

July 2011

USDA SYSTEMS MODERNIZATION

Management and Oversight Improvements Are Needed

U.S. Government Accountability Office

GAO 90

YEARS

1921-2011

ACCOUNTABILITY ★ INTEGRITY ★ RELIABILITY



Highlights of [GAO-11-586](#), a report to congressional committees

Why GAO Did This Study

The United States Department of Agriculture's (USDA) Farm Service Agency (FSA) is responsible for administering billions of dollars annually in program benefits to farmers and ranchers. Since 2004, FSA has been planning to modernize its information technology (IT) systems that process these benefits with the Modernize and Innovate the Delivery of Agricultural Systems (MIDAS) program.

GAO was asked to determine (1) the scope and status of MIDAS, (2) whether MIDAS has appropriate program management, and (3) whether MIDAS has appropriate executive oversight and governance. To do so, GAO reviewed relevant department guidance and program documents and interviewed USDA officials.

What GAO Recommends

GAO is recommending that USDA update cost and schedule estimates, address management weaknesses in plans and program execution, and clarify the roles and coordination among governance bodies. USDA agreed with GAO's recommendations and described plans to address them.

View [GAO-11-586](#) or key components. For more information, contact David A. Powner at (202) 512-9286 or pownerd@gao.gov.

July 2011

USDA SYSTEMS MODERNIZATION

Management and Oversight Improvements Are Needed

What GAO Found

FSA plans to modernize the systems supporting its 37 farm programs with MIDAS. The implementation cost estimate is approximately \$305 million, with a life cycle cost of approximately \$473 million. However, the implementation cost estimate is uncertain because it has not been updated since 2007 and does not include cost elements that have since been identified, such as the selection of a commercial enterprise resource planning product. Following completion of its initial phase of program planning in October 2010, MIDAS entered its second of four phases—proof of concept and system design. However, the schedule for this phase, which was to be completed in October 2011, is now uncertain. While FSA officials report that the proof of concept activities are proceeding as scheduled, they have delayed a requirements review milestone until December 2011 and have not yet set a new date for the design review. As a result, the completion date for the second phase and its impact on subsequent phases is uncertain. FSA officials plan to revisit the cost and schedule estimates after completing requirements definition.

FSA's program management approach includes many leading practices, but could be strengthened. For example, prior to the proof of concept and system design phase, plans were in place for organizational change and communication, requirements management, and risk. However, a few practices were either partially addressed or not addressed at all in program plans or in the implementation of those plans. For example, an integrated team has not yet been formed with representatives from IT programs that MIDAS depends on for its success. Moreover, the plans do not explicitly call for, and FSA has not produced, a schedule that reflects dependencies with those programs, and risks are not being regularly tracked as planned. FSA's uneven adoption of leading practices is likely to limit the agency's effectiveness in managing system development, and thus its ability to deliver system capabilities on time and within budget.

Executive-level governance for MIDAS has not been clearly defined and does not fully follow department IT investment management guidance. Specifically, oversight and governance has been assigned to several department and agency bodies, but roles and escalation criteria are not clearly defined among them. Department officials reported that department guidance is being followed for monthly status reviews, but not for department-level reviews at key decision points. The lack of clarity and definition for the roles of the governance bodies could result in duplication or voids in program oversight, as well as wasted resources. Moreover, because MIDAS is not being governed according to the department's investment guidance, the department may not be rigorously monitoring and managing the program and its risks, and may not have the information it needs to make timely and appropriate decisions to ensure the success of MIDAS.

Contents

Letter		1
	Background	2
	MIDAS Is Currently Being Defined; Cost and Schedule Estimates Are Uncertain	11
	MIDAS Plans Reflect Many Leading Management Practices, but Could Be Strengthened	18
	MIDAS Governance Is Not Clearly Defined and Does Not Follow Department Investment Guidance	28
	Conclusions	31
	Recommendations for Executive Action	32
	Agency Comments	33
Appendix I	Objectives, Scope, and Methodology	35
Appendix II	MIDAS Farm Programs	39
Appendix III	Comments from the Department of Agriculture	41
Appendix IV	GAO Contact and Staff Acknowledgments	42
Tables		
	Table 1: MIDAS Supporting Contracts	14
	Table 2: FSA Plans and Actions to Address Leading Planning and Monitoring Practices	20
	Table 3: FSA Plans and Actions to Address Leading Requirements Management Practices	22
	Table 4: FSA Plans and Actions to Address Leading Contract Management Practices	24
	Table 5: FSA Plans and Actions to Address Leading Risk Management Practices	26
	Table 6: MIDAS Oversight and Governance Bodies	29

Figures

Figure 1: MIDAS Timeline	7
Figure 2: Current and Proposed MIDAS Environments	12
Figure 3: Implementation Schedule for MIDAS	15

Abbreviations

CMMI	Capability Maturity Model Integration
CIO	chief information officer
FSA	Farm Service Agency
IT	information technology
MIDAS	Modernize and Innovate the Delivery of Agricultural Systems
OMB	Office of Management and Budget
USDA	United States Department of Agriculture

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.



G A O

Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

July 20, 2011

The Honorable Debbie Stabenow
Chair
The Honorable Pat Roberts
Ranking Member
Committee on Agriculture, Nutrition, and Forestry
United States Senate

The Honorable Herb Kohl
Chairman
The Honorable Roy Blunt
Ranking Member
Subcommittee on Agriculture, Rural Development,
Food and Drug Administration, and Related Agencies
Committee on Appropriations
United States Senate

The United States Department of Agriculture's (USDA) Farm Service Agency (FSA) is responsible for administering billions of dollars annually in program benefits to farmers and ranchers.¹ Since 2004, FSA has been planning a program called Modernize and Innovate the Delivery of Agricultural Systems (MIDAS) to modernize the information technology (IT) systems that process these benefits. Goals include replacing aging computer hardware and revamping complex and duplicative farm program benefits processing by 2014. The estimated life cycle costs for the program are expected to approach half a billion dollars.

This report responds to your request that we review the progress of FSA's modernization program. Specifically, you asked us to determine (1) the scope and status of MIDAS, (2) whether MIDAS has appropriate program management, and (3) whether MIDAS has appropriate executive oversight and governance.

To describe the program's scope and status, we reviewed program documents and interviewed agency officials to identify the farm programs, interfaces, and systems; the milestones and products planned and

¹FSA estimates that the total amount of fiscal year 2010 payments was \$10 billion.

delivered; and the costs budgeted and expended. To assess whether there is appropriate program management, we compared program plans and artifacts with leading practices for program planning and monitoring, requirements management, contract management, and risk management to determine the extent to which practices were planned and executed. To assess whether there is appropriate executive oversight and governance, we compared USDA and FSA policies, plans, and artifacts for MIDAS oversight and governance with our guidance and that of the Office of Management and Budget (OMB) to determine whether this guidance has been applied.

We conducted this performance audit from October 2010 to July 2011 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. See appendix I for a complete description of our objectives, scope, and methodology.

Background

USDA manages and administers benefits programs that support farm and ranch production, natural resources and environmental conservation, and rural development. FSA is one of three USDA service center agencies that manages and administers these benefits to farmers and ranchers.² FSA has three core program areas: farm programs, farm loan programs, and commodity operations.

The largest of the program areas—farm programs—pays billions of dollars annually to approximately 2 million farmers and ranchers. As of November 2008, FSA reported that these five farm programs accounted for 95 percent of FSA's budget and transactions.

- Direct and Counter-Cyclical Payments Program: offsets losses for a drop in the market price for a specific crop.

²The other two agencies are the Natural Resources Conservation Service, which administers programs that provide funding to landowners and other partners, and Rural Development, which offers business loans and grant programs for rural development.

-
- Marketing Assistance Loan Program: provides interim financing to meet cash flow needs when market prices for commodities are at harvest time lows.
 - Noninsured Crop Disaster Assistance Program: provides aid for uninsured crops that are destroyed through natural disasters.
 - Crop Disaster Program:³ provides benefits for crop production or quality losses during the crop year.
 - Conservation Reserve Program: provides incentive payments and cost sharing for projects to reduce erosion, protect streams and rivers, enhance wildlife habitats, and improve air quality.

FSA administers these programs primarily at its approximately 2,300 local offices using a variety of computing environments and software applications to process farm program data, including

- a central “Web farm,” consisting of an array of interconnected computer servers that exchange data in support of data storage and Web-based applications;⁴
- a central IBM mainframe that hosts non-Web applications and data; and
- a distributed network of IBM Application System 400 computers and a common computing environment⁵ of personal and server computers at each local office.

³See also the Supplemental Revenue Assistance Payments Program, authorized by the 2008 farm bill, the Food, Conservation, and Energy Act of 2008, as amended, Pub. L. No. 110-246, § 12033(b), 122 Stat. 1651, 2156, June 18, 2008. This program provides crop disaster payments for eligible losses incurred during years 2008 through 2011.

⁴FSA began migrating selected applications to the Web farm in 2002. In late 2006, it began experiencing performance issues with the Web farm and began an effort to correct the problems with an initiative called Stabilization, which cost \$118.7 million and was reported as being completed in fiscal year 2010.

⁵The common computing environment provides administrative applications—such as common e-mail, telecommunications, and Microsoft Office tools—to the three service center agencies. FSA reported that upgrades to the common computing environment will help ensure that the FSA local office staff have the desktop computers, telecommunication, and Internet services to use the program applications.

We, FSA, and others have reported challenges with the current systems used to deliver benefits.⁶ Specifically, FSA's information systems

- date to the 1980s and are obsolete and difficult to maintain. The maintenance contract on a key component—the Application System 400 computer—expires in 2013, and FSA anticipates that the contract will be difficult to renew.
- provide farmers and ranchers with limited access to farm programs through the Internet, so they must primarily visit a local office to conduct transactions.
- are not interoperable. FSA personnel at the local offices must switch between applications hosted on each system. In addition, the Application System 400 computers can only store customer information at a local office. Therefore, customers cannot use different offices to complete their transactions.
- do not satisfy federal directives for internal controls and security.
- are difficult to modify or change, hampering FSA's ability to promptly implement new benefits programs.⁷

Goals and History of MIDAS

In early 2004, FSA began planning the MIDAS program to streamline and automate farm program processes and to replace obsolete hardware and software. FSA identified these goals for the program:

- Replace aging hardware: Replace the Application System 400 computers with a hosting infrastructure to meet business needs, internal controls, and security requirements.

⁶GAO, *Information Technology: Agriculture Needs to Strengthen Management Practices for Stabilizing Its Farm Program Delivery Systems*, [GAO-08-657](#) (Washington, D.C.: May 16, 2008); FSA, *MIDAS C1-04 Concept of Operations* (October 2010); *MIDAS Project Management Plan (PMP)* (August 2010); BearingPoint, *Delivery of Legislatively Mandated Farm Benefit Programs: A Third Party Report on Modernization and Stabilization at FSA* (January 2009).

⁷See for example the Supplemental Revenue Assistance Payments Program included in the most recent farm bill—the Food, Conservation, and Energy Act of 2008, as amended, Pub. L. No. 110-246, § 12033(b).

-
- Reengineer business processes: Streamline outmoded work processes by employing common functions across farm programs. For example, determining benefits eligibility might be redesigned (using business process reengineering) as a structured series of work steps that would remain consistent regardless of the benefits requested.
 - Improve data management: Make data more readily available to FSA personnel and farmers and ranchers—including self-service capabilities—and increase data accuracy and security.
 - Improve interoperability with other USDA and FSA systems: Integrate with other USDA and FSA modernization initiatives, including the Financial Management Modernization Initiative for core financial services that meet federal accounting and systems standards, the Geospatial Information Systems to obtain farm imagery and mapping information, and the Enterprise Data Warehouse to provide enterprise reporting.

FSA drafted initial requirements for MIDAS in January 2004. It halted requirements development when program officials decided that the proposed customized solution would not meet future business needs. FSA subsequently changed its approach in the summer of 2006 from customized software to commercial off-the-shelf enterprise resource planning⁸ software.

In February 2008, FSA analyzed how its farm program functions would map to functions available in an off-the-shelf enterprise resource planning software suite from vendor SAP, which was selected for two other USDA modernization initiatives—the Financial Management Modernization Initiative and the Web Based Supply Chain Management program. This analysis concluded that MIDAS processes generally mapped to the SAP software. Based on that analysis and a software alternatives analysis, FSA decided to proceed with SAP Enterprise Resource Planning as the solution for MIDAS. FSA also decided to accelerate the time frame for implementing the solution from the 10 years originally planned to 2 years for its 2008 business case. To accomplish this, FSA would compress the

⁸Enterprise resource planning refers to commercial off-the-shelf software that incorporates shared data from various lines of business and that is consistent across an entire organization.

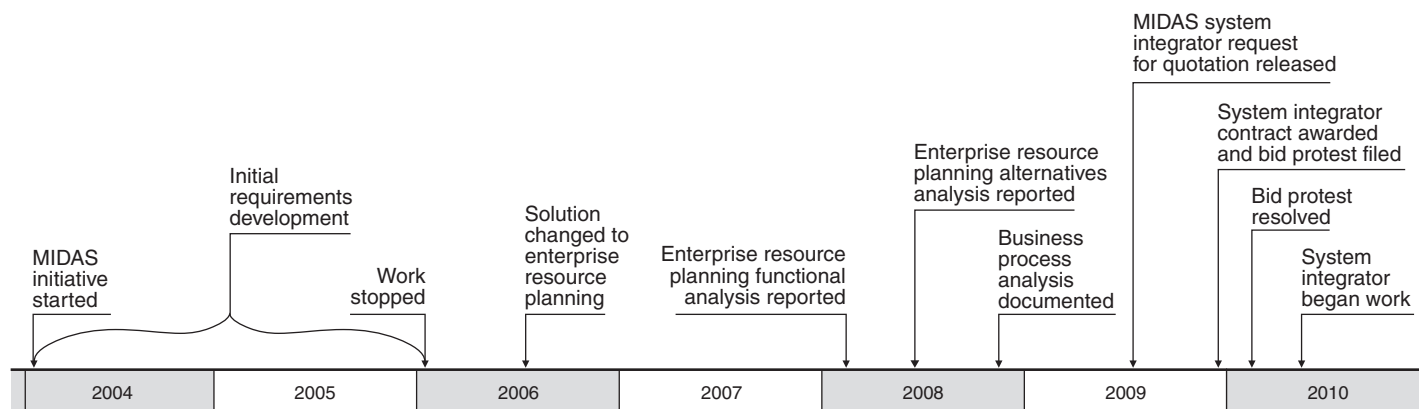
requirements analysis phase from 4 years to 5 months, and reduce the analysis and design phase from 3½ years to 9 months.

In preparation for issuing a request for quotation and selecting a contractor to define, design, and implement MIDAS with the SAP software suite, FSA staff visited local offices to document farm program business processes and to determine requirements for the new system. The request for quotation for the MIDAS system integrator contract was released in July 2009; a contract based on this request was awarded to SRA International in December 2009. The contract start was delayed due to a bid protest, which was resolved in February 2010, and SRA International began work in May 2010. By this point, FSA had also awarded six other contracts for services to support additional aspects of this initiative, including software licenses, project management support, and technical support.

FSA hired a MIDAS executive program manager in September 2007 and drafted a staffing plan in April 2009 that called for 35 to 40 full-time government employees to oversee the program and its supporting contracts. The program office reports to the FSA Chief Information Officer (CIO) and has three functional areas: requirements and project management, IT solutions, and change management and communications. The USDA CIO is responsible for MIDAS investment guidance and direction.

Figure 1 depicts a timeline of key milestones for MIDAS from its inception through the initiation of work by the system integrator.

Figure 1: MIDAS Timeline



Source: GAO analysis of agency data.

In view of congressional concern about the complexity, scale, and challenges of FSA’s IT modernization, USDA has been required to report to the committees on Agriculture and Appropriations of the Senate and House of Representatives on key aspects of MIDAS management, including cost, schedule and milestones, oversight and investment management, and integration with other modernization initiatives.⁹ In response, USDA has submitted a series of reports to Congress¹⁰ that reflect the department’s approach toward the modernization program and its progress.

⁹Pub. L. No. 110-246, Sec. 1618, 122 Stat. 1651, 1750, June 18, 2008; H.R. Rep. No. 111-279, at 70-71 (2009) (Conf. Rep.); and H.R. Rep. No. 110-258, at 57 (2007).

¹⁰FSA, *A Report to Congress on FSA IT Systems Modernization and Stabilization* (August 2010); USDA, *A Report to Congress on the USDA’s Oversight of FSA’s IT Modernization* (September 2009); and USDA, *A Report to Congress on the MIDAS Program* (Washington, D.C., August 2008).

Prior GAO Review Found That Program Cost and Schedule Estimates Were Inadequate

In May 2008, at the request of the House and Senate Committees on Appropriations, we reported¹¹ that MIDAS was in the planning phase and that FSA had begun gathering information and analyzing products to integrate its existing systems.¹² We determined that the agency had not adequately assessed the program's cost estimate, in that the estimate had been based on an unrelated USDA IT investment. Moreover, the agency had not adequately assessed its schedule estimate because business requirements had not been considered when FSA reduced the implementation time frame from 10 years to 2 years. As a result, we said that it was uncertain whether the department could deliver the program within the cost and schedule time frames it had proposed and recommended that FSA establish effective and reliable cost estimates using industry leading practices and establish a realistic and reliable implementation schedule that was based on complete business requirements. The department generally agreed with our recommendations.

Leading Practices for IT Modernization Management

Effective planning and management practices are essential for the success of large, complex IT modernization efforts. Our reviews¹³ of these practices and experience with federal agencies have shown that such practices can significantly increase the likelihood of delivering promised system capabilities on time and within budget. Organizations such as the Software Engineering Institute at Carnegie Mellon University have issued guidance¹⁴ on effective planning and management practices for developing and acquiring software-based systems. These practices include:

¹¹[GAO-08-657](#).

¹²This review also assessed the extent to which USDA's stabilization plan addressed key management issues for its existing farm program delivery systems.

¹³GAO, *Information Technology: Foundational Steps Being Taken to Make Needed FBI Systems Modernization Management Improvements*, [GAO-04-842](#) (Washington, D.C.: Sept. 10, 2004) and *Information Technology: FBI Is Implementing Key Acquisition Methods on Its New Case Management System, but Related Agencywide Guidance Needs to Be Improved*, [GAO-08-1014](#) (Washington, D.C.: Sept. 23, 2008).

¹⁴Software Engineering Institute, *Capability Maturity Model® Integration for Development (CMMI)*, version 1.2 (Pittsburgh, Penn., August 2006) and Software Engineering Institute, *Capability Maturity Model® Integration for Acquisition (CMMI)*, version 1.2 (Pittsburgh, Penn., November 2007).

-
- **Project planning and monitoring:** Project planning establishes a framework for managing the project by defining project activities and their estimated cost and schedule, among other things. Project monitoring provides an understanding of the project's progress, so that appropriate corrective actions can be taken if performance deviates from plans. Effective planning and monitoring employ a range of resources and tools that promote coordination of and insight into the project's activities, such as an integrated project schedule, which identifies a project's dependencies with other projects to facilitate coordination of their tasks and resources.
 - **Requirements management:** Requirements establish what the system is to do, how well it is to do it, and how it is to interact with other systems. Effective management of requirements involves assigning responsibility for them, tracking them, and controlling requirements changes over the course of the project. It also ensures that requirements are validated against user needs and that each requirement traces back to the business need and forward to its design and testing.
 - **Contract management:** Effective contract management ensures that contractor activities are performed in accordance with contractual requirements and that the acquiring organization has sufficient visibility into the contractor's performance to identify and respond to performance shortfalls. It also ensures that the roles of multiple contractors are clearly defined in a contract management plan, thus avoiding confusion or duplication of effort in managing the tasks.
 - **Risk management:** Risk management is a process for anticipating problems and taking appropriate steps to mitigate risks and minimize their impact on project commitments. It involves identifying and cataloging the risks, categorizing them based on their estimated impact, prioritizing them, developing risk mitigation strategies, and tracking progress in executing the strategies.

For projects such as MIDAS, which involve complex and concurrent activities, it is important that proven practices be implemented early in the life of the project so that potential problems can be identified and addressed before they can significantly impact program commitments.

Federal guidance,¹⁵ along with our framework for managing IT investments and our prior reviews of federal investments¹⁶ also point to the importance of having executive-level oversight and governance for the success of large IT investments. Executive attention helps to ensure that such projects follow sound business practices for planning, acquiring, and operating the IT system; meet cost, schedule, and performance goals; and detect and address risks and problems that could impede progress toward those goals. When multiple oversight boards govern an investment, it is critical to define the roles and coordination among them to avoid duplication of effort and to increase the effectiveness of the oversight. To help institutionalize such oversight, OMB requires capital planning and investment control processes, including a department-level board with the authority to commit resources and make decisions for IT investments. Such boards are to review the investments at key decision points against standard evaluation factors. OMB also requires annual and monthly reporting for such investments.¹⁷ Due to its concerns that investment review boards have not always been effective, OMB recently identified additional actions agencies should take to strengthen the boards, including improving the timeliness and accuracy of program data available to them.¹⁸

¹⁵OMB Cir. A-11, *Capital Programming Guide, Supplement to Part 7: Planning, Budgeting, and Acquisition of Capital Assets*, (Washington, D.C.: June 2006).

¹⁶GAO, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, [GAO-04-394G](#) (Washington, D.C.: March 2004); *Information Technology: U.S. Postal Service Needs to Strengthen System Acquisition and Management Capabilities to Improve Its Intelligent Mail Full Service Program*, [GAO-10-145](#) (Washington, D.C.: Oct. 29, 2009); *DOD Business Systems Modernization: Billions Continue to Be Invested with Inadequate Management Oversight and Accountability*, [GAO-04-615](#) (Washington, D.C.: May 27, 2004).

¹⁷For example, monthly reports are posted on the OMB Web-based IT Dashboard, at <http://it.usaspending.gov>.

¹⁸OMB, *25 Point Implementation Plan to Reform Federal Information Technology Management* (Washington, D.C., Dec. 9, 2010).

MIDAS Is Currently Being Defined; Cost and Schedule Estimates Are Uncertain

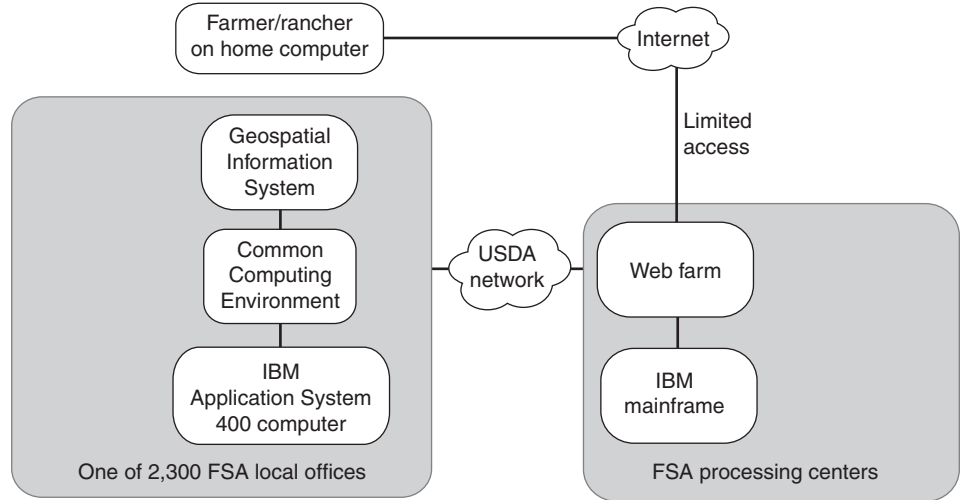
FSA plans to modernize all the systems that support its 37 farm programs (listed in app. II) with the MIDAS program. The implementation cost estimate is approximately \$305 million, with a life cycle cost of approximately \$473 million. However, the implementation cost is uncertain because it has not been updated since 2007 and does not include key cost elements. MIDAS is in its second of four phases—proof of concept and system design. However, the schedule for the current program phase, which was to be completed in October 2011, is uncertain, and a key milestone, requirements review, is delayed. As a result, the completion date for the second phase, and its impact on subsequent phases, is unknown. FSA officials plan to revisit the cost and schedule estimates after completing requirements definition.

Program Scope Is Generally Defined, but Is Not Reflected in Outdated Cost Estimate

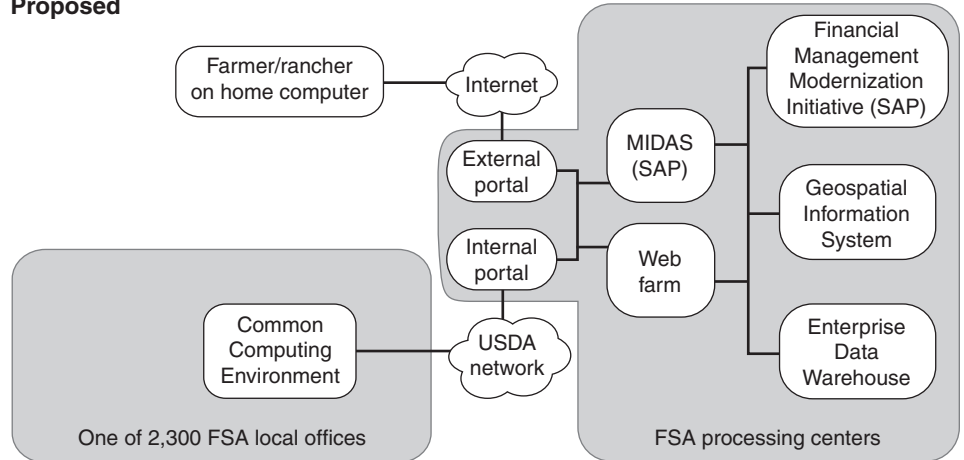
As currently defined, the scope of MIDAS includes modernization of FSA's systems for all of its 37 farm programs (listed in app. II). The modernization effort is to address all of the goals of MIDAS: replace aging hardware; reengineer business processes across all the farm programs; improve data access, accuracy, and security; and provide interoperability with the financial management, geospatial, and enterprise data initiatives. Figure 2 conceptually depicts the proposed systems, components, and interconnections, in contrast with those currently used to deliver farm program benefits.

Figure 2: Current and Proposed MIDAS Environments

Current



Proposed



Source: GAO analysis of USDA data.

The program's estimated life cycle cost is approximately \$473 million, with approximately \$305 million for program planning, requirements definition, system design and development, deployment, and program support through 2014. FSA considers the implementation cost estimate—

which was developed in 2007 and is the most current available—to be preliminary, with a large degree of uncertainty.¹⁹

FSA officials reported that approximately \$66 million has been obligated for the program from fiscal year 2009 to June 2011,²⁰ \$61 million of which has been obligated for seven contracts that supported MIDAS during our review.²¹ Approximately \$36 million has been obligated for the system integrator contract, which is to provide planning, development, design, and deployment. Approximately \$25 million has been obligated for the remaining six contracts, which are to provide project management support, development, independent verification and validation, software licenses, and hosting infrastructure. Table 1 describes these contracts.

¹⁹The variance in the estimated development cost is roughly estimated at -50% to +100%.

²⁰FSA officials reported in April 2011 that USDA had budgeted and approved \$50 million for MIDAS for fiscal year 2011.

²¹Approximately \$5 million has been obligated for acquisition support and government salaries and expenses.

Table 1: MIDAS Supporting Contracts

Dollars in millions		
Contract	Obligations FY09 to June 2011	Scope
Program management		
Project management support ^a	\$3.5	Supports MIDAS program office with project control, acquisition development, risk management, budget and finance, and overall project management
Enterprise project management office	6.3	Supports enterprise governance including planning, control reporting and communication, and some project-level process definition and reporting
Development		
Lean Six Sigma business process mapping ^a	3.5	Supports the MIDAS office to improve business processes and develop and maintain MIDAS requirements
Independent verification and validation		
Independent verification and validation	4.9	Independent oversight and review of the system integrator's deliverables and methodology
Software and infrastructure		
SAP software licenses/contracts	3.5	Software licenses to support the development and operation of MIDAS
Hosting services	3.3	Infrastructure needed to run the MIDAS system

Source: GAO analysis of FSA data.

^a In July 2011, an FSA official said that these had expired.

FSA officials stated that they have not revised the 2007 cost estimate because the scope of MIDAS has not changed. However, FSA's cost estimate for MIDAS does not reflect costs resulting from program changes identified since 2007, such as

- selection of SAP as the enterprise resource planning software and mechanism for enterprise reporting;
- workshops held with stakeholders in 2010 to identify business processes; and
- deployment of the financial management initiative and planned integration with the geospatial and enterprise data initiatives.

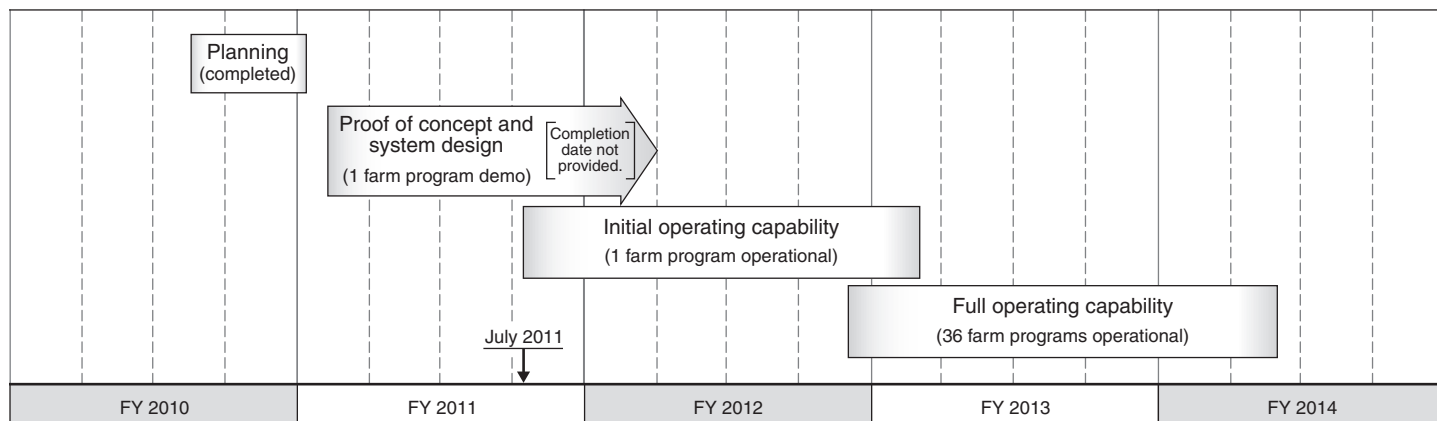
In addition, estimated costs have not been included for modernizing program processes that cannot be supported with the SAP software, or for implementing any new farm program requirements that may be enacted in the 2012 farm bill.

In April 2011, FSA officials stated that they would begin revising the program's cost estimate in September 2011 and would incorporate new information gained from requirements development.²² However, they could not provide a date for completing the revised estimate because this information was still being identified.

Design Milestones Have Slipped; Program Schedule Is Uncertain

MIDAS is to be executed in four phases with incremental deployment of system capabilities, as recommended by OMB.²³ FSA calls these four phases planning, proof of concept and system design, initial operating capability, and full operating capability. These phases were to run from fiscal year 2010 through fiscal year 2014, as shown in figure 3.²⁴ FSA completed the program planning phase in October 2010.

Figure 3: Implementation Schedule for MIDAS



Source: GAO analysis of agency data.

²²The MIDAS budget and cost management plan states that cost estimates will be based on our cost estimating guide, GAO, *Cost Estimating and Assessment Guide: Best Practices for Developing and Managing Capital Program Costs*, [GAO-09-3SP](#) (Washington, D.C.: March 2009).

²³OMB's *25 Point Implementation Plan to Reform Federal Information Technology Management* report, released in December 2010, advises agencies to use a modular system of development for IT projects.

²⁴Maintenance is planned through fiscal year 2018.

In April 2011, FSA officials reported that the second phase was under way and that the proof of concept demonstration was on schedule, but that key milestones for system design would not be completed as scheduled. FSA officials could not provide new completion dates for the system design milestones or the second phase. They stated that an update to the schedule, due in September 2011, would also not be completed as planned because information needed to revise the schedule is being identified as the second phase progresses. This uncertainty has implications for the remaining phases, as discussed in the following sections.

Project planning. This phase began in May 2010 and was completed in October 2010—1 month later than planned due to FSA’s requirement that the system integrator address deficiencies in its planning deliverables. During this phase, the system integrator developed—and FSA approved—planning documents that define and detail the management of processes, products, activities, and milestones for the succeeding phases of MIDAS, including a project plan, concept of operations, SAP implementation road map, technical development approach, organizational change management strategy, and data management plan. FSA also established a federal program office for MIDAS and filled most program office positions, including key management positions for the program director and deputy directors for requirements and project management, IT solutions, and change management/communications.

Proof of concept and system design. This phase, begun in November 2010, was scheduled to be completed in October 2011. The proof of concept is to demonstrate several functions of one farm program—the Marketing Assistance Loan farm program—with an interface to geospatial systems. This demonstration is to use SAP software in a stand-alone (i.e., not production) environment and is to validate certain SAP software functions. An FSA official stated that the first proof of concept demonstration was conducted in May 2011 and that field demonstrations are to be conducted through August 2011.

The system design portion of this phase entails three efforts—defining requirements, allocating requirements to systems, and designing system functions. To define requirements, FSA is analyzing the 37 farm programs to identify the required business processes, including the steps, tasks, and data currently used for these programs. These processes are also

being re-engineered or optimized by aligning them with nine common processes where possible.²⁵ Tasks that do not align with common processes will be identified as program-specific processes. Both common and program-specific business processes are to be captured and baselined as requirements. Technical requirements are to be defined in conjunction with business requirements and will specify computer processing power, data storage, network bandwidth, and computer upgrades to support the processing of MIDAS functions, among other needs. They are also to address modernization goals, including consolidation of farm program processing to two existing computing centers, eliminating the obsolete computers in the local offices; allowing internal and external access to MIDAS through Web portals; and integrating MIDAS with the other USDA and FSA modernization initiatives.

Following requirements definition, FSA plans to conduct an allocation analysis to determine which business requirements can be supported by the SAP software. Requirements that cannot be implemented using the SAP software are to be allocated to the Web farm for implementation. A high-level design of the MIDAS solution, to include both SAP and Web farm (non-SAP) system functions, will be based on this requirements allocation.

In April 2011, FSA officials stated that two key system design milestones—the system requirements review and the high-level design review—would not be held as scheduled. According to the December 2010 program schedule, milestones for these events were originally scheduled for May 2011 and July 2011, respectively. However, FSA officials do not plan to conduct the system requirements review until December 2011, and a new date for the high-level design review has not yet been set because additional information and analysis are needed to plan this milestone. As a result, the completion date for the second phase is uncertain.

Initial operating capability. This phase was to be conducted from July 2011 to December 2012—a schedule that has not yet been updated to reflect delays in the second phase. The initial activities of this phase are

²⁵FSA identified nine common processes that are used by more than one farm program: agreement modifications, agreements, application, assessment, audit, claims, payments, program management, and repayments.

to run concurrently with the proof of concept and system design phase. Detailed requirements are to be defined for the Marketing Assistance Loan farm program, including required interfaces, computers, data storage, and networks. Plans call for augmenting the high-level system design to reflect these requirements, implementing the design for modernized Marketing Assistance Loan operations, and deploying it to all local offices.

Full operating capability. This phase, scheduled from September 2012 to March 2014, is to include detailed requirements definition, design, and deployment for the 36 remaining farm programs and for farmer and rancher access to farm program services from their own computers. The schedule for this phase has also not been updated to reflect delays in the proof of concept and system design phase.

MIDAS Plans Reflect Many Leading Management Practices, but Could Be Strengthened

Delivering large IT modernization programs such as MIDAS on time and within budget presents challenges and risks. Program goals are more likely to be achieved when managers employ leading practices for managing program planning and monitoring, requirements, contracts, and risks. Prior to the proof of concept and system design phase, MIDAS plans were in place and managers were assigned for these practices. These plans largely incorporated certain leading practices, although each management area had at least one practice that was not fully satisfied.

Program Planning and Monitoring Are Partially Defined; Implementation Is Incomplete

The success of complex IT modernization initiatives such as MIDAS, which involve transforming business processes and integrating with other systems, requires effective program planning and monitoring to ensure that the intended results are achieved. The Software Engineering Institute, our work,²⁶ and recent OMB guidance²⁷ have identified leading practices that support effective planning and monitoring to include

- assigning a full-time project manager and committed business sponsor to guide the program;

²⁶*CMMI for Development*, version 1.2; [GAO-04-394G](#).

²⁷OMB, *25 Point Implementation Plan to Reform Federal Information Technology Management*.

-
- planning organizational change and communications management to obtain user acceptance of new ways of doing business;²⁸
 - establishing integrated project teams with external stakeholders and subject matter experts to facilitate coordination of project activities;
 - developing integrated project schedules to identify external dependencies among tasks and resources;
 - defining earned value management that is compliant with relevant guidelines²⁹ to manage contractor and project office development work; and
 - tracking and reporting the status of key program milestones—such as through OMB’s IT investment business case (known as the exhibit 300) and program status reports on OMB’s IT investment Web site (known as the IT Dashboard).³⁰

Of these six practices, FSA has satisfied three, partially satisfied two, and not satisfied one (see table 2). Specifically, FSA has assigned a program manager and a business sponsor, has planned and initiated organizational change and communications management, and planned for earned value management. However, it has not yet established an integrated project team that formally commits the support of IT programs related to the project, developed an integrated project schedule that specifies related IT program dependencies, or reported clearly on key MIDAS milestones to accurately convey program progress.

²⁸[GAO-09-3SP](#).

²⁹OMB and our cost guidance ([GAO-09-3SP](#)) call for monitoring project cost, schedule, and performance compliance using an industry standard (ANSI/EIA 748-B, Earned Value Management Systems, approved July 2007).

³⁰This Web site, at <http://it.usaspending.gov>, tracks major federal IT investments.

Table 2: FSA Plans and Actions to Address Leading Planning and Monitoring Practices

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Assign a program manager and business sponsor	X			As of October 2010, a full-time director and a business sponsor had been assigned. These roles are defined in the project management plan and charter. The business sponsor for MIDAS is the FSA Administrator.
Plan organizational change and communications management	X			The organizational change and communications plans call for stakeholder engagement, communications, organizational readiness, and training to facilitate program acceptance and to specify activities for these four areas. Plans also define the roles of the organization change and communications managers and call for monitoring and managing activities from design through deployment. FSA has assigned a manager for organizational change and communications and reported that it had established an enterprisewide modernization communications team; completed the initial phase of stakeholder analysis for an enterprisewide communications plan; conducted FSA staff training in development techniques; and had developed a Web site, newsletter, and brochure about the program, among other things.
Establish an integrated project team		X		The system integrator's project management plan calls for establishing an integrated project team comprised of FSA and contractor staff from MIDAS and other FSA modernization initiatives to facilitate external integration, interfacing, and dependencies with other projects, such as the financial management and geospatial initiatives. Even though the FSA CIO stated that he has been able to obtain staff to support MIDAS as needed, a chartered project team would better ensure that needed staff will continue to be available in the future. When we discussed this with FSA officials, they agreed that a chartered team would be helpful. As of April 2011, however, FSA had not chartered such a team.
Establish an integrated project schedule to identify external dependencies			X	Plans do not call for an integrated schedule that identifies external dependencies with the financial management, geospatial, and enterprise data initiatives, nor have these dependencies been incorporated into the program's schedules. Instead, FSA's documented schedule only includes tasks and dependencies within the program office. The inventory of program risks from November 2010 noted the need for integrated scheduling with other modernization initiatives and, at that time, FSA's CIO said that such a schedule was being developed. In March 2011, an FSA official provided a separate high-level schedule that identified dependent milestones between MIDAS and these initiatives, but it did not include the tasks that contributed to the dependencies or the associated resource commitments or contention. An FSA briefing in April 2011 noted that weak integration planning could result in inefficient use of funding, inability to properly scope the work, and unmet stakeholder expectations.
Define earned value management	X			Plans require the program to comply with relevant guidance for earned value management. The project management plan describes the earned value standards to be followed and requires establishing a program baseline; updating task performance, cost, and schedule status monthly; and comparing these monthly status updates to the approved baseline. Plans also require assigned staff to review all earned value management reports from contractors. Program office positions responsible for reviewing earned value management reports were staffed. (Contractor compliance requirements for earned value management are also discussed in the section on contract management practices.)

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Track and report the status of key milestones		X		Plans call for identifying, evaluating, and tracking program milestones, and USDA requires that programs report progress against milestones to the department on a monthly basis. MIDAS reported its progress against program milestones on the IT Dashboard in February 2011 and in its 2012 business case. However, the system blueprint milestone, reported as planned for completion in September 2011, is only one of several system blueprint milestones, and the others are not shown on the program schedule. Unless all the blueprinting milestones are depicted on the schedule and progress is presented for each increment, the current milestone will incorrectly convey that all system blueprinting is to be completed in 2011, rather than in 2014, as planned. FSA officials acknowledged that this blueprinting milestone could be misleading.

Source: GAO analysis of FSA data.

Without a committed integrated project team and an integrated project schedule that identifies MIDAS dependencies on initiatives outside the program office, the program may not obtain necessary and timely staff participation, expertise, and resources, and may not be able to adequately monitor integration with these initiatives.

Without clear milestone reporting, Congress, OMB, department and agency management, and other interested parties will have difficulty tracking the delivery of MIDAS capabilities.

Requirements Management Is Defined, but User Concerns Need to Be Fully Validated

Defining and implementing disciplined processes for developing and managing the requirements for a new system can help improve the likelihood that the system will meet user needs and that it will perform or function as intended. Leading practices for requirements development and management³¹ include, among other things,

- establishing a policy for developing and managing requirements;
- assigning and defining the role and responsibilities for a requirements manager;
- eliciting and validating user needs;

³¹CMMI for Development, version 1.2.

- defining a disciplined change control process; and
- ensuring that system requirements are traceable back to business requirements and forward to detailed requirements, design, and test cases.

FSA fully satisfied four of these practices, and partially satisfied one (see table 3). MIDAS requirements and change management plans address all of these leading practices. However, one practice—the validation of user needs—was not fully satisfied due to incomplete validation of user needs (called “pain points”) that had been identified prior to the award of the system integrator contract.

Table 3: FSA Plans and Actions to Address Leading Requirements Management Practices

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Establish a requirements development and management policy	X			The requirements management plan calls for requirements development and management processes based on the SAP methodology for gathering, decomposing, and documenting requirements (called blueprinting); supporting systems and infrastructure (called landscaping); and integrating with FSA’s enterprise architecture. It also specifies the tools that will support these processes during the MIDAS life cycle.
Assign and define a requirements manager position	X			The project management plan defines the role and responsibilities of the requirements manager. This position had been staffed as of October 2010.
Elicit and validate user needs		X		The requirements management strategy calls for eliciting desired or required system capabilities from users, validating them, translating them into system requirements, and obtaining approval before deployment. It specifically calls for eliciting system capabilities via workshops with stakeholders from all the farm programs. These capabilities are to be translated or decomposed into the baseline system-level requirements and approved by stakeholders at the system requirements review, validated against the initial design at the preliminary design review, and approved for implementation at a system design review. Elicitation of system capabilities for all FSA farm programs was conducted with stakeholders via workshops conducted with the systems integrator in late 2010. In addition to this elicitation effort, FSA previously obtained user requirements from field staff—referred to as “pain points”—prior to the systems integrator contract award. ⁹ Agency officials initially told us in December 2010 that they did not plan to validate the pain points against the requirements being developed through blueprinting, but in April 2011, they reported that the pain points were being tracked to MIDAS requirements. However, the mapping they provided in early May 2011 was incomplete, in that only 57 percent of the original 591 pain points were represented.

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Define a disciplined change control process	X			The requirements management and change management plans call for several review levels for change requests, including the system integrator's Engineering Review Board and Change Control Board, and the MIDAS Change Control Board, which is the final authority in approving change requests. The reviewing parties for a change depend on the impact of the change. Changes are to be logged and tracked in an SAP tool called Solution Manager. Once changes have been validated in the development environment, Solution Manager is to be used to transport the changes to the next environment in the life cycle, such as test or quality assurance.
Ensure that requirements trace forward and backward among development products	X			The requirements management plan calls for bidirectional traceability among requirements products, both backward to business requirements and forward to detailed system requirements and test cases. The repository for this traceability, called a requirements traceability matrix, is a required deliverable of the system integrator contract in conjunction with the system requirements review milestone.

Source: GAO analysis of FSA data.

⁸USDA describes a "pain point" as an issue or weakness that hinders the progress of a process—specifically for a farm benefit program. Examples of these pain points include eligibility determinations that are not consistent and calculations on farm and crop acreage that are cumbersome because they require separate transactions to compute.

Unless all the concerns previously expressed by field staff as "pain points" are systematically validated with respect to MIDAS requirements and appropriately resolved by the new system or some other means, MIDAS may not meet user expectations and its acceptance by field staff may be jeopardized.

Contract Management Is Defined, but Tasks Could Be Better Delineated among Contractors

Effective project management includes clear definition of authority, duties, and responsibilities among contractors, and between contractors and program management. According to the Software Engineering Institute and our prior work,³² effective processes to manage and oversee contracts that support IT projects include

- establishing and maintaining a plan for managing and overseeing the contracts;

³²CMMI for Acquisition, version 1.2, and GAO, *Information Technology: Immigration and Customs Enforcement Needs to Fully Address Significant Infrastructure Modernization Program Management Weaknesses*, [GAO-07-565](#) (Washington, D.C.: Apr. 27, 2007).

- assigning responsibility and authority for performing contract management and oversight;
- identifying the contract work to be performed and the associated acceptance criteria;
- conducting reviews with contractors to ensure cost and schedule commitments are being met and risks are being managed; and
- establishing processes for verifying and accepting contract deliverables.

FSA fully satisfied four of these practices and partially satisfied one (see table 4). The system integrator contract and supporting documents indicate that FSA has planned to use these practices and has applied them in managing this contractor. In addition, the project management plan describes the management approach for all the contracts that support MIDAS, specifies responsibility for overseeing the contracts, and defines the process for reviewing contractor performance. The plan also requires that contractor deliverables and acceptance criteria be specified in the contracts. However, the plan does not clarify contractor roles for tasks supported by more than one contractor, and does not require that those roles be delineated in other program or contractor documents. Table 4 presents a detailed assessment of how FSA has addressed leading contract management practices.

Table 4: FSA Plans and Actions to Address Leading Contract Management Practices

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Establish and maintain a contract management plan		X		The project management plan describes plans for managing contracts. It describes the seven contracts and the contract management processes, including earned value management compliance and system integrator deliverable requirements and reviews. The plan references contract-specific documents for details on contract management processes. However, the plan, the project schedule, a program report, and the program's inventory of risks indicate instances where two contractors support the same task, with no clarification of their unique roles. Specifically, both the enterprise program management office and project management support contractors support project-level oversight, and both the system integrator and business process management contractors are to develop requirements. FSA officials acknowledged the instances of poorly described and duplicative tasks, and stated that the duplicative project management and business process support would expire in 2011. ^a

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Assign contract management responsibility and authority	X			FSA contract managers for each contract and for overall contract management are defined in the project management plan. All contract manager positions had been filled as of October 2010.
Identify the contract work and acceptance criteria	X ^b			The project management plan references standard operating procedures for review of all of the contract deliverables and describes additional reviews for system integrator work. The system integrator contract identifies the contract work. FSA officials stated that content and acceptance criteria for contract deliverables are further defined in deliverable descriptions. One example of a deliverable description we reviewed includes acceptance criteria, such as consistency with SAP best practices and federal records management laws and regulations, for the system integrator's deliverable "Strategy Plan to Decompose the Requirements Document."
Conduct cost, schedule, and risk reviews with contractors	X ^c			The project management plan requires that contractors comply with relevant earned value management guidance to support the monthly review of contract costs and schedule. Reviews are to be performed by the contracting officer's technical representative and at monthly program management reviews. The project management plan also requires that contractors comply with the risk management plan, which requires that contractors report risks for federal manager review, and it describes this reporting process. The system integrator contract requires compliance with relevant earned value management requirements. Earned value and risk are to be reported monthly.
Establish processes for verifying and accepting deliverables	X			Project management plans define processes for verifying and accepting system integrator contract deliverables at a performance gate review and by an independent contractor. The September 2010 gate review of system integrator planning deliverables was documented. The independent review of the system integrator's "Strategy Plan to Decompose the Requirements Document," based on its deliverable description, was also documented.

Source: GAO analysis of FSA data.

^a In July 2011, an FSA official confirmed this expiration.

^b Our validation was limited to the system integrator contract and specific deliverables.

^c We did not evaluate compliance with the earned value management guidance.

Unless program plans, schedules, and reports clearly delineate the work products and activities of individual contractors, program staff, contractors, and stakeholders may be confused about contractor responsibilities, which may negatively impact program deliverables or make it difficult to hold contractors accountable. By eliminating contracts with the potential for duplicate or confusing efforts, FSA has resolved the ambiguous roles contained in its plans and can now clearly present the unique roles of its contractors in updates to its program plans and other artifacts.

Risk Management Is Defined and an Inventory Established, but Risks Are Not Regularly Tracked

Risk management is critical in complex IT modernization programs such as MIDAS to detect and address risks before they adversely impact project objectives. Leading practices and our prior work³³ recommend

- establishing and documenting risk management processes in a risk management plan from the program’s inception;
- assigning a risk manager with the authority to oversee the plan and its execution;
- defining a risk inventory, and documenting risks in it, along with decisions about their priority, probability of occurrence, and impact; and
- regularly tracking the status of risks and mitigation efforts and providing this input to project managers.

FSA satisfied three of these practices and did not satisfy a fourth (see table 5). Specifically, it has defined its risk management processes in a risk management plan, designated a risk manager, and established a risk inventory. However, it has not maintained the risk inventory to track and report the current status of risks and mitigation efforts to inform MIDAS managers.

Table 5: FSA Plans and Actions to Address Leading Risk Management Practices

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Establish and document risk management processes in a plan	X			The risk management plan defines processes for managing risk, including capturing risks in an inventory called a risk register, prioritizing them, determining their probability and impact, defining a mitigation approach, and reporting the status of the risks in the register.
Assign a risk manager	X			The risk management plan defines the role of the risk manager. This position had been staffed as of October 2010. ^a

³³CMMI for Acquisition, version 1.2, [GAO-10-145](#), and [GAO-07-565](#).

Leading practice	Satisfied	Partially satisfied	Not satisfied	FSA plans and actions
Define a risk inventory and document risks	X			The risk register defined in the risk management plan includes risk descriptions, priority (rating), probability of occurrence, impact, mitigation approach (response), and status. The program's risk register of November 2010 was populated with risks and this associated information. ^b The register included key risks and concerns identified in MIDAS plans, oversight reviews, and in this report. For example, plans and oversight reviews cite risks with the integration of other USDA systems, the complexity of modernizing farm programs and converting existing data, and gaps in meeting farm program requirements using the commercial SAP solution, which were also in the risk register. In addition, the register includes risks associated with management practices reviewed in this report, such as cost and schedule estimates and user requirements validation.
Regularly track the status of risks			X	The risk management plan calls for risk status to be updated for review at biweekly meetings. The risk register of January 2011, including the status of risks and risk mitigation, was not updated from the November 2010 version. In the risk register FSA provided in early May 2011, the risk identification scheme had changed and risk identifiers did not correspond to the same risks in the previous registers. As a result, we could not determine the status and disposition of the November risks as of the end of our review. For instance, risk #6 in the November register is "SAP technology hasn't been deployed publicly," while in the May register, risk #6 reads "MIDAS solution will not be able to accommodate the farm bill." Moreover, when risks were clearly similar in both registers, the status of actions to address the November mitigation strategy was not clearly presented in the May register. Although FSA was not tracking risks, the May risk register introduced new risks, some of which did not have responses or resolution plans documented. FSA officials stated that they intend to mature their risk management process to regularly update and track risks and to discuss them in weekly MIDAS status meetings.

Source: GAO analysis of FSA data.

^aAccording to the MIDAS risk management plan, the risk manager is also the Deputy Director for Requirements and Program Management.

^bWe did not assess whether FSA assigned the risk indicators according to the criteria in the risk management plan.

Identifying risks according to the MIDAS risk management plan has provided FSA managers with an initial understanding of the risks faced by the program. However, until FSA ensures that its risks have been consistently identified throughout the course of the program and regularly updates the status of its risks, it cannot ensure that it is effectively managing the full set of risks it faces or that progress is being made in mitigating the risks throughout the life cycle of MIDAS.

MIDAS Governance Is Not Clearly Defined and Does Not Follow Department Investment Guidance

Oversight and governance of IT investments help to ensure that the investments meet cost, schedule, and performance goals. When an investment is governed by multiple boards or bodies, the roles and coordination among these bodies should be clearly defined, including the processes and criteria for escalating issues. In addition, we³⁴ and OMB³⁵ recommend that federal agencies establish an executive board, typically at the department level, to oversee major IT investments. This board should review investments against criteria at key decision points, such as investment selection. In addition, OMB requires departmental oversight of the business cases for major IT investments and monthly status updates³⁶ of program cost, schedule, and performance information. Consistent with federal guidance, USDA requires an executive board to oversee major IT investments at key decision points and a monthly status review.

Oversight and governance of MIDAS is the responsibility of several department and agency bodies. Department-level oversight is performed by the Senior Management Oversight Committee; the Project Management/Design Decision Committee, which reports to the senior committee; and a proposed third body called the Modernization Review Board. In addition, the Modernization Program Management Review Board operates at the agency level. FSA has not clearly identified this board's position in the oversight hierarchy. Table 6 summarizes the purpose and meeting schedules for these bodies.

³⁴GAO-04-394G, GAO-10-145, and GAO, *United States Coast Guard: Improvements Needed in Management and Oversight of Rescue System Acquisition*, GAO-06-623 (Washington, D.C.: May 31, 2006).

³⁵OMB Cir. A-11, *Capital Programming Guide, Supplement to Part 7: Planning, Budgeting, and Acquisition of Capital Assets* (Washington, D.C.: June 2006).

³⁶GAO, *Information Technology: OMB's Dashboard Has Increased Transparency and Oversight, but Improvements Needed*, GAO-10-701 (Washington, D.C.: July 16, 2010).

Table 6: MIDAS Oversight and Governance Bodies

Body	Purpose	Meeting schedule	Membership levels
Senior Management Oversight Committee	Oversee and review MIDAS modernization progress at the USDA level. Review MIDAS at system integrator gates.	monthly	USDA, FSA
Project Management/Design Decision Committee	Provide direction and decisions for MIDAS in areas such as meeting timelines, ensuring proper talent and skills, design specifications, supplementing consultants, meeting regulations, and meeting project goals. Manage cross-agency dependencies.	monthly	USDA, FSA
FSA Modernization Program Management Review Board	Review the major IT initiatives within the agency and resolve key interdependencies from an IT perspective.	monthly	FSA
USDA Modernization Review Board (proposed)	Improve MIDAS governance in areas such as USDA enterprise solution management, cross-initiative architectural and technical integration (projects), cross-organizational architectural and technical integration (support groups), and technical risk management.	not specified	USDA

Source: GAO analysis of FSA data.

However, the roles and coordination of these bodies are not clear in the following respects:

- Certain roles have been assigned to governance bodies without clear delineation of their scope and criteria for escalating issues.** Charters and plans for the department Project Management/Design Decision Committee and the agency Modernization Program Management Review Board describe similar—and potentially overlapping—roles for overseeing agency IT initiatives. Moreover, the extent of oversight by the active bodies and criteria for escalating issues related to cost, schedule, performance, and risk have not been defined in charters or plans.
- A key role has not been assigned.** According to the MIDAS risk register, the Project Management/Design Decision Committee and Senior Management Oversight Committee are to coordinate enterprise resource planning among MIDAS and other initiatives, such as financial management. However, this coordination role has not been described in charters or plans.³⁷

³⁷FSA officials reported that another body that was to perform this role, called the Enterprise Resource Planning Center of Excellence, is not overseeing MIDAS.

-
- **The role of the proposed board has not yet been defined.** FSA officials stated that the USDA Modernization Review Board is to improve MIDAS governance, but its oversight responsibilities and processes to do so have not yet been defined.

These concerns have been recognized to some extent by FSA and the department, but remain unresolved. In October 2010, the FSA Modernization Program Management Review Board appeared to be aware of this lack of clarity and recommended that a directory of governance boards be developed and their respective responsibilities, decision-making processes, and escalation path be defined. An April 2011 Project Management/Design Decision Committee briefing noted that the proposed Modernization Review Board would mitigate the risk of integrating MIDAS with other systems. However, as of May 2011, these recommended improvements had yet to be provided.

Regarding oversight of MIDAS, none of these boards reviewed MIDAS at key decision points using criteria defined in department guidance. An official from the department's CIO office stated that the Senior Management Oversight Committee serves as the IT investment executive board recommended by OMB and required by USDA, although the committee's charter and other governance plans do not specify this role. The committee reviewed MIDAS at the planning gate in October 2010, but did not use the department's review criteria. Instead, the review focused on contract deliverables and did not include project management office documents such as the MIDAS risk assessment and project management plan, as called for by department guidance. On the other hand, department officials reported that MIDAS has complied with department requirements for business case and monthly status reviews. A department official reported that USDA's CIO office has conducted monthly reviews of MIDAS status and its business case using the department's criteria and that the status is posted on the IT Dashboard.³⁸ Nevertheless, the dashboard reported in January and March 2011 that improved oversight is needed for MIDAS.

The lack of clarity and definition for the roles of MIDAS oversight and governance bodies may result in duplication or voids in program oversight

³⁸The IT Dashboard (<http://it.usaspending.gov>) tracks the performance of major federal IT investments. The dashboard CIO rating for MIDAS was 3 out of 5 in January 2011 and 4 out of 5 in March 2011.

and wasted resources. Moreover, because MIDAS is not being fully governed according to department investment guidance, the department may not be rigorously monitoring and managing the program and its risks, and may not have the information it needs to make timely and appropriate decisions to ensure the success of MIDAS.

Conclusions

After years of planning, USDA is moving forward with its farm program modernization effort known as MIDAS, which intends to remedy long-standing problems with the supportability, efficiency, and accuracy of existing systems. The agency has made key decisions regarding the scope of MIDAS, the contractors that will support system design and development, and the incremental approach it will use to execute the program. However, FSA's implementation cost estimate has yet to reflect decisions and activities that have occurred since the estimate was developed in 2007. In addition, key events for the proof of concept and system design phase, currently under way, have been delayed.

Consequently, agency managers are revising the plans for completing MIDAS requirements definition, system design, and the cost and schedule for the program, but are unlikely to finalize these plans until fiscal year 2012. Given the agency's prior difficulty with developing reliable cost and schedule estimates, and our corresponding prior recommendation, it is critical that FSA and USDA adopt a rigorous and credible approach for revising estimates and complete them in a timely manner, so that the department has a basis for effectively managing program progress and making decisions about needed adjustments.

The challenges USDA is facing in meeting its program commitments are more likely to be overcome if it can adopt and execute effective management practices. The management framework established by the agency in a series of plans reflects many leading practices for program planning and monitoring, requirements, contracts, and risk. Moreover, FSA has followed through on these plans to some extent by staffing government managers in these areas and instituting mechanisms to promote use of the practices, such as contract provisions for earned value management. However, MIDAS management could be further strengthened through improved definition and execution of these and other leading practices, specifically by chartering and operating an integrated project team; fully documenting MIDAS dependencies on other departmental IT initiatives in an integrated project schedule; clearly identifying and reporting key incremental milestones to OMB; validating all previously identified user concerns against MIDAS requirements; clearly delineating contractor roles and responsibilities; and consistently

identifying and regularly tracking and reporting the status of MIDAS risks. By applying its plans and embracing other proven management practices, FSA will stand a better chance of surfacing and resolving issues before they can derail the program.

The agencywide impact of MIDAS and its dependence on other IT initiatives point to the need for clearly defined and effectively executed oversight. However, the roles and coordination among oversight bodies are not clearly defined and USDA's well-defined investment oversight guidance is not being fully executed. Providing adequate and efficient oversight for MIDAS in such an environment presents a challenge that could be avoided if USDA and FSA delineate governance roles and responsibilities and execute them accordingly.

Recommendations for Executive Action

To increase the likelihood that the United States Department of Agriculture (USDA) will be able to successfully define, develop, and deploy the Modernize and Innovate the Delivery of Agricultural Systems (MIDAS) program, we recommend that the Secretary of Agriculture direct the chief information officers of USDA and the Farm Service Agency (FSA) to take the following three actions:

- To ensure that the department can effectively oversee MIDAS cost, schedule, and performance commitments, FSA should
 - develop timely cost estimates for MIDAS's remaining phases, its overall development and deployment, and its life cycle, to incorporate the program changes previously omitted and any others recently identified and
 - develop complete and detailed schedules for the program's current and remaining phases that take into account the milestone delays from the program's second phase and a requirements baseline.
- To ensure that FSA is employing leading practices for program planning and monitoring, requirements management, contract management, and risk management for MIDAS, the agency should

-
- charter and operate an integrated project team that commits stakeholders to the program from other USDA information technology (IT) initiatives;
 - establish an integrated project schedule that identifies tasks, dependencies, and resource commitments and contention between MIDAS and other department IT initiatives;
 - clearly track key milestones, and report their status in the program's business case and on the Office of Management and Budget's IT Dashboard;
 - validate all of the 591 user pain points against the requirements and document the results of this validation, including points that will not be addressed by MIDAS;
 - update the program's management plans to clearly delineate the roles and responsibilities of contractors assigned to the same tasks; and
 - document the status of resolved and unresolved risks initially identified in November 2010, identify and maintain any unresolved risks from that period in the current risk register, and regularly track risks and update the risk register according to the program's risk management plan.
- To ensure the effectiveness of MIDAS oversight and the efficiency of its governance bodies, the department and agency should collaborate to
 - delineate the roles and responsibilities of the governance bodies and clarify coordination among them, to include criteria for escalating issues and
 - document how the department is meeting its policy for IT investment management for MIDAS, to include investment reviews.

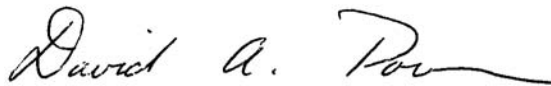
Agency Comments

In written comments on a draft of this report signed by the Administrator, Farm Service Agency, and reprinted in appendix III, USDA generally agreed with the content and recommendations and described actions and time frames to address the recommendations. For example, the

department stated that it will revise MIDAS schedule and cost estimates for this year's capital planning submission based on fiscal year 2011 planning, requirements, and design sessions, and will be able to develop more precise estimates at the completion of primary blueprinting and design in the first quarter of fiscal year 2012. The department described improvements to address our other recommendations, including integration processes with other initiatives; requirements validation; risk management; and department-level governance, to be completed by the end of the second quarter of fiscal year 2012.

We are sending copies of this report to interested congressional committees, the Director of the Office of Management and Budget, the Secretary of Agriculture, and the Administrator of the Farm Service Agency. In addition, this report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staffs have any questions about this report, please contact me at (202) 512-9286 or at pownerd@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 IV.



David A. Powner,
Director, Information Technology Management Issues

Appendix I: Objectives, Scope, and Methodology

Our objectives were to determine (1) the scope and status of the Modernize and Innovate the Delivery of Agricultural Systems (MIDAS) program; (2) whether MIDAS has appropriate program management; and (3) whether MIDAS has appropriate executive oversight and governance.

To determine the program's scope and status, we reviewed planning documents to identify the farm programs included in MIDAS, the required interfaces to other United States Department of Agriculture (USDA) and Farm Service Agency (FSA) modernization initiatives, and the proposed technical approach to the program. We also reviewed the fiscal year 2012 business case (called the exhibit 300), program schedules, oversight reviews from October 2010, and a 2010 FSA report to Congress to identify the active contracts supporting MIDAS and to determine the program's phases, due dates, and phase completion status. To determine whether FSA completed the planning phase as scheduled, we identified the deviation between the planned and actual completion dates. We also examined selected products produced during that phase. We identified the cost estimate and its limitations using these sources and a 2009 third-party report to Congress on FSA modernization. We interviewed USDA and FSA officials to clarify information in the documents we reviewed and to more fully understand the program's progress and status.

To determine whether MIDAS has appropriate program management, we identified leading management practices for four areas that we and others have previously found to be important for the success of large information technology (IT) programs—planning and monitoring, requirements management, contract management, and risk management.¹ We then reviewed plans to determine if they addressed these leading practices. For the four management areas, we examined plans, organization charts, and program records to determine whether and when managers had been assigned. To the extent that MIDAS had progressed to a stage where implementation of these practices would be appropriate, we reviewed program artifacts and interviewed program officials to determine the extent to which the practices were in place.

¹Software Engineering Institute, *Capability Maturity Model® Integration for Development (CMMI)*, version 1.2 (Pittsburgh, Penn., August 2006) and Software Engineering Institute, *Capability Maturity Model® Integration for Acquisition (CMMI)*, version 1.2 (Pittsburgh, Penn., November 2007).

We assessed a practice as being satisfied if the evidence provided by USDA and FSA officials demonstrated all aspects of the leading practice. We assessed a practice as being not satisfied if the evidence did not demonstrate any aspect of the leading practice, or if no evidence was provided by USDA or FSA for that practice. Finally, we assessed a practice as being partially satisfied if the evidence demonstrated some, but not all, aspects of the leading practice. Additional considerations in our evaluation of each management area follow.

- **Project planning and monitoring:** We compared program plans, including the project management plan and supporting documentation, against leading practices to determine whether such practices were specified in the plans. We also examined program artifacts and records to determine the extent to which an integrated project team, an integrated project schedule with external dependencies, and tracking and reporting of program progress outside the program were in place. Due to the early stage of the program, we did not verify whether earned value management had been executed and reported as planned or whether organizational change and communications activities had been executed as planned.
- **Requirements management:** We compared the requirements management plan and related documents against leading practices to determine whether such practices had been specified in the plans. Because requirements were in the early stages of being defined during the period of this review, we did not verify whether FSA was executing its requirements management approach as planned. However, we reviewed a 2008 requirements document containing previously elicited user requirements and interviewed FSA officials to determine how those requirements had been validated.
- **Contract management:** We compared program plans, including the project management plan and supporting documentation, against leading practices to determine whether such practices had been specified in the plans. Due to the critical role of the system integrator contract in achieving program goals, we focused our assessment on this contract, the deliverables specified in this contract, and the review criteria for one deliverable—the strategy plan to decompose the requirements document. We verified whether the review criteria had been applied to this deliverable. We did not verify whether other planning phase contract deliverables had been evaluated by the gate review panel according to corresponding review criteria. We compared the descriptions of contractor tasks from contract management documents to each other and when we identified similar

or identical tasks for different contractors, we interviewed FSA officials to obtain their explanations for the roles of each contractor and to clarify the contract management documentation. We reviewed the risk inventory to determine whether duplicate contractor roles had been identified as risks and how the risks were described.

- **Risk management:** We compared the risk management plan and supporting documentation against leading practices to determine whether such practices had been specified in plans. We also reviewed the November 2010 risk inventory to assess whether risks had been aligned with risk factors such as mitigation plans and status. We did not assess whether FSA assigned the risk indicators according to the criteria in the risk management plan. To assess whether the risk inventory was being updated, we compared the November 2010 risk inventory to risk inventories from January 2011 and May 2011 to characterize overall changes to risks, mitigation strategies, and status, and to determine whether the inventories clearly captured progress in addressing selected risks.

To determine whether MIDAS has appropriate executive oversight and governance, we reviewed USDA guidance for investment management, project plans, charters, and meeting minutes for the governance bodies, agency presentations, and 2009 and 2010 USDA and FSA reports to Congress to identify the executive oversight and governance bodies, responsibilities, and hierarchy for MIDAS. We also interviewed USDA and FSA officials about MIDAS governance structure and practices. We compared the information we obtained with USDA's capital planning and investment control guidance, which comports with federal IT investment management guidance, and with our IT investment management framework² to ascertain whether USDA had complied with its own guidance for overseeing the investment and the extent to which governance bodies, their responsibilities, and processes had been defined.

We performed our work at the USDA office in Washington, D.C. We conducted this performance audit from October 2010 to July 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain

²GAO, *Information Technology Investment Management: A Framework for Assessing and Improving Process Maturity*, [GAO-04-394G](#) (Washington, D.C.: March 2004).

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.

Appendix II: MIDAS Farm Programs

Farm program

1. Asparagus Market Loss Program
 2. Average Crop Revenue Election
 3. Biomass Crop Assistance Program
 4. Conservation Reserve Enhancement Program
 5. Conservation Reserve Program
 6. Cottonseed Program
 7. Dairy Indemnity Payments Program
 8. Direct and Counter-Cyclical Payments Program
 9. Durum Wheat Quality Program
 10. Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish
 11. Emergency Conservation Program
 12. Emergency Forest Restoration Program
 13. Emergency Forestry Conservation Program
 14. Emergency Livestock Assistance Program
 15. Farm Storage Facility Loan Program
 16. Farmable Wetlands Program
 17. Geographically Disadvantaged Farmer or Rancher
 18. Grassland Reserve Program
 19. Hard White Wheat Development Program
 20. Karnal Bunt Program
 21. Livestock Forage Disaster Program
 22. Livestock Indemnity Program
 23. Loan Deficiency Payments
 24. Marketing Assistance Loans
 25. Milk Income Loss Contract Program
 26. Non-Insured Crop Disaster Assistance Program
 27. Oil Seed Quality Incentives Program
 28. Source Water Protection Program
 29. Sugar Loan Program
 30. Sugar Storage Facility Loan Program
 31. Supplemental Revenue Assistance Payments Program
 32. Tobacco Transition Payment Programs
 33. Trade Adjustment Assistance for Farmers Program
 34. Transition Incentives Program
 35. Tree Assistance Program
-

Appendix II: MIDAS Farm Programs

Farm program

36. Voluntary Public Access and Habitat Incentive Program

37. Boll Weevil Eradication Loan Program

Source: FSA reported data.

Appendix III: Comments from the Department of Agriculture



United States
Department of
Agriculture

Farm and
Foreign
Agricultural
Services

Farm
Service
Agency

Office of the
Administrator

1400 Independence
Ave, SW
Stop 0501
Washington, DC
20250-0501

July 6, 2011

TO: David A. Pownor
Director, Information Technology Management
Government Accountability Office

FROM: Bruce Nelson
Administrator *Bruce Nelson*
Farm Service Agency

SUBJECT: Response to GAO-11-586 Draft Report: USDA SYSTEMS
MODERNIZATION - Management and Oversight Improvement Are
Needed

The U.S. Department of Agriculture (USDA) generally agrees with the content and recommendations in the draft report.

Based on the planning, requirements and design sessions in Fiscal Year (FY) 2011, USDA will review and revise as appropriate the overall schedule, costs and milestones and submit them as part of this year's Office of Management and Budget business case/capital planning submission process. In addition, at the completion of the primary blueprinting and design phase in the first quarter of FY 2012, the Modernize and Innovate the Delivery of Agricultural Systems (MIDAS) program will be able to more precisely estimate the cost and iterative schedules for the solution deployment phases by the end of the second quarter of FY 2012.

USDA also will complete the program management plan and risk management improvements by the end of the second quarter of FY 2012. This effort will include the validation of the user pain points against the requirements. And, USDA will develop the processes for maintaining the external project team stakeholder commitment and integrated initiative schedule.

In addition, to ensure that the USDA Farm Service Agency (FSA) is employing leading practices for program planning and monitoring requirements, management, contract management, and risk management; the FSA, in coordination with the USDA Chief Information Officer, the Office of the Under Secretary for Farm and Foreign Agriculture Services, and relevant Departmental agency heads, will assess and re-charter the initiative governance. The charter, sponsored by the Secretary, will be completed by the end of the second quarter of FY 2012, including a delineation of the roles, responsibilities and processes.



USDA is an equal opportunity provider and employer.

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

David A. Powner, (202) 512-9286 or pownerd@gao.gov

Staff Acknowledgments

In addition to the contact name above, the following staff made key contributions to this report: Paula Moore (assistant director), Neil Doherty, Claudia Fletcher, Nancy Glover, Javier Irizarry, and Karl Seifert.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday afternoon, GAO posts on its Web site newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to www.gao.gov and select "E-mail Updates."

Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's Web site, <http://www.gao.gov/ordering.htm>.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm

E-mail: fraudnet@gao.gov

Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Ralph Dawn, Managing Director, dawnr@gao.gov, (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548

