for completion in September 2007. However, the contractor was unable to meet the original cost and schedule milestones due, in part, to productivity issues with its initial development team, and acknowledged that it would not meet a September 2007 goal for initial operating capability (IOC).



In response, NARA and Lockheed Martin agreed to a revised schedule and strategy, consisting of a two-pronged development approach.

- First, they agreed to continue development of the original system but delayed capabilities to later increments. According to NARA, IOC for this system, now referred to as the “base” ERA system, was achieved in June 2008 as planned under the revised schedule.
- Second, NARA is conducting parallel development of a separate system dedicated initially to receiving electronic records from the outgoing Bush administration in January 2009. This new system, referred to as the Executive Office of the President (EOP) system, uses a different architecture from that of the ERA base: it is being built on a commercial product that is to provide the basic requirements for processing presidential electronic records, such as rapid ingestion of records and the ability to search content. NARA believes that if it cannot ingest the Bush records in a way that supports search and retrieval immediately after the transition, it may not be able to effectively respond to requests from the Congress, the new administration, and the courts for these records—a critical agency mission.



As mandated by the Consolidated Appropriations Act,¹ NARA is required to submit an expenditure plan before obligating multiyear funds for the ERA program. As in the previous year, the plan must satisfy the following legislative conditions:

- meet the capital planning and investment control review requirements established by the Office of Management and Budget (OMB), including Circular A-11;
- comply with the agency's enterprise architecture;
- comply with the acquisition rules, requirements, guidelines, and system acquisition management practices of the federal government;
- conform to the agency's enterprise life cycle methodology;
- be approved by the agency and OMB; and
- be reviewed by GAO.

On December 4, 2007, the agency submitted its 2008 expenditure plan to the relevant House and Senate appropriations committees as required to obtain the release of \$38.3 million for ERA.² As of July 2008, the committees had released \$24.0 million of these funds.

¹ Consolidated Appropriations Act, 2008, Pub. L. No. 110-161, div. D, title V, 121 Stat. 1844, 2006 (Dec. 26, 2007).

² ERA's FY 2008 budget authority totaled \$63.3 million which includes \$4.4 million carried over from multiyear funds and \$800,000 from recoveries of prior year unpaid obligations.



Objectives, Scope, and Methodology

As agreed, our objectives were to

- determine the extent to which the agency's fiscal year 2008 expenditure plan satisfies the legislative conditions specified in the consolidated appropriations act, and
- provide any other observations about the expenditure plan and the ERA acquisition.



Objectives, Scope, and Methodology

To assess compliance with the legislative conditions, we

- reviewed NARA's fiscal year 2008 exhibit 300 submission³ to OMB to determine the extent to which the agency has complied with OMB's capital planning and investment control requirements;
- obtained and reviewed data on enterprise architecture to determine the status of the agency's enterprise architecture efforts;
- obtained and reviewed NARA's status of an external assessment of ERA;
- reviewed the enterprise systems development life cycle methodology that includes processes for managing system investments, configuration, and risks and reviewed related documentation concerning how these processes were implemented for the ERA project such as minutes of oversight boards and the risk management plan;
- obtained and reviewed OMB's approval of the expenditure plan; and
- reviewed the fiscal year 2008 expenditure plan submitted by the agency in December 2007 and analyzed it to identify any variances from the legislative conditions.

³ Agencies develop an exhibit 300, also known as the Capital Asset Plan and Business Case Summary, to justify each request for a major information technology investment. OMB sets forth requirements for the exhibit 300 in Circular A-11, Part 7, Planning, Budgeting, Acquisition, and Management of Capital Assets.



Objectives, Scope, and Methodology

To develop observations on the ERA expenditure plan and acquisition, we analyzed the cost and schedule information contained in the expenditure plan, reviewed agency and contractor documents such as ERA Oversight Group and risk management reports, and interviewed NARA and Lockheed Martin officials.

We conducted this performance audit from February to July 2008 at NARA's College Park, Maryland, location in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.



Results in Brief

NARA's fiscal year 2008 expenditure plan satisfies five of the six legislative conditions, and partially satisfies the remaining condition—that ERA conform to the agency's enterprise life cycle methodology. This methodology requires, among other things, that the agency identify, communicate, and mitigate program risks. NARA has identified numerous project risks and reported them to OMB and the Congress, including the risk that it will not have the capability to process the outgoing administration's records at the time of the January 2009 presidential transition. However, NARA has not yet developed a plan to mitigate this risk. Instead, the agency intends to develop a mitigation plan at the end of 2008, when it expects to know more about the types and volumes of presidential records that it is to receive. This proposed schedule, however, will leave NARA little time to prepare for and implement the plan, decreasing the assurance that it will be adequately prepared to meet the requirements of the Congress, the incoming President, and the courts for information contained in the previous administration's records.



We have one observation:

- Pursuant to a congressional mandate, NARA has been providing monthly status reports on ERA to the Congress since January 2008. These reports, which are intended to update the expenditure plan, have included useful information on the project's activities, expenditures, and risks. However, these reports do not include summary measures of the project's performance against cost and schedule estimates—information that NARA provides to OMB. According to agency officials, such measures are not included in the monthly reports because the reports follow an agreed-upon format. However, these measures provide an important perspective on project progress not otherwise available. If future reports do not include such measures, the Congress may be hampered in its ability to effectively oversee the program.



We are making recommendations to NARA to

- develop a risk mitigation plan to ensure that it can index and search electronic records from the outgoing Bush administration in the event that the EOP system is not complete in time for the January 2009 presidential transition and
- improve the utility of information provided to the Congress by including summary measures of project performance against ERA cost and schedule estimates in future monthly reports.

In comments on a draft of this briefing, the Archivist of the United States generally agreed with our findings. He also outlined additional actions NARA was taking to address the risk to presidential records and agreed to include the project performance measures in future monthly reports to the Congress.



Background

The ability to find, organize, use, share, appropriately dispose of, and save records—the essence of records management—is vital for the effective functioning of the federal government. In the wake of the transition from paper-based to electronic processes, records are increasingly electronic, and the volumes of electronic records produced by federal agencies are vast and rapidly growing, providing challenges to NARA as the nation's record keeper and archivist.

Besides sheer volume, other factors contributing to the challenge of electronic records include their complexity and their dependence on software and hardware. Specifically, the computer operating systems and the hardware and software that are used to create electronic documents can become obsolete. If they do, they may leave behind records that cannot be read without the original hardware and software. Further, the storage media for these records are affected by both obsolescence and decay. Media may be fragile, have limited shelf life, and become obsolete in a few years. For example, few computers today have disk drives that can read information stored on 8- or 5¼-inch diskettes, even if the diskettes themselves remain readable.



Background

Another challenge is the growth in electronic presidential records. The Presidential Records Act gives the Archivist of the United States responsibility for the custody, control, and preservation of presidential records upon the conclusion of a President's term of office.⁴ The act states that the Archivist has an affirmative duty to make such records available to the public as rapidly and completely as possible consistent with the provisions of the act. At the time of the last presidential transition, NARA met these requirements by recreating the Clinton administration's computer systems (software and hardware) that originally held the records and developing simple search interfaces so that NARA personnel could search for requested information. NARA reported that it took about 400 days to process the 2 terabytes of data from the Clinton administration.⁵ NARA believes that the electronic records of the Bush administration are significantly more voluminous and complex.

⁴ 44 U.S.C. 2203(f)(1).

⁵ A terabyte is about 1 trillion bytes or about 1,000 gigabytes.



Background

In response to widely recognized challenges, the Archives began a research and development program to develop a modern archive for electronic records. In 2001, NARA hired a contractor to develop policies and plans to guide the overall acquisition of an electronic records system. In December 2003, the agency released a request for proposals for the design of ERA. In August 2004, NARA awarded two firm-fixed-price⁶ contracts for the design phase, totaling about \$20 million—one to Harris Corporation and the other to Lockheed Martin Corporation. On September 8, 2005, NARA announced the selection of Lockheed Martin Corporation to build the ERA system.

The contractor was originally to deliver an initial operating capability (IOC) in September 2007, with completion of a second phase to follow in November 2007. However, as previously discussed, the project experienced schedule delays due to factors such as low productivity of contractor software programmers, difficulties in securing an acceptable contract to prepare the site that was to house the system, and problems with software integration. In response, NARA and Lockheed Martin developed a revised strategy and schedule. This strategy included the parallel development of the ERA base and EOP systems, using separate development teams, and the deferral of certain functions to subsequent phases of the project.

⁶ According to the Federal Acquisition Regulation, a firm-fixed-price contract provides for a price that is not subject to any adjustment on the basis of the contractor's cost experience in performing the contract. This type of contract places on the contractor maximum risk and full responsibility for costs and resulting profit or loss.



As currently planned, the ERA system is to consist of six major components.

- *Ingest* enables the transfer of electronic records from federal agencies.
- *Managed Storage* enables stored records to be managed in a way that guarantees their integrity and availability.
- *Dissemination* enables users to search descriptions and business data about all types of records, and to search the content of electronic records and retrieve them.
- *Records Management* supports scheduling,⁷ appraisal,⁸ description, and requests to transfer custody of all types of records, as well as ingesting and managing electronic records, including the capture of selected records data (such as origination date, format, and disposition).
- *Preservation* enables secure and reliable storage of files in formats in which they were received, as well as creating backup copies for off-site storage.
- *Local Services & Control* regulates how the ERA components communicate with each other, manages internal security, and enables telecommunications and system network management.

⁷ A record schedule is a document that describes agency records, establishes a period for their retention by the agency, and provides mandatory instructions for what to do with them when they are no longer needed for current government business.

⁸ Records appraisal is the process of determining the value and the final disposition of records, making them either temporary or permanent.



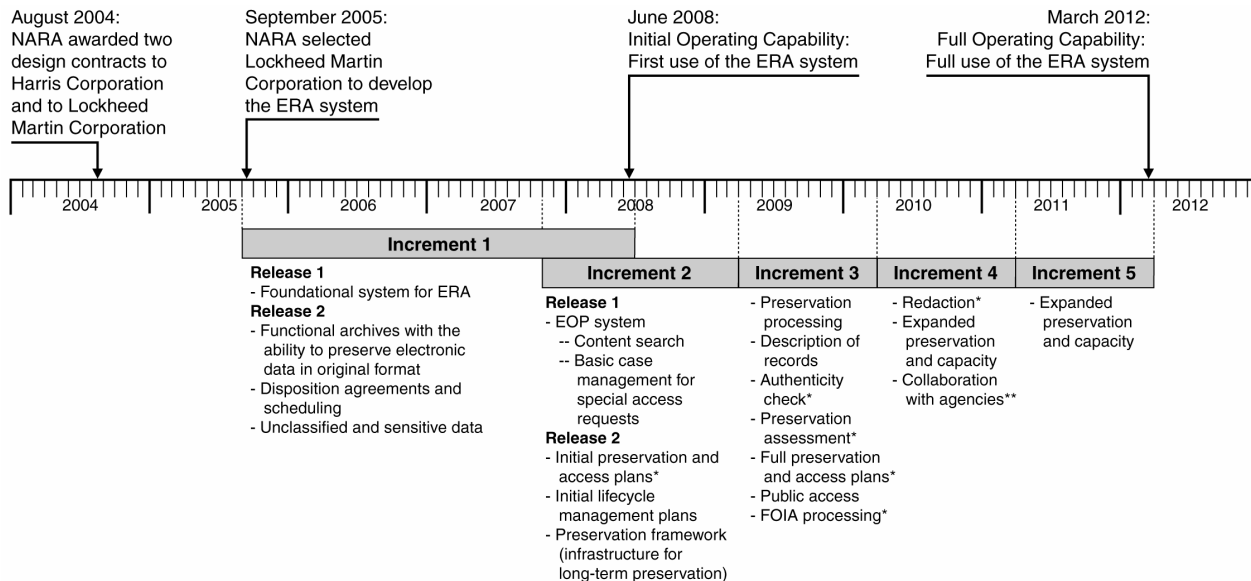
NARA currently plans to deliver these components in five separate increments:

- Increment 1 was deployed in two releases. Release 1 established the ERA base system—the hardware, software, and communications needed to deploy the system. Release 2 enabled functional archives with the ability to preserve electronic data in their original format, enable disposition agreements and scheduling, and receive unclassified and sensitive data from four federal agencies; according to NARA officials, this increment was completed in June 2008.
- Increment 2, Release 1, includes the EOP system, which is planned to handle records from the Executive Office of the President. This release is to include the content searching and basic case management for special access requests.
- The second release of Increment 2 and Increments 3 through 5 will provide additional ERA functionality, such as public access.



Figure 1 shows the current incremental timetable for deploying ERA and the functionality planned for each increment.

Figure 1: ERA Acquisition Approach



*Functionality moved forward from previous increment.
**Functionality moved from Increment 2.

Source: GAO analysis of NARA data.



As of March 2008, the life cycle cost for ERA through 2011 was estimated at \$453 million; total life cycle cost includes not only the development contract costs, but also program management, research and development, and program office support, among other things.

Tables 1 and 2 show the amount spent for ERA in fiscal year 2007, as well as the reported spending from the program's inception to the end of fiscal year 2007.

Table 1: Summary of Fiscal Year 2007 ERA Spending (Dollars in millions)

Project category	Fiscal year 2007 spending
Development contract—Lockheed Martin	\$30.3
Program management	6.6
Program Office Support Team	4.0
Research and development	3.5
Integrated deployment and support	3.2
Independent verification and validation	1.2
Security	0.1
Total	\$48.9

Source: GAO analysis of NARA data.



Table 2: Summary of ERA Spending from Fiscal Year 2002 through Fiscal Year 2007 (Dollars in millions)

Project category	Spending
Development contract—Lockheed Martin	\$70.4
System analysis and design contracts—Lockheed Martin and Harris Corporation	40.8
Program management	23.8
Program Office Support Team	18.0
Research and development	14.3
Integrated deployment and support	5.8
Independent verification and validation	4.0
Security	0.2
Net adjustments	-2.6 ^a
Total	\$174.6^b

Source: GAO analysis of NARA data.

^aRecoveries of prior year unpaid obligations, adjustments to obligations incurred, and obligations against prior years.

^bTotal number may not add up due to rounding.



Background

In December 2007, NARA submitted a fiscal year 2008 expenditure plan as required to obtain the release of multiyear funds for ERA. The agency could not obligate these funds until the appropriations committees reviewed and approved the expenditure plan. As of July 2008, the appropriations committees have released \$24.0 million out of \$38.3 million of the fiscal year 2008 multiyear money. Approximately \$14 million remains to be released.

NARA's estimated ERA obligations for fiscal year 2008 are \$63.3 million. This includes the \$13 million NARA spent on EOP system planning and development from October 2007 to May 2008, of which \$7 million was used to buy hardware.

Table 3 shows how NARA planned to distribute funds across the ERA program.⁹

⁹ ERA Monthly Congressional Report, May, 2008, Appendix B-Planned/Actual Obligations by Month.



Table 3: Summary of NARA's Fiscal Year 2008 Estimated Obligations for ERA (Dollars in millions)

Project category	Description	Estimated obligations
Development contract	Activities performed under the ERA system acquisition contract with Lockheed Martin (includes EOP)	\$42.0
Program management	Salaries and benefits, supplies, equipment, and telecommunications	8.7
Research and development	Research performed with other agencies	4.5
Program Office Support Team	Labor, contracts, and materials to support ERA program management	3.0
Integrated deployment and support	Interagency agreements for ERA facilities ^a	2.9
Independent verification and validation ^b	Verification and validation activities	2.0
Total		\$63.3^c

Source: GAO analysis of NARA data.

^aERA facilities include Allegany Ballistics Lab at Rocket Center, West Virginia, and the Naval Meteorology and Oceanography Command at Stennis, Mississippi.

^bNARA contracted with Northrop Grumman to perform independent verification and validation on policies and plans produced by the ERA program and contract deliverables produced by Lockheed Martin.

^cTotal may not equal the sum of individual items due to rounding.

Note: NARA obligated \$40,000 towards security, but this is not shown in the table because the amount is equal to zero when converted into millions and rounded to one decimal place.



Background

We have issued several reports on ERA and its development.¹⁰ In July 2007¹¹ we reported that NARA did not fully comply with its enterprise life cycle methodology because it had not yet developed an agencywide risk management capability—it had a risk management plan, but the plan had not been approved by the agency's senior staff and agency head. This plan was subsequently approved in July 2007. In addition, NARA is revising a project-level risk management plan for ERA that was first written in 2006. Agency officials expect this plan to be completed in August 2008.

Most recently, at a hearing in May on the ERA project,¹² we testified that the development of the ERA base was proceeding according to the revised schedule, although it faced challenges in meeting several testing deadlines. We also testified that the timely completion of the EOP system was uncertain, in part due to ongoing negotiations between NARA and Lockheed Martin on system capabilities and time frames.

¹⁰ GAO, *Records Management: Planning for the Electronic Records Archives Has Improved*, [GAO-04-927](#) (Washington, D.C.: Sept. 23, 2004); *Information Management: Acquisition of the Electronic Records Archives Is Progressing*, [GAO-05-802](#) (Washington, D.C.: July 15, 2005); *Electronic Records Archives: The National Archives and Records Administration's Fiscal Year 2006 Expenditure Plan*, [GAO-06-906](#) (Washington, D.C.: Aug. 18, 2006).

¹¹ GAO, *Information Management: The National Archives and Records Administration's Fiscal Year 2007 Expenditure Plan*, [GAO-07-987](#) (Washington, D.C.: July 27, 2007).

¹² GAO, *Information Management: Challenges in Implementing an Electronic Records Archive*, [GAO-08-738T](#) (Washington, D.C.: May 14, 2008).



Further, we noted that the uncertainties regarding requirements and dates were due, in part, to uncertainty about the nature of the records to be delivered:

- NARA had received limited information from the Bush administration about the types of data it will receive. The Archives received limited technical information on systems used for e-mail, digital image systems, correspondence tracking, and paper records management, but it received only brief descriptions of 32 other systems identified by the White House. NARA and the administration had held meetings on this topic, according to NARA, but the administration had not yet provided NARA with specific information required for it to plan for reliable ingesting, indexing, and accessing of the electronic records involved.
- NARA was also uncertain about the volume of data that it was to receive. It based its capacity requirements on an estimate that the volume will be about 100 terabytes. (A terabyte is about 1 trillion bytes or about 1,000 gigabytes.) This is about 50 times the volume of the Clinton administration's electronic records.



Background

Subsequently, NARA certified the completion of the first ERA increment, meeting its revised June 2008 IOC milestone. However, NARA is continuing to work to patch several outstanding flaws in the software that it considers noncritical.

Also, NARA has received additional information from the White House on two systems--those used for managing paper records and tracking correspondence--but still lacks technical details on 28 other systems. It has also updated its volume estimate for the Bush administration electronic records to 140 terabytes.

As of July 22, 2008, discussions between NARA and Lockheed Martin on a contract for development of the EOP system were still ongoing. NARA expected to complete negotiations by the end of July 2008. During these negotiations, the contractor continued development of the EOP system.



Legislative Conditions

As discussed in further detail below, NARA's fiscal year 2008 expenditure plan fully satisfies five of the six legislative conditions, and partially satisfies the fourth condition that the ERA acquisition comply with the agency's enterprise life cycle methodology.

1. Meet OMB capital planning and investment control review requirements

OMB requires agencies to develop capital planning and investment control review processes that help ensure that projects are being implemented at acceptable cost and within reasonable and expected time frames, and that they are contributing to observable improvements in mission performance. The agency met this condition; it provides control over cost, schedule, and performance through the activities of the ERA Oversight Group, which meets weekly to review ERA progress, and the Information Technology Executive Committee. These committees, which meet regularly, include senior agency leadership and other agency stakeholders. NARA has also implemented a policy and process for semiannual reviews of ongoing information technology investments, including interdependencies with ERA, through an agencywide capital planning and investment control process.



2. Comply with NARA's enterprise architecture

OMB requires NARA to include ERA in its agency-level enterprise architecture, which is updated on a yearly basis. The current agency enterprise architecture—version 5.0—includes ERA and has been submitted to and approved by OMB. NARA's enterprise architecture consists of several component architectures, including business, data, systems, application, operations, and information technology security architectures. According to NARA, ERA is included in the target business and technical architectures, and ERA technology dependencies and organizational impacts are identified in the agency's sequencing plan.

In addition, OMB requires that any major IT investment be mapped to and support the Federal Enterprise Architecture. The business case for the investment must also demonstrate the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's architecture. NARA's budget submission business case for the ERA system certifies compliance with these requirements and was approved by OMB.



3. Comply with acquisition rules, requirements, guidelines, and system acquisition management practices of the federal government¹³

The quality of software is governed largely by the quality of the processes involved in developing or acquiring it and maintaining it. Carnegie Mellon University's Software Engineering Institute (SEI),¹⁴ recognized for its expertise in software processes, has developed models and methods that define and determine organizations' software process maturity. NARA satisfied this provision using methods consistent with SEI guidance. Specifically, NARA (1) conducted internal assessments in 2002 and 2004 that used the Institute's SA-CMM¹⁵ methods to determine the maturity of ERA's system policies, processes, and practices and (2) implemented a process to address the assessment's recommendations.

¹³ We did not review the program's compliance with the Federal Acquisition Regulation.

¹⁴ SEI is a federally funded research and development center operated by Carnegie Mellon University and sponsored by the Department of Defense. Its objective is to provide leadership in software engineering and in the transition of new software engineering technology into practice.

¹⁵ The Software Acquisition-Capability Maturity Model (SA-CMM) identifies key process areas that are essential to effectively managing software-intensive system acquisitions.



Legislative Conditions

In addition, in its fiscal year 2006 expenditure plan, NARA described a plan to commission an independent appraisal of ERA in fiscal year 2007 that was to use a standard CMMI[®] appraisal methodology for process improvement (SCAMPISM).¹⁶ However, NARA did not commission the independent appraisal as planned. Instead, all available resources from ERA that would have been involved in such a review have been directed towards meeting the IOC date of June 27, 2008.

¹⁶CMMI is registered in the U.S. Patent and Trademark Office by the Carnegie Mellon University. The CMMI is SEI's process model that describes how to develop the processes needed for software development and specific practices that organizations should follow. SCAMPI is a service mark of Carnegie Mellon University. It is a method used for appraising organizations using CMMI.



4. Conform to NARA's enterprise life cycle methodology

The ERA project partially conforms to NARA's enterprise life cycle methodology, which defines a set of processes that are to be used throughout the program's life cycle, including processes for managing system investments, configuration, and risks. In particular, the risk management methodology calls for the agency to identify and categorize risks, qualify the probabilities and consequences of the risks, specify a strategy to mitigate each risk, communicate risk status, and act upon risks that become unacceptable.

NARA conforms to several aspects of this methodology:

- NARA uses processes to manage investment decisions and system configuration.
- NARA also identifies, ranks, quantifies, and communicates ERA risks using an agency-level risk review board, a program-level risk review board, and a technical risk review team. These bodies report top ERA risks to the Executive Oversight Group, OMB, and the Congress on a monthly basis. In recent reports, the highest rated risk to the ERA program has been the risk that the agency would not be able to ingest and process electronic records from the Bush administration during the January 2009 presidential transition, in part due to the uncertainties described earlier.



Legislative Conditions

However, NARA has not yet developed a risk mitigation plan to address this significant risk. As we have previously reported, effective risk management includes developing risk mitigation plans that identify planned actions and milestones for key mitigation deliverables.¹⁷

Instead, NARA officials believe the development of the EOP system will adequately handle most incoming presidential records. In addition, NARA intends to formulate a plan to mitigate the risk that incoming records will not be processed by EOP. However, it does not intend to develop such a plan until November or December 2008 when it expects to have more in-depth technical knowledge of the records to be transferred. According to NARA officials, it intends to handle presidential records that cannot be processed by the EOP system by replicating the source systems being used by the White House, as was done for the Clinton transition.

¹⁷GAO, *2010 Census: Preparations for the 2010 Census Underway, but Continued Oversight and Risk Management Are Critical*, [GAO-07-1106T](#), (Washington, D.C.: July 17, 2007).



Legislative Conditions

NARA officials also stated that the agency has taken other steps to mitigate this risk. For example, it has begun the process of soliciting a contract to support the duplication of White House systems at the Archives, as needed. They plan to have this contract in place by November, after which the contractor will have to analyze the systems, procure the necessary hardware and software, and build the duplicate systems. NARA officials believe they have adequate time to complete these steps before the transition. NARA is also working to identify and prioritize those systems mostly likely to be the subject of requests early in the transition and negotiating with the White House for the prompt transfer of records.



Legislative Conditions

However, ongoing uncertainties about the EOP system raise concerns about the adequacy of NARA's strategy. For example, it is still uncertain when the EOP system will be completed. In May, NARA officials expected to complete negotiations with Lockheed Martin, and finalize a development contract for EOP by June. As of July, NARA and the contractor have continued negotiating about the details of the EOP system requirements and capabilities, as well as the specific development plans and final contract terms. As a result, the final capabilities of the system and its expected delivery dates are not yet known. In addition, the contractor met only one of the two agreed-upon delivery milestones for segments of the EOP system during this period. Although it demonstrated several added capabilities, such as access control and Internet security, as planned on May 13, it has not yet completed system integration testing for the final set of capabilities, including backup and restore functions, which was due on July 17. According to NARA officials, this delivery was deferred to July 31 because it needed more time to ensure that the software worked correctly.



Legislative Conditions

Considering these uncertainties and the limited time left to prepare for the transition, delaying the preparation of a mitigation plan increases the risk that NARA will not be prepared to ingest the Bush administration records and positioned to respond to critical requests for this information from the Congress, the new administration, and the courts.



5. Approval by NARA and OMB

The expenditure plan was reviewed and approved by NARA and OMB in December 2007.

6. Review by GAO

We completed review of the plan in July 2008.



Observation on the ERA Expenditure Plan and Acquisition

The committee print of last year's appropriations act¹⁸ required NARA to provide monthly status reports on ERA to the Congress. These monthly reports discuss the program's cost, schedule, and performance and are intended to serve as updates to the expenditure plan. To provide the Congress with a sufficient understanding of the system acquisition and permit effective oversight and to allow for informed decision-making about the use of appropriated funds, these updates should disclose a sufficient level and scope of information to allow the Congress to understand what system capabilities and benefits are to be delivered, by when, and at what cost, and what progress is being made against the commitments that were made in expenditure plans.

Since January 2008, NARA has provided five monthly updates, covering activities through May. These updates have discussed ERA's recent activities and accomplishments, monthly funding obligations, overall project schedule, and significant risks. The information they provide can assist congressional oversight by ensuring that timely information on the program is available to congressional decision makers.

¹⁸Consolidated Appropriations Act, 2008, Committee Print of the House Committee on Appropriations on H.R. 2764, Pub. L. No. 110-161 (Legislative Text and Explanatory Statement).



Observation on the ERA Expenditure Plan and Acquisition

However, these updates lack summary measures of the project's performance against cost and schedule estimates. One way to derive such data is through earned value management (EVM), a project management tool that compares the value of work accomplished during a given period with that of the work expected in the period. Differences between accomplishments and expectations are measured in both cost and schedule variances. NARA is required by OMB to use EVM in its program management and reports summary EVM measures to OMB. For example, in a June 2008 briefing to OMB, NARA reported that ERA's cumulative cost performance index¹⁹ was 1.027 as of April 2008. This represents a favorable variance, meaning that the cost of completing the work for the ERA development was lower than planned for the reported period. However, in the same briefing, agency officials informed OMB that ERA's schedule performance index²⁰ was 0.893, an unfavorable variance, meaning that the contractor had completed less work than planned.

¹⁹ Cost performance index (CPI) is the amount of work performed (or earned value) compared to actual costs of work performed.

²⁰ Schedule performance index (SPI), work efficiency, is defined as the ratio of work performed (or earned value) to the initial planned schedule.



Observation on the ERA Expenditure Plan and Acquisition

According to NARA officials, EVM variance data changes frequently and would be out of date by the time they could be included in an annual expenditure plan. In addition, they stated that such measures are not included in the monthly reports to the Congress because they follow a previously agreed-upon format. However, the data provide an important perspective on project progress not otherwise available. This is especially true for a project such as ERA, where the scope and schedule have changed significantly. If NARA does not provide summary information on variances in the systems cost and schedule in its monthly updates, the Congress may be hampered in providing effective oversight of the system.



Conclusions

Although NARA's expenditure plan satisfies five of the six legislative conditions mandated by the Consolidated Appropriations Act, it has only partially satisfied the remaining condition that the ERA acquisition comply with the agency's life cycle methodology. Specifically, it has not yet developed a plan to mitigate its highest-rated program risk: that NARA will not have the capability to handle the Bush administration records by the time of the presidential transition in January 2009. Although NARA intends to develop such a plan at the end of this year, the mission-critical nature of the task and the uncertainty surrounding EOP system development underscore the need to complete such a plan in time to ensure that the agency will have an alternative means available for processing the Bush records, if necessary. Without a timely mitigation plan, when the next administration takes office, NARA may not be able to meet the requirements of the Congress, the incoming President, and the courts for the information contained in the previous administration's records.

NARA's mandated monthly reports to the Congress provide valuable information about ERA's expenditures, activities, and risks. However, these reports would help the Congress better understand what system capabilities will be delivered and at what costs if they included summary measures of variances in cost and schedule performance. Without such information in future reports, the Congress may be hampered in its ability to effectively oversee the program.



Recommendations

To ensure that NARA can fulfill its critical responsibilities during the upcoming presidential transition, we recommend that the Archivist develop a mitigation plan for indexing and searching the electronic records from the outgoing Bush administration in the event that the EOP system is not complete. The plan should be completed in time to be fully implemented for the January presidential transition.

To enhance oversight of the ERA project, we recommend that the Archivist ensure that summary measures of project performance against ERA cost and schedule estimates are included in future monthly reports to the Congress.



Agency Comments

In comments on a draft of this briefing, the Archivist of the United States generally agreed with our findings and stated that he was pleased with our recognition of the progress made in implementing ERA. The Archivist also provided additional information on efforts under way to mitigate the risk to presidential records during the transition, but did not specifically address our recommendation to develop a risk mitigation plan. He agreed to implement our recommendation that he include project performance measures in future monthly reports to the Congress.

A copy of the Archivist's letter is attached.

**Appendix I: Briefing to Staff of Congressional
Committees on NARA's Fiscal Year 2008
Expenditure Plan**



Agency Comments



JUL 22 2008

Government Accountability Office
Director of Information Management Issues
Ms. Linda Koontz
441 G Street, NW
Washington, DC 20548

Dear Ms. Koontz:

We thank you for the opportunity to review and comment on the draft presentation entitled *Review of the National Archives' Fiscal Year 2008 Electronic Records Archives Expenditure Plan* before it is briefed to the staff members of the Subcommittee on Financial Services and General Government, Senate Appropriations Committee and the Subcommittee on Financial Services and General Government, House Appropriations Committee. We are pleased to note the recognition of the progress made towards implementing the Electronic Records Archives (ERA) Program.

We also appreciate the insight into the Expenditure Plan observations addressed in GAO's presentation. We would like to take this opportunity to address the recommendations on your presentation. NARA has been submitting the mandated monthly reports to Congress using a previously agreed upon format. The Earned Value (EV) information requested in your presentation is already provided on a monthly basis to the Office of Management and Budget (OMB). We will add this information to the Congressional reports starting with the August report. It should be clarified in the report that the comment related to EV data changing frequently was made in response to including this information in the Expenditure Plan not the monthly report to Congress.

Regarding GAO's recommendation for a mitigation plan for NARA's highest rated program risk, as with the transition at the end of the Clinton administration, the detailed migration plans will be developed when we have more in-depth technical knowledge of the systems to be migrated from the Executive Office of the President (EOP). This will probably happen closer to November, 2008. Although the ERA EOP instance is still on track to support the Presidential transition, NARA is working on putting in place the contractual vehicle to ensure we are ready to transition the records if this risk were to become a reality. NARA is also identifying, based on experience with previous transitions, which EOP applications are most likely to be subjects of requests soon after the transition and directed ERA EOP development to those applications. Finally, NARA is in negotiations with the EOP to implement a transfer mechanism for moving the electronic records to NARA's system as quickly as possible.

National Archives and Records Administration

Again, we thank you for this opportunity and look forward to our future interactions as we continue the ERA acquisition process.

Sincerely,

ALLEN WEINSTEIN
Archivist of the United States

Appendix II: Comments from the National Archives and Records Administration

National Archives at College Park



8601 Adelphi Road College Park, Maryland 20740-6001

SEP -5 2008

Government Accountability Office
Director of Information Management Issues
Ms. Linda Koontz
441 G Street, NW
Washington, DC 20548

Dear Ms. Koontz:

We thank you for the opportunity to review and comment on the draft report entitled *Information Management The National Archives and Records Administration's Fiscal Year 2008 Expenditure Plan (GAO-08-1105)* before submission to the Subcommittee on Financial Services and General Government, Senate Appropriations Committee and the Subcommittee on Financial Services and General Government, House Appropriations Committee. Once again, we are pleased to note the recognition of the progress made towards implementing the recommendations provided in GAO's previous reports.

We would like to take this opportunity to update you on the status of the efforts related to your observations since our last letter. The report indicates that the Electronic Records Archives (ERA) monthly status reports submitted to Congress exclude useful information regarding the project's performance against cost and schedule. The information requested was added to the report submitted in August and will continue to be included in subsequent reports.

The report asserts that NARA has not yet developed a plan to mitigate the risk that the ERA system "will not have the capability to process the outgoing administration's records at the time of the January 2009 presidential transition." The most fundamental requirement for this system is that it guarantees the survival of presidential electronic records of the outgoing administration. The ERA development is on track to deliver by the end of November a system capable of bringing in the very large volumes of electronic records expected to be transferred, establishing archival control over them, storing them safely, and retrieving them. In addition, this system will have the ability to index several hundred different formats, enabling full content searching of records in those formats. There is no noteworthy risk related to this development. The identified risk relates to the probability that there will be some electronic records that the system cannot index in their native formats. The system is designed to enable versions of such records to be created in formats that are amenable to search. The system will store both the original and new versions. NARA has implemented a significant mitigation of this risk by including in the Lockheed Martin contract provision for acquisition or development of software to produce alternate versions of formats that cannot

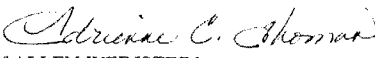
National Archives and Records Administration

**Appendix II: Comments from the National
Archives and Records Administration**

be indexed. In fact, the contractor has been working for several months to develop such software for several important applications, including e-mail. We expect to have this capability available by the end of the current administration, and development will continue thereafter. In this context, it should be noted that it will take some time to ingest the very large volumes we expect to receive. The residual risk is that there will be some formats that ERA will not be able to ingest and index in a reasonable amount of time. An additional mitigation is to have alternative methods of processing records in those formats. Developing definitive plans for such alternatives requires obtaining detailed specifications from the Executive Office of the President (EOP). The EOP has been providing NARA with such specifications on a case by case basis. To date, NARA's preference has been to use this information in its primary mitigation of the risk, by developing the required capability within the ERA system.

Again, we thank you for this opportunity and look forward to our future interactions as we continue the development of the ERA system.

Sincerely,


ALLEN WEINSTEIN
Archivist of the United States

Appendix III: GAO Contact and Staff Acknowledgments

GAO Contact

Linda D. Koontz, (202) 512-6240, or koontzl@gao.gov

Staff Acknowledgments

In addition to the individual named above, key contributions to this report were made by James R. Sweetman, Jr., Assistant Director; Monica Perez Anatalio; Barbara Collier; Neil J. Doherty; Pamtricia Greenleaf; Charles C. Hinnant; Lee McCracken; and Tarunkant Mithani.

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