

**Testimony
of**

Judith J. Gordon

**Associate Deputy Inspector General
U.S. Department of Commerce**

**Information Policy, Census, and National Archives Subcommittee
of the
Oversight and Government Reform Committee
House of Representatives**

*Thursday, March 25, 2010
2154 Rayburn HOB
2:00 p.m.*

***The 2010 Census:
An Assessment of the Census Bureau's Preparedness***

Chairman Clay, Ranking Member McHenry, and Members of the Subcommittee:

Thank you for inviting us to testify today on the Census Bureau's readiness for this year's decennial count. More than 100 million census forms were mailed to addresses across the country last week, asking that they be filled out by residents and returned by Census Day, April 1—one week from today.

Last month we released our third *Quarterly Report to Congress*¹ on the status of the 2010 Decennial Census, covering October through December of last year. That report discussed our findings in the areas of schedule, cost, and risk management. Today, I would like to focus on an issue that affects all of these components: the information systems that are integral to a successful count.

With a life-cycle cost estimate now at \$14.7 billion, the 2010 Census is a massive undertaking made up of many moving parts. The bureau must integrate 44 separate operations (with a total of some 9,400 program- and project-level activities). Group quarters enumeration begins in less than a week, and the start of the largest operation, nonresponse follow-up (NRFU), is just over 5 weeks away.

¹2010 Census: *Quarterly Report to Congress*, Report OIG (Office of Inspector General)-19791-3, February 2010. OIG reports are available on our Web site: www.oig.doc.gov.



Now estimated to cost \$2.3 billion, NRFU is the most expensive operation of the decennial, requiring census takers to visit every household that does not return a form and record answers to the form's questions.

Temporary bureau management staff must run 494 local offices and manage over 600,000 temporary workers, while recruiting substantially more. Much of the Census Bureau's plan is on track, but the success of NRFU—which is critical—hinges on how effectively Census controls the enormous NRFU workload and workforce. As I will discuss at length, it must do so using a Paper-Based Operations Control System (PBOCS) with less functionality than planned and currently experiencing significant performance problems. PBOCS is essential for efficiently making assignments to enumerators, tracking enumeration forms, and reporting on the status of operations. And Census must recruit, hire, and pay its massive temporary workforce with a Decennial Applicant, Personnel, and Payroll System (DAPPS) also experiencing persistent performance limitations.

While my testimony identifies serious issues currently faced by the Census Bureau, we are mindful of the unparalleled challenge of the decennial and the extraordinary efforts being made by bureau staff to achieve a successful outcome. Nevertheless, NRFU efficiency and accuracy are at risk—because of PBOCS and DAPPS limitations—and final decennial costs remain uncertain.

INFORMATION TECHNOLOGY SYSTEMS ARE BEING DEVELOPED QUICKLY AND EXPERIENCING SERIOUS TECHNICAL PROBLEMS, LEADING TO PERFORMANCE ISSUES THAT PLACE CENSUS SCHEDULE AT RISK

PBOCS is essential to managing data collection and quality control for ten discrete enumeration operations, including the large, door-to-door NRFU. This system is needed, for example, to make work assignments to enumerators, to confirm that completed questionnaires have been returned to the office, and to ensure that workload completion rates are on track.

As shown in Table 1, PBOCS is being deployed in phases, prior to the start of each field operation it is to support. So far, it has been deployed for seven of ten operations. Yet system development and testing have fallen substantially behind schedule, resulting in a 3-week delay in deploying PBOCS for NRFU, now scheduled for April 12. In addition, staff in local Census offices are encountering technical problems in support of early field operations. And Census has encountered major hardware and software issues affecting system performance that have prompted Census officials to consult executives and senior

technical troubleshooters from the companies that provide PBOCS hardware and software components. Workarounds for NRFU are currently being planned to overcome performance problems.

Table 1. PBOCS Deployment and Field Operations Schedule as of March 19, 2010

Operation	Operation Start	Operation End	Deployment
Remote Alaska Enumeration	January 25	April 30	January 19
Group Quarters Advance Visit	February 1	March 19	
Update/Leave	March 1	March 26	
Enumeration of Transitory Locations	March 19	April 12	February 22
Remote Update/Enumerate	March 22	May 29	
Update/Enumerate	March 22	May 29	
Group Quarters Enumeration	April 1	May 21	March 8
Nonresponse Follow-up (NRFU)	May 1	July 10	April 12 ^a
Vacant/Delete Check	July 24	August 25	June 4
Field Verification	August 6	September 3	July 13

^aRepresents a 3-week delay from March 22

Source: U.S. Census Bureau 2010 data

Start dates for Census field operations are fixed: If PBOCS is not ready or if additional actions are not taken, field operations could be adversely affected, resulting in increased cost and reduced accuracy of the population count.

The problems surrounding PBOCS are not new; we reported on these challenges in prior testimony and in our last two quarterly reports to the Congress. It is clear that the Census Bureau Director and his staff are taking extensive corrective actions. But the risk remains.

With population counts for apportionment due to the President by December 31, 2010, the decennial census is the epitome of a schedule-driven program—with all of its attendant risks and consequences. Issues in developing decennial systems have included rushed and incomplete requirements specifications; cut corners in program design, development, and testing; massive cost growth; and increased operational and quality risks.

As our last quarterly report details, the development and testing of PBOCS is being compressed to meet the schedule, partially due to a change in plans from

using handheld computers to the use of paper for collecting respondent data. However, the inevitable impact of this “just-in-time” approach is that errors are not being found until the system is used in actual operations or functionality is not complete. An example is completion of key PBOCS interfaces with other decennial systems: Census headquarters and regional offices cannot use the Cost and Progress system to monitor the progress of operations at the national, regional, and local office levels because the interface with PBOCS has not been completed. Fixes are currently being made to address problems identified in testing the PBOCS interface with the quality-control system for the update/enumerate² operation and NRFU, called the Matching and Review Coding System.

System Problems Already Affecting Operations

Local Census office staff are experiencing PBOCS reliability problems in early enumeration operations. Our analysis of help desk reports indicates that users have experienced difficulties with assigning work to enumerators, updating completed work, and generating reports used to track field work progress, performance, and accuracy. Further, PBOCS has experienced slow performance during office hours, and continues to experience complete system outages. An outage earlier this week lasted an entire day. Similar outages during NRFU would be particularly serious.

In addition, PBOCS performance does not yet meet the operational needs of NRFU, which is scheduled to start May 1—just 37 days from today. The number of simultaneous users permitted to access PBOCS in each local Census office is only seven—half the number that Census expects will be needed for NRFU. A Census team of engineers and operational managers is aggressively attacking decennial system performance issues: the team meets daily and is working around the clock to monitor and to plan and implement improvements.

This team’s major strategy for improving PBOCS performance is to add about \$6 million in hardware to double the computing capacity of the operational and test environments, along with building a new backup environment. Up to now, work on system performance had to compete with system testing for needed computing resources. Census expects the new hardware to be in place by April 5.

The team has focused on minimizing risk to existing operations while making changes—both hardware and software—to improve PBOCS performance. This approach will probably have to continue after the installation of the new hardware. Despite the team’s best efforts, as operations are increasing in scale, local Census office staff have been reporting that nightly and weekend downtimes needed to

²See Appendix for a description of this operation.

correct bugs, install additional hardware, and test and deploy new functionality are affecting operations because staff are unable to run additional shifts needed to catch up on work that is behind schedule. If this were to continue into NRFU, it would severely increase the risk to completing the operation on schedule, due to NRFU's massive scale.

Census has also been developing major workarounds to address PBOCS performance issues. Some of the planned workarounds include using other decennial systems to print materials needed by local Census offices and prioritizing the work of these offices. Printing of materials needed for enumeration in general and for NRFU in particular is a big concern. With NRFU, the demands of printing materials for 47 million housing units must be met in a very short period of time. Workarounds are currently being developed to prepare electronic copies of materials at headquarters in advance so that local Census office staff can retrieve and print them more quickly.

Decennial Applicant, Personnel, and Payroll System (DAPPS) Likewise Suffering Persistent Performance Limitations

DAPPS is also needed to support recruiting, applicant tracking and processing, and personnel and payroll processing for the massive temporary Census workforce. Along with PBOCS, it has suffered ongoing and persistent operational limitations. DAPPS has been affected by numerous outages and poor performance. To help alleviate the heavy demand on this system, Census initiated a procedure to stagger each region's use of the application to minimize the number of concurrent users. Following this change, no outages have been reported, but system performance continues to be slow and hardware resources operate consistently at or near full capacity.

The same specialized team that is tackling PBOCS performance issues has also been monitoring and working on DAPPS. According to the team, it has made all the software changes possible to improve performance; team members see current problems as a result of insufficient hardware resources. Consequently, the team's approach has mirrored its strategy for PBOCS: it has been implementing and testing approximately \$5 million-worth of new hardware to replace existing resources. The new hardware more than triples current system capacity. Initial load tests of the new hardware indicate that performance problems will likely be resolved once the hardware is deployed in the operational environment. The new hardware was placed in operation this past Monday.

To summarize, both PBOCS and DAPPS continue to proceed under very difficult conditions. Specifically:

- Systems development for NRFU is behind schedule;
- Critical software errors persist;
- System performance is not meeting operational needs; and
- With operations underway, staff are working to resolve technical and performance issues and deploy new functionality, while struggling to minimize the impact to ongoing field operations.

Accordingly, Census will have to rely upon workarounds for PBOCS—and possibly for DAPPS—in order to complete operations. Workarounds for software errors, performance limitations, and operations falling behind schedule need to be fully developed and test, as well as clearly communicated and coordinated, to ensure that the operational impact of further disruptions caused by PBOCS and DAPPS will be reduced where possible.

CENSUS MUST CLOSELY MONITOR NRFU COSTS GIVEN OVERRUNS AND INEFFICIENCIES FOUND IN THE COMPLETED ADDRESS CANVASSING OPERATION

Wide variances between budgeted and actual costs hinder confidence in the Census Bureau’s budgeting and cost containment process for large-scale field operations. Our 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 for address canvassing in 2009. This amount was allocated among the 151 early local Census offices based on the type of area—such as urban or rural—covered by each office. Following the operation, Census reported that address canvassing overspent its budget by \$88 million (25 percent). The two major cost drivers of the operation were wages and reimbursement for miles driven by temporary employees (listers) to assignment areas. For production, one-third of the offices exceeded their wage budgets and one-half exceeded their mileage budgets. For the quality control operation, 82 percent of the offices exceeded both their wage and mileage budgets.

This review of address canvassing wage and travel data revealed several inefficiencies that Census managers should be aware of in managing 2010 field operations, chief among them an excessive number of miles claimed by the temporary employees, and training costs. Analyzing bureau data, we found that 604 employees spent the majority of their time driving instead of conducting field

work; of those, 23 spent *all* of their time driving.³ This analysis suggests that some employees may have over-reported the number of miles driven. 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 fieldwork 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.

The Census Bureau spent a great deal of money on training for the amount of work it received. For example, over 10,000 employees earned over \$300 apiece for attending training but performed no work for Census; an additional 5,000 employees received the same money for attending training and worked only a single day—or less. It may be that some employees, after being trained, decided that they did not want to do this kind of work; others may have been deemed unfit. Nevertheless, the costs were substantial—not only what was paid directly to employees, but the costs of the training as well.

Census expenses and projections are a moving target, as might be expected of an operation whose many parts are already progressing on several fronts. Such inefficiencies as we found in the areas of wage, travel, and training costs are the kind for which Census should develop effective internal controls and ensure that managers scrupulously follow these controls in future operations.

COST CONTAINMENT—ESSENTIAL FOR FIELD OPERATIONS—REQUIRES STRONG BUDGET ESTIMATION CAPABILITY

The ability to produce valid budget estimates is essential for cost containment. The 25-percent cost overrun for address canvassing indicates that either the budget for this operation was unrealistically low or that cost containment for the operation was poorly managed. In contrast, Census spent only about 59 percent of its group quarters validation⁴ budget, somewhat more than \$41 million out of a field budget of over \$70 million. Inaccuracies of this magnitude in estimated budgets—high or low—combined with wide variances among early local Census offices in address canvassing costs, indicate significant weaknesses in the bureau's budget estimation capabilities.

³We analyzed the number of miles reported driven per hour compared with the total number of hours worked by address canvassing employees.

⁴The group quarters validation operation is aimed at verifying information from each one of the potential group quarters nationwide.

The important lesson for the Census Bureau now is that with NRFU set to begin very soon—with three times the number of employees and offices than were involved with address canvassing—the bureau’s revised budget estimate needs to be as accurate as possible so that the operation’s final cost does not exceed the amount budgeted, which includes a 15-percent contingency. With \$7.4 billion in funding from FY 2009, FY 2010, and the American Recovery and Reinvestment Act to be expended for the decennial in FY 2010, poor estimating will not be an acceptable justification for any later request for supplemental funding.

Under the Census Bureau Director’s leadership, Census has, in fact, reexamined its NRFU budget. Its recently-provided estimate totals \$2.33 billion. However, it continues to finalize revisions to this estimate, with the operation scheduled to begin May 1. This is \$410 million less than the bureau’s earlier estimate, but it does not factor in the productivity reductions that may result from a PBOCS with significantly reduced capabilities and performance and the problematic performance of DAPPS.

In addition, 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. The vacant/delete check workload, originally estimated at 8 million cases, has now been revised to 14.5 million cases. This results in an estimated cost increase from \$345 million to \$482 million.

The bureau has identified two components as the areas of greatest concern due to their high level of uncertainty and high impact on cost: workload (a function of the level of mail response) and staff productivity. To these we would add the unknown impact on operations of a PBOCS with reduced functionality and performance.

THE CENSUS BUREAU IS MAKING PROGRESS WITH ITS RISK REDUCTION ACTIVITIES, BUT CONTINGENCY PLANS REMAIN UNFINISHED

Census’s risk management plan establishes processes and procedures for monitoring decennial risks and identifies staff responsible for implementing them. Each program-level risk—i.e., one that may affect overall program cost, schedule, and technical and compliance objectives—must have a plan that defines mitigation strategies and specific time frames, along with staff to implement them. The risk management plan also requires contingency plans for addressing certain risks triggered by a missed date or specific event, and these plans are to be completed well in advance of the expected trigger. The bureau’s risk management program represents a significant improvement over the 2000 decennial, which lacked a formal risk management process.

While the bureau is making progress with its risk reduction activities, contingency planning remain unfinished, and contingencies for PBOCS are under development.

Census's Risk Review Board (RRB) continues to oversee risk management activities and update its "risk register." As of March 19, the register contained 24 program-level risks, each rated high (likely), medium (somewhat likely), or low (unlikely), and has undergone a few changes since the beginning of this year. The distribution of risk ratings currently stands at 10 high, 10 medium, and 4 low. In our February quarterly report, we noted that the risk register at the end of the period contained 25 risks—8 high, 14 medium, and 3 low. The two new high risks are an inaccurate Puerto Rico address list and a potential national immigration policy backlash.

In addition, the RRB has been completing contingency plans to guide the bureau in addressing problems that might arise should mitigation plans and activities aimed at program risks fail. Progress on contingency planning continued during the last quarter of last year, but time is running short; currently, five of the 12 plans are not yet final.⁵ Significant work, then, remains to be completed. This is especially critical in light of the difficulties with PBOCS, so that alternative plans will be ready to be put in motion if needed.

During the period encompassing our last quarterly report, we reviewed four contingency plans that had been completed as of February 16 of this year, and they appeared adequate. The four plans are:

- Information Technology (IT) Security Breach
- Loss of Confidential Data
- Continued Operations of Critical Infrastructure During Disasters
- 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

⁵Of the seven that have been completed, we reviewed the four listed above. The other three include (1) a major disaster's effect on population, (2) H1N1 influenza and similar contagious illnesses affecting *non*-regional Census Centers and *non*-local Census Offices activities, and (3) uncertainty of assumptions in cost model.

their effect on operations. For example, if an H1N1 influenza outbreak were to affect a local Census office, managers could hold employee replacement training, limit visitors to the office, and monitor the staff illness rate.

OFFICE OF INSPECTOR GENERAL OVERSIGHT PLAN FOR DECENNIAL OPERATIONS AND SOME INITIAL OBSERVATIONS

The Office of Inspector General (OIG) is continuing to monitor the bureau's progress—on PBOCS, DAPPS, and other key decennial activities. In addition, over the next several months, about 100 members of our staff will be participating in what is for us an unprecedented effort in scope and resource commitment, to go on the road and observe Census workers in action. Such oversight, while Census activities are ongoing, will allow us to immediately observe successes along with any problems that might arise, and notify the bureau without delay.

Our initial observations in the field during the update/leave operation have identified three major challenges:

- Slow and unreliable computer systems,
- Incorrect maps in some locations, and
- Potential shortfalls in identifying outdoor homeless locations by the partnership assistance program.

According to local Census office personnel, the slow performance and lack of reliability of PBOCS and DAPPS is affecting staff efficiency. Although we cannot quantify the impact, we have observed work getting interrupted, data having to be entered into the system more than once, and completion of tasks being delayed. Staff are therefore concerned about their ability to manage their growing workloads and meet their deadlines as Census operations expand—especially during NRFU.

We have identified a few areas in which it appears that maps were not updated from the address canvassing operation. Consequently, enumerators working on update/leave spent significant amounts of time updating maps—work that should have been completed during address canvassing—thereby increasing their total workloads. We identified multiple instances of this at one office, but if widespread, this would be a significant problem. We are working with the bureau to determine both the extent of and reason for these map errors.

Finally, Recovery Act funds increased the number of partnership specialists and created a new partnership assistant position. With these additional positions, the partnership program added a new workload responsibility—identifying locations

and contact information for regularly scheduled mobile food vans and targeted nonsheltered outdoor locations within a local Census office area, for the service-based (homeless) enumeration. Our initial field visits indicate that the partnership program—at least in nonurban areas—did not, in fact, assist with this effort as intended. As a result, the local Census office staff have had to take on the additional workload of identifying outdoor homeless locations requiring enumeration.

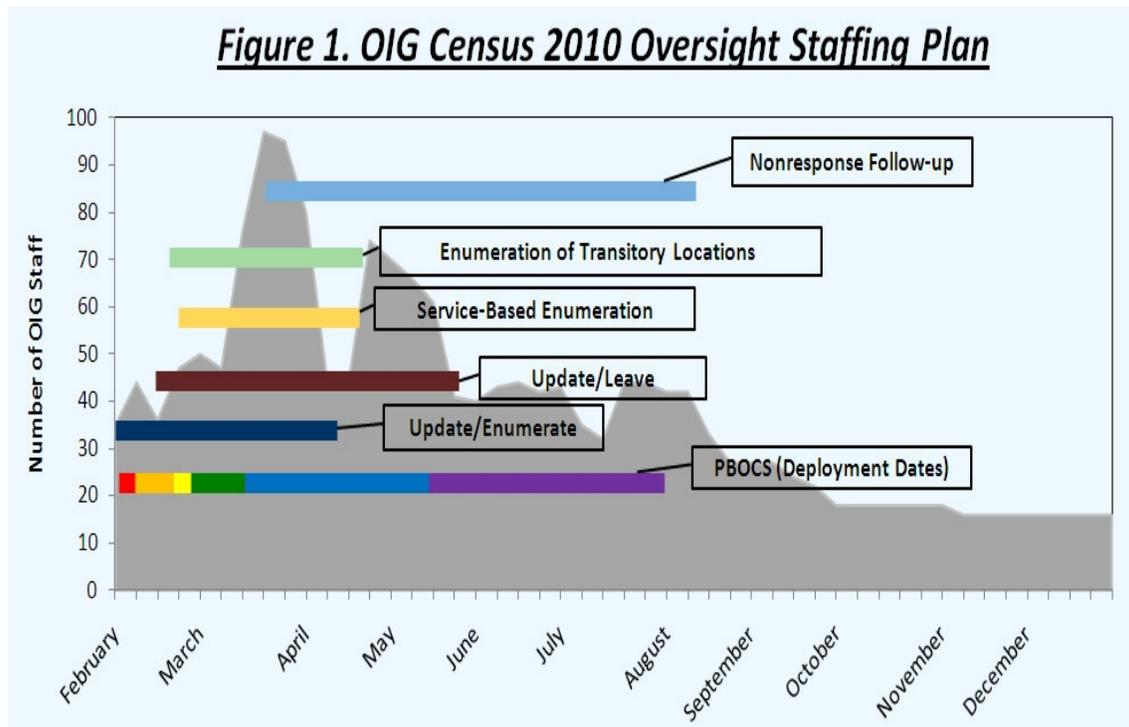
The appendix to this statement provides a fuller discussion of our approach to overseeing this year's operations.

Mr. Chairman, this completes my prepared remarks, and I would be happy to respond to questions from you or any other Members of the Subcommittee.

**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 1, 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 (FTEs) 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.



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; 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.

APPENDIX

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:

<i>Anchorage, AK</i>	<i>St. Louis City, MO</i>
<i>Flagstaff, AZ</i>	<i>Jackson, MS</i>
<i>Phoenix Central, AZ</i>	<i>Meridian, MS</i>
<i>Los Angeles Downtown, CA</i>	<i>Las Vegas, NV</i>
<i>Stockton, CA</i>	<i>Bronx Southeast, NY</i>
<i>Lakewood, CO</i>	<i>Queens Northwest, NY</i>
<i>DC East, DC</i>	<i>Syracuse, NY</i>
<i>Miami East, FL</i>	<i>Canton, OH</i>
<i>Sarasota, FL</i>	<i>Oklahoma City, OK</i>
<i>Atlanta South, GA</i>	<i>Charleston, SC</i>
<i>Honolulu, HI</i>	<i>Rapid City, SD</i>
<i>Chicago Far North, IL</i>	<i>Houston Central, TX</i>
<i>Chicago Near South, IL</i>	<i>Salt Lake City, UT</i>
<i>Frederick, MD</i>	<i>Richmond, VA</i>
<i>Seat Pleasant, MD</i>	<i>Tacoma, WA</i>
<i>Portland, ME</i>	<i>Eau Claire, WI</i>
<i>Detroit West, MI</i>	<i>Charleston, WV</i>

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 (DAPPS). Other systems that may be reviewed include the response processing system, the universe control and management system, and the Decennial Response Integration System (DRIS).

- *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.