



Testimony

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Government Information, Federal Services, and
International Security, Committee on Homeland Security
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2010 CENSUS

Preparations for the 2010 Census Underway, but Continued Oversight and Risk Management Are Critical

Statement of Mathew J. Scirè, Director,
Strategic Issues

and

David A. Powner, Director,
Information Technology





Highlights

Highlights of [GAO-07-1106T](#), testimony before the Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security, Committee on Homeland Security and Governmental Affairs, U.S. Senate

Why GAO Did This Study

The decennial census is a Constitutionally-mandated activity that produces critical data used to apportion congressional seats, redraw congressional districts, and allocate billions of dollars in federal assistance. The Census Bureau (Bureau) estimates the 2010 Census will cost \$11.5 billion, making it the most expensive in the nation's history after adjusting for inflation. This testimony, based primarily on GAO's issued reports and preliminary observations from our ongoing work, discusses the extent to which the Bureau has (1) developed a comprehensive project plan with the most current cost data; (2) incorporated lessons learned from Dress Rehearsal activities; (3) managed automation and technology for the reengineered census; and (4) planned for an accurate census in areas affected by Hurricanes Katrina and Rita.

What GAO Recommends

At this time, GAO is not making new recommendations, but past reports recommended that the Bureau take steps to develop a project plan for the 2010 Census, further test software for the Local Update of Census Addresses (LUCA) program, and promote an accurate census in areas affected by hurricanes Katrina and Rita. The Bureau generally agreed with these recommendations and has begun to implement some of them.

www.gao.gov/cgi-bin/getrpt?GAO-07-1106T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Mathew J. Scire at (202) 512-6806 or sciremj@gao.gov.

2010 CENSUS

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What GAO Found

The Bureau is conducting its Dress Rehearsal of the 2010 Census, the last opportunity it will have to test its design under census-like conditions. Given the importance of a successful enumeration and the complexities of enumerating a hard-to-count population in a more technology-dependent census, our message remains that the risks associated with the decennial must be closely monitored, evaluated, and managed. GAO found that the Bureau is developing but has not yet completed a comprehensive project plan that includes milestones, itemized costs, and measurable goals, nor has it updated the 2010 life-cycle cost estimate to reflect current information from testing. Having a comprehensive project plan and updated cost information will allow the Bureau to manage the operations and cost of the decennial census. Moreover, GAO observed technical problems with the handheld computing devices used in the Dress Rehearsal by field staff for address canvassing (in which the Bureau verifies addresses). If the device does not function as expected or needed, little time will be left for the Bureau to take corrective action. In addition, during the LUCA Dress Rehearsal, the Bureau did not fully test software tools intended to reduce burden on participants. Also, the Bureau's level of reliance on automation and technology for the 2010 Census, at an estimated cost of \$3 billion, makes effective contractor oversight (of cost, schedule, and technical performance) and risk management activities imperative. Finally, in the Gulf Coast Region, the condition of the changing housing stock is likely to present additional challenges for the address canvassing operation and subsequent operations. However, the Bureau has not finalized plans for modifying the address canvassing operation or subsequent operations in the Gulf Coast region.

Timeline of Selected Key Decennial Events

Dates	Decennial activity
Jan. 2007–Jan. 2010	Local Update of Census Addresses (localities assist in updating address lists and maps)
Feb. 2006–June 2009	2008 Dress Rehearsal (Bureau's rehearsal of all planned decennial operations)
Jan. 2008	Opening of 12 Regional Census Centers
Oct. 2008	Opening of about 455 Local Census Offices
Apr.–Sept. 2009	Address listing activities (staff validate address lists and maps)
April 1, 2010	Census Day
Apr.–July 2010	Nonresponse follow-up (field staff follow-up in person at housing units of nonresponding persons)
Dec. 31, 2010	Delivery of apportionment counts to the President
Mar. 31, 2011	Complete delivery of redistricting data to the states

Source: GAO summary of Census Bureau data.

Mr. Chairman, Mr. Coburn, Members of the Subcommittee:

Thank you for the opportunity to be here today to discuss the status of the Census Bureau's (Bureau) preparations for the 2010 Census. Our testimony today is based on issued and ongoing work and addresses the Bureau's efforts to prepare for the next decennial census by (1) having a strategic plan in place to help control costs; (2) incorporating lessons learned from the 2008 Dress Rehearsal operation underway, including the use of handheld computing devices; (3) managing automation and technology that are an integral part of the reengineered census; and (4) planning how to ensure an accurate population count in areas affected by Hurricanes Katrina and Rita.

As you know, Mr. Chairman, the decennial census is a critical national effort mandated by the Constitution. Census data are used to apportion seats in the Congress, redraw congressional districts, allocate billions of dollars in federal assistance to state and local governments, and for numerous other public and private sector purposes. In addition, the census is a complicated undertaking and a substantial investment, requiring careful planning, risk management, and oversight to ensure its ultimate success. The Bureau estimates the 2010 Census will cost \$11.5 billion over its life cycle, making it the most expensive census in our country's history, even after adjusting for inflation. For example, the average cost per housing unit for 2010 is expected to increase by about 29 percent from 2000 levels (from \$56 per housing unit to \$72 per housing unit in 2000 inflation-adjusted dollars). Since Census 2000, we have been examining how the Bureau is preparing for the 2010 Census, including incorporating lessons learned from the 2000 Census into its planning for the 2010 decennial. Given the importance of a successful enumeration and the complexities of enumerating a hard-to-count population in a more technology-dependent census, our message remains that the risks associated with the decennial must be closely monitored, evaluated, and managed. We have long supported an approach to oversight that is timely, rigorous, constructive, and holds the Bureau accountable to help ensure that accurate results are delivered within projected costs.

Today's hearing is particularly timely, as the Bureau has begun 2008 Dress Rehearsal activities in California and North Carolina. Census Day for the Dress Rehearsal is April 1, 2008. In concept, a Dress Rehearsal should be a dry run of the full enumeration planned for 2010, and include the testing of operations and procedures planned for the decennial census under as close to census-like procedures as possible. If properly executed, the

Dress Rehearsal should serve as a tool to help the Bureau identify and mitigate risk associated with the 2010 Census.

Thus, the Bureau is at an important point in planning and conducting the 2010 Census, as it begins the first operations for 2010 while continuing its dry run of other operations. Sound risk management is important to a successful census because many risks are interrelated, and a shortcoming in one operation could cause other operations to spiral downward. We would like to highlight several areas of risk that the Bureau needs to manage to ensure its success. For example:

- To provide the Congress, stakeholders, and others a clear picture of the status of the 2010 Census operations and the likely cost, the Bureau needs to complete its 2010 Census comprehensive project plan and update the 2010 life-cycle cost estimate to reflect current information from testing.
- During recent Dress Rehearsal operations, we observed technical problems with the handheld mobile computers the Bureau expects to use for the 2010 Census. If the device does not function as expected or needed, little time will be left for the Bureau to take corrective action. Further, in the first operation of the Dress Rehearsal—the Local Update of Census Addresses (LUCA)—the Bureau made some improvements over the Census 2000 program; however, it did not fully test certain tools, such as computer-based training and other new software, with potential users. It will be important for the Bureau to complete such software testing.
- Greater reliance on contractor-developed automation and technology for the 2010 Census requires the Bureau to focus on sound acquisition and management of these key investments.
- Finally, because the changing housing stock may affect the Bureau's ability to effectively conduct address canvassing and other operations in the Gulf Coast region, it is important for the Bureau to complete its planning for addressing the challenges that the Bureau's temporary field staff would likely face in such hurricane-affected geographic areas.

Our remarks today are based primarily on reports that GAO issued from 2002 through June 2007 on the planning and development of the 2010 Census, as well as observations from our ongoing work on the performance of the handheld mobile computing devices and the Bureau's acquisition of monitoring of key automation and technology investments. (Please see Related GAO Products page for a list of relevant reports.) In addition to the Dress Rehearsal, the Bureau conducted several field tests for its reengineered 2010 Census—including deployment of earlier prototypes of handheld mobile computing devices. For the 2004 field test, we visited Queens, New York, and several counties in rural south-central

Georgia. We visited the Texas and South Dakota test sites during the Bureau's 2006 field test. During these visits we observed several operations including address canvassing and the nonresponse follow-up operation. During the autumn of 2006, we observed the Local Update of Census Addresses (LUCA) phase of the 2008 Dress Rehearsal in sites located in North Carolina and California. In January 2007, we visited areas in Louisiana, Mississippi, and Texas affected by Hurricanes Katrina and Rita, and in June 2007 we observed the Bureau's address canvassing operation using the handheld devices at both of the Dress Rehearsal sites. In regard to technology acquisition and contracts, we analyzed current project and acquisition documents, including earned value management data, and we interviewed Bureau officials and contractors. To determine the status of risks and whether the Bureau is adequately managing risks, we identified sound IT risk management processes from those developed by the Software Engineering Institute and compared them to the Bureau's risk management practices for the selected projects. The areas examined included risk preparation, risk identification and analyses, and risk mitigation. We conducted our work in accordance with generally accepted government auditing standards.

Background

The decennial census is the nation's largest, most complex survey. To conduct its decennial activities, the Bureau recruits, hires, and trains over half a million field staff based out of local census offices nationwide, temporarily making it one of the nation's largest employers. The first operation for the 2010 Census has already begun. Starting in January 2007, the Bureau notified state and local governments that it would seek their help in developing a complete address file through the Bureau's LUCA program. Address canvassing—a field operation to build a complete and accurate address list in which census field workers go door to door verifying and correcting addresses for all households and street features contained on decennial maps—will begin in April 2009. One year later, the Bureau will mail census questionnaires to the majority of the population in anticipation of Census Day, April 1, 2010. Those households that do not return their questionnaire will be contacted by census field workers during the nonresponse follow-up operation to determine the number of people living in the housing unit on Census Day, among other information.

In addition to these operations, the Bureau conducts other operations, including gathering data from residents in group quarters such as prisons or military bases. The Bureau also employs different enumeration methods in certain settings, such as remote Alaska enumeration, in which people living in inaccessible communities must be contacted in January 2010 in

anticipation of the spring thaw, which makes travel difficult, or update/enumerate, a data collection method involving personal interviews that is used in communities where many housing units may not have typical house number–street name mailing addresses.

The decennial census is conducted against a backdrop of immutable deadlines. The census’s elaborate chain of interrelated pre- and post-Census Day activities is predicated upon those dates. To meet these mandated reporting requirements, census activities must occur at specific times and in the proper sequence. The Secretary of Commerce is legally required to (1) conduct the census on April 1 of the decennial year, (2) report the state population counts to the President for purposes of congressional apportionment by December 31 of the decennial year, and (3) send population tabulations to the states for purposes of redistricting no later than 1 year after the April 1 census date. (See table 1 for dates of selected key decennial activities.)

Table 1: Timeline of Selected Key Decennial Events

Beginning and end dates	Decennial activity
Jan. 2007–Jan. 2010	Local Update of Census Addresses (localities assist in updating address lists and maps)
Feb. 2006–June 2009	2008 Dress Rehearsal (Bureau’s rehearsal of all planned decennial operations)
Jan. 2008	Opening of 12 Regional Census Centers
Oct. 2008	Opening of 455 Local Census Offices
Apr.–Sept. 2009	Address list activities (Bureau field staff validate all address lists and maps)
Apr. 1, 2010	Census Day
Apr.–July 2010	Nonresponse follow-up (Field staff follow-up in person at housing units of nonresponding persons)
Dec. 31, 2010	Delivery of apportionment counts to the President
Mar. 31, 2011	Complete delivery of redistricting data to states

Source: GAO summary of Census Bureau data.

The Bureau estimates that it will spend about \$3 billion in information technology investments to support collections, processing and dissemination of census data and will be undertaking four major systems

acquisitions—totaling about \$2 billion. The major acquisitions include the Decennial Response Integration System (DRIS); Field Data Collection Automation (FDCA) program, which includes the handheld mobile computing devices to be used by the Bureau’s temporary field staff; Data Access and Dissemination System (DADS II); and Master Address File/Topologically Integrated Geographic Encoding and Referencing Accuracy Improvement Project (MTAIP) system. The four systems were planned to be available for the Dress Rehearsal so that their functionality could be tested in an operational environment. (See table 2.)

Table 2: Major Information Technology Contracts

Contract	Contractor	Contract purpose	Estimated contract cost (dollars in millions)	Award dates
DRIS	Lockheed Martin Corporation	Providing a solution for data capture and respondent assistance	More than \$500	October 2005
FDCA	Harris Corporation	Providing automated resources for supporting field data collection, including the provision of mobile computing devices used by enumerators	\$600	March 2006
DADS II	To be determined	Develop a replacement for legacy tabulation and dissemination system	To be determined	Delayed by 1 year to September 2007
MTAIP	Harris Corporation	Modernizing the system which provides the address list, maps, and other geographic support services for the Census and other Bureau surveys.	\$209	June 2002

Source: GAO analysis of Census Bureau documents.

In June 2005, we reported on the Bureau’s progress in five information technology (IT) areas—investment management, systems development/management, enterprise architecture management, information security, and human capital.¹ These areas are important because they have substantial influence on the effectiveness of organizational operations and, if applied effectively, can reduce the risk of cost and schedule overruns, and performance shortfalls. We reported that, while the Bureau had many practices in place, much remained to be done to fully implement effective IT management capabilities. We made several recommendations to improve the Bureau’s management.

¹GAO, *Information Technology Management: Census Bureau Has Implemented Many Key Practices, but Additional Actions Are Needed*, [GAO-05-661](#) (Washington, D.C.: June 16, 2005).

Subsequently, in March 2006, we testified on the Bureau's acquisition and management of two key information technology system acquisitions for the 2010 Census—FDCA and DRIS.² We reported on the Bureau's progress in implementing acquisitions and management capabilities for these initiatives. To effectively manage major IT programs, organizations should use sound acquisition and management processes, minimize risk, and thereby maximize chances for success. Such processes include project and acquisition planning, solicitation, requirement development and management, and risk management. We reported that, while the project offices responsible for these two contracts have carried out initial acquisition management activities, neither office had the full set of capabilities they needed to effectively manage the acquisitions, including a full risk management process. We also made recommendations for the Bureau to implement key activities needed to effectively manage acquisitions. The Bureau agreed with the recommendations but is still in the process of implementing them.

2010 Comprehensive Project Plan with Updated Cost Information Still Not Firm

Careful planning and monitoring are key to successfully managing a complex undertaking such as the decennial census. In January 2004, we recommended that the Bureau develop a comprehensive integrated project plan. Specifically, we recommended that such a project plan be updated as needed and include: (1) detailed milestones that identify all significant interrelationships; (2) itemized estimated costs of each component, including a sensitivity analysis, and an explanation of significant changes in the assumptions on which these costs are based; (3) key goals translated into measurable, operational terms to provide meaningful guidance for planning and measuring progress; and (4) risk and mitigation plans that fully address all significant potential risks. We reported that although some of this information is available piecemeal, to facilitate a thorough, independent review of the Bureau's plans and hold the agency accountable for results, having a single, comprehensive document would be important. In May 2007, we met with Bureau officials to discuss the status of the 2010 project plan. At that time officials indicated that they planned to finalize the project plan over the next several months. We look forward to reviewing the 2010 Census project

²GAO, *Census Bureau: Important Activities for Improving Management of Key 2010 Decennial Acquisitions Remain to be Done*, [GAO-06-444T](#) (Washington, D.C.: Mar. 1, 2006).

plan once it becomes available, and we will continue to monitor the Bureau's planning efforts.

Among the elements of that plan, we specifically recommended that the Bureau itemize the then-estimated \$11.3 billion in costs for completing key activities for the upcoming decennial census. However, in June 2006 before this subcommittee, we testified that the Bureau's \$11.3 billion life-cycle cost estimate for the 2010 Census lacked timely and complete supporting data. Specifically, the supporting data of the estimate were not timely because the data did not contain the most current information from testing and evaluation, and were not complete because sufficient information on how changing assumptions could affect cost was not provided.

In its Fiscal Year 2008 Budget Estimates, the Bureau updated its estimate to about \$11.5 billion. According to Bureau documents, the estimated life-cycle cost for the entire 2010 Census remained relatively unchanged between 2001, when the \$11.3 billion estimate first was released, and 2006.

In our testimony last year, we noted that the September 2005 estimate was based on assumptions made in 2001 that had not been borne out by testing. One such assumption pertained to the testing of a new handheld mobile computing device that is intended to automate and streamline address canvassing, nonresponse follow-up, coverage measurement, and payroll operations. After its 2004 Census Test the Bureau found that local office space and staff savings of 50 percent as a result of using the handheld computers were not realized. Nonetheless, the 2005 estimate continued to assume the 50 percent savings. In our view, revising cost estimates with the most current information allows the Bureau to better manage the cost of the census and make necessary resource trade-offs. Most recently, the Bureau tested a new prototype of the handheld mobile computing devices during the address canvassing operation of the 2008 Dress Rehearsal. This experience should provide the Bureau additional data on productivity and space needs when using the new devices.

Table 3 shows the Bureau's cost estimate released in June 2006. Based on the table, most spending will occur between fiscal years 2008 through 2013.

Table 3: Bureau's Revised June 2006 Estimate of Life-cycle Costs for the 2010 Decennial Census Program (nominal year dollars, in millions)

Program Component	FY 2001 Enacted	FY 2002 Enacted	FY 2003 Enacted	FY 2004 Enacted	FY 2005 Enacted	FY 2006 Enacted	FY 2007 Request	Subtotal FY01-07	FY 2008-2013 (est.)	Total (est.)
American Community Survey	\$23.6	\$29.0	\$56.8	\$64.1	\$144.1	\$167.8	\$179.8	\$665.2	\$1,036.7	\$1,701.9
MAF/TIGER Enhancements Program	\$0	\$15.0	\$47.0	\$82.4	\$81.2	\$78.8	\$73.7	\$378.1	\$156.2	\$534.3
2010 Census	\$0	\$21.0	\$41.6	\$106.0	\$163.0	\$201.2	\$258.3	\$791.1	\$8,227.3	\$9,018.4
Total	\$23.6	\$65.0	\$145.4	\$252.5	\$388.3	\$447.8	\$511.8	\$1,834.4	\$9,420.2	\$11,254.6

Source: U.S. Census Bureau.

Note: These figures have not been audited by GAO. Moreover, the Bureau's updated \$11.525 billion life-cycle cost estimate, as contained in the agency's Fiscal Year 2008 Budget Estimates to the Congress, assumes cost increases in the American Community Survey, Data Access and Dissemination System, and Field Data Collection Automation.

Mr. Chairman, as you can see, given the projected increase in spending, it will be imperative that the Bureau effectively manage the 2010 Census, as the risk exists that the actual, final cost of the census could be considerably higher than anticipated. Indeed, this was the case for the 2000 Census, when the Bureau's initial cost projections proved to be too low because of such factors as unforeseen operational problems or changes to the fundamental design. For example, the Bureau estimated that the 2000 Census would cost around \$4 billion if sampling was used, and a traditional census without sampling would cost around \$5 billion. However, the final price tag for the 2000 Census (without sampling) was over \$6.5 billion, a 30 percent increase in cost. Large federal deficits and other fiscal challenges underscore the importance of managing the cost of the census, while promoting an accurate, timely census.

At the request of the House Committee on Appropriations, Subcommittee on Commerce, Justice, Science and Related Agencies, we are reviewing the life-cycle cost estimate of the 2010 Census to determine whether it is comprehensive, credible, accurate, and adequately supported.

2008 Dress Rehearsal Experience Points to Further Testing of Software for LUCA Operations

During the address canvassing phase of the 2008 Dress Rehearsal, the Bureau tested a prototype of the handheld computers that it intends to use for 2010. The devices are a keystone to the reengineered census because they allow the Bureau to automate operations, and eliminate the need to print millions of paper questionnaires and maps used by temporary field staff to conduct address canvassing and nonresponse follow-up as well as to manage the payroll for field staff. Automating operations allows the Bureau to reduce the cost of operations; thus, it is critical that the risks surrounding the use of the handheld devices be closely monitored and effectively managed to ensure their success.

However, during the address canvassing phase of the 2008 Dress Rehearsal, we observed some technical difficulties with the handheld mobile computing device. We observed that it took an inordinate amount of time for field staff using the handheld devices to link multiple units to one mapspot, which occurs when listing units within apartment buildings. In North Carolina, for example, we observed a field staffer take 2 hours to verify 16 addresses in one apartment building. The device was also slow to process addresses that were a part of a large assignment area. These inefficiencies affect productivity and ultimately the cost of the census. Over the next several weeks, we will be working with the Bureau to understand the root cause of the problems we observed. Given the lateness in the testing cycle, the Bureau now runs the risk that if problems do emerge, little time will be left to develop, test, and incorporate refinements to the handheld devices before 2010.

To date, the Bureau, in its 2008 Dress Rehearsal, has completed nearly all LUCA activities, and while the Bureau has taken many steps to improve LUCA since 2000, additional steps could be taken to address possible new challenges. To reduce participant workload and burden, the Bureau provided a longer period for reviewing and updating LUCA materials; provided options for submitting materials for the LUCA program; and created MAF/TIGER³ Partnership Software (MTPS), which is designed to assist LUCA program participants in reviewing and updating address and map data. This software will enable users to import address lists and maps for comparison to the Bureau's data and participate at the same time in both the LUCA and another geographic program, the Boundary and

³The Bureau's address list is known as the Master Address File (MAF); its associated geographic information system is called the Topologically Integrated Geographic Encoding and Referencing (TIGER) database. TIGER is a registered trademark of the U.S. Census Bureau.

Annexation Survey.⁴ However, during the Dress Rehearsal, the Bureau tested MTPS with only one local government. The Bureau also planned improvements to LUCA by offering specialized workshops for informational and technical training and supplementing the workshops with new computer-based training. However, the Bureau did not test its computer-based training software in the Dress Rehearsal.⁵ Properly executed user-based methods for software testing can give the truest estimate of the extent to which real users can employ a software application effectively, efficiently, and satisfactorily. In June 2007, we recommended the Bureau better assess the usability of the MTPS and test the computer-based training software with local governments. The Bureau has agreed to do so, and in August 2007 is expected to provide an action plan for how it will implement this recommendation.

Additionally, not all participants will rely on the MTPS. For these participants, the Bureau could do more to help them use their own software. We found that participants in the LUCA Dress Rehearsal experienced problems converting files from the Bureau's format to their respective applications; our survey of participants in the LUCA Dress Rehearsal showed that the majority of respondents had, to some extent, problems with file conversions to appropriate formats. For example, one local official noted that it took him 2 days to determine how to convert the Bureau's files. At present, the Bureau does not know how many localities that participate in LUCA will opt not to use MTPS, but those localities may face the same challenges faced by participants in the LUCA Dress Rehearsal. In response to our recommendations, the Bureau agreed to disseminate instructions on file conversion on its Web site and provide instructions to help-desk callers.

⁴The Bureau conducts the Boundary and Annexation Survey annually to collect information about selected defined geographic areas. This survey is used to update information about the legal boundaries and names of all governmental units in the United States.

⁵Respondents to our survey ranked computer-based training higher than classroom training, in terms of being "extremely" or "very" useful. Additionally, local officials told us that this training was more convenient for them because they need not leave their offices or adjust their schedules to learn how the LUCA program works.

Bureau's Plans for Greater Use of Automation and Technology Demand Greater Risk Management

The Bureau's reengineered approach for the 2010 Census involves greater use of automation, which offers the prospect of greater efficiency and effectiveness; however, these actions also introduce new risks. The automation of key census processes involves an extensive reliance on contractors. Consequently, contract oversight and management become a key challenge to a successful census. We are (1) determining the status and plans for DRIS, FDCA, MTAIP, and DADS II (including cost, schedule, and performance); and (2) assessing whether the bureau is adequately managing risks associated with these key contracts including efforts to integrate systems. We are scheduled to report the results of our work by September 2007. Effective risk management includes identifying and analyzing risks, assigning resources, and developing risk mitigation plans and milestones for key mitigation deliverables, briefing senior-level managers on high-priority risks, and tracking risks to closure. Risk management is an important project management discipline to ensure that among other things, key technologies are delivered on time, within budget, and with the promised functionality.

The Bureau has awarded three of four 2010 decennial census contracts: MTAIP (June 2002), DRIS (October 2005), and FDCA (March 2006). For DADS II, the Bureau delayed the contract award by 1 year (the contract is now scheduled to be awarded in September 2007). In March 2006, Bureau officials said that this 1-year delay occurred to gain a clearer sense of budget priorities before initiating the request for proposal process.

Our preliminary results on the status and plans for the three awarded 2010 decennial census system contracts show that the contractors are making mixed progress in meeting cost, schedule, and functional performance. Specifically, the DRIS, FDCA, and MTAIP contractors are delivering products on schedule. For example, as of March 2007, the MTAIP contractor delivered 2,513 of the 3,232 improved county map files to the Bureau's repository of the location of every street, boundary, and other map features (known as the TIGER database). In addition, the DRIS contractor has delivered certain program management documents on schedule, including the External Interface Control document, which documents the interfaces between DRIS and the other 2010 Census systems, such as FDCA. Also, the FDCA contractors provided the 1,400 handheld mobile computing devices on schedule for conducting the May 2007 address canvassing for the Dress Rehearsal sites in North Carolina and California.

Concerning costs, two projects—DRIS and MTAIP—are in line with the projected budget. For example, as of March 2007, of the \$66 million

planned for DRIS during this period, the Bureau has obligated \$37 million and disbursed \$19 million with the project 36 percent completed. Further, our analyses of cost performance reports show no projected cost overrun for DRIS by the 2008 Dress Rehearsal. However, the FDCA project is projected to experience cost overruns by the 2008 Dress Rehearsal. Our analyses of earned value management (EVM)⁶ data show a projected FDCA cost overrun by between \$17 million and \$22 million, with the most likely cost overrun being about \$18 million. According to the contractor, the overrun is occurring primarily due to the increase in system requirements. We are concerned that this is an indication of additional cost increases that are forthcoming, given requirements growth associated with FDCA.

The Bureau has delayed delivering some key functionality that was expected to be delivered for the Dress Rehearsal. For example, some key functionality expected to be delivered with DRIS contract including the 2010 Census telephone assistance system has been delayed until fiscal year 2009. The Bureau has stated that it will not have a robust telephone assistance system in place for the Dress Rehearsal. The Bureau has also delayed selecting data capture center sites for the 2010 Census, building-out data capture facilities (including physical security, hardware, furniture, and telecommunications), and recruiting and hiring data capture center staff. According to the Bureau, this delay will affect areas, such as hardware installation and staffing training. Further, the Dress Rehearsal will not include all collection forms for the 2010 Census. According to project team officials, changes to the DRIS original functionality were due to the Bureau's fiscal year 2006 budget constraints, and therefore changed their priorities for the 2008 Dress Rehearsal.

The importance of testing is particularly important, since systems and functionality planned for the 2010 Census will not be available for the 2008 Dress Rehearsal. The Bureau has plans to conduct system tests, such as the interfaces between FDCA and DRIS. The Bureau has not finalized plans for other tests to be performed for the 2010 Census, such as end-to-end testing. End-to-end testing is performed to verify that a defined set of

⁶EVM is a project management tool that integrates the investment scope of work with schedule and cost elements for investment planning and control. The method compares the value of work accomplished during a given period with that of work expected in the period. Differences in expectations are measured in both cost and schedule variances. OMB requires agencies to use EVM as part of their performance-based management system for any investment under development or with system improvements under way.

interrelated systems that collectively support an organizational core business function interoperate as intended in an operational environment. The failure to conduct end-to-end testing increases the risks of systems performance failure occurring during the 2010 Census operations.

Our preliminary results also show that the Bureau's project teams have made progress in risk management activities, but weaknesses remain. According to the Software Engineering Institute's (SEI) Capability Maturity Model[®] Integration (CMMISM), the purpose of risk management is to identify potential problems before they occur so that risk-handling activities can be executed as needed to mitigate adverse impacts.⁷ Risk management activities can be divided into key areas, including identifying and analyzing risks, mitigating risks, and executive oversight. The discipline of risk management is important to help ensure that projects are delivered on time, within budget, and with the promised functionality. It is especially important for the 2010 Census, given the immovable deadline.

Our preliminary results on the Bureau's risk management processes show that the project teams have performed many practices associated with establishing sound and capable risk management processes. Specifically, most of the projects (DRIS, FDCA, and DADS II) had developed a risk management strategy to identify the methods or tools to be used for risk identification, risk analysis and prioritization, and risk mitigation. However, some projects did not fully identify risks, establish mitigation plans that identified planned actions and milestones, and report risk status to higher level officials.

- All four projects were identifying and analyzing risks, but one project team was not adequately performing this activity. As of May 2007, the most significant risks for DRIS included the possibility of a continuing budget resolution for fiscal year 2008, new system security regulations, and disagreement between the Bureau and contractor on functionality implementation. For FDCA, as of May 2007, the most significant risks included insufficient funding, late development of training materials, and untimely completion of IT Security Certification and Accreditation. However, as part of our ongoing work, we question the completeness of the reported risks. For example, although the FDCA project had experienced a major increase in the number of requirements, the project team did not identify this as a significant risk. In addition, the project

⁷The CMMI is SEI's process model, which describes how to develop processes needed for software development and specific practices that organizations should follow.

office did not identify any risks associated with using the handheld mobile computing devices.

- All four projects are developing risk mitigation plans as a response strategy for the handling of risks, but three project teams (DADS II, FDCA, and MTAIP) developed mitigation plans that were often untimely or had incomplete activities and milestones. For example, although mitigation plans were developed for all high-level risks, they did not always identify milestones for implementing mitigating activities. In addition, the FDCA project has yet to provide any evidence of mitigation plans to handle their medium-level risks as described in their risk management strategy.
- Two projects (MTAIP and FDCA) have yet to provide evidence that risks were reported regularly to higher-level Department of Commerce and Bureau officials. For example, although both project teams had met with Commerce and Bureau officials to discuss the status of the projects, the meetings did not include discussions about the status of risks.

The failure to develop timely and complete mitigation plans increases the project's exposure to risks and reduces the project team's ability to effectively control and manage risks during the work effort. Further, failure to report a project's risks to higher level officials reduces the visibility of risks to executives that should be playing a role in mitigating them. Until the project teams implement effective and consistent risk management processes, the Bureau faces increased risks that system acquisition projects will incur cost overruns, schedule delays, and performance shortfalls.

Bureau Is Designing Decennial Activities in the Geographic Area Affected by Hurricanes Katrina and Rita, but Needs to Finalize Plans and Related Milestones

As part of our evaluation of the Bureau's LUCA Dress Rehearsal, we visited the localities along the Gulf Coast to assess the effect that Hurricanes Katrina and Rita might have on decennial activities in these geographic areas, and we found that the damage and devastation of these hurricanes will likely affect the Bureau's LUCA program and possibly other operations. The Bureau has begun to take steps toward addressing these issues by developing proposed actions. However, the Bureau has not yet finalized plans and milestones related to changes in actions for modifying address canvassing or subsequent operations in hurricane-affected areas.

In visiting localities along the Gulf Coast earlier this year, we observed that the effects of the hurricanes are still visible throughout the Gulf Coast region. Hurricane Katrina alone destroyed or made uninhabitable an estimated 300,000 homes; in New Orleans, local officials reported that Hurricane Katrina damaged an estimated 123,000 housing units. Such

changes in housing unit stock continue to present challenges to the implementation of the 2010 LUCA Program and address canvassing operations in the Gulf Coast region. Many officials of local governments we visited in hurricane-affected areas said they have identified numerous housing units that have been or will be demolished as a result of Hurricanes Katrina and Rita and subsequent deterioration. Conversely, many local governments estimate that there is new development of housing units in their respective jurisdictions. The localities we interviewed in the Gulf Coast region indicated that such changes in the housing stock of their jurisdictions are unlikely to subside before local governments begin reviewing and updating materials for the Bureau's 2010 LUCA Program—in August 2007.⁸ As a result, local governments in hurricane-affected areas may be unable to fully capture reliable information about their address lists before the beginning of LUCA.

The mixed condition of the housing stock in the Gulf Coast could decrease productivity rates during address canvassing. We observed that hurricane-affected areas have many neighborhoods with abandoned and vacant properties mixed in with occupied housing units. Bureau field staff conducting address canvassing in these areas may have decreased productivity due to the additional time necessary to distinguish between abandoned, vacant, and occupied housing units. We also observed many areas where lots included a permanent structure with undetermined occupancy as well as a trailer. Bureau field staff may be presented with the challenge of determining whether a residence or a trailer (see fig. 1), or both, are occupied. Another potential issue is that, due to continuing changes in the condition in the housing stock, housing units that are deemed uninhabitable during address canvassing may be occupied on Census Day, April 1, 2010. Bureau officials said that they recognize there are issues with identifying uninhabitable structures in hurricane-affected zones. Further, workforce shortages may also pose significant problems for the Bureau's hiring efforts for address canvassing. The effects of Hurricanes Katrina and Rita caused a major shift in population away from the hurricane-affected areas, especially in Louisiana. This migration displaced many low-wage workers. Should this continue, it could affect the availability of such workers for address canvassing and other decennial census operations.

⁸The period for local review and update of addresses and maps for the 2010 LUCA Program is August 2007–March 2008.

Figure 1: Trailers in Front of Damaged Housing Units in New Orleans, Louisiana



Source: GAO (January 2007).

In June 2006, we recommended that the Bureau develop plans (prior to the start of the 2010 LUCA Program in August 2007) to assess whether new procedures, additional resources, or local partnerships, may be required to update the MAF/TIGER database along the Gulf Coast—in the areas affected by Hurricanes Katrina and Rita.⁹ The Bureau consulted with state and regional officials from the Gulf Coast on how to make LUCA as successful as possible, and held additional promotional workshops for geographic areas identified by the Bureau as needing additional assistance.

The Bureau has also considered changes to address canvassing and subsequent operations in the Gulf Coast region. For example, Bureau officials stated that they recognize issues with identifying uninhabitable structures in hurricane-affected zones and, as a result, that they may need to change procedures for address canvassing. The Bureau is still brainstorming ideas, including the possibility of using its “Update/Enumerate”¹⁰ operation in areas along the Gulf Coast. Bureau

⁹GAO, *2010 Census: Census Bureau Needs to Take Prompt Actions to Resolve Long-standing and Emerging Address and Mapping Challenges*, [GAO-06-272](#) (Washington, D.C.: June 15, 2006), and GAO, *2010 Census: Costs and Risks Must be Closely Monitored and Evaluated with Mitigation Plans in Place*, [GAO-06-822T](#) (Washington, D.C.: June 6, 2006).

¹⁰In an “Update/Enumerate” operation, interviewers enumerate a housing unit and update address registers and census maps at the time of their visit.

officials also said that they may adjust training for field staff conducting address canvassing in hurricane-affected areas to help them distinguish between abandoned, vacant, and occupied housing units. Without proper training, field staff can make errors and will not operate as efficiently.¹¹

The Bureau's plans for how it may adjust address canvassing operations in the Gulf Coast region can also have implications for subsequent operations. For example, instructing its field staff to be as inclusive as possible in completing address canvassing could cause increased efforts to contact nonrespondents because the Bureau could send questionnaires to housing units that could be vacant on Census Day. In terms of the Bureau's workforce in the Gulf Coast region, Bureau officials also recognize the potential difficulty of attracting field staff, and have recommended that the Bureau be prepared to pay hourly wage rates for future decennial field staff that are considerably higher than usual. However, Bureau officials stated that there are "no concrete plans" to implement changes to address canvassing or subsequent decennial operations in the Gulf Coast region.

Mr. Chairman, the Bureau faces formidable challenges in successfully implementing a redesigned decennial. It must also overcome significant challenges of a demographic and socioeconomic nature due to the nation's increasing diversity in language, ethnicity, households, and housing type, as well as a reluctance of the population to participate in the census. The need to enumerate in the areas devastated by Hurricanes Katrina and Rita is one more significant difficulty the Bureau faces. We have stated in the past, and believe still, that the Bureau's reengineering effort, if effectively implemented, can help control costs and improve cost effectiveness and efficiency. Yet, there is more that the Bureau can do in managing risks for the 2010 Census.

The Dress Rehearsal represents a critical stage in preparing for Census 2010—a time when the Bureau's plans will be tested as close to census-like conditions as is possible. This is a time when the Congress, the Department of Commerce, and others should have the information needed to know how well the design is working. This is a time for making transparent the risks that the Bureau must manage to ensure a successful census. We have highlighted some of these risks today.

¹¹GAO, *2010 Census: Census Bureau Should Refine Recruiting and Hiring Efforts and Enhance Training of Temporary Field Staff*, [GAO-07-361](#) (Washington, D.C.: Apr. 27, 2007).

First, the Bureau's planning and reporting of milestones and estimated costs could be made more useful. Second, the performance of key contractors needs more oversight. Third, the Bureau can build on lessons learned early in the Dress Rehearsal by further testing new software that will help localities participating in the LUCA program. The functionality and usability of the handheld computing device—a key piece of hardware in the reengineered census—also bears watching. If, after the 2008 Dress Rehearsal, the handheld computers are found to not be reliable, the Bureau could be faced with the remote but daunting possibility of having to revert, in whole or in part, to the costly, paper-based census used in 2000. Finally, the Bureau must complete plans for ensuring an accurate population count in areas affected by Hurricanes Katrina and Rita. All told, these areas continue to call for risk mitigation plans by the Bureau and careful monitoring and oversight by the Commerce Department, Office of Management and Budget, the Congress, GAO, and other key stakeholders. As in the past, we look forward to supporting this subcommittee's oversight efforts to promote a timely, complete, accurate, and cost-effective census.

Mr. Chairman that concludes our statement. We would be glad to answer any questions you and the committee members may have.

Related GAO Products

2010 Census: Census Bureau Is Making Progress on the Local Update of Census Addresses Program, but Improvements Are Needed. [GAO-07-1063T](#). Washington, D.C.: June 26, 2007.

2010 Census: Census Bureau Has Improved the Local Update of Census Addresses Program, but Challenges Remain. [GAO-07-736](#). Washington, D.C.: June 14, 2007.

2010 Census: Census Bureau Should Refine Recruiting and Hiring Efforts and Enhance Training of Temporary Field Staff. [GAO-07-361](#). Washington, D.C.: April 27, 2007.

2010 Census: Design Shows Progress, but Managing Technology Acquisitions, Temporary Field Staff, and Gulf Region Enumeration Require Attention. [GAO-07-779T](#). Washington, D.C.: April 24, 2007.

2010 Census: Redesigned Approach Holds Promise, but Census Bureau Needs to Annually Develop and Provide a Comprehensive Project Plan to Monitor Costs. [GAO-06-1009T](#). Washington, D.C.: July 27, 2006.

2010 Census: Census Bureau Needs to Take Prompt Actions to Resolve Long-standing and Emerging Address and Mapping Challenges. [GAO-06-272](#). Washington, D.C.: June 15, 2006.

2010 Census: Costs and Risks Must be Closely Monitored and Evaluated with Mitigation Plans in Place. [GAO-06-822T](#). Washington, D.C.: June 6, 2006.

2010 Census: Census Bureau Generally Follows Selected Leading Acquisition Planning Practices, but Continued Management Attention Is Needed to Help Ensure Success. [GAO-06-277](#). Washington, D.C.: May 18, 2006.

Census Bureau: Important Activities for Improving Management of Key 2010 Decennial Acquisitions Remain to be Done. [GAO-06-444T](#). Washington, D.C.: March 1, 2006.

2010 Census: Planning and Testing Activities Are Making Progress. [GAO-06-465T](#). Washington, D.C.: March 1, 2006.

Information Technology Management: Census Bureau Has Implemented Many Key Practices, but Additional Actions Are Needed. [GAO-05-661](#). Washington, D.C.: June 16, 2005.

2010 Census: Basic Design Has Potential, but Remaining Challenges Need Prompt Resolution. [GAO-05-09](#). Washington, D.C.: January 12, 2005.

Data Quality: Census Bureau Needs to Accelerate Efforts to Develop and Implement Data Quality Review Standards. [GAO-05-86](#). Washington, D.C.: November 17, 2004.

Census 2000: Design Choices Contributed to Inaccuracies in Coverage Evaluation Estimates. [GAO-05-71](#). Washington, D.C.: November 12, 2004.

American Community Survey: Key Unresolved Issues. [GAO-05-82](#). Washington, D.C.: October 8, 2004.

2010 Census: Counting Americans Overseas as Part of the Decennial Census Would Not Be Cost-Effective. [GAO-04-898](#). Washington, D.C.: August 19, 2004.

2010 Census: Overseas Enumeration Test Raises Need for Clear Policy Direction. [GAO-04-470](#). Washington, D.C.: May 21, 2004.

2010 Census: Cost and Design Issues Need to Be Addressed Soon. [GAO-04-37](#). Washington, D.C.: January 15, 2004.

Decennial Census: Lessons Learned for Locating and Counting Migrant and Seasonal Farm Workers. [GAO-03-605](#). Washington, D.C.: July 3, 2003.

Decennial Census: Methods for Collecting and Reporting Hispanic Subgroup Data Need Refinement. [GAO-03-228](#). Washington, D.C.: January 17, 2003.

Decennial Census: Methods for Collecting and Reporting Data on the Homeless and Others Without Conventional Housing Need Refinement. [GAO-03-227](#). Washington, D.C.: January 17, 2003.

2000 Census: Lessons Learned for Planning a More Cost-Effective 2010 Census. [GAO-03-40](#). Washington, D.C.: October 31, 2002.

The American Community Survey: Accuracy and Timeliness Issues. [GAO-02-956R](#). Washington, D.C.: September 30, 2002.

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