



*U.S. DEPARTMENT OF COMMERCE
Office of Inspector General*



*2010 Census:
Quarterly Report
to Congress,
February 2010*

Final Report No. OIG-19791-3

For Public Release





UNITED STATES DEPARTMENT OF COMMERCE
The Inspector General
Washington, D.C. 20230

February 16, 2010

The Honorable Alan B. Mollohan
Chairman
Subcommittee on Commerce, Justice,
Science, and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

The Honorable Frank R. Wolf
Ranking Member
Subcommittee on Commerce, Justice,
Science, and Related Agencies
Committee on Appropriations
U.S. House of Representatives
Washington, DC 20515

Dear Mr. Chairman and Mr. Wolf:

This letter transmits our third quarterly report to Congress in response to the explanatory statement accompanying the Supplemental Appropriations Act of 2008 requiring the Office of Inspector General to report on a quarterly basis the status of Census's 2010 operations. This report provides an update on the schedule, cost, and risk management activities of the 2010 Census for the quarter ending December 31, 2009.

During this period, we report that the Census Bureau experienced delays with development and testing of its Paper-based Operations Control System (PBOCS). This system is critical for field operations and requires swift corrective action to minimize adverse impacts on these operations. With respect to cost, we report cost inefficiencies related to address canvassing and note that Census should implement internal controls and carefully monitor similar costs during upcoming field operations. Finally, we found that the Census Bureau has finalized 4 of 13 program-level contingency plans and continues work on reviewing the remaining ones.

We will issue formal recommendations in a separate report to the bureau on actions that should be taken to address issues involving PBOCS performance and development, as well as development of internal controls to help contain field operations costs.

We have sent identical letters to the Chairwoman and the Ranking Member of the Senate Subcommittee on Commerce, Justice, Science and Related Agencies.

If you have any questions, or if we can be of further assistance, please do not hesitate to contact me at (202) 482-4661.

Sincerely,

Todd J. Zinser

Enclosure



cc: Representative Patrick J. Kennedy
Representative Chaka Fattah
Representative Adam Schiff
Representative Michael Honda
Representative C.A. "Dutch" Ruppersberger
Representative Peter J. Visclosky
Representative Jose E. Serrano
Representative David R. Obey, *Ex Officio*
Representative John Abney Culberson
Representative Robert B. Aderholt
Representative Jo Bonner
Representative Jerry Lewis, *Ex Officio*



UNITED STATES DEPARTMENT OF COMMERCE
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February 16, 2010

The Honorable Barbara A. Mikulski
Chairwoman
Subcommittee on Commerce, Justice,
Science and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

The Honorable Richard C. Shelby
Ranking Member
Subcommittee on Commerce, Justice,
Science and Related Agencies
Committee on Appropriations
United States Senate
Washington, D.C. 20510

Dear Madam Chairwoman and Senator Shelby:

This letter transmits our third quarterly report to Congress in response to the explanatory statement accompanying the Supplemental Appropriations Act of 2008 requiring the Office of Inspector General to report on a quarterly basis the status of Census's 2010 operations. This report provides an update on the schedule, cost, and risk management activities of the 2010 Census for the quarter ending December 31, 2009.

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Todd J. Zinser

Enclosure



cc: Senator Daniel Inouye
Senator Patrick Leahy
Senator Herb Kohl
Senator Byron Dorgan
Senator Dianne Feinstein
Senator Jack Reed
Senator Frank Lautenberg
Senator Ben Nelson
Senator Mark Pryor
Senator Judd Gregg
Senator Mitch McConnell
Senator Kay Bailey Hutchison
Senator Lamar Alexander
Senator George Voinovich
Senator Lisa Murkowski



Report In Brief

U.S. Department of Commerce Office of Inspector General



Why We Did This Review

The Supplemental Appropriations Act of 2008 gave the Census Bureau an additional \$210 million to help cover spiraling 2010 decennial costs stemming from the bureau's problematic efforts to automate major field operations, major flaws in its cost-estimating methods, and other issues. The Act's explanatory statement required the bureau to submit to Congress a detailed plan and timeline of decennial milestones and expenditures, as well as a quantitative assessment of associated program risks, within 30 days.

OIG must provide quarterly reports on the bureau's progress against this plan. This report's objective was to provide an update of activities and operations, identify budget and spending issues, and examine risks to the 2010 Census program.

Background

Since first conducted in 1790, the constitutionally mandated decennial census field activities have largely been paper based. The 2010 Census plan included significant expansion of automation, using handheld computers to verify addresses (address canvassing), conduct in-person surveys with households that did not return their questionnaires (nonresponse follow-up), and collect data from a nationwide sample to evaluate the accuracy of the decennial count (coverage measurement).

Nonresponse Follow-up (NRFU) is the most expensive and labor-intensive operation of the decennial census. Increasing costs and automation problems prompted the bureau's decisions to abandon the handheld computers for NRFU and coverage measurement operations in favor of paper.

2010 Census: Quarterly Report to Congress February 2010 (OIG-19791-3)

What We Found

About 9,400 key operations and activities make up the Census 2010 program. With such a complex, time-sensitive undertaking, it remains vitally important that the Census Bureau operate efficiently and within budget. In our last quarterly report, we noted several risks to the decennial, including scheduling delays, cost overruns, and complications associated with the development of the paper-based operations control system (PBOCS).

During this reporting period, we observed the following:

- PBOCS development and testing have continued to suffer setbacks that will reduce functionality and require the development of workarounds to complete the NRFU operation. PBOCS testing is revealing more and more critical defects as it progresses. Schedule delays have hindered the development of training manuals and technical support guides.
- The bureau conducted two operational load tests of the computer networks supporting decennial operations. The tests showed that the networks and devices were able to successfully handle peak loads, but revealed PBOCS and other IT performance problems.
- While Census stayed within its budget during our review period, spending among local Census offices (LCOs) remains a concern. The Address Canvassing operation was 25 percent over budget, and our analysis of travel costs for the operation found wide disparities in wages and mileage reimbursement in some of the LCOs.
- Census has issued a revised cost estimate of \$2.33 billion for the NRFU operation. Any reductions that may be achieved in NRFU are likely to be partially offset by an estimated increase of \$137 million for the Vacant/Delete Check operation.
- Census's Risk Review Board (RRB) has taken a proactive role in overseeing risk management activities. The RRB has initiated a monthly review of the 25 identified risks on the bureau's risk register. The RRB is reviewing contingency plans for 13 of the risks. To date, the RRB has finalized four plans. These plans appear to be adequate to cover the actions Census would need to take should the risks materialize.

This report does not provide recommendations. We will forward the Census Bureau a separate document recommending that the following actions be taken:

- senior executives with the authority to set priorities—such as reallocating resources to where they are most needed, resolving conflicting priorities, and making major changes to the decennial schedule or plan—closely monitor PBOCS activities and act to expeditiously reduce operational risk;
- streamline development and testing by further reducing PBOCS capabilities to the essentials needed for the most important enumeration operations;
- focus on developing standardized procedural workarounds for PBOCS capabilities that cannot be implemented to support operations; and
- enhance technical support staff and procedures to expeditiously resolve problems in the field.

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Introduction

The Supplemental Appropriations Act of 2008, enacted June 30, 2008, gave the U.S. Census Bureau an additional \$210 million to help cover spiraling 2010 Census costs. The Act's explanatory statement required Census to formulate a detailed plan encompassing a timeline of decennial activities, cost estimates, and risk management activities. This information and subsequent updates of Census's progress are the measures we review when preparing our quarterly reports.

Our first quarterly report, issued in August 2009, highlighted limitations in the Census Bureau's ability to oversee the systems and information for tracking its schedule, cost, and risk management activities during the 2010 Census. We subsequently issued a separate report to Census with recommendations that we believe would help improve the program management of both the current and 2020 Censuses.¹ Our second quarterly report, issued in December 2009, provided an update on the 2010 Census schedule, cost, and risk management activities for the period June–September 2009, but included more recent information when available.²

This quarterly report covers 2010 Census activities from October through December 2009 and includes more current information when available. As with the previous quarterly, this report has three areas of focus: *chapter 1*, which highlights the development and testing of the bureau's paper-based operations control system (PBOCS); *chapter 2*, which analyzes Address Canvassing cost overruns, an update on nonresponse follow-up (NRFU) budget planning, and planned spending of American Recovery and Reinvestment Act of 2009 funds for the 2010 Census; and *chapter 3*, which updates program-level risks to the decennial census and the development of risk-based contingency plans. See appendix A for a complete outline of our objectives, scope, and methodology. Appendix B contains the Office of Inspector General's (OIG) plan for monitoring and observing 2010 Census operations.

¹ For specific information on our findings and recommendations, see *2010 Census: First Quarterly Report to Congress*, OIG-19791-1, Department of Commerce, Office of Inspector General, August 2009; and *Recommendations from 2010 Census: First Quarterly Report to Congress*, OIG-19791-1. OIG reports are available on our Web site, www.oig.doc.gov.

² *2010 Census: Quarterly Report to Congress, December 2009*, OIG-19791-2.

Chapter 1: Update on the 2010 Census Schedule

The Census Bureau maintains a schedule of about 9,400 program- and project-level activities to manage the 44 operations that make up the 2010 Census. Project-level teams monitor their own activity schedules while Decennial Management Division staff manage the integration of all scheduled activities and operations, and any changes to those activities. The bureau's Group Quarters Validation operation finished in late October and all 494 local Census offices (LCOs) were deployed ahead of schedule, as we reported in our previous quarterly report. In addition, Census staff continued developing PBOCS, which is critical to managing the 10 major enumeration operations to be conducted in 2010.

In our last review, we noted that both the bureau and OIG regard this system as a major risk to decennial operations, given the lack of time available for its development and testing. During this period, we assessed the progress of PBOCS development and found a number of serious problems: staff is working at capacity yet continues to fall behind schedule; critical software errors are increasing; system performance is still lagging; and testing continues to be compressed, risking the system's capabilities and performance in the field.

PBOCS Development Delays Require Census to Take Swift Remedial Action

In October 2009, the Census Bureau identified PBOCS as the system most at risk of not being completed in time for decennial field operations. PBOCS is used to manage data collection and quality control for 10 field enumeration operations, including the large door-to-door NRFU. Specifically, PBOCS is used to print materials for enumerators to take into the field, allocate assignments to enumerators, check materials out to the field and back into the office, manage individual cases, and provide management reports. The biggest challenge for Census concerning PBOCS is the short timeframe remaining to develop and deploy the system. Start dates for Census's field operations are fixed, and if PBOCS is not ready or if additional actions are not taken, the operation could be adversely affected, resulting in increased costs and reduced accuracy of the population count.

During this quarterly review period, we continued to monitor PBOCS. We met with PBOCS managers and technical leads; spoke with a subject-matter expert on the PBOCS steering committee; and reviewed management reports, release notes, independent assessments of the project, and other project documentation. We found that system development and testing have fallen substantially behind schedule, resulting in less functionality and an increased likelihood of field staff's encountering technical problems during operations. Putting further strain on the project is that development staff already working to capacity must now contend with resolving any problems that surface during operations.

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PBOCS development started late in the decennial cycle, partially due to a change in plans from using handheld computers to the use of paper for collecting data. An independent assessment of the system, requested by Census, found that developing PBOCS would take two to three times longer than the time available due to its size, adding pressure to the bureau. This lack of time has proved to be the biggest obstacle to the system's development. In November 2009, Census raised the risk level for PBOCS from medium to high due to a significant delay in the already inadequate development schedule. According to management reports, the project continues to lag behind schedule.

PBOCS Deployment. PBOCS is being deployed in phases; the system is usually needed several weeks before an actual operation starts so that materials can be printed (assignments lists, data collection forms, and labels) and for training of staff. The first deployment, on January 19, was for the Remote Alaska enumeration, Group Quarters Advance Visit, and Update/Leave operations. Remote Alaska and Group Quarters Advance Visit have started. PBOCS will be deployed on March 22 for NRFU, which starts May 1. Table 1 presents deployment and field operation dates. The shaded areas denote operations where PBOCS has been deployed.

Table 1. PBOCS Deployment and Field Operations Schedule, as of February 16, 2010

Deployment	Operation	Operation Start	Operation End
January 19	<i>Remote Alaska Enumeration</i>	<i>January 25</i>	<i>April 30</i>
	<i>Group Quarters Advance Visit</i>	<i>February 1</i>	<i>March 19</i>
	<i>Update/Leave</i>	<i>March 1</i>	<i>March 26</i>
February 22	Remote Update/Enumerate	March 22	May 29
	Update/Enumerate	March 22	May 29
	Enumeration of Transitory Locations	March 19	April 12
March 1	Group Quarters Enumeration	April 1	May 21
March 22	Nonresponse Follow-up	May 1	July 10
June 4	Vacant Delete Check	July 24	August 25
July 13	Field Verification	August 6	September 3

Source: U.S. Census Bureau data

Development and Testing. PBOCS is being developed using a methodology in which small increments of functionality are designed, coded, and tested in short cycles typically lasting 3 weeks. However, because of the tight schedule Census and the PBOCS contractor shortened the cycle to about 1 week, with the expectation that more functionality could be tested and found ready to deploy. However, according to internal project metrics, this shortened cycle may be introducing new errors into software code that has already been tested.

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PBOCS increments are put through three types of tests—alpha, beta, and user. Initially, code is tested internally by developers in the alpha computing environment. Then the code is promoted to an operational-like beta environment (in this case, a replica of an LCO) for independent testing. This beta environment is also available for user testing. User tests have been informally scheduled and mostly carried out by headquarters staff rather than regional staff, who are the primary users of PBOCS. According to the project manager, user testing will be more formally arranged for subsequent PBOCS deployments.

PBOCS was also part of the Decennial Application Load Test (DALT), a performance test of the networks connecting the LCOs to computers at the bureau's computer center. It also tested whether those computers had adequate computing power. Although the test showed that networks could support the expected peak loads during NRFU, the test also revealed significant problems with the performance of the PBOCS computers, which is limiting the number of staff who can use the system at the same time. Performance is a top concern of PBOCS management and the Census chief information officer (CIO). The CIO has redirected senior Census engineers and brought in experts from computer vendors to resolve these problems.

Scheduling and Staffing. Although development staff have been deployed as much as possible—working two shifts per day, extended hours, weekends and holidays—the schedule to build new functionality has not appreciably improved, and testing of already developed functionality continues to fall farther behind. At the same time, critical software defects have mounted (see table 2). Improvements in the schedule and the pace of defect resolution seem unlikely because staff availability will become an even greater issue as operations ramp up. Staff developing and testing PBOCS will be drawn away to repair problems encountered by field staff. PBOCS management stated that increasing the development staff was not a viable option because current staff are not available to train new team members.

Table 2. PBOCS Schedule Delays and Critical Defects

	12/15/2009	1/5/2010	1/12/2010
Development (days behind)	20	19	19
Testing (days behind)	19	18	21
Critical Defects	26	76	80

Source: U.S. Census Bureau

Functionality. Schedule delays coupled with fixed deadlines have forced stakeholders to accept that there is not enough time to implement all PBOCS capabilities. For example, one limitation under consideration is that managers at local Census offices may not be able to use PBOCS to help bring in additional enumerators to work an assignment area during NRFU; instead, paper records may be needed to track these split assignments. This limitation would become problematic when managing thousands of enumerators working in thousands of assignment areas in 494 LCOs across the country. Another major consequence of the tight schedule is that 50

management reports from a total of 435 had to be dropped from the original PBOCS specification.

The first PBOCS deployment also had limitations. Thirty management reports that are part of the deployment cannot be generated properly. Eleven of these reports are needed for the ongoing Remote Alaska and Group Quarters Advance Visit field operations. Also, the bureau reported in mid-January that testing of PBOCS was still incomplete. The number of problems field staff will encounter is unknown, but a shortfall in testing portends potentially significant technical problems in the field.

Training and Technical Support. Software development delays are having an impact on the preparation of training materials. The bureau is developing computer-based training and how-to guides to assist LCO managers and clerks on the use of PBOCS and workaround procedures for missing system functions. However, PBOCS management reported in mid-January that development of these training materials was 31 days behind schedule—more delayed than the testing. Contributing to this delay is uncertainty about which functions will be available in subsequent PBOCS releases.

Technical support for field operations is provided by the Decennial Operations Technical Support center. The center's staff will be augmented by eight PBOCS specialists working two shifts (four per shift) to handle help desk calls and coordinate PBOCS software patches. However, according to PBOCS management in mid-January, these specialists do not have full technical knowledge of PBOCS or a consistent understanding of the problem-resolution process because knowledgeable staff members, who were working on development, were unable to provide training.

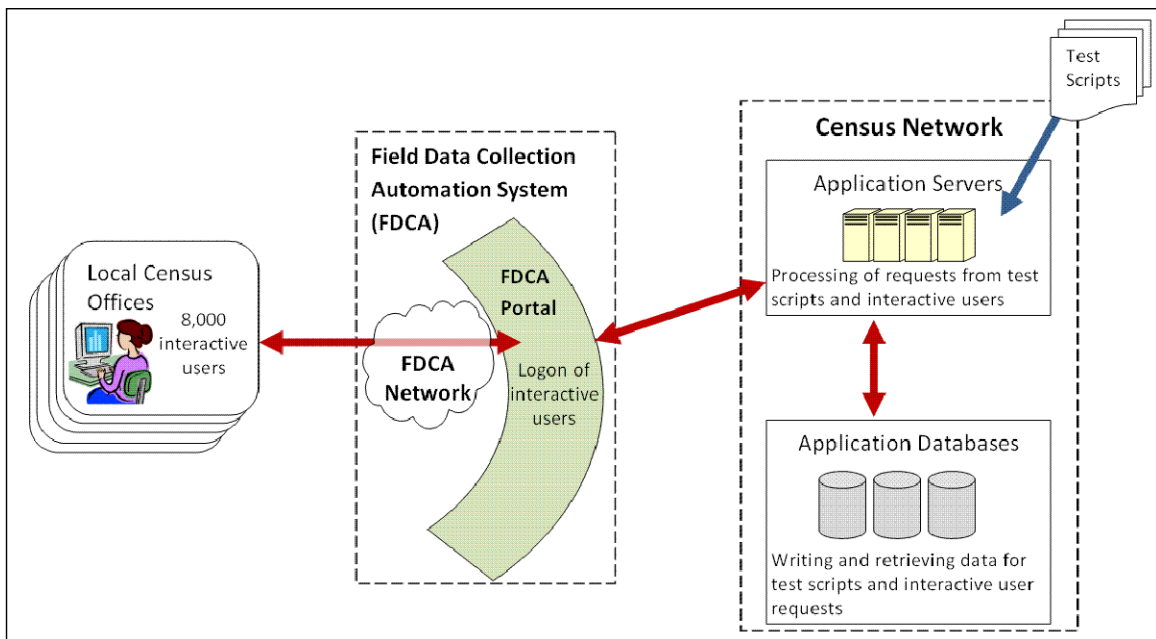
Now that PBOCS is being deployed and is in use, it becomes more complicated to maintain consistency of the development, testing, and operational environments. As technical problems are resolved, patched versions of PBOCS will need to be deployed to the field. Changes to the operational version of PBOCS will have to be reflected in development and test versions. PBOCS management has reported that synchronizing these environments is becoming more of a challenge.

Recent Operational Load Tests Indicated Adequate Network Capacity but Revealed PBOCS Performance Problems

In October 2009, the Census Bureau announced plans to simulate a full operational load on the IT infrastructure supporting decennial operations. Two load tests were conducted in December 2009 to determine the network and computing capacity needed during peak operations. The first test revealed numerous performance and functional problems. Although many of these problems were alleviated for the second test, performance issues persist. Discovering problems so close to system deployment has made performance an urgent concern. In response, the Census CIO's office deployed senior engineers to assist in resolving the remaining issues.

The purpose of DALT was to determine the network capacity needed to carry transactions over the Field Data Collection Automation (FDCA) network from the 494 LCOs to computers (application servers) within the bureau's network that process those transactions, and the computing power needed by those computers (see figure 1 for a diagram of the tests). Applications such as PBOCS and the Decennial Application Payroll Processing System (DAPPS) were included in these load tests.³ To simulate the heavy workloads expected during NRFU, 8,000 interactive users at the LCOs entered transactions into the infrastructure by following scripted scenarios; this load was supplemented by automated scripts generating additional transactions.

Figure 1. Diagram of DALT Components Tested and Test Data Flow



Source: OIG analysis of U.S. Census information

The first load test brought important problems to the attention of bureau managers and engineers. The DAPPS application was unavailable for the first test because of a software configuration problem. For the other applications, the test identified functions that did not work or experienced performance slowdowns and limitations, especially with logging on to the applications. The FDCA and Census network connections and devices performed well during the test. However, because DAPPS activity was not included, the tests could only simulate about half of the expected peak load.

Before the second load test, Census engineers corrected issues identified during the first test. Tests of all the applications, including DAPPS, were completed. Performance and functionality for PBOCS were improved. The FDCA and Census network connections and devices

³ The Decennial Application Payroll Processing System (DAPPS) is the administrative system that supports employment applicant processing, recruiting reports, and personnel and payroll processing.

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successfully handled the peak load with capacity to spare. However, the test revealed significant problems with the PBOCS application servers as well as with DAPPS, which had four times more problems than PBOCS. The Census CIO has redirected the bureau's senior engineers and brought in vendor expertise to resolve these performance problems.

Conclusion. PBOCS and other essential IT elements are proceeding under very difficult conditions. NRFU deployment is less than 5 weeks away, software errors are increasing, and system performance is not meeting operational needs. The Census Bureau Director and staff are aware of the IT problems and are attempting to take swift corrective action. However, because time is at a premium, Census must realign PBOCS development and testing efforts, placing greater emphasis on minimizing the impact of PBOCS limitations during operations.

Accordingly, in a separate memorandum to the Census Bureau, we are recommending that the Director ensure that the following actions are taken:

- senior executives with the authority to set priorities—such as reallocating resources to where they are most needed, resolving conflicting priorities, and making major changes to the decennial schedule or plan—closely monitor PBOCS activities, and act to expeditiously reduce operational risk;
- streamline development and testing by further reducing PBOCS capabilities to the essentials needed for the most important enumeration operations;
- focus on developing standardized procedural workarounds for PBOCS capabilities that cannot be implemented to support operations; and
- enhance technical support staff and procedures to expeditiously resolve problems in the field.

We plan to continue monitoring PBOCS and DAPPS performance and functionality, along with contingencies put into place to compensate for any shortfalls.

Chapter 2: Update on 2010 Census Costs

As stated in our last quarterly report, the 2010 Census is currently estimated to cost approximately \$14.7 billion, reflecting an increase of \$3.2 billion over the last 2 years. For this fiscal year, spending on the 2010 Census will total \$7.4 billion. During October–December 2009, the bureau spent less money than it had budgeted due to salary costs that were not incurred and obligations that were delayed. Our analysis of the Address Canvassing operation’s cost overrun revealed wide disparities in terms of spending among early local Census offices (ELCOs).⁴ These wide variances between budgeted and actual costs do not generate confidence in the Census Bureau’s budgeting and cost containment processes for large-scale field operations. With respect to budget planning, the bureau has revised its budget estimate for NRFU and expects to finalize the details by the end of this month. Also, our analysis of travel costs for Address Canvassing revealed a number of inefficiencies that Census managers should be aware of for future operations. Finally, the bureau plans to spend most of its Recovery Act funding during the first half of 2010 as it carries out the majority of its early enumeration operations.

Census Spending During This Quarter Has Been Under Budget

The Census Bureau monitors the status of budget and accounting for the cost of the 2010 decennial census on a monthly basis. The results are contained in several documents produced monthly, including status reports to the Office of Management and Budget, internal financial management reports, and internal cost variance analyses. Cumulative planned spending and actual expenditures are presented monthly and over the past year have included the following budget frameworks:

- Program development and management
- Content, questionnaires, and products
- Field data collection and support systems
- Automated data collection systems and data capture
- Census design, methodology, and evaluation
- Census test and Dress Rehearsal implementation
- Contingency

Individual categories may be over or under budget for the month, which combined show the overall budget variance for the 2010 Census. These major areas, in turn, contain nearly 300 individual projects, each with a project manager and numerous cost categories.

⁴ In late 2008 and early 2009, 151 local Census offices were deployed early, ahead of 2010 enumeration operations, to conduct Address Canvassing and Group Quarters Validation. These offices are part of the 494 local Census offices to be used in 2010.

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Census spent approximately 15 percent less than it had planned for the 3-month period ending December 2009 (see table 3). Monthly status reports for the months of October and November show that savings were realized in nearly all budget frameworks as a result of salaries that were not incurred, obligations that were delayed, and delays in hiring LCO staff, to name a few reasons. However, it is unlikely that Census will experience this level of cost containment in the coming months as operations commence and obligations are actualized. We will monitor spending and expenditures for the month of December (to be reported in the February monthly status report) to assess whether delayed obligations have any impact on program activities during subsequent months.

Table 3. Comparison of 2010 Census Cumulative Planned Spending and Actual Costs for FY 2010 (\$ in millions)

Month	Cumulative Planned Spending	Cumulative Actual Spending	Cumulative Variance	Percentage Under Budget
October	\$ 465.2	\$459.5	\$ 5.7	1%
November	^a 923.6	825.2	98.4	11
December	^a 1,164	988.8	175.2	15

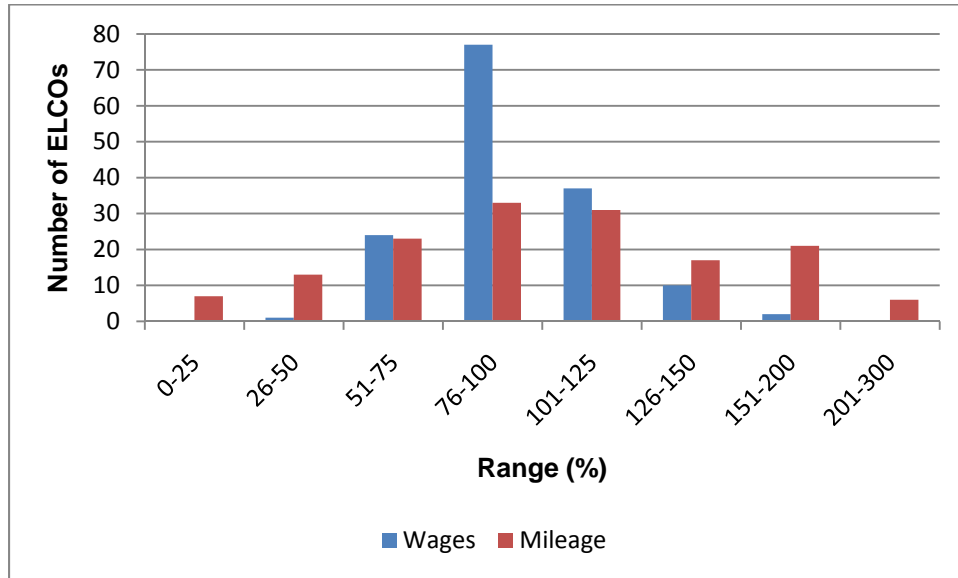
^aAs revised in November and December 2009, respectively.

Source: U.S. Census Bureau

OIG Analysis of Address Canvassing Budget Overruns Revealed Wide Disparities in Spending Among Local Census Offices

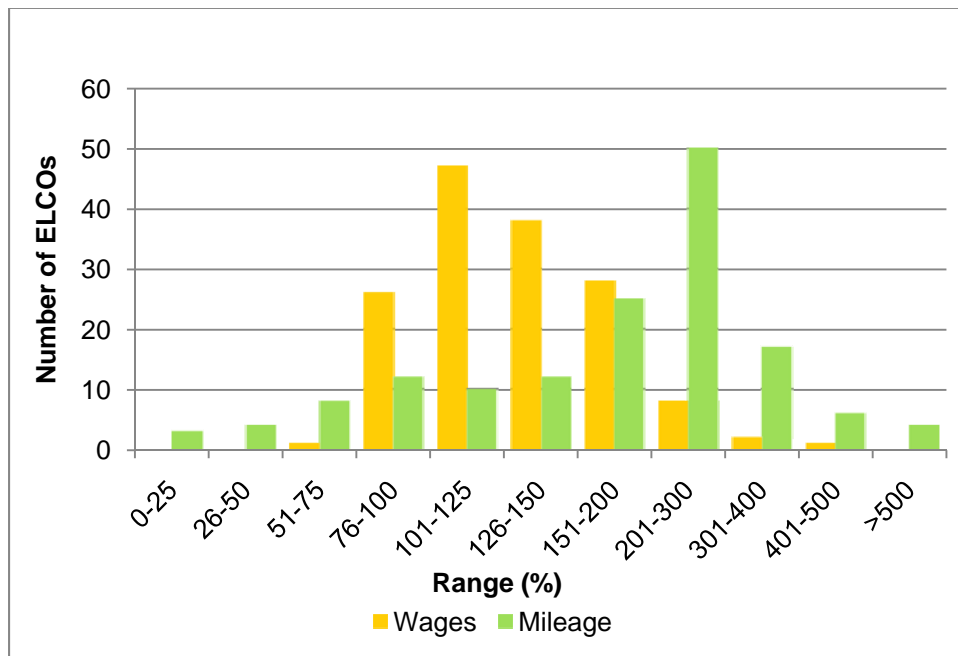
Census Bureau headquarters formulated a total budget of \$356 million to conduct the Address Canvassing operation in 2009. This amount was allocated among the 151 ELCOs nationwide based on the type of area, such as urban or rural, covered by each ELCO. We reported in December 2009 that the Address Canvassing operation overspent its \$356-million budget by \$88 million (25 percent). We analyzed Census data to determine the extent of overspending at the ELCO level and found wide disparities among offices. The two major cost drivers of the operation were wages and reimbursement for miles driven by temporary employees (listers) to assignment areas. For production, 49 of 151 ELCOs (32 percent) exceeded their wage budgets and 75 (50 percent) exceeded their mileage budgets (see figure 2). For quality control, 124 of 151 ELCOs (82 percent) exceeded both their wage and mileage budgets (see figure 3).

Figure 2: Percentage of Wages and Travel Budgets Spent by 151 ELCOs for Address Canvassing Production



Source: OIG analysis of U.S. Census Bureau data

Figure 3: Percentage of Wages and Travel Budgets Spent by 151 ELCOs for Address Canvassing Quality Control



Source: OIG analysis of U.S. Census Bureau data

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The ELCOs' production wage costs were 45–186 percent of their budgets and for production mileage they were less than one percent to 250 percent of their budgets. For the quality control phase of the operation, ELCOs' wage costs were 68–439 percent of their budgets and for mileage were less than one percent to 878 percent of their budgets. These figures show that the Address Canvassing budget estimate was inaccurate and expenditures varied greatly among ELCOs.

With the upcoming NRFU operation requiring three times the number of employees and offices than were used during Address Canvassing, it is important that Census's revised budget estimate for this operation be reasonably accurate so that the final cost does not exceed the amount budgeted, including its contingency fund (set at 15 percent above the operation's current cost estimate). In 2000, Census exceeded its budget of \$1.2 billion for NRFU activities by approximately \$186 million—almost 15 percent. While a similar overrun during the 2010 Census would be covered by existing contingency funds, issues arising from PBOCS, as discussed in chapter 1, could result in unexpected costs, which the bureau should monitor.

Details of Census's Revised NRFU Cost Estimate Are Nearly Complete

In our last quarterly, we reported that Census planned to have a revised NRFU cost estimate by mid-November 2009. The budget for the operation was projected at \$2.74 billion with an additional \$411 million in contingency funds to cover any cost overruns. During our current review period, Census budget staff, with the help of a consultant, conducted an analysis of the NRFU budget estimate to determine whether the original estimate was sufficient for the operation. By developing over 1,000 likely cost estimates using a number of factors, the bureau reached what it considers a reasonable NRFU cost estimate of \$2.33 billion. This figure is within the analysis's distribution of costs, which ranges from \$1.94 billion to \$2.83 billion. The range was necessary because of uncertainty about two major cost drivers—mail response and worker productivity. To these we would add the unknown impact on operations of a PBOCS with reduced functionality and performance.

As part of this analysis, the bureau obtained savings by adjusting a number of known cost drivers. For example, Census decided to maintain 2009 enumerator pay rates for 2010 operations after assessing current economic conditions. This resulted in significant savings in the cost estimate. To a lesser degree, the U.S. government's recent change in its mileage reimbursement rate for official travel—from 55 cents per mile to 50 cents per mile, effective January 1, 2010—also helped reduce the overall NRFU cost estimate. The decrease in the NRFU estimate is partially offset by a \$137-million increase in the estimate for Vacant/Delete Check, which aims to verify the status of addresses classified as vacant or nonexistent during NRFU. This operation is forecast to cost almost 40 percent more than originally estimated because the projected workload is expected to nearly double. Census Bureau staff informed us that it anticipates finalizing the details of the new \$2.33-billion NRFU budget estimate by the end of this month so that LCOs can adjust their spending plans accordingly before the start of operations. We look forward to receiving the final cost estimate, which we will assess during our next review period.

OIG Analysis of Address Canvassing Travel Costs Reveals Some Inefficiencies

Census's Address Canvassing operation took place between March 30 and July 10, 2009. During that period, more than 100,000 Census listers traveled over 150 million miles, for which they were reimbursed \$83 million. In addition, employees were given one week's worth of training prior to performing fieldwork. Our analysis of the Census data showed some inefficiencies with travel fund management and training that Census managers should be aware of in managing 2010 field operations. Specifically, employees (1) were reimbursed at a rate higher than was allowed, (2) drove a relatively high number of miles per hour worked, and (3) were paid for training but completed little or no work.

Mileage Reimbursement. The federal mileage reimbursement rate was set at 58.5 cents per mile on August 1, 2008, and subsequently reduced to 55 cents on January 1, 2009. However, during the period between January and July 2009, which encompassed the Address Canvassing operation, some employees claimed nearly 3.9 million miles driven at the higher rate, resulting in excess payments of approximately \$136,000.

Ratio of Miles Driven per Hour to Hours Worked. Using bureau data, we calculated a ratio for each employee of the number of miles driven per hour to the number of hours worked. To do that, we determined the number of hours required by an employee to drive the number of miles claimed while driving at a speed of 50 miles per hour (a relatively high speed). Then, we divided that figure by the total number of hours the employee worked to give us a measure of time spent driving during work hours.⁵ Despite this conservative estimate—assuming that employees drove 50 miles per hour at all times—we found that 604 employees spent the majority of their time driving instead of conducting field work, and of those, 23 employees spent 100 percent or more of their time driving. This suggests some over-reporting of actual mileage in travel claims.

While the number of employees with questionable reimbursements is very small compared with the overall universe of 140,000 employees involved in this operation, the potential exists for this problem to be compounded because upcoming field work operations will involve significantly more temporary employees than did Address Canvassing. Census Bureau managers should monitor mileage reimbursements carefully during upcoming enumeration operations, and verify the validity of those reimbursement claims that appear excessive before they are paid.

Training Costs. During Address Canvassing, 15,263 employees received training but worked for less than a single day or did not work at all. Of these employees, 10,235 did not work at all but earned approximately \$3.4 million for attending training. An additional 5,028 employees completed training, at a cost of \$2.2 million in wages, but worked for less than a single day. Several reasons could have accounted for these results: employees could have voluntarily quit after taking training or been deemed unsuitable to work, or there may not have been enough work for them to perform.

Problems such as these can be expected for any major field operation. In relation to the final cost of Address Canvassing, the cost of these inefficiencies was relatively low. However, as field

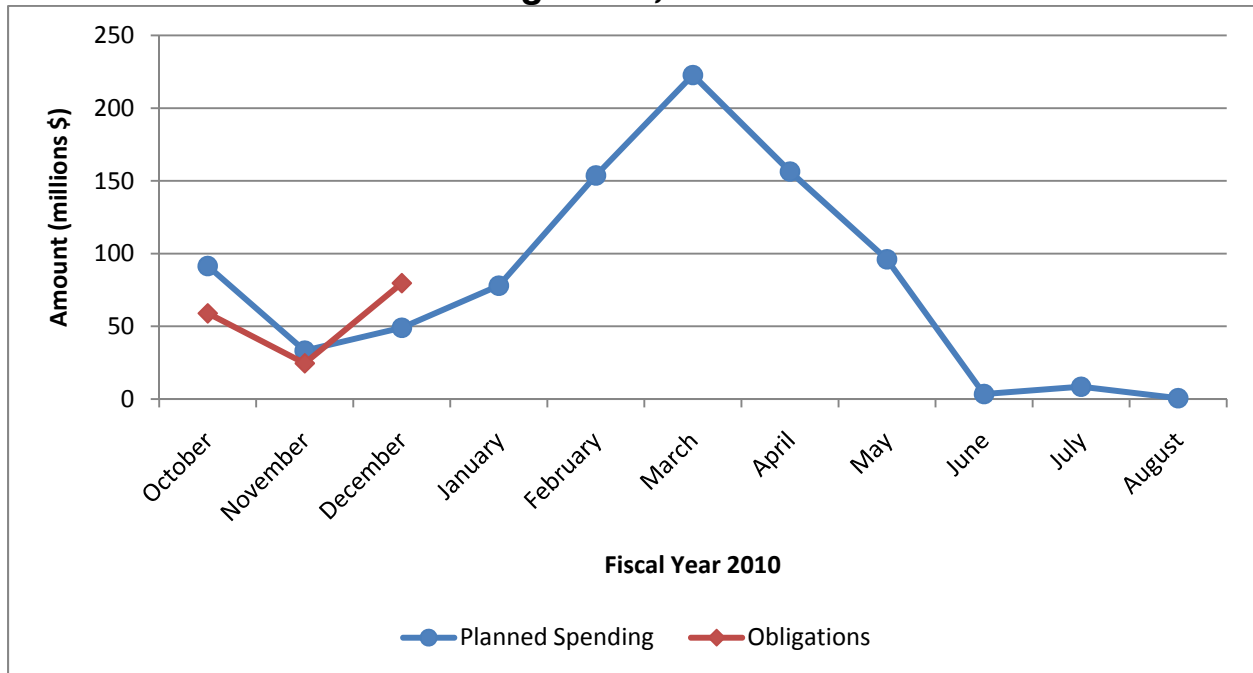
⁵ Training hours were excluded from this calculation.

operations take place during 2010 involving significantly more employees, Census should develop effective internal controls over wage, travel, and training costs and ensure that managers scrupulously follow these controls in future operations.

Census Plans to Spend Most of Its Recovery Act Funding During Field Operations

The American Recovery and Reinvestment Act of 2009 provided the Census Bureau with \$1 billion in funds to improve communications and outreach (\$250 million) and to fund early operations (\$750 million) for the 2010 Census. At the start of FY 2010, Census had \$899.6 million available, having spent \$100.4 million the previous fiscal year.⁶ Figure 4 shows the level of monthly planned spending of Census’s remaining Recovery Act funds for the rest of FY 2010, as well as obligations incurred between October and December 2009.

Figure 4. Recovery Act Funds—Planned and Actual Spending Obligations, FY 2010



Source: U.S. Census Bureau financial management reports

According to its December 2009 financial management report, the bureau plans to spend nearly \$629 million of its remaining Recovery Act funds during the 4-month period between February and May 2010. During this time, the bureau will be carrying out 8 of 10 field enumeration operations involving thousands of enumerators based out of 494 LCOs nationwide. If current spending plans are realized, the bureau will deplete its Recovery Act funding by the end of August 2010.

⁶ This amount represents one source of funding available to Census this fiscal year. The other sources are appropriations for FY 2010 and from FY 2009.

Chapter 3: Update to Census's Risk Management Activities

As our previous quarterly reports have noted, the bureau's risk management program represents a significant improvement over the 2000 decennial, which lacked a formal risk management process. Census's Risk Review Board (RRB)—a subgroup of the Census Integration Group—continues to oversee risk management activities and update its risk register. As of December 31, 2009, the register contained 25 program-level risks, with each risk rated high (likely), medium (somewhat likely), or low (unlikely)—colored red, yellow, or green, respectively. As discussed in our second quarterly for the period ending in September 2009, Census reported 8 high-, 14 medium-, and 3 low-level risks. For the period October–December 2009, the RRB did not make changes to the overall risk ratings but did close one risk and add two others. Also during this period, the board initiated monthly meetings to specifically review each risk rating on its register to comply with the requirements of its risk management plan. Finally, the RRB has begun to finalize and implement contingency plans for program risks to guide the bureau in addressing problems that might arise should mitigation plans and activities fail. We reviewed four contingency plans that have been completed to date, and they appear to be adequate and informative.

Risk Review Board Initiates Monthly Review and Updates the Risk Register

The RRB held its first monthly meeting in December, in addition to its weekly meetings, to review the status of each program-level risk. Census's risk management plan requires the board to oversee the risk ratings and verify whether individual risk managers are appropriately monitoring and assessing their respective risks. However, the RRB had spent the majority of its weekly meetings reviewing drafts of contingency plans. As a result, it was not reviewing the status of risks on a monthly basis, as required by the risk management plan. Ultimately, the RRB added a monthly meeting specifically dedicated to reviewing the status of risks. By having monthly meetings, the board is ensuring an accurate register that informs Census's staff and stakeholders while also complying with the bureau's risk management plan.

As a result of the board's December meeting, the risk register remained relatively unchanged from what we reported in our previous quarterly report, with the exception of one risk being closed and the opening of two additional risks (see table 4).

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Table 4. Changes in Program-Level Risk Ratings, September–December 2009

Risk Grouping	Risk Name	Sept. 2009	Dec. 2009
Operations and Systems Risks	Contract management issues	High	High
	Late design changes	High	High
	Address Canvassing and Group Quarters Validation operational control system solutions ^a	Medium	Closed
	2010 operational and systems failures	High	High
	FDCA decentralization/reintegration	High	High
Quality Risks	Housing unit duplicates and misses	High	High
	Exception enumeration quality	Low	Low
	Inaccurate Puerto Rico address list	Medium	Medium
	Data quality	Medium	Medium
	Person over-coverage and under-coverage	Medium	Medium
Public Cooperation Risks	IT security breach	Medium	Medium
	Loss of confidential data	Medium	Medium
	Respondent cooperation	Medium	Medium
	Stakeholder support	Medium	Medium
	Immigration policy backlash	Medium	Medium
Major Disasters Affecting Population	Major disaster's effect on population	High	High
	Continued operations of critical infrastructure during disasters	Medium	Medium
Staffing Risks	Permanent staff retention	Low	Low
	Inability to recruit sufficient temporary workforce	Low	Low
Budget Risks	Uncertainty of assumptions in cost model	Medium	Medium
	Continuing resolution	Medium	Medium
	Insufficient funding	Medium	Medium
Schedule	Falling behind schedule on key milestones	High	High
Not Yet Categorized	H1N1 influenza affecting regional Census centers and local Census office activities ^{b,c}		Medium
	H1N1 influenza and similar contagious illnesses affecting non-regional Census centers and non-local Census office activities ^b		Medium
	Litigation that threatens the delivery of apportionment and redistricting data	High	High
^a Risk has been closed. ^b Risk had not yet been created in September. ^c Risk decreased from high in October and November to medium in December.			

Source: OIG analysis of U.S. Census Bureau data

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Because the Address Canvassing and Group Quarters Validation operations ended in July and October 2009, respectively, the risk “Address Canvassing and Group Quarters Validation operational control system solutions” was closed and removed from the register. At the same time, the board added two new risks: “H1N1 Influenza and Similar Contagious Illnesses Affecting Non-Regional Census Centers and Non-Local Census Offices Activities” (non-regional flu risk) and “H1N1 Influenza Affecting Regional Census Centers and Local Census Office Activities” (regional flu risk) to mitigate the delay in decennial operations caused by outbreaks of H1N1 influenza.

The regional flu risk had been a high-level risk in October and November because the board had been unsure of its ramifications. However, after the risk manager presented a combined mitigation and contingency plan at a weekly RRB meeting in December, the risk level was downgraded to medium. This combined plan, which was developed expeditiously by staff, addresses the potential effects of an H1N1 influenza outbreak on decennial operations resulting from large numbers of staff at either centralized or field offices becoming ill, the staff’s being unwilling to contact respondents in high-infection areas, or respondents being reluctant to cooperate with Census staff. Bureau staff continues to prepare the combined mitigation and contingency plan for the non-regional flu risk.

Update on Contingency Plans. The RRB continues to spend the majority of its time at its weekly meetings reviewing drafts of contingency plans for the 13 of 25 risks that it decided needed plans. Table 5 shows the status of the 13 risks selected for contingencies.

Table 5. Status of Contingency Plans

Risk	Risk Status (December 2009)	Contingency Plan Status (January 2010)		
		In Progress	Conditionally Approved	Finalized
IT security breach	Medium			X
Loss of confidential data	Medium			X
Continued operations of critical infrastructure during disasters	Medium			X
H1N1 influenza affecting regional census centers and local census offices activities	Medium			X
Uncertainty of assumptions in cost model	Medium		X	
Continuing resolution	Medium		X	
Insufficient funding	Medium		X	
Housing unit duplicates and misses	High		X	
Falling behind schedule on key milestones	High		X	
2010 operational and systems failures	High		X	
Person over-coverage and under-coverage	Medium		X	
Major disaster's effect on population	High	X		

Table 5 continued

Risk	Risk Status (December 2009)	Contingency Plan Status (January 2010)		
		In Progress	Conditionally Approved	Finalized
H1N1 influenza and similar contagious illnesses affecting non-regional census centers and non-local census office activities	<i>Medium</i>	X		

Source: OIG analysis of U.S. Census Bureau data

As of early January 2010, the RRB had finalized four contingency plans, including the regional flu risk discussed above, and given preliminary approval for seven others. These contingency plans will become effective upon a final RRB review once the board’s comments from a previous review have been addressed.

As reported in the second quarterly, the RRB was deciding whether a contingency plan was necessary for the risk “Litigation that Threatens the Delivery of Apportionment and Redistricting Data.” This risk focuses on the possibility that the bureau might not deliver census data on schedule because of possible lawsuits from stakeholders disputing Census’s data and contesting the bureau’s procedures and methodology. The RRB concluded that a contingency plan would not be practical because of the uncertainty over potential litigation and how to adequately prepare for events that have not yet occurred and of uncertain magnitude. Instead, the board decided to institute a rapid response process involving appropriate staff to respond to situations as they develop.

Finalized Contingency Plans Appear to Address Program Risks

To date, the RRB has formulated contingency plans for the following four program-level risks: (1) IT Security Breach, (2) Loss of Confidential Data, (3) Continued Operations of Critical Infrastructure During Disasters, and (4) H1N1 Influenza Affecting Regional Census Centers and Local Census Office Activities. A contingency plan will be triggered if its mitigation activities are no longer effective, prompting the risk to materialize. When a trigger—such as a date or an event—occurs, appropriate Census staff will assess impacts to the decennial schedule and resources, take necessary actions to resolve problems, and monitor their effects on operations. Overall, these finalized contingency plans appear to be reasonable for addressing the potential risks if they occur.

The risk entitled “IT Security Breach” was developed on the premise that IT security breaches have affected U.S. government systems in the past. The threat exists for unauthorized access to the bureau’s secured facilities, networks, and systems during the 2010 Census. As a result, the contingency plan focuses on ensuring that IT systems are secure from both automated and physical attacks on Census networks and systems by complying with the National Institute of Standards and Technology’s (NIST) security guidelines and following Department of

Commerce, Census Bureau, and NIST guidelines and security policies for physical access to Census's secured facilities and systems. If a network breach or unauthorized access occurs, the plan requires the bureau to follow its own guidelines as well as the Department's for reporting and handling an incident. At the same time, the bureau will form a rapid response team composed of the system owners, security office staff, and technical personnel familiar with the affected systems to resolve any issues. Given the uncertainty over the extent of security breaches (if they occur at all), this plan appears sufficient to handle situations as they arise.

The risk called "Loss of Confidential Data" addresses the possibility of losing confidential data, including personally identifiable information and Title 13 data, during decennial operations.⁷ Census is responsible for safely gathering and moving mass volumes of confidential paper and electronic data among hundreds of field offices, several data centers, and Census headquarters. The bureau understands that the loss of confidential data may result in the loss of the public's confidence, which may lower the household response rate, increasing costs and delaying operations. The contingency plan, which is similar to the one addressing IT security breaches, involves following the bureau's established processes and procedures for dealing with the loss of data, working with the operational unit where the loss occurred, and, if necessary, creating a rapid response team to recover or replace the data. In addition, the plan assigns responsibility to the bureau's public information office for formulating announcements addressing perceived or actual loss of data and disseminating that information to the media. Given the bureau's responsibility for collecting, processing, and protecting its data, the plan includes processes and procedures adequate for addressing the loss of confidential data.

Based on past censuses, natural disasters are likely to occur during decennial operations, adversely affecting decennial operations in terms of cost and time. The risk "Continued Operations of Critical Infrastructure During Disasters" focuses on identifying events that may disrupt or prohibit access to the operation of decennial systems or network infrastructure. Triggers for the contingency plan include detecting a security breach or network connectivity issue with either the FDCA contractor's or Census's network. Contingencies include following NIST/Commerce IT security guidelines, having the FDCA contractor institute a rapid response team to deal with problems involving its network, and having bureau staff implement several specific strategies to handle issues with the Census network. The plan appears to be reasonable for handling a system or network infrastructure disruption.

The combined mitigation and contingency plan for the risk entitled "H1N1 Influenza Affecting Regional Census Centers and Local Census Office Activities" was added in the event an H1N1 influenza outbreak affects field operations. An outbreak has the potential to sicken large numbers of decennial field staff and households, inhibiting both groups from making contact with one another in high-infection areas. Delays in decennial operations would likely increase costs. This plan calls for a mix of mitigation and contingency activities for varying levels of employee absenteeism—under 10 percent, between 10 and 15 percent, and between 15 and 25 percent. These activities include encouraging employees to use provided hand sanitizers, limiting unnecessary visitors to Census facilities, increasing the number of replacement training sessions

⁷ Title 13 data refers to data collected by the U.S. Census Bureau for statistical purposes that is deemed confidential and protected from unauthorized disclosure by 13 U.S.C. § 9(a).

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in highly affected areas to replace ill employees, and conducting telephone interviews in place of face-to-face enumeration. While it is difficult to forecast the impact of an H1N1 influenza outbreak during decennial operations, the plan provides strategies and actions that should help diminish any negative effects.

**Appendix A:
Objectives, Scope, and Methodology**

To satisfy the requirement for our third quarterly report on the 2010 Census, we have provided an update on the status of 2010 Census activities with respect to schedule, cost, and risk management activities. This information covers activities that occurred October–December 2009 and plans for activities moving forward.

To accomplish our objectives, we conducted a review of documentation, including monthly status reports, activity schedules, program management reviews for 2010 Census contracts, and updates to plans for Census-managed activities such as paper-based operations, financial management and status of funds reports, internal budget variance reports, risk registers, and mitigation and contingency plans for program-level risks. We also attended weekly schedule and risk management meetings during this reporting period.

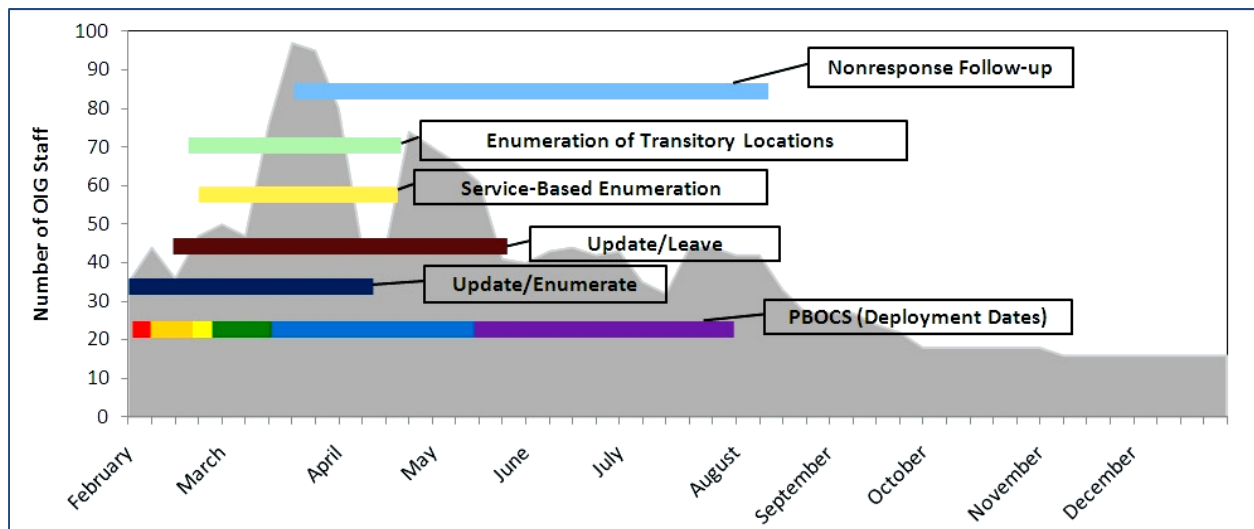
We conducted this review from November 2009 through February 2010, under the authorities of the Inspector General Act of 1978, as amended; Departmental Organization Order 10-13, dated August 31, 2006, as amended; and in accordance with the *Quality Standards for Inspections* (revised January 2005) issued by the President’s Council on Integrity and Efficiency.

**Appendix B:
Office of Inspector General
2010 Decennial Census Oversight Plan**

The Census Bureau has identified 44 decennial operations for 2010. These operations span several years and entail providing support, establishing where to count, collecting and integrating respondent information, providing results, measuring coverage, and performing analysis and research for the 2020 Census. In FY 2010 we anticipate covering aspects of 20 of these operations, including deploying substantial numbers of staff to observe eight Census field operations. This work will also inform our oversight of the 2020 census.

OIG resources devoted to the 2010 Decennial Census over the coming year will involve almost 100 members of our staff at a given point in time. Details of our planned staffing deployment over the course of the calendar year are provided in Figure 5, below. The variability of resource deployment is related to the number and extent of the field operations conducted by Census. During this period, OIG plans to expend approximately 35 full-time-equivalent employees at an estimated cost of about \$5.8 million for the review of the decennial census. OIG will oversee Census Bureau field and headquarters management of operations, field enumeration activities, information technology (IT) systems and the security of personally identifiable information, and internal controls over payroll.

Figure 5. OIG Census 2010 Oversight Staffing Plan



Field Activities

Our oversight of field activities will include deploying staff to selected local Census offices nationwide to observe whether activities are being conducted in accordance with Census procedures (for example, whether the Census questionnaire is being administered properly;

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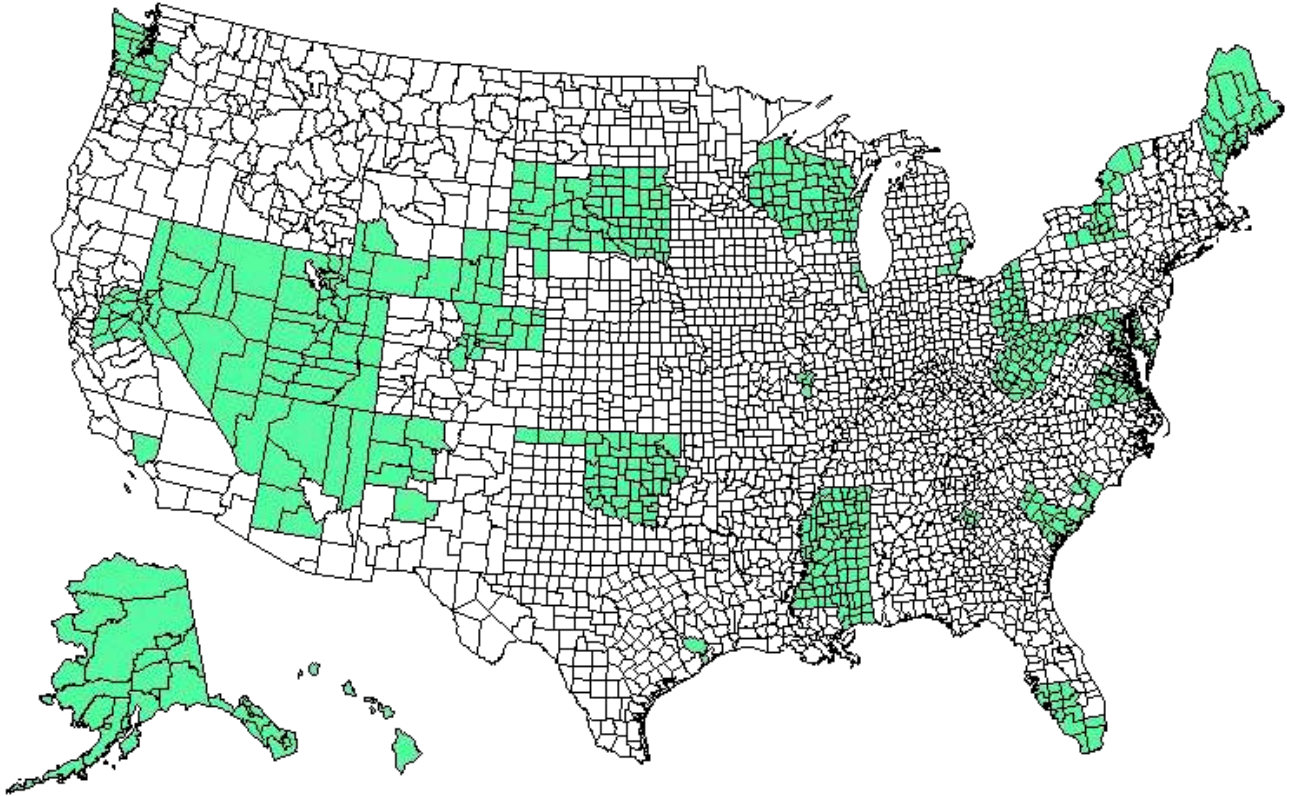
whether map and address list updating is being completed correctly, where applicable; etc.) and local Census office practices. We will notify the Census Bureau promptly of any problems needing immediate attention. We will summarize our observations and findings in a final report, to be completed in FY 2011. This capping report will provide our summary assessment of the overall efficacy and efficiency of the 2010 Census enumeration. This and subsequent reports will provide lessons learned to aid in planning for the 2020 Census.

In FY 2009 we observed *Address Canvassing* and *Group Quarters Validation*. During FY 2010 field operations we intend to have a presence in every enumeration activity. In our planning for this major deployment of OIG personnel, we analyzed multiple data sources to ascertain the areas in which the Census Bureau may face its greatest demographic and operational hurdles. The following are six decennial operations that we will be observing:

- *Update/Leave*: In areas in which many homes do not receive mail at a city-style address, enumerators canvass assignment areas to deliver a Census questionnaire to each housing unit. At the same time, they update the address list and maps. This method is also used in selected collection blocks within *mailout/mailback* areas, where mail delivery may be a problem, such as apartment buildings where mail is left in common areas.
- *Update/Enumerate*: Enumerators canvass assignment areas to update residential addresses, including adding living quarters that were not included on original address listing pages, update Census Bureau maps, and complete a questionnaire for each housing unit. This occurs in communities with special enumeration needs and in which many housing units may not have house-number-and-street-name mailing addresses, similar to *update/leave*.
- *Enumeration of Transitory Locations*: Enumerators visit transitory locations, such as campgrounds and hotels, to enumerate their residents.
- *Service-based Enumeration*: This focused, 3-day enumeration provides an opportunity for people living on the street or in shelters to be included in the Census.
- *Nonresponse Follow-up (including Vacant/Delete Check)*: Enumerators visit addresses for which the Census Bureau had no questionnaire or telephone response. Enumerators collect information about the household residents as of April 1, 2010.
- *Coverage Follow-up*: This telephone operation attempts to resolve erroneous enumerations and omissions.

Our field observations will focus on a judgmental sample of 34 of 151 early local Census offices that supported Address Canvassing operations. These are split into smaller local Census offices for enumeration activities; our sample equals 113 of 494 local Census offices. The areas highlighted on the following map (Figure 6) indicate the boundaries of local Census offices within our sample. OIG staff will observe Census operations in selected areas within those locations.

Figure 6. Local Census Office Boundaries within Sample to be Observed by OIG Staff



To ensure nationwide coverage, we initially selected at least one Early Local Census Office per Census region. Our selections were based on the bureau's demographic measures of enumeration difficulty, operational factors such as blocks with large populations, and significant socioeconomic changes such as high foreclosure rates or high growth rates. Next, we identified a smaller sample conveniently located near OIG offices. The remaining selections were included to ensure adequate representation of population density and specific hard-to-count populations. For example, we intentionally included the rural Mississippi Delta and the hurricane-affected Galveston, Texas, areas. We balanced the sample by including several areas that were not considered hard to count. A listing of the Early Local Census Offices in our sample follows:

Anchorage, AK
Flagstaff, AZ
Phoenix Central, AZ
Los Angeles Downtown, CA
Stockton, CA
Lakewood, CO
DC East, DC
Miami East, FL
Sarasota, FL
Atlanta South, GA
Honolulu, HI

Chicago Far North, IL
Chicago Near South, IL
Frederick, MD
Seat Pleasant, MD
Portland, ME
Detroit West, MI
St. Louis City, MO
Jackson, MS
Meridian, MS
Las Vegas, NV
Bronx Southeast, NY

Queens Northwest, NY
Syracuse, NY
Canton, OH
Oklahoma City, OK
Charleston, SC
Rapid City, SD
Houston Central, TX
Salt Lake City, UT
Richmond, VA
Tacoma, WA
Eau Claire, WI
Charleston, WV

Other Reviews

In addition to deploying staff to observe enumeration activities, we will be conducting reviews in the following areas:

- *Evaluating and Monitoring Decennial Systems:* We plan to evaluate key IT decennial systems for development and operational risks that may affect critical decennial operations and the accuracy of the population count. We will assess the paper-based operations control system and management workarounds required to address its anticipated shortcomings, starting with the *Group Quarters Advanced Visit* operation, as well as the Decennial Applicant, Personnel and Payroll System. Other systems that may be reviewed include the response processing system, the universe control and management system, and the Decennial Response Integration System.
- *Safeguarding Decennial Respondent Confidential Data:* We will assess controls to protect the confidentiality, integrity, and availability of electronic decennial respondent information.
- *Census's Ability to Detect/Respond to Cyber Attacks:* We will evaluate the extent and effectiveness of Census's monitoring of its decennial information systems for malicious activity.
- *2010 Enumeration Payroll and Progress Review:* In our ongoing audit of Address Canvassing payroll for the decennial Census, we are verifying the accuracy and integrity of payroll processing, including a review of supervisory approval, overtime compliance, and time-and-expense reports. The overall purpose of this review will be to monitor the cost and progress of the 2010 Census field operations and verify the accuracy and integrity of the payroll—with emphasis placed on identifying irregular operations, assessing management staffing and deployment decisions, and identifying fraud.
- *Early 2020 Planning:* Planning for the 2020 Census has already started, and we intend to track progress throughout the decade. Weaknesses in the bureau's cost estimating techniques and its failure in planning and managing the acquisition of handheld computers for field data collection were major contributors to the eventual cost overruns and high level of operational risk. A related factor was the misalignment of budgets, schedules, requirements, testing, and acquisitions leading up to the 2010 Census. We will monitor early 2020 planning to identify more cost-effective methods for obtaining a high-quality address file and conducting enumeration, and promote more effective and transparent decennial planning and budgeting.