

U.S. DEPARTMENT OF COMMERCE Office of Inspector General



Census Bureau

Census 2010: Final Report to Congress

Final Report No. OIG-11-030-I June 27, 2011

FOR PUBLIC RELEASE

OIG Office of Audit and Evaluation





June 27, 2011

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

This letter transmits our final report on the results of our 2010 Census oversight. We conducted this work pursuant to the explanatory statement accompanying the Supplemental Appropriations Act of 2008, which required the Census Bureau to submit to the Senate and House Committees on Appropriations a detailed decennial plan and assessment of associated risks, and also required OIG to provide quarterly reports on the bureau's progress against this plan. Chief among our efforts were our direct observations of 2010 field operations and our quarterly reports to Congress, which began in August 2009 and conclude with the issuance of this, our sixth and final report.

In this report, we provide the results of our oversight of the 2010 Census and outline challenges Census must address in order to perform a more cost-effective and accurate 2020 Census. We also include recommendations to the bureau on ways to improve the next decennial census. We plan to maintain our oversight and will continue to engage the Department, the bureau, Congress, and other stakeholders in support of the planning and design of an accurate, cost-effective decennial.

We have sent identical letters to the Chairman 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: Members of the Subcommittee on Commerce, Justice, Science, and Related Agencies





June 27, 2011

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 Kay Bailey Hutchison 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 Hutchison:

This letter transmits our final report on the results of our 2010 Census oversight. We conducted this work pursuant to the explanatory statement accompanying the Supplemental Appropriations Act of 2008, which required the Census Bureau to submit to the Senate and House Committees on Appropriations a detailed decennial plan and assessment of associated risks, and also required OIG to provide quarterly reports on the bureau's progress against this plan. Chief among our efforts were our direct observations of 2010 field operations and our quarterly reports to Congress, which began in August 2009 and conclude with the issuance of this, our sixth and final report.

In this report, we provide the results of our oversight of the 2010 Census and outline challenges Census must address in order to perform a more cost-effective and accurate 2020 Census. We also include recommendations to the bureau on ways to improve the next decennial census. We plan to maintain our oversight and will continue to engage the Department, the bureau, Congress, and other stakeholders in support of the planning and design of an accurate, cost-effective decennial.

We have sent identical letters to the Chairman and the Ranking Member of the House 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: Members of the Subcommittee on Commerce, Justice, Science, and Related Agencies





June 27, 2011

MEMORANDUM FOR:

Dr. Robert M. Groves Director, U.S. Census Bureau

lodel J. Ju

FROM:

Todd J. Zinser

SUBJECT:

Census 2010: Final Report to Congress (Report No. OIG-11-030-I)

This memorandum transmits our final report on the results of our 2010 Census oversight. We conducted this work pursuant to the explanatory statement accompanying the Supplemental Appropriations Act of 2008, which required the Census Bureau to submit to the Senate and House Committees on Appropriations a detailed decennial plan and assessment of associated risks, and also required OIG to provide quarterly reports on the bureau's progress against this plan. Chief among our efforts were our direct observations of 2010 field operations and our quarterly reports to Congress, which began in August 2009 and conclude with the issuance of this, our sixth and final report.

In this report, we provide the results of our oversight of the 2010 Census and outline challenges Census must address in order to perform a more cost-effective and accurate 2020 Census. We also include recommendations to the bureau on ways to improve the next decennial census. We plan to maintain our oversight and will continue to engage the Department, the bureau, Congress, and other stakeholders in support of the planning and design of an accurate, cost-effective decennial.

Thank you for the courtesies extended to my staff during our review of 2010 decennial operations. If you have any questions, please call me at (202) 482-4661 or Ron Prevost, Assistant Inspector General for Economic and Statistical Program Assessment, at (202) 482-3052.

Attachment

cc: Rebecca M. Blank, Under Secretary for Economic Affairs, Economics and Statistics Administration
Scott Quehl, Assistant Secretary for Administration/Chief Financial Officer
Nancy Potok, Deputy Under Secretary for Economic Affairs, Economics and Statistics Administration
Thomas L. Mesenbourg, Jr., Deputy Director, U.S. Census Bureau
Arnold Jackson, Associate Director, Decennial Census Programs, U.S. Census Bureau
Frank Vitrano, Associate Director, 2020 Census, U.S. Census Bureau
Pam White, External Liaison Branch Chief, Decennial Management Division, U.S. Census Bureau
Pam Moulder, Senior Program Analyst, Economics and Statistics Administration
Adam Miller, Audit Liaison, U.S. Census Bureau





Why We Did This Review 2010 Census: Final Report to Congress (OIG-11-030-I)

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 was required to provide quarterly reports on the bureau's progress against this plan.

This report's objective was to summarize our findings, examine the 2010 Census programs, and provide recommendations for improvements that will benefit future decennial censuses.

Background

First conducted in 1790, decennial censuses have fulfilled a vital constitutional mandate. The 2010 Census enumerated more than 308 million people and cost over \$12 billion. The results provide important data that will guide Congressional apportionment and redistricting, as well as the distribution of more than \$400 billion of government funding annually.

The 2010 Census represents the largest peacetime mobilization in American history. For this massive undertaking, Census integrated 44 separate operations (with a total of some 9,400 program- and project-level activities). Temporary bureau management staff ran 494 local offices and managed over 600,000 temporary workers to count the population. The bureau completed the count on time and matched the 2000 decennial's final household mailback participation rate of 74 percent.

What We Found in 2010

This is our final report on the 2010 Census. As such, it includes a summary of our findings over the last decade related to the Census Bureau's management of the decennial census. The bureau faced challenges in the following areas:

- 1. maintaining senior management continuity;
- 2. managing information technology requirements and its large field data collection contract;
- 3. ensuring transparent and effective budgeting processes and decision making;
- 4. scheduling operations effectively and implementing project management controls and contingency plans;
- 5. budgeting for and hiring a workforce appropriately sized for each operation;
- 6. providing consistent training to a large workforce and having that workforce conduct operations according to procedures;
- 7. maintaining sufficient quality control over its field operations;
- 8. managing and updating its maps and addresses;
- 9. eliminating duplicate enumerations while counting the population experiencing homelessness; and
- 10. Addressing respondent reluctance and enumerator safety.

Top Management Challenges for 2020

Considering current population trends and likely cost growth, the Government Accountability Office recently estimated that if 2010 were used as a model for the next census, the total price tag could rise to as high as \$30 billion; the bureau's own estimate is \$22 billion. By either estimate, such cost growth is simply unsustainable. Census must make fundamental changes to the design, implementation, and management of the decennial census to obtain a quality count for a reasonable cost. And in order to decide on, design, and implement these changes, this effort must start now. This decade's early years are critical for setting the course for how well the 2020 count is performed and how much it will ultimately cost.

In our view, the Census Bureau faces six challenges it must effectively address for 2020. These challenges necessitate changing the decennial design to contain costs, increase accuracy, and reduce the burden on respondents. Importantly, they also call for fundamental improvements in decennial planning, management, testing, and transparency to help ensure that the missed opportunities of previous decades are not repeated in 2020:

- 1. Revamp cost estimation and budget processes to increase accuracy, flexibility, and transparency.
- 2. Use the Internet and administrative records to contain costs and improve accuracy.
- 3. Implement a more effective decennial test program using the American Community Survey as a test environment.
- 4. Effectively automate field data collection.
- 5. Avoid a massive end-of-decade field operation through continuous updating of address lists and maps.
- 6. Implement improved project planning and management techniques early in the decade.

Over the coming decade, we will monitor how well the bureau addresses these challenges.

Contents

Part I: Top Management Challenges for the 2020 Census: Lessons Learned from 2010; Loo Ahead to 2020	king
Challenge 1: Revamp Cost Estimation and Budget Processes to Increase Accuracy, Flexib and Transparency	oility, 4
Challenge 2: Use the Internet and Administrative Records to Contain Costs and Improve Accuracy	7
Challenge 3: Implement a More Effective Decennial Test Program Using the American Community Survey as a Test Environment	10
Challenge 4: Effectively Automate Field Data Collection	12
Challenge 5: Avoid a Large-scale End-of-Decade Field Operation Through Continuous Updating of Address Lists and Maps	15
Challenge 6: Implement Improved Project Planning and Management Techniques Early in Decade	n the 17
Challenge 7: Establish a Census Bureau Director Position That Spans Presidential Administrations	19
Part II: Summary of OIG Findings on 2010 Decennial IT Acquisition and Operations	20
Chapter 1: Field Data Collection Automation (FDCA)	22
Chapter 2: Address Canvassing	27
Chapter 3: Update/Leave (U/L)	31
Chapter 4: Update/Enumerate (U/E)	33
Chapter 5: Enumeration at Transitory Locations (ETL)	36
Chapter 6: Service-Based Enumeration (SBE)	38
Chapter 7: Nonresponse Operations: NRFU and Vacant Delete Check (VDC)	42
Chapter 8: Coverage Follow-up (CFU), Field Verification (FV), and Count Review	48
Part III: OIG Recommendations	51
Summary of Agency and OIG Comments	54
Appendix A: Objectives, Scope, and Methodology	55
Appendix B: Local Census Offices Visited by OIG Staff During 2010 Census	57
Appendix C: Bibliography: OIG Reports and Testimony on the 2010 Decennial Census	58
Appendix D: Bureau Response to Draft Report	63

Message from the Inspector General

This report provides the results of our oversight of the 2010 Census and outlines challenges Census must address in order to perform a more cost-effective and accurate 2020 Census. While 2010 Census operations have been successfully completed, this constitutionally mandated activity carried with it a high cost and a level of risk that should not be repeated. Part I of our report outlines top management challenges for the 2020 Census. From our assessment of lessons learned from the 2010 Census, we suggest new approaches that should be taken for 2020.

The information in our report is based on our oversight and analysis of the 2010 decennial. Over the course of the last decade, we covered both the planning of the decennial and its execution. Part II of the report discusses major 2010 activities—from the mid-decade awarding of the field data collection automation contract (2006), to the late-decade undertaking of a massive address canvassing operation to bolster address lists and maps (2009), and finally 2010 field operations that extended the bureau's reach to populations who did not receive or respond to mailout/mailback surveys. Part III of the report collects all of our recommendations to the Census Bureau, which are intended to improve key aspects of the 2020 Census.

The decennial carries a decade-long cumulative impact on congressional representation; federal services; and funding to state, local, and tribal governments. As we look ahead, it is clear that the next decennial must incorporate new approaches in order to contain costs while maintaining or improving accuracy in counting an ever-growing and increasingly diverse population. A redesigned 2020 Census must be accomplished without escalating the cost, schedule, and performance risk—as happened during the 2010 Census. The next decennial thus calls for careful planning and testing along with unprecedented transparency on the part of the Census Bureau, including early and continuous engagement with key stakeholders.

We appreciate the courtesies and cooperation of the Census Bureau Director and staff have shown us during our field work.

We plan to maintain our oversight as the Census Bureau prepares for the next decennial and look forward to working with the Department, the bureau, Congress, and other stakeholders in support of a cost-effective and accurate 2020 Census.

Tour Bine

Todd J. Zinser Inspector General

Part I: Top Management Challenges for the 2020 Census: Lessons Learned from 2010; Looking Ahead to 2020

The Supplemental Appropriations Act of 2008 gave the Census Bureau an additional \$210 million to help cover increasing 2010 decennial costs that resulted 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. The act also required the Office of Inspector General (OIG) to provide quarterly reports on the bureau's progress against this plan. This document is the sixth and final quarterly report to Congress and the Census Bureau summarizing the findings stemming from our oversight of the 2010 Census, with a focus on the significant change needed to improve 2020 Census operations. See appendix A for a complete description of the objectives, scope, and methodology we followed during our oversight.

Decennial field operations were successfully completed in 2010. However, this constitutionally mandated function carried with it a high cost and a level of risk that should not be repeated. The bureau is now preparing an assessment of decennial accuracy, to be issued next year, and should take full advantage of the results to build upon its successes and overcome weaknesses as it plans and designs the 2020 Census.

The next decennial must incorporate far-reaching approaches in order to contain costs while maintaining or improving accuracy in enumerating an ever-growing and increasingly hard-to-count population. The next census thus calls for new design elements and careful planning and testing—along with unprecedented transparency on the part of the Census Bureau, including early and continuous engagement with key stakeholders.

This report is informed by the oversight OIG provided over the last decade to both the planning of the decennial and its execution. Our 2010 decennial oversight program involved over 100 OIG staff, and we visited every state and the District of Columbia to observe temporary Census workers conducting office operations, checking address lists and maps, and interviewing respondents in person and over the phone—and we went back to Census Bureau headquarters to track final Census count review operations. We spoke with numerous Census Bureau officials, met with regional managers, interviewed dozens of local Census office teams, surveyed hundreds of Census employees, and observed hundreds of temporary field workers. We provided feedback to stakeholders on activities at headquarters and from the field—in reports, in testimony, and in real-time communication. Census was responsive when addressing problems we identified in the field, taking immediate action to rectify the most urgent issues.

From this perspective, we saw not only the Census Bureau's missed opportunities, but also its successes. For example, the bureau followed through on its plans to transition the decennial "long form" to the American Community Survey (ACS), leaving the entire decennial survey with only 10 short-form questions designed for easier response. Census also conducted a strategic communications campaign, which contributed to a better-than-expected mailback participation

rate¹ of 74 percent nationally. And the 2009 address canvassing operation used handheld computers, representing the bureau's first foray into computer-automated field data collection for a decennial census.

However, plans to automate field data collection had to be greatly curtailed. Problems developing and implementing the handheld computers and related automation compelled the bureau to abandon its plan to use the devices during the nonresponse follow-up (NRFU) operation and forced it to make late-stage preparations for a pen-and-paper NRFU. This change led to major cost escalation, disruption of workflow, and high operational risk. Because of these circumstances and cost estimation weaknesses, the lifecycle cost for the 2010 decennial—originally estimated at more than \$11 billion—exceeded \$12 billion.

Considering the current trends in population and likely cost growth, the Government Accountability Office (GAO) recently estimated that if 2010 were used as a model for the next census, the total price could rise to as high as \$30 billion; the bureau's own estimate is \$22 billion (see figure 1). By either estimate, such cost growth is unsustainable; Census must make fundamental changes to the design, implementation, and management of the decennial census to obtain a quality count for a reasonable cost. And in order to decide on, design, and implement these changes, this effort must start now. This decade's early years are critical for determining how well the 2020 count will be performed and how much it will ultimately cost.

Figure 1. Increasing Lifecycle Costs for Decennial Census (2000–2020 Projected)



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

In recent decades, change to the design of the decennial census has been slow. However, Census has made incremental improvements to operations, coverage methods, and automation. Nevertheless, important initiatives designed to improve accuracy and contain costs—in areas such as use of administrative records, address file improvements, and automation of field data

¹ The *participation response rate* represents the percent of forms mailed back by households that received them, excluding the forms deemed "undeliverable" by the U.S. Postal Service that typically represent vacant or nonexistent housing units. The *mailback response rate* for all mailed or hand-delivered forms was 63 percent.

collection—have had only limited success, leading to recurring calls for change at the beginning of each new decade.

This part of the report covers seven challenges that, in our view, the Census Bureau must effectively address for the 2020 Census. These challenges include changes to the decennial design aimed at cost containment, accuracy, and reduction in respondent burden. Importantly, they also call for fundamental improvements in decennial planning, management, testing, and transparency to help ensure that the missed opportunities of previous decades are not repeated in 2020.

Top management challenges for the 2020 Census are as follows:

Challenge	Relevant Chapters (See Part II)
1. Revamp Cost Estimation and Budget Processes to Increase Accuracy, Flexibility, and Transparency	Chapter 1 Chapter 2 Chapter 5 Chapter 6 Chapter 7
2. Use the Internet and Administrative Records to Contain Costs and Improve Accuracy	Chapter 2 Chapter 7
3. Implement a More Effective Decennial Test Program Using the American Community Survey as a Test Environment	Chapter 1 Chapter 7
4. Effectively Automate Field Data Collection	Chapter 1 Chapter 3 Chapter 7
5. Avoid a Massive End-Of-Decade Field Operation Through Continuous Updating of Address Lists and Maps	Chapter 1 Chapter 3 Chapter 4 Chapter 5
6. Implement Improved Project Planning and Management Techniques Early in the Decade	Chapter 1 Chapter 4 Chapter 6
7. Establish a Census Bureau Director Position That Spans Presidential Administrations	Chapter 1

The Census Bureau and the Department of Commerce have the primary responsibility for successfully meeting most of these challenges. However, because fully addressing two of these challenges—the greatly expanded use of administrative records and the continuity of Census Bureau leadership—requires legislative action, the bureau and Department need to work closely with Congress to effect improvements.

Challenge 1: Revamp Cost Estimation and Budget Processes to Increase Accuracy, Flexibility, and Transparency

Throughout the decade, the Census Bureau remained uncertain of what the 2010 decennial's total cost would ultimately be. With a lifecycle cost estimate of more than \$11 billion in 2003, the projection topped \$14 billion in 2008—due, in part, to escalating IT costs and major flaws in the bureau's cost assumptions—and ultimately totaled in excess of \$12 billion as decennial operations concluded in 2010. These fluctuating estimates made planning difficult and consumed an excessive amount of time and attention on the part of the Department, Congress, Office of Management and Budget (OMB), and other stakeholders. This instability was characteristic of the weaknesses in the bureau's planning, cost estimation, and budgeting processes.

In 2008, GAO reported that the Census Bureau's 2010 lifecycle cost estimate lacked adequate documentation and was not comprehensive, accurate, or credible. The bureau's cost estimate did not adequately document changes in cost assumptions and did not include certain cost factors, such as the cost of fingerprinting temporary workers. For example, the 2009 address canvassing operation was over budget by \$88 million because changes in productivity and workload were not taken into account. Without a well-grounded cost estimate, the bureau's annual budget requests were not reliable indicators of actual funding needs for planning and conducting the decennial. The bureau needs to develop a comprehensive cost estimate, including known cost factors, and update the estimate throughout the decade to account for changes in decennial plans, assumptions, and incurred costs.

The bureau has informed us that as part of its 2020 decennial planning efforts to date, it has developed initial budget scenarios for four proposed enumeration options. Among these options are targeted address canvassing, administrative records use, and an Internet response option. For each of the options for which a budget scenario was developed, the bureau calculated a range of estimated costs, each with minimum and maximum amounts. The bureau plans to update these scenarios annually to improve future budget requests.

In addition to improving the quality of budget estimates, the Census Bureau also needs to identify areas for achieving cost savings. We have reported on the bureau's practice of overhiring and training temporary employees to offset turnover, no-shows, and dropouts from training (a practice known as *frontloading*). Frontloading frequently resulted in hiring many more enumerators than needed. For example, more than 140,000 temporary field employees received training (for at least 24 hours) but worked 40 or fewer nontraining production hours— costing the bureau in excess of \$80 million in the process. Overhiring is to be expected with any large operation; nonetheless, training these employees cost the bureau a great deal of money but provided little production (see figure 2).

We have recommended that the bureau reevaluate its practice of frontloading; the bureau also needs to develop a better process to estimate workload and develop and revise cost assumptions. In general, less labor-intensive field operations would reduce wage, training, and travel costs— and potentially reduce the number of field offices, along with space requirements and associated IT infrastructure.

U.S. Department of Commerce	Final Report
Office of Inspector General	June 27, 2011

Planning for the 2010 decennial often lacked transparency as the bureau made changes to the originally conceived census design. For example, in a June 2001 document presenting the potential lifecycle cost savings of the 2010 decennial design, the bureau estimated \$155 million in savings from maintaining and updating the address list throughout the decade and using a targeted approach to address listing. This design would have enabled Census to avoid a massive end-of-decade address listing operation. In March 2004, Census issued an internal planning memorandum stating that it had abandoned this approach; however, key stakeholders were not aware of this change.



Figure 2. Cost of Training Employees Who Worked Only 0–5 Days

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

Similarly, the Census Bureau did not maintain a transparent budget management process during the decennial census. It is to be expected that a program of this size would shift funds from activities running surpluses to cover those running deficits. However, the bureau did not maintain adequate traceability of these shifts, which prevented visibility into overruns and underruns in the various decennial activities and operations.

The bureau's 2020 decennial strategy of developing a set of budget scenarios and identifying key decision points is a positive approach to addressing the high degree of uncertainty that inevitably exists early in the decennial planning cycle. Census should continue to make its planning transparent, and stakeholders must recognize that once a baseline design and cost estimate are

U.S. Department of Commerce	Final Report
Office of Inspector General	June 27, 2011

developed, periodic modifications are unavoidable. Design and budget changes will occur as a result of research and testing, as a better understanding of the implementation details emerges, and as new information and analysis become available. Thus, the bureau should obtain agreement as early as possible on the basic design components of the 2020 decennial; develop realistic and well-substantiated budget estimates; and work continually with the Department, OMB, and Congress to discuss design changes and make appropriate budget modifications as circumstances warrant.

Challenge 2: Use the Internet and Administrative Records to Contain Costs and Improve Accuracy

By not using the Internet and administrative records as key decennial data collection methods for 2010, the Census Bureau turned aside promising cost reductions and data quality improvements. Cost savings from Internet use could potentially have accrued from reducing paperwork and associated data capture costs—for the 2010 decennial, the bureau processed over 164 million paper forms—and less expensive field work, with a smaller temporary work force. Quality could likely have improved through easier access to foreign-language Internet questionnaires and automated checks of census responses for consistency and completeness.

Administrative records—information collected for the administration of programs and provision of services by federal, state, and local governments and commercial entities—could have reduced the cost of the nonresponse operations (which, at \$2 billion, were the most expensive of the 2010 decennial; see figure 3) and helped the bureau avoid inaccurate enumerations. Greater use of administrative records also offered the potential to enhance the decennial census in a number of important areas, ranging from improving the master address file (MAF) to finding households or individuals who may otherwise be missed.



Figure 3. 2010 Census Field Operations Costs^a

^a Includes enumerating people living in group homes and facilities, and transitory locations such as campgrounds and marinas, as well as hand-delivering questionnaires or conducting doorstep interviews for special areas or populations.

Source: OIG analysis of U.S. Census Bureau and public information.

Using the Internet to collect census data is an established practice in other countries. Statistical agencies in Australia, Canada, and New Zealand, among others, have employed the Internet to collect census data, and the United Kingdom's plan for its 2011 census includes an Internet option.

An Internet response option would not be unprecedented in this country either. The Census Bureau offered an Internet response option in the 2000 decennial but did not publicize its availability. While it received only 65,000 unique electronic submissions, the Internet was deemed a viable response option. The bureau did not, however, implement this mode for collecting 2010 decennial information and consequently executed paper-intensive operations, which were difficult to manage, prone to error, and expensive.

The bureau included an Internet response option in its Decennial Response Integration System contract, which was awarded in 2005. However, in 2006, the bureau eliminated use of the Internet for this purpose, maintaining that it did not increase response and citing IT security concerns and cost. In 2008, it again rejected an Internet option due to operational and security concerns. The bureau now intends to use the Internet in 2020 and is planning an Internet test as part of the ACS. Given the widespread availability of the Internet and the public's reliance on it, the 2020 Census should contain an Internet response option—one, of course, that addresses IT security concerns.

Administrative records would be useful to the decennial by providing, on a large scale, individually submitted data on the receipt of services (such as housing assistance, social services, and health services) and for the payment or documentation of taxes. As various federal government agencies already expend resources to collect these data, directing Census to collect the same information could be considered duplicative effort and costs. The Census Bureau has conducted years of research on the use of these personal administrative records, developing a thorough understanding of the processing, matching, and deletion of duplicates for billions of records on an annual basis. Prior censuses and surveys also provide data that the bureau could reuse in support of the 2020 decennial census.

These personal administrative records contain information that individuals have already provided to the government, such as their names, addresses, age, sex, race, and a wide variety of demographic, socioeconomic, and housing information. Census began a formal administrative records program in the 1990s to supplement and inform decennial, demographic, and geographic programs. In fact, the Census Bureau has been using the U.S. Postal Service address file, which is an administrative record, to support key address list development activities. It has also employed a variety of administrative records to support its economic and demographic statistics programs. However, so far the bureau has not made extensive use of administrative records for the decennial. By December 1996, the bureau had abandoned a major part of its plan to use administrative records for the 2000 decennial. For 2010, efforts to contain costs focused on automating field data collection; administrative records were only used for limited applications, including the location of group quarters and for the selection of cases for coverage follow-up operations.

For 2020, the use of administrative records to contain costs and improve quality must be explored. Recently, the National Research Council (NRC)—in line with research plans proposed within the Census Bureau in the past and now being considered, at least in part, for 2020—urged the bureau to assess the use of administrative records in the 2020 decennial to

• improve the Census MAF by identifying missing addresses or entire localities that would benefit from a targeted address canvassing operation;

- help validate decisions about inconsistent response data concerning particular individuals or households (e.g., a college student listed as living with his or her parents could be verified or edited using administrative records);
- target specific field operations by focusing fieldwork on missing respondents or households in order to improve coverage or identify specific subpopulations that require special enumeration procedures;
- evaluate census results (coverage measurement and evaluation);
- provide an alternative to last-resort interviews in which, after six unsuccessful interview attempts, people who are not household members—such as neighbors who may not be able to answer all of the questions and who may resent the burden of responding—are interviewed;² and
- provide input to methods currently used to fill in missing questionnaire information.

Further, the NRC saw the potential use of administrative records to help eliminate duplicate persons without committing the time, effort, and expense of a follow-up or field operation.

With the advent of the Internet, popular sentiment about uses of personal information has been evolving; however, the public's view concerning extensive use of administrative records for the decennial census is unknown. By definition, the constitutional mandate to conduct a census affects the privacy of every American—whether it is accomplished by in-person interviews, mail, the Internet, or telephone, or through the use of existing records. Census must determine the public's willingness to accept the bureau's use of information collected and maintained by other government agencies—such as Social Security information, tax records, and food stamp registers—for decennial census purposes. The bureau should keep stakeholders—including the American public—apprised of its progress as it researches, plans, and refines the use of administrative records.

The Census Bureau recently restructured its organization in an effort to revitalize its Research and Methodology Directorate; of the five centers the bureau is establishing, the new Center for Administrative Records Research and Applications is designed to help with related decennial innovations. However, the current statutory system does not require the level of interagency cooperation that would allow the Census Bureau to utilize administrative records to their full potential. The bureau possesses appropriate authority to request and use administrative records from all government sources under 13 U.S.C. § 6, and the Privacy Act permits other agencies to disclose their records to the bureau. In contrast, relevant legislation governing other federal agencies either does not compel those agencies to provide their records to the bureau in response to requests, or states that agencies are only required to provide certain information to the bureau, limiting the use of the requested information. Congressional guidance on the disclosure and permitted uses of administrative records for the decennial census would greatly benefit the Census Bureau.

² These *proxy interviews* are discussed further in Part II, Chapter 7: Nonresponse Operations: NRFU and Vacant Delete Check (VDC).

Challenge 3: Implement a More Effective Decennial Test Program Using the American Community Survey as a Test Environment

To prepare for the 2010 decennial, the Census Bureau began planning and testing, including three major site tests in 2004, 2006, and 2008, early in the decade. In addition to these tests, Census conducted an overseas enumeration test and three questionnaire content and design tests in 2003, 2005, and 2007 (see figure 4).



Figure 4. Census Bureau Decennial Testing (2000–2010)

Source: OIG analysis of U.S. Census Bureau and public information

Although the Census Bureau scheduled its site tests at 2-year intervals, each one took place over 3 years of planning, implementation, and evaluation—resulting in overlap with prior or subsequent tests. This overlap made it difficult for the bureau to build on experiences and incorporate feedback from previous tests into the operational design it examined in the next test. Further, the results of the research and experimentation program from the 2000 Census were intended for use in the design and test of the 2010 Census; however, this program was not completed until 2004, after planning for the first site test was well underway.

Scheduling proved particularly problematic in the case of the handheld computers. The bureau tested internally developed prototypes in both 2004 and 2006 and found serious problems in both tests. Because of the poor handheld performance and the tests' timing, the bureau did not effectively use these tests to help define requirements for the handheld computer contract.

Weaknesses in the decennial test program were also evident in the portion of the 2006 test that the bureau conducted on an American Indian reservation. The objective was to improve coverage

of reservation populations, which are considered *hard to count*.³ The enumeration procedures tested showed almost no effect on mitigating long-standing obstacles to producing an accurate count. Yet the bureau had no time to develop and test possible improvements.

The bureau had planned to conduct a large-scale operational test of major components, operations, and systems, beginning with address canvassing in 2007 followed by enumeration operations in 2008. This test was intended to be a "dress rehearsal" of the 2010 decennial. However, for a number of reasons—including the late decision to revert to a paper-based NRFU operation—Census cancelled the majority of the operations to be tested. As a result, actual decennial operations became the proving ground for enumerating some traditionally difficult groups, such as the homeless, residents of military bases, and group quarters residents.

The bureau is now planning to conduct a larger number of smaller tests to more closely align its research with its testing program. Census also plans to utilize the ACS, a mandatory nationwide survey that collects housing and population information throughout the decade (data are used primarily for the distribution of federal funds but not for congressional apportionment). Following the 2000 decennial, the ACS replaced the decennial long form in order to provide more current information. The ACS is conducted on a continuing basis, sampling about 250,000 addresses every month. By expanding the sample to accommodate decennial testing, the ACS will provide a viable test environment for conducting smaller assessments of new processes and procedures. We suggest that Census use the ACS to explore areas such as questionnaire content and design, response options (such as the Internet), use of administrative records (on Internet and administrative record use, see challenge 2), and targeted field data collection procedures and methodologies. These data collection procedures include risks to the safety of Census staff who conduct interviews, as described in Part II, Chapter 7: Nonresponse Operations: NRFU and Vacant Delete Check (VDC). This risk requires remedy by the Department, law enforcement agencies, and Congress to explicitly address safety concerns. Conducting smaller tests in the ACS (or other surveys, such as the Current Population Survey) and special censuses could also facilitate the introduction of new technologies for the 2020 decennial. This would provide the Census Bureau a greater opportunity to evaluate new technology in the field before the decennial census, as well as pave the way for the bureau to use decennial technology in other surveys and thus amortize the necessarily large IT investments over a number of programs-rather than building systems for one-time use.

Although we advocate a series of smaller tests throughout the decade, we also believe it is important for the bureau to ultimately conduct a large-scale test that assesses the functionality of major decennial operations and IT systems to verify that these components work together as intended in an operational environment. If possible, the bureau should conduct this large-scale operational test earlier in the decade, in order to provide more time to solve problems and make improvements before the start of 2020 decennial operations.

³ *Hard-to-count populations* include but are not limited to the homeless, migrant farm workers, foreign-born individuals, African Americans, American Indians and Alaska natives, native Hawaiians and other Pacific Islanders, and linguistically isolated populations.

Challenge 4: Effectively Automate Field Data Collection

Leading up to the 2010 decennial, Census planned to reduce the costs of field operations by using inexpensive mobile handheld computing devices—equipped with global positioning system capabilities—to automate the workload assignment, data collection, and information processing functions. If executed well, automation promised to reduce labor costs, improve quality, and enhance operational efficiency.

In 2006, the Census Bureau awarded a \$595 million field data collection automation (FDCA) contract for the development of more than half a million handheld computers. However, the project experienced constant setbacks, including technical problems, escalating costs, and missed deadlines. Poor performance in the 2007 address canvassing dress rehearsal exacerbated concerns that the handhelds would not be ready in time. Census regional offices, responsible for the massive decennial data collection operation, would be particularly affected by problems with the project; they expressed major concerns about the change to an automated field data collection process.

In April 2008, the decision was made to abandon the plan to use the handhelds for NRFU so that the bureau and the contractor could focus on improving the handhelds for the following year's decennial address canvassing operation. This change necessitated last-minute preparations to make this \$2 billion operation paper based.

The main reason for the significant problems the bureau encountered was the failure of senior bureau managers in place at the time to anticipate the complex IT requirements involved in automating the decennial. Census had originally intended to develop the handhelds in-house and tested prototypes in both the 2004 and 2006 site tests. However, the devices had serious technical problems in both tests. Based on the 2004 test, the bureau decided to contract out the project. But by then it was late in the decade to plan and implement a complex acquisition that could meet the ambitious, fixed deadlines for the dress rehearsal tests (set to start in 2007) and decennial operations (set to start in 2009).

In addition to these problems, the bureau's requirements continued to change frequently after the contract was awarded. It was not until January 2008—nearly 2 years after contract award—that the bureau finally delivered a first draft of a complete, user-validated set of requirements for the handhelds and supporting infrastructure. It had no contingency plan in the event the handhelds proved unusable. The problems experienced in developing the handhelds and the need to revert to paper-based operations for all but address canvassing so close to the start of the decennial introduced a high degree of risk into NRFU and other operations.

Automating field data collection—replacing the millions of paper forms and maps that enumerators carry and reduce forms processing—remains a viable goal for 2020. However, based on its 2010 experience, Census must change its approach to planning, managing, and overseeing complex IT acquisitions including making improvements in the following areas:

• **Requirements development.** The bureau did not successfully convey the IT system requirements to its contractor or collaborate effectively to ensure the contractor fully understood the requirements. These weaknesses in requirement specifications and

collaboration, along with poor financial planning, caused the FDCA contract to increase by nearly \$200 million while delivering far less capability than planned. The same problem occurred in previous censuses: during our oversight of the 2000 decennial, we reported that inadequate control of requirements disrupted the development of the data capture system and caused major cost growth. Census must establish an effective process for defining and controlling requirements.

- **Cost estimation and budgeting.** At the time the FDCA contract was awarded, funding requests were significantly less than what the project would cost based on the bureau's own analysis. According to bureau documentation, for the first 6 months of the contract—when having adequate resources for planning, requirements analysis, and design was critical—the project had only about half the needed funding, leading to the first of several replanning efforts. Moreover, as requirements changed, the bureau did not incorporate the resulting cost increases into project cost and budget estimates. For 2020 decennial acquisitions, the bureau should develop well-substantiated cost estimates, promptly determine the cost impacts of requirements and other changes, update project cost estimates and budget requests accordingly, and ensure that sufficient funds are available in project budgets.
- Independent assessments. Until late in the development process, key stakeholders remained unaware of the serious problems with the FDCA contract. Independent reviews—performed by experts not under the supervision, direction, or control of the program—can provide the Census Bureau, Department of Commerce, and other stakeholders with an objective second opinion on cost, schedule, and technical progress and critical issues.
- Field participation. Effectively introducing new technology for field operations means re-engineering longstanding business processes and requires the solid support of the regional offices, which are responsible for conducting the decennial field operations. The bifurcated structure of the decennial—with the bulk of planning taking place at headquarters but responsibility for the fieldwork in the regions—makes this a significant challenge. With ultimate responsibility for overseeing the enumerators who collect census information, regional Census staff must be integrally involved in and supportive of automation efforts.
- **Transparency and oversight.** An analysis conducted in 2004 by a bureau contractor indicated that the scope of FDCA carried a high risk. The Department lacked an effective oversight function and did not successfully address the high-risk nature of the acquisition. For 2020, departmental oversight beginning early in the acquisition process and at key milestones is essential. If performed well, oversight can reveal early in the process whether the bureau has considered all reasonable project alternatives—and whether it is assuming too much risk. In this way, the Department can work with the bureau to address problems before unnecessary costs accumulate. Supported by early independent cost estimates and independent assessments, Department oversight can play a critical role in ensuring decennial IT investments stay on track.

U.S. Department of Commerce	Final Report
Office of Inspector General	June 27, 2011

For the 2010 decennial, the Census Bureau tried to contain costs by automating the largest, most costly decennial operations. Unfortunately, it lacked the knowledge and experience it needed to manage and implement the large, complex IT acquisition that was necessary to do so. Census must improve its IT acquisition processes and start early in the decade to prepare for successfully implementing an automated data collection solution for NRFU, as well as the other doorstep operations. For a more complete discussion of our findings related to FDCA, see part II, chapter 1, of this report.

Challenge 5: Avoid a Large-Scale End-of-Decade Field Operation Through Continuous Updating of Address Lists and Maps

The Census Bureau describes "an accurate, comprehensive, and timely [address] list" as "one of the best predictors of a successful census." If the list is incomplete or inaccurate, people may be missed or counted more than once. Errors in the bureau's MAF can also increase costs, the public burden, and enumerator workload, by requiring visits to nonexistent or duplicate locations in NRFU.

Because the Census Bureau enumerates the population for the purposes of apportionment, redistricting, and distribution of federal funds, all addresses in the decennial census must be associated with a geographic location. The bureau attempts to locate all MAF addresses spatially in its nationwide automated geographic system (called the Topologically Integrated Geographic Encoding and Referencing system, or TIGER). Throughout the last decade, the bureau updated the MAF/TIGER database through a limited number of automated, clerical, and field operations.

Over the decade, the bureau also implemented a major initiative to align all street features to GPS map coordinates. Although this resulted in significant improvements to the maps' accuracy, the bureau cancelled further operations mid-decade to fund the escalating field data collection automation costs. Meanwhile, some of Census's early-decade accomplishments would not have reflected new housing developments and roads, necessitating updates during address canvassing.

The bureau conducted its large-scale address canvassing operation in spring 2009. During this operation, more than 160,000 temporary employees were instructed to walk every street of the country to update the maps and address list according to specified protocols.

Address canvassing for the 2010 Census was costly, totaling \$444 million and running nearly 25 percent over the initial budget (and 19 percent over a revised budget). It was also error prone: our field observations during the operation revealed that the temporary workforce hired for this task did not consistently draw roads or locate housing units accurately on maps. While address canvassing was underway, we reported that listers were not following important procedures. The bureau responded promptly by communicating to field staff and regional directors about the issue; however, by then many areas had completed production. Our observations and the bureau's implementation of ad hoc operations to fix errors confirmed numerous map and address list problems resulting from the address canvassing operation.

We have long-standing concerns about the efficacy and cost effectiveness of this operation. For example, following the operation in the 2000 Census, we made numerous recommendations aimed at improving Census's strategy for updating the MAF. After the 2006 site test of address canvassing, we recommended that the bureau perform an analysis of the costs and benefits of canvassing 100 percent of the nation's housing, and consider whether alternative, less costly strategies for developing the address list for the 2010 decennial were feasible. The bureau responded that anything less than 100 percent address canvassing was unacceptable. A 2004 report by NRC similarly called for more analysis of the necessity of conducting a complete address canvassing operation and questioned the cost-benefit of this decision, stating that Census should justify why selective targeting of areas for address canvassing is either infeasible or inadequate—and how the costs of the complete canvass compare against the benefits.

U.S. Department of Commerce	Final Report
Office of Inspector General	June 27, 2011

Now that the 2010 Census is over, the Census Bureau now plans to update the address list and maps continuously throughout the decade and consider three address canvassing options for the 2020 decennial—*full, targeted,* and *no additional address canvassing.* The bureau should keep stakeholders apprised of its progress on continuous updating and should maintain transparency into its decision making regarding the extent of address canvassing that will be implemented at the end of the decade. This decision should be supported by relevant research data and costbenefit analyses.

Challenge 6: Implement Improved Project Planning and Management Techniques Early in the Decade

The Census Bureau describes the decennial census as the nation's largest peacetime mobilization. For the 2010 Census, the bureau planned, managed, and tracked over 9,000 activities spanning several years and representing 44 major operations. Such a complex operation is inherently risky; Census identified more than two dozen major program risks, each requiring program monitoring and contingency plan development. Effective project planning and management are particularly critical, not only to allay major cost growth but also to meet the immovable decennial deadline with accurate results: by law, the bureau must deliver apportionment counts to the President within 9 months of the census date, which in recent decades has equated to December 31 of the year the decennial takes place.

To meet this deadline, the bureau must have a well-defined decennial plan—with consistent task plans, schedules, and cost estimates. Initially, the plan will necessarily be preliminary and should identify various alternative designs. As the bureau assesses its alternatives and design, cost, and budget information become firm, it should establish the baseline plan and refine the details. Despite the scale of the bureau's planning effort and its gains in project management as compared to 2000, our quarterly reports to Congress since August 2009 have identified significant problems in project planning and risk management that Census must resolve in order to contain costs and meet the 2020 Census schedule:

- The bureau did not use key project management *best practices* in planning and managing the 2010 decennial. Specifically, it did not (1) ensure that all applicable tasks were entered into its project management system; (2) provide a consistent level of detail for all tasks; (3) verify, up front, the correctness of all start and end dates entered; and (4) use its project management system to track the cost of performing each task. The bureau therefore had incomplete and unreliable information for monitoring progress.
- Without complete and accurate schedule information, the Census Bureau could not calculate the decennial's *critical path*—the set of activities that must be completed on schedule in order for the project to be completed on time—leaving the bureau unable to assess the impact on the overall schedule of delays in these tasks. To compensate, Census developed a list of separate critical activities based on management judgment and updated it weekly; however, in some cases, inaccurate scheduling information weakened the list's reliability as a management tool.
- Having omitted key data from its project management system, the bureau could not connect the cost, schedule, and progress of tasks—and therefore could not fully assess the likely impact on the final decennial cost of variances in the cost and schedule of individual tasks. Linking these critical factors, an approach called *earned value management*, is required by OMB on major investment projects and is a best practice because it can alert management to potential problems sooner than data on expenditures examined alone.

- In addition, the schedule did not account for the entire decade of work leading up to the decennial. Lack of a full lifecycle schedule contributed to many of the problems we identified with the 2010 testing strategy—for example, not enough time was allotted for test results to inform future testing (see challenge 3). We support the bureau in its efforts to create a lifecycle schedule for the 2020 Census.
- Although the bureau's 2010 risk management program represented a significant improvement over the previous decennial census, disciplined risk identification and contingency planning occurred late in the decade. In fact, two contingency plans remained incomplete even as decennial operations ended.

By employing best practices for program and risk management early in the decennial cycle, and following through during the decade, the bureau can achieve a more effective planning and management process. While the bureau's project management system had the capability to support these practices, the system was not fully utilized for 2010. Census needs to improve how it uses its project management system in order to obtain accurate, reliable, and complete data for decennial planning and oversight.

Establishing uniform processes to develop the baseline schedule early—and integrate it with budget, cost, and contract information—will help provide the bureau with objective management information. For the 2020 decennial, the bureau should implement appropriate risk management from the outset and finalize contingency plans prior to the start of decennial operations. These improvements will provide more reliable information to Census management and stakeholders; promote transparency in decennial planning, management, and oversight; help contain risk and cost; and reduce the likelihood of late-decade budget request increases in the 2020 decennial.

The bureau acknowledges the need to improve project management and is taking actions to establish a program management office under the proposed 2020 decennial directorate. Early discussions indicate the office will lead and document a strategy for schedule, budget, acquisition, performance management, and risk management that will effectively address management weaknesses from the 2010 decennial.

Challenge 7: Establish a Census Bureau Director Position That Spans Presidential Administrations

In our 2008 *Top Management Challenges* report, we described the Census Bureau—particularly headquarters—as "an insular organization that eschews open dialogue with outside parties and even its own regional operations." Considerable progress toward changing the culture has been made since that time, but as planning begins for the 2020 Census, leadership continuity is essential to maintain momentum. Because of the decennial's long planning cycle, it is particularly critical that one individual be able to set the direction and lead the Census Bureau with vision, strength, and consistency.

Such leadership continuity has not been characteristic of previous decennial census cycles. For example, there have been six Census Bureau directors—two of them acting—responsible for the 2010 Census throughout its lifecycle. And, as shown in figure 5, the current director was appointed less than 9 months before Census Day (April 1). Similarly, the 2000 decennial lifecycle saw five directors, two of them acting. Census leadership usually changes when new presidential administrations take office, and the transition frequently entails a long nomination and confirmation process. Therefore, leadership gaps may well occur when critical decisions (such as those involving budget, operational design, and questionnaire content) affecting the next decennial census must take place.



Figure 5. Tenure of Census Bureau Directors, 1989–Present

Source: U.S. Census Bureau

A solution considered in 2010 by the 111th Congress was to implement a fixed term for the Census Bureau director, staggered to begin and end in such a way as to minimize disruption to decennial planning, testing, and implementation. A leadership structure that promotes tenure can advance needed change and help the bureau recognize when to retire outdated methods, implement new methods with greater success, and reap the potential benefits of innovation.

Part II: Summary of OIG Findings on 2010 Decennial IT Acquisition and Operations

The 2010 Census was an immense undertaking, attempting to count accurately the more than 308 million people living in America today. About 800,000 temporary employees worked on the census; at its peak, the decennial had approximately 600,000 temporary employees working at one time. The bureau first began planning for this census in 2000, and throughout the decade OIG has tracked the bureau's progress toward the 2010 count. In particular, we reviewed decennial operations and the performance of several decennial systems, including monitoring the Paper-Based Operations Control System (PBOCS) Census developed as a result of weaknesses with the Field Data Collection Automation (FDCA) initiative. (See chapter 1.)

In this section of the report, we will examine several aspects of the 2010 decennial that, based on our observations, had major impacts on costs, accuracy, and operational efficiency. Between April 2009 and October 2010, OIG staff traveled to Census sites nationwide, visiting every state and observing operations at approximately one third of the 494 local Census offices. This coverage gave us the opportunity to make real-time recommendations for improvements to Census as situations warranted. While in the field, OIG staff observed Census employees performing address canvassing (see chapter 2); delivering questionnaires, conducting doorstep enumeration, and enumerating people experiencing homelessness (chapters 3 through 6); enumerating households that did not return questionnaires and verifying vacant or nonexistent housing units (chapter 7); and conducting telephone follow-up on returned questionnaires as well as performing many other activities (chapter 8). Our staff also attended field operations' training sessions, interviewed employees, and observed activities and management practices at local Census offices. (See appendix B for a list of offices visited by OIG staff during decennial oversight.)

2010 Decennial Operation	OIG Observations	2010 Field Operation Timeline ^a
Address Canvassing	Chapter 2	3/30–7/9/2009
Group Quarters Validation	Chapter 2	9/28–10/23/2009
Remote Alaska	—	1/25-4/30/2010
Group Quarters Advance Visit	—	2/1-3/19/2010
Update/Leave	Chapter 3	3/1–26/2010
Remote Update/Enumerate	_	3/22–5/29/2010
Update/Enumerate	Chapter 4	3/22-6/22/2010

The table below lists the major decennial field operations for 2010. Our observations and findings concerning these operations are provided in the referenced chapters.

2010 Decennial Operation	OIG Observations	2010 Field Operation Timeline ^a
Enumeration at Transitory Locations	Chapter 5	3/19–4/16/2010
Service-Based Enumeration	Chapter 6	3/29–31/2010
Group Quarters Enumeration	—	4/1-6/4/2010
Nonresponse Follow-up (NRFU)	Chapter 7	5/1–9/6/2010
NRFU Vacant Delete Check	Chapter 7	7/1-8/25/2010
Field Verification	Chapter 8	7/27–9/7/2010
Coverage Follow-up	Chapter 8	4/5-8/30/2010
Count Review	Chapter 8	2/22-8/13/2010
Census Coverage Measurement	_	9/8/2008–9/27/2011

^a From the Census Master Activity Schedule

These decennial operations include the Census Bureau's coverage of people living in various geographical areas beyond the mailout/mailback population. For 2010, Census introduced various innovations and improvements to decennial operations, including its methods for identifying group quarters, its *service-based enumeration* approach to counting people experiencing homelessness, and additional questionnaire probes for coverage improvement. Also new for the 2010 Census was the separate operation to enumerate people who live in boats; motorized recreational vehicles; trailers that are pulled by car or trucks; or any other type of housing that is movable, mobile, or temporary, such as tents and hotel rooms.

However, decennial census methods have essentially remained the same since 1960, the first decennial census to use a mailout questionnaire and thus self enumeration as the primary method to collect enumeration information.⁴ And, while the Census Bureau succeeded in automating address canvassing for 2010, technological improvement for field data collection methods have otherwise remained relatively static. The following chapters discuss issues we identified in our oversight of the 2010 Census and improvements for 2020. We suggest enhancements to operations that would afford some improvements if they are conducted in a manner similar to the 2010 Census. Other enhancements—such as use of the Internet, administrative records, and continuous map and address list updating—are more far-reaching and, in our view, critical to achieving significant cost containment while also increasing accuracy.

⁴ The 1970 and 1980 decennials marked the advent of the Census Bureau's coverage improvement efforts, targeting special populations and unique living situations.

Chapter 1: Field Data Collection Automation (FDCA)

FDCA: A contract put in place to provide automated systems for streamlining the decennial census field operations. The program covered developing, procuring, and maintaining a handheld computer to enable data collection, GPS address verification, and administrative applications, as well as managing the local Census office computing and telecommunications environment.

Workload*	Actual Cost	Percent Budget Spent
 Address canvassing (handheld computer and operations control system) Group quarters validation (operations control system) Local Census office infrastructure 	\$790 million	133

* Nonresponse follow-up (handheld computer and operations control system) and other activities were removed from the contract.

A key component of the Census Bureau's 2010 decennial re-engineering plan was the initiative to automate field data collection, in which handheld computers would replace paper-based data collection for the two largest field operations (address canvassing and nonresponse follow-up, or NRFU).⁵ If executed well, automation held the promise of reducing labor costs and data entry errors and enhancing operational efficiency.

Despite the expected benefits, automation also presented substantial risks. The FDCA project was the largest, most complex system integration effort the Census Bureau had ever undertaken and the bureau was inexperienced in planning and managing such a large integration contract. Also, statutory deadlines for delivering apportionment and redistricting population counts left little room for schedule delays.

Early in the decade, Census attempted to internally develop the technology required to automate field data collection. By 2004, however, the bureau abandoned its in-house development efforts and began the process to contract out the project. In April 2006, Census awarded a \$595 million cost-reimbursement contract to Harris Corporation of Melbourne, Florida, for a comprehensive automation solution for field data collection operations. The Harris FDCA contract was to furnish (1) a national network infrastructure connecting headquarters with 12 regional offices, 500 local census offices, and 600,000 handheld computers for address canvassing and NRFU; (2) an operations control system for managing both the automated and the paper-based field work; and (3) local and regional office automation, training materials, technical support, and other operation-related needs. The bureau's late start in contracting out for these extensive IT requirements introduced significant risk into the project.

⁵ For *address canvassing*, Census verifies and updates the addresses on its master address list and their locations on Census maps. The *nonresponse follow-up* operation was the bureau's method of enumerating households that received questionnaires by mail or in person but did not return them.

The FDCA project soon began to experience complications. The first large-scale operational test of FDCA (part of the Census Bureau's dress rehearsal for the 2010 decennial) for address canvassing in April 2007 revealed numerous technical problems, partially due to insufficient time to test the system thoroughly before deployment. Problems continued to mount, the rate of spending was exceeding available funds, and the Census Bureau had difficulty developing a cohesive requirements baseline for the decennial.

It was not until late 2007 that project stakeholders and outside observers alike realized that FDCA was in serious trouble. Harris then formally requested the delivery of all decennial requirements, informing the Census Bureau that otherwise it would not be able to finish the project. And Mitre, a consulting firm supporting Census in the FDCA effort, warned Census executives that requirements were not ready, FDCA's cost was unpredictable, time was running out, and risk to the decennial was so great that the bureau must develop a contingency for a paper-based NRFU operation.



A temporary employee using the handheld computer to verify the address and place housing unit GPS coordinates on the census map. *Source*: U.S. Census Bureau

In response, Census formed a team that, in January 2008, finally established the first complete draft of decennial baseline requirements. But projected FDCA costs had escalated dramatically; Harris estimated that the cost for both new and clarified requirements ranged from \$950 million to \$1.3 billion, far exceeding the original \$595 million contract value.

Census convened a risk reduction task force to determine how best to address these concerns. In April 2008, the bureau implemented the task force's recommendation to use handheld computers only for the upcoming address canvassing operation, cancelling their use for NRFU. Both Census and Harris lacked the capacity to simultaneously develop handhelds for the two separate operations—address canvassing and NRFU. While the decision ensured that the handhelds, tested in the address canvassing portion of the dress rehearsal, would be ready in time for the 2010 operation,

it introduced a new risk—not enough time to test a paper-based NRFU solution in a dress rehearsal prior to full-scale decennial operations. Census reported at that time that this change would increase decennial cost by about \$1.1 billion.

In November 2008, Census modified the FDCA contract. Even though this reduced Harris's responsibilities, the contract's cost increased to \$798 million—over \$200 million more than FDCA's original cost. Contract cost increased due to a number of factors: (1) the full scope and complexity of operational needs had not been specified in the original FDCA contract; (2) although Harris did not have to implement handhelds for NRFU, it had already devoted considerable costs to the development effort; (3) changes in assumptions and costs of handheld computer hardware caused address canvassing costs to rise; and (4) funding shortfalls forced project revisions and delays.

However, FDCA did provide some valuable support to the decennial. With a narrower scope and improved collaboration, Census and Harris were able to develop FDCA in time to provide handheld computers and the operations control system for decennial address canvassing. Reports from Census regions indicated that the handheld computers met operational needs and that managers found the ability to manage operations in real time—a new capability afforded by the handhelds—would be beneficial for future surveys and censuses.

FINDINGS

1. Ineffective oversight allowed FDCA problems to persist. Neither the Department of Commerce nor Census had an oversight process that recognized soon enough FDCA's high level of risk. Contributing to the risk level were the project's scope and complexity, its insufficient budget (as discussed below) and unrealistic schedule, and the bureau's own challenges with system development. Although an October 2004 Mitre report informed Census that the scope of the full plan for FDCA was a high-risk endeavor, Census did not alter its plan and in June 2005 the Department approved spending authority of \$115 million, the first installment for the full FDCA plan, and continued to fund the project until it neared failure.

The Commerce Information Technology Review Board was established to improve the management of major IT investments as directed by the Clinger Cohen Act of 1996. According to its charter, the board assesses whether to approve major IT investments based on whether they fulfill agency missions, employ sound methodologies, and have acceptable risk. However, the board's review procedures were informal, and it did not establish key decision points and criteria to assess project readiness. Also, the board did not require the Census Bureau to adhere to any specific reporting requirements or present measurable management information about FDCA.

Similarly, the Census Bureau's IT governing board did not have oversight authority for decennial systems. Rather, the then-Deputy Director of the bureau and then-Associate Director of the decennial census, in conjunction with the Decennial Leadership Group (consisting of senior executives in charge of Census directorates) were responsible for overseeing decennial programs. However, they focused mainly on operational issues and did not regularly evaluate system acquisition risk. It should also be noted that the Census Bureau changed directors four times from the time the FDCA contract was awarded to its implementation (2006 to 2010).

2. FDCA was adversely affected by weak budget forecasting and financial management. In 2001, Census developed a model to estimate the total lifecycle cost of the 2010 decennial. The FDCA portion of the total cost was an estimated \$545 million. This estimate was used for the FY 2006 budget, and it became the initial operating budget for the project. However, the assumptions for the estimate were inadequately supported and did not include funds for a project management office or a contingency reserve to compensate for program risk and uncertainty. The contractor's plan for FY 2006 cost twice as much as Census had budgeted, necessitating re-planning the development effort. In FY 2007, the FDCA budget fell short by \$45 million; in FY 2008, the shortfall was \$143 million.

Census started to lose track of contract costs as requirements were identified and the contractor developed engineering change proposals for implementing them. In response to intense schedule pressure, the bureau would approve change proposals before the contractor had a chance to develop its costs. As a result, accurate cost-to-complete estimates were unavailable to help decide which requirements were affordable. Census found several ways to cover costs, but delays in funding disrupted the contractor's development activities. Ultimately, the project had to be limited because of prohibitive costs.

3. Ineffective requirements management delayed development and increased contract cost. Initially, the bureau did not establish a requirements management structure or collaborative environment with its contractor to transform FDCA into a workable system. Nor did it fully engage its principal end users—the regional Census directors, who had to rely on FDCA to manage decennial field operations—in requirements development.

In part because of the late decision to contract out, decennial automation requirements were not available for formulating the FDCA bid solicitation (issued in June 2005) and the schedule for developing overall operational requirements was not aligned with the schedule for developing FDCA. Moreover, Census subject matter experts were not regularly available to work on the solicitation or, later, to collaborate with Harris. Instead, a team led by the FDCA program office defined general, high-level requirements that gave the contractor a high degree of control over the design of operations and the opportunity to innovate an automation solution—an approach informally referred to by Census as a "solutions-based contract." However, Census managers were unwilling to change decennial operations to fit the contractor's automation solution, forcing the contractor to redefine its development and deployment strategy.

FDCA was a cost-reimbursement contract, so every change to requirements increased contract costs and complicated the development effort. Nevertheless, Mitre reported that Census overwhelmed the contractor with thousands of unreconciled requirements, that little attention was being paid to the impact of requirements on cost and schedule, and that the process for managing requirements lacked clarity. These problems are not new; Census had similar difficulty managing information technology requirements for the 2000 decennial.

Census also did not establish an effective collaborative environment to develop and refine requirements until early 2008, when the project was already in crisis. The contractor had access primarily to headquarters staff, rather than FDCA end users in the regional offices. Ineffective collaboration contributed to the problems in the address canvassing dress rehearsal conducted in 2007.

4. Lack of technical planning exacerbated an aggressive approach to develop the Paper-Based Operations Control System (PBOCS). The FDCA contract modification also included Census's takeover of the development of the control system for pen-and-paper enumeration operations, which became known as PBOCS. PBOCS was used to manage data collection for 10 discrete enumeration operations conducted from January to September 2010. Key PBOCS functionality included assigning workload, monitoring progress, and defining quality control (QC) parameters. Because of this late change in plans, the bureau was forced to implement an aggressive development schedule. Census deployed PBOCS

functionality in increments just before the start of each field operation, sometimes before the technology was ready. PBOCS' instability disrupted several field operations, as discussed in the following chapters.

Inadequate technical planning and expertise further contributed to the system's instability. Census did not recognize and plan for the complexity of PBOCS development. As a result, it did not have enough time to adequately test the system's performance by creating a test environment separate from the operational environment. The bureau also had to bring in experts from the vendors supplying hardware and software products for the project to solve serious performance problems that arose during tests in December 2008, just 2 months before field operations were scheduled to start.

With the help of these experts, Census determined that it needed additional hardware to improve PBOCS' performance. Census ordered \$4.9 million in additional hardware, but it was not available until April, 2 months after field operations started. However, performance problems persisted, especially at the beginning of NRFU. Census determined that the fundamental cause of the performance problems was the database design, which was impractical to change during operations.

Because of PBOCS' performance and stability problems, Census had to develop procedural workarounds and alternative contingency systems, as well as redesign portions of the field operations. The impact was significant: we estimate that costs for coping with PBOCS' problems amounted to \$11.6 million and delayed processing affected quality checks of the collected data.

Chapter 2: Address Canvassing

Address Canvassing: A method to verify and update the addresses on the address list and their locations on Census maps. Address canvassing fieldwork was conducted in two phases—production and QC

Final Workload	Actual Cost	Percent Budget Spent*
134.4 million addresses	\$443.6 million	119

*Dollar amounts come from Census's Cost and Progress system and represent actual amounts spent and revised (versus initial) budget estimates.

For the decennial census and its other surveys, it is essential that the Census Bureau have a complete, up-to-date address and map database of every location where people live in the nation. Address canvassing was the Census Bureau's primary means of ensuring a current, comprehensive address listing and map database; subsequent 2010 enumeration operations would be negatively affected by errors made during address canvassing. This operation utilized an automated field data collection methodology. Handheld computers containing Census addresses and maps and automated assignment and timesheet applications were used nationwide.

The Census Bureau's method for collecting and tabulating decennial census data is to link (geographically encode, or *geocode*) addresses in its Master Address File (MAF) to the bureau's digital map collection, known as Topologically Integrated Geographic Encoding and Referencing (TIGER). Then, the bureau uses a subset of the MAF to generate the address list that is the basis for decennial operations. Geocoding is the bureau's way of satisfying its constitutional mandate to count people where they live for purposes such as redistricting and apportionment.

The Census Bureau executed its 2010 address canvassing operation—employing nearly 160,000 temporary workers out of 151 local Census offices—from March 30 through July 10, 2009. OIG staff members observed production address canvassing in 15 different locales in 5 of the 12 Census regions. We also observed 63 QC listers in 37 rural and 14 urban areas across the country. Additionally, OIG staff members conducted a limited review of the group quarters validation operation and the contingency-implemented large block operation plan. All of these operations seek to improve the accuracy of Census's address list and map.

FINDINGS

1. Address canvassing cost overruns prompted budget reviews of future operations. The initial \$356 million budget estimate was nearly 25 percent short; the final cost of the operation totaled about \$444 million. The \$88 million overrun was partially caused by Census experiencing less employee turnover than predicted. Census was able to cover the overrun from several sources, including FY 2009 contingency funds and its fingerprinting budget. Because of its cost overrun, Census revised NRFU cost assumptions, as discussed in Chapter 7: Nonresponse Operations.

2. Some listers did not follow address canvassing procedures. Address canvassing production listers verified, updated, or deleted addresses; added missing addresses; updated streets on the TIGER maps; and geocoded every structure by assigning GPS coordinates using the handheld computers. During address canvassing field observations, OIG staff observed some listers collecting GPS coordinates from their cars instead of near the housing unit's main entrance, omitting the procedure of knocking on doors, or not thoroughly canvassing all roads.

A number of factors may have contributed to this breakdown in procedures. It is a major challenge to train more than 160,000 staff to closely follow complex procedures that ensure consistent and accurate results. We observed and were told of instances in which listers ignored portions of the training or received instructions from their supervisors to skip some procedures. In addition, pressure to finish on schedule may have caused procedural breakdowns. OIG received reports from Census field employees that they were under pressure to complete their assignments within a limited timeframe to minimize or avoid overtime. (Census guidance provided that employees would face termination if they did not meet productivity quotas or if they worked unauthorized overtime.)

The procedural shortcuts listers used to complete their work faster may have resulted in more errors. As a result, during NRFU, Census had to implement an ad hoc operation to correct potential address canvassing errors. The operation's purpose was to determine whether listers incorrectly deleted addresses. This operation highlights how errors made during address canvassing resulted in an increased workload for subsequent operations. The following chapters will describe numerous map problems and address list errors that Census should have identified, corrected, and processed.

3. Census missed opportunities to retrain or remove poorly performing production listers from the initial listing operation. Most field workers were production listers who were instructed to canvass their assignment areas (AAs) by walking in a clockwise direction around one or more blocks to update their addresses and maps. Once they completed those areas, QC listers conducted field checks of address samples to ensure accuracy. If the area passed, the QC lister only verified deleted addresses—those housing units that listers were unable to locate in the assigned block or that were designated as duplicate addresses. If the QC check failed, the entire AA required re-canvassing (see figure 6 below).





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

But the production portion of the operation ran significantly ahead of schedule, quickly outpacing QC. This meant that production listers who had been identified by QC listers for not following procedures were not immediately retrained or replaced.

4. Once an area passed QC, listers could not fix identified errors. After the QC check, QC listers needed to verify all remaining addresses marked for deletion. Performing as specified by Census, the handheld computers only allowed changes to those deleted addresses, although QC listers would find additional errors. Consequently, housing units, streets, or new developments found, or housing units on the list that should have been deleted, could not be updated on the handheld computers during the delete verification component of the QC

operation. QC listers were restricted to updating only the addresses the production listers marked for deletion. We observed and heard about a number of complaints and concerns about errors that could not be corrected. Once this issue was identified, QC listers were instructed to write down the addresses in question, which were included in a later operation. We noted varying levels of effort and effectiveness in capturing and using this information. Errors that were made in production but not identified by the QC operation (i.e., finding errors on the list after passing QC) suggest that the current address canvassing operation is flawed and fundamental reforms are needed to obtain a complete list of the nation's addresses.



Linking addresses to housing units is difficult when house numbers are posted on mailboxes, but not the homes. *Source*: OIG

5. Experienced workers updating Census maps and addresses throughout the decade could result in an improved list. During the address canvassing dress rehearsal conducted

in 2007, the Census Bureau found the handheld computers did not meet operational needs when used to list blocks containing over 700 housing units. As a result, about 2 percent of the total address canvassing workload was performed, using laptops, by regional Census staff already trained on the system and software. OIG staff observed these employees conduct the operation. Because of their experience, the Census staff required limited training and were very knowledgeable about deleting and adding addresses and updating maps.

We also observed the 2010 group quarters validation—an operation in which the bureau attempted to appropriately classify addresses that were identified in earlier operations, including address canvassing, as possible group quarters.⁶ While group quarters validation is not part of the address canvassing operation, it is an address list improvement operation that involved about 25,000 temporary field workers. The primary purpose of this operation was to verify whether a specific address was a housing unit, group quarters, or nonresidential—and, if group quarters, to determine the type of group quarters in order to help plan for the actual enumeration. Eighty-six percent of the 2,045,110 address workload were identified as housing units, nonresidential addresses, and deleted units. Again, Census's experienced staff, familiar with group quarters housing, would be a valuable asset for identifying potential group quarters.

For the 2020 decennial, Census should minimize these labor-intensive operations. As discussed earlier (in part I, challenge 2), we suggest using administrative records to assist with assessing and improving the entire address list. Census began a formal administrative records program in the 1990s to supplement and inform decennial, demographic, and geographic programs. The bureau could use this information to update the address list throughout the decade.

We also suggest using the existing, trained workforce, based primarily in the 12 Census regions, for the 2020 count. This permanent workforce conducts other Census surveys on an ongoing basis. Using these workers to continuously update the maps and address list throughout the decade could reduce the size and improve the accuracy of the end-of-decade map and address updating operations.

⁶ Census defines *group quarters* as places where people live or stay that are normally owned or managed by entities or organizations providing housing and/or services for the residents (e.g., college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, or correctional facilities).

Chapter 3: Update/Leave (U/L)

U/L Operation: A method to (1) verify and update the addresses on the address list and their locations on Census maps and (2) deliver a Census questionnaire for the household members to complete and return by mail

Final Workload	Actual Cost	Percent Budget Spent
12 million housing units	\$107.3 million	80



Census enumerators left bagged questionnaires on doorknobs. *Source*: U.S. Census Bureau

During U/L, enumerators traveled primarily to rural areas where many homes do not receive mail, or do not have a citystyle address, to leave a questionnaire at places where people live, stay, or could live or stay. At each of these places, enumerators interviewed a resident or other knowledgeable person to determine whether the unit in question was a housing unit and to verify address information. Enumerators compared what they discovered at these locations and what they learned from the interviews to the information on their address lists and Census maps. Based on their findings, enumerators verified, corrected, or deleted addresses already on the list, adding any newly discovered living quarters; they also updated the maps. At each housing unit, enumerators left a 2010 Census questionnaire for an occupant to complete and mail back to the Census Bureau.

OIG staff members observed enumerator training for this operation. During production, we also observed, from February 24 to April 2, 2010, 15 U/L

enumerators in eight cities nationwide. In each location we observed, at least one of the following factors affected a significant percentage of the

population: high post-2000 poverty rate, high unemployment, high hard-to-count population, high foreclosure rate, and damage from recent natural disasters all of which contributed to the risk that those people might not be counted. We did not observe the QC operation.

FINDINGS

1. Uncorrected errors on Census maps and address listings affected the operation. Notwithstanding the earlier address canvassing operation—which was supposed to identify and correct maps to be used by enumerators—errors persisted, resulting in an increased workload to add missed housing units and update maps. In Fredericksburg, VA, a 50-to-75unit housing development was missing from the Census list.

In Galveston, TX, three homes destroyed by Hurricane Ike in 2008 remained on 2010 Census maps.

In Fort Myers, FL, one U/L enumerator updated a Census map left uncorrected—after he had previously corrected errors on the same map block during address canvassing.

U.S. Department of Commerce	Final Report
Office of Inspector General	June 27, 2011

Adding a large number of units and correcting maps indicate that either (1) address canvassing had not been thorough or (2) enumerators had to correct the maps again during subsequent field operations, resulting in extra wage and mileage costs. The Census Bureau did not explain why these mistakes occurred in the map examples we provided to them. We noted such errors in several cities where we observed enumerations during other operations.

2. IT systems' problems impeded workflow, caused frustration, and threatened to have serious impacts on later operations. Two major systems—PBOCS and the Decennial Application and Personnel Processing System (DAPPS)—had serious problems that significantly slowed down work, necessitating timeconsuming workarounds and wasting employee resources. During this operation, some local Census offices had to deal with recurring PBOCS outages and delays, resulting in a backlog of cases to be checked into the system. DAPPS also experienced slow response time, which reportedly led to lost data. A hardware upgrade, which took effect on March 22, 2010, resolved those problems.



OIG chose to visit U/L regions recently affected by natural disaster. Source: OIG

Chapter 4: Update/Enumerate (U/E)

U/E Operation: A method to (1) verify and update the addresses on the address list and their locations on Census maps and (2) conduct an interview to enumerate residents				
Final Workload	Actual Cost	Percent Budget Spent		
1.5 million living quarters	\$63 million	49		

U/E collected data from communities with special enumeration needs and where many housing units may not have house-number-and-street-name mailing addresses. Census typically conducts this enumeration operation on American Indian reservations, in rural Spanish-speaking communities, and in resort areas with high concentrations of seasonally vacant living quarters. OIG staff visited all three types of U/E areas, although the majority of our observations were on the 18 American Indian reservations we visited. Enumerating those who live on expansive rural reservations is especially difficult because—in addition to having unmarked streets and houses—reservations often have high numbers of households in which several families share a single residence.

OIG staff members observed enumerator training, production assignments, and QC of the field work at 13 different local Census offices in five different Census regions. We observed 47 production enumerators canvass 500 living quarters and obtain 179 interviews. We also observed 20 QC enumerators conduct 14 interviews (out of 35 attempts) and check for missing or incorrectly deleted housing units in 20 other locations.

FINDINGS

1. Inadequate maps and address listings hampered work. Census instructed enumerators to rely on the bureau's maps and addresses (which in many cases consist of a location and housing unit description rather than a street name and house number) to associate the pre-addressed questionnaire with the correct housing unit. Over 50 percent of the production enumerators, whom we observed using their maps as instructed, encountered deficient information such as limited landmarks and misplaced map spots. Consequently, enumerators were often uncertain whether a questionnaire applied to the housing unit or if the housing unit needed to be added to the map and address list. When enumerators associate questionnaires with the wrong housing unit, residents are not counted in the right location.

On the Yavapai-Apache Nation and in Hayward, WI, map spots were on the wrong side of the street and not corrected by the enumerator.

On the Navajo Nation, an enumerator spent all of her time determining her location with respect to the map, completing no enumerations.

In Window Rock, AZ, an enumerator deemed a map incorrectly oriented for direction and thus unusable. If Census conducts an operation similar to U/E in 2020, we suggest the bureau follow up on our 2006 Census Test report recommendation to use handheld computers or an inexpensive off-the-shelf device equipped with GPS in conjunction with the housing unit GPS coordinate information for rural doorstep enumeration operations. At a minimum, the maps that guide enumerators around their AAs should include sufficient landmarks and traversable canvassing paths to lead to each housing unit on the address list.

2. Quality control experienced considerable delays. While U/E was still underway, the largest decennial field operation, NRFU, began. Because of PBOCS' extremely slow performance when supporting multiple operations, the bureau almost exclusively limited its use to NRFU. PBOCS' unavailability resulted in persistent U/E questionnaire backlogs that kept QC enumerators from receiving work.

Every local Census office we visited spoke of delays and workarounds that affected schedules and increased opportunities for error—and increased costs by extending hours and requiring additional clerical personnel. For the final several weeks of the operation, PBOCS was unavailable to generate QC assignments or monitor their progress.

3. U/E procedures were often not followed. Almost 40 percent of the enumerators observed by OIG conducted interviews incorrectly, with lapses occurring in both production and QC enumerations. Some production enumerators assumed respondents' race or estimated a date of birth if the respondent was unsure, and others did not follow the procedures for determining if all household members were enumerated. Interview information should never be assumed; potentially missed household members—particularly on American Indian reservations, where several families often share a single residence—could negatively affect the final enumeration. Further, some QC enumerators lacked the forms necessary to conduct interviews at housing units previously missed or incorrectly deleted, which would, if uncorrected, contribute to undercounting.

Census also required U/E enumerators to check the accuracy of the housing unit list by canvassing along an indicated path in a clockwise direction, then comparing the residences they find to their AA maps and address list. QC canvassing starts at a randomly selected house and continues clockwise for a specified number of housing units, seeking to identify production enumerators who performed inadequate work, including work that had been falsified. About half of the enumerators we observed did not follow canvassing procedures—ignoring the maps, using their address lists to verify residences instead of using the residences to confirm the accuracy of the lists, or traveling in a non-clockwise direction—with QC enumerators just as likely as production enumerators to make these errors. Consequently, housing units were potentially placed in the wrong map locations or missed entirely.

The problems complying with canvassing procedures increased because many of the indicated paths were along natural barriers, such as ravines or riverbeds (see figure 7). The inability to traverse such paths forced enumerators to take alternate canvassing routes that risked skipping portions of their AAs, which could lead to residences being missed or double counted.



Figure 7: Difficult Canvassing Along a Natural Barrier

Source: OIG

4. U/E training was inadequate. To train thousands of staff consistently across the United States, Census employs a *verbatim training* approach (in which a trainer reads internally developed training materials word for word to trainees). OIG staff attended training in five Census local offices, each with varying types of U/E workload.



U/E assignment areas provided challenging roads for Census workers. *Source*: OIG

We found that errors in U/E training materials—such as discrepancies between trainer and trainee manuals were numerous and disruptive, causing instructors to frequently stop to redirect trainees to find the correct page. In addition, at least one instructor did not use the required visual aid. As a result, the quality of training suffered. All 2020 Census operations should ensure that training materials for trainers and trainees are complete and correct before training is delivered.

Chapter 5: Enumeration at Transitory Locations (ETL)

ETL: A method to count people at transient locations such as recreational vehicle campgrounds and parks, commercial and public campgrounds, marinas, campgrounds at racetracks, and fairs and carnivals

Final Workload	Actual Cost	Percent Budget Spent
48,180 transitory locations	\$12.7 million	69

ETL counted people living in nontraditional housing. These people do not maintain a residence in a house or apartment and instead live in motorized recreational vehicles, trailers pulled by a car or truck, boats in marinas, or any other type of housing that is movable (including tents). While Census mailed or hand-delivered most questionnaires to known addresses, for ETL Census staff interviewed and completed a questionnaire to count people at transitory locations who have no other usual residence most of the time. This operation also counted people who live in hotels or motels on a transitory basis because they have no other residence.

OIG staff observed 73 different enumerators in 12 local Census offices, covering all 12 Census regions, from March 22 to April 1, 2010.

FINDINGS

1. Some enumerators neither used Census maps nor updated them consistently. ETL required enumerators to systematically traverse each transitory location and update Census maps, including (1) correcting road names, (2) updating features, and (3) inserting missing map spots and numbers. Enumerators reported that they did not use Census maps because

they were difficult to use and often inaccurate. Also, we observed problems and confusion with map spot placement at three local Census offices. As a result, enumerators did not always update or correct maps; therefore, the maps lacked updated information for use in subsequent operations. Enhanced ETL enumerator training, stressing the importance of updating and correcting Census block maps, and adding and deleting map spots during the canvassing portion of the ETL operation could solve these problems.

In Waldorf, MD; Bakersfield, CA; Lafayette, IN; and Jackson, MS; most enumerators did not use the Census maps and stated the maps were unclear. We did not observe any corrections made to the maps.

In Punta Gorda, FL, enumerators did not know what to do with incorrect map spots.

2. Census could improve its methodology for enumerating people living in transitory situations. According to Census cost and progress data as of June 9, 2010, staff collected only 120,660 questionnaires during the operation, at a cost of approximately \$12.7 million dollars—approximately \$105 per questionnaire. While this operation involves both canvassing and enumeration, the total is more than triple the NRFU cost of \$34 per household questionnaire.⁷

According to Census's field cost data, almost 80 percent of the local Census offices had finished ETL after 2 weeks of a 4-week schedule. The rapid completion of this operation could be attributed to two factors: (1) the bureau continued its practice of frontloading over-hiring and training enumerators to compensate for no-shows, drop-outs during training, and expected turnover—without sufficient workload for each enumerator for the entire 4 weeks; and (2) initial transitory workload information was often incorrect or missing, distorting the actual number of locations for enumeration. As a result, the bureau paid for 3



An example of a transitory housing unit in the ETL operation. *Source*: OIG

days of training for replacement enumerators whose services were not necessary because of lower-thanexpected turnover. If an operation similar to ETL is conducted in 2020, we suggest the Census bureau assess the efficiency and effectiveness of this operation and develop alternative approaches to staffing and other lessons learned.

3. Budget formulation and assumptions overstated the need for funds. Because Census's budget assumptions were based on dated information or best guesses in the absence of historical data, its ETL budget overstated the need for funds. Census developed its \$18.4 million ETL budget based on staffing plans, including the use of internal Census staff workers, contract workers, recruiting strategy, staffing ratios, and staff from previous operations. Census calculated the number of enumerators needed by estimating workload based on 2002 Economic Census data, concluding it would need approximately 6,048 enumerators to travel to 25,354 transitory locations. At the height

of ETL, there were 13,223 enumerators and crew leaders traveling to 48,180 transitory locations and incurring actual direct field costs of \$12.7 million—or 69 percent of the ETL field budget. If ETL is conducted in a similar manner, future operation budgets should incorporate realistic assumptions in staffing plans and use 2010 Census ETL costs as the benchmark for budget formulation.

⁷ Only direct costs (labor expenses, mileage reimbursement, and incidental costs) are included in the estimates. The actual costs for enumerating households is much higher because costs for supplies, management, systems, and infrastructure, etc., are not included.

Chapter 6: Service-Based Enumeration (SBE)

SBE: A method to count homeless individuals at homeless shelters, soup kitchens, mobile food vans, and nonsheltered outdoor locations over three days preceding Census Day (April 1)					
Final Workload Actual Cost Percent Budget Spent					
69,592	\$10.8 million	102			

SBE attempted to count people experiencing homelessness during the 2010 decennial. The operation, which was conducted from March 29 to March 31, 2010, consisted of a 2-day enumeration of people at service locations such as shelters and soup kitchens, plus one nighttime count of persons living in unsheltered locations such as parks or alleys, or under bridges. This enumeration effort was known as the targeted nonsheltered outdoor location (TNSOL) operation.

OIG staff members observed aspects of the SBE operation during its entire 3-day duration, primarily focusing on cities with historically high homeless populations. We visited facilities in eight cities at 13 local Census offices, covering enumerations at 60 sites (29 shelters, 24 soup kitchens, 6 mobile food vans, and 1 daytime event at an outdoor park). We also observed 24 enumerator teams during TNSOL.

FINDINGS

1. A high risk of duplication occurred in the SBE operation to count homeless people in facilities. Unlike any other Census operation, SBE enumerators could collect information by observing just three characteristics (i.e., race, gender, and perceived age) of a homeless

respondent. Census did not require a person's first and last name or birth date. In addition, the bureau instructed enumerators to count individuals even if they stated that they had been previously enumerated; Census presumed respondents wishing to avoid participating in the decennial would claim they had already been counted. Finally, given that the operation occurred over 3 days at different sites, there was a high likelihood that the same individual would be encountered and enumerated multiple times.

In Atlanta, we observed enumerators counting the same respondents more than once at a homeless shelter because the layout of the space made it difficult to determine who had already been approached.

In over half of our observation sites, respondents informed the enumerators that they

had already been counted. In nearly a third of these cases, we observed enumerators consistently following the Census procedure to recount individuals who stated that they had previously been counted. Some respondents provided their name and date of birth but, for those who did not, enumerators collected information by direct physical observation as instructed. Thus, a high potential for duplication exists.⁸ In the remaining 70 percent of our observations, enumerators did not conform to procedures and did not re-enumerate respondents who said they had already been counted.

If Census conducts an operation similar to SBE in 2020, we suggest the bureau reconsider the practice of recounting all individuals who state they were counted but refuse to provide information. We propose creating a new record only for those persons who provide their name and date of birth; this would help identify multiple records associated with the same individual, who may have been counted at other locations earlier in the operation. The bureau should also eliminate enumeration by observation in all operations except TNSOL—and then only if a respondent is asleep—again, to reduce duplicate enumerations.

2. Missteps in planning and coordination led to inefficient staffing. We observed more enumerators than necessary at many food shelters, soup kitchens, and mobile food vans (an average ratio of 1:7, or one enumerator for every seven respondents, versus a ratio of 1:25 per Census guidance). Assuming that each enumerator could interview and process a questionnaire in 10 minutes,⁹ we estimate that Census could have accomplished the 6,000 enumerations we observed with half the staff. Thus, the size of the team and the duration of the shift appeared outsized for the work required, resulting in higher labor costs for the SBE operation.

There are two possible reasons for the overstaffing problem. First, some overstaffing could have arisen from local Census office managers using their discretion to assign more enumerators for certain sites. Also, local Census office staff asked service center personnel to provide information about estimated population levels and the best times to enumerate at their sites. This practice was intended to help Census determine staffing levels for enumerators. However, the quality of the information received by Census staff may have varied because responses to the scripted questions may not have accurately reflected the service centers' usage. Although factors such as weather and changing economic conditions make it difficult to estimate populations at service sites, sufficient preparations must occur prior to SBE for appropriate scheduling and staffing of SBE operations.

In general, SBE completed the enumeration of this hard-to-count population. However, improvements can be made, such as (1) increasing the quantity and relevance of information collected about service sites during the group quarters advance visit operation (specific attention devoted to estimating the likely population at service sites would provide a more reasonable and efficient staffing allocation) and (2) increasing the frequency of communication between the local Census offices and service sites to schedule the best times to count individuals experiencing homelessness.

⁸ Census attempts to unduplicate people in this operation through computer matching. However, these efforts are hampered by the collection of limited (e.g., no name given) and observed demographic information.

⁹ The individual Census report, the questionnaire used for the SBE operation, states that it takes a participant 5 minutes to complete the form. We conservatively estimate that an enumerator would need an additional 5 minutes to fill out the envelope and listing sheet for each report. We also subtracted 30 minutes from each shift to allow for pre-enumeration and post-enumeration activities in our workload assumptions calculations.

3. Counting the homeless population in outdoor locations likely resulted in high duplication and raised considerable enumerator safety concerns. The previous two findings described the challenges integral to enumerating service-based sites; those same challenges—duplication and inefficiency—were significantly more problematic during the outdoor enumeration. During our 24 TNSOL observations, our staff observed 122 enumerators counting only 180 respondents. At 16 of the observations, fewer than six individuals were enumerated; at four of the sites, no one was enumerated. While SBE generally presented duplication risks, there was a more serious risk of duplication during the outdoor enumeration because many respondents were sleeping. In such cases, enumerators were instructed to fill out a questionnaire by observing three personal characteristics (race, gender, and perceived age) and then identify the individual numerically (e.g., "Person 1" or "Person 2") on the form. A similar problem emerged during the 2000 decennial, when 18 percent of the records collected during TNSOL did not contain a first and last name and thus were ineligible for duplication analysis. It cannot be determined whether Census workers had already enumerated sleeping TNSOL respondents earlier in the week-at soup kitchens, mobile food vans, or shelters. As a result, there was a high risk of duplication due to the TNSOL operation.

Census made enumerators aware of the safety risks and provided them with strategies to minimize those risks, but significant safety risks were inevitably present in the attempt to

enumerate individuals experiencing homelessness. In 4 out of 24 cases we observed, employees were unprepared for TNSOL. In one case, enumerators failed to travel as a group as instructed; in another, enumerators had trouble understanding the maps, spending more time than necessary in questionable areas. Some of the

Enumerators in Detroit were shot at in their car during TNSOL.

enumerators we observed in Houston, Los Angeles, and Asheville, North Carolina, avoided TNSOL sites because of perceived safety threats. Some local Census office managers also perceived TNSOL as a major safety risk and canceled or curtailed the TNSOL operation. For example, in Towson, Maryland, police told the local Census office manager that TNSOL was too dangerous, prompting the manager to reduce the scope of the operation.

If Census conducts an operation similar to TNSOL in 2020, it should work with stakeholders to create a safer and more effective operation and reduce the risks associated with danger and duplication.

4. Most Local Census offices reported little value added from the Partnership Program's¹⁰ involvement in SBE. According to local Census office staff, the Partnership Program provided little or no value to the identification of sites for mobile food vans and unsheltered outdoor locations. Partnership specialists and assistants were responsible for providing local Census offices with sites to visit for both of these operations by January 15, 2010, but many

¹⁰ The Census Bureau staffed 680 Partnership and Data Services Program positions established for community outreach supporting the 2010 decennial census. The Partnership Program primarily assisted decennial operations by interfacing with hard-to-count groups, populations who have historically been undercounted or traditionally have not responded well to the decennial census questionnaire (e.g., ethnic or minority populations, renters, or low-income people).

U.S. Department of Commerce	Final Report
Office of Inspector General	June 27, 2011

of the offices complained that the Partnership Program's site lists arrived after the deadline had passed and after local office staff had already identified sites. (OIG has issued a separate report on the Partnership Program. See our bibliography of reports in appendix C.)

Chapter 7: Nonresponse Operations: NRFU and Vacant Delete Check (VDC)

NRFU Operation: A method to enumerate households in areas of the country that received questionnaires by mail or in person and did not return them

VDC Operation: A method to verify (1) addresses classified as vacant or nonexistent and (2) new addresses added since NRFU

Final Workload	Actual Cost	Percent Budget Spent*
NRFU Production: 47.2 million housing units	\$1.6 billion	71
NRFU Reinterview: 1.9 million housing units	\$95.3 million	101
NRFU Residual: 729,143 housing units	\$42.6 million	136
VDC: 8.7 million housing units	\$281.7 million	115

*Dollar amounts come from Census's Cost and Progress system and represent actual amounts spent and revised (versus initial) budget estimates.

NRFU, the largest and most expensive field operation of the 2010 decennial census, officially ran from May 1 through July 30.¹¹ Like the other operations, it consisted of two components— the original, or production, enumeration and a QC component known as *reinterview*—and was executed by 475,000 temporary workers nationwide. VDC, the next major operation following NRFU, was carried out between July 1 and August 25 by nearly 130,000 temporary staff. Questionnaires that Census received after the development of its initial NRFU workload required enumeration in a last-minute close-out operation called *NRFU residual*. While OIG made field observations during this August 2010 operation, we were unable to target specific NRFU residual activities due to the small number of addresses involved.

VDC was a new decennial operation providing an independent follow-up of addresses classified as vacant or nonexistent during NRFU (excluding seasonal housing and deletes for military installations, duplicate addresses, and undeliverable addresses) as well as new addresses, such as

¹¹ NRFU began in April in some areas to enumerate university students at off-campus housing units before they left for summer break. According to the Census Bureau, 493 of 494 offices completed NRFU prior to the scheduled completion date of July 10, 2010. The remaining office located in the New York City area did not finish until July 30 because staff had to re-enumerate several thousand questionnaires as a result of an allegation of questionnaire falsification. For more information, see *Whistleblower Allegations Concerning Census Operations in Brooklyn, New York*, the IG's July 2010 testimony before the House Committee on Oversight and Government Reform, available at www.oig.doc.gov.

U.S. Department of Commerce	Final Report
Office of Inspector General	June 27, 2011

those from new construction. Like NRFU production, enumerators went door-to-door conducting interviews with respondents to complete household questionnaires.

OIG staff members visited 39 local Census offices during NRFU and 17 offices during VDC, covering all 12 Census regions, from mid-April to late July 2010. OIG observations consisted of:

NRFU

227 enumerator observations

- 136 refusals

2,571 housing unit visits resulting in:

- 799 enumerations

- 1,816 doors not answered

VDC

64 enumerator observations 460 housing unit visits resulting in:

- 61 enumerations
- 93 vacant verifications
- 242 doors not answered
- 74 housing unit deletions

FINDINGS

 Variance between the revised NRFU budget and actual costs demonstrate a need for improved cost estimation. Census revised the September 2009 NRFU cost estimate of \$2.7 billion in early 2010 to \$2.3 billion—within the range of likely estimates of between \$1.9 and \$2.8 billion (after assessing 1,000 likely cost estimates). The decision to maintain 2009 enumerator pay rates for 2010 operations was one reason for the cost savings. Even with the revision, the total cost of NRFU was significantly lower than the revised budget, as shown in figure 8.

Figure 8. NRFU Budget, Estimated and Actual (Figures in millions) ^a				
Component Initial Budget Revised Budget Actual Cos				
Production	\$2,677	\$2,248	\$1,589	
Reinterview	\$67	94	95	
Total	\$2,744	\$2,342	\$1,684	
^a Figures have been rounded. Source: U.S. Census Bureau				

It is unknown which factors, individually or in combination, such as mail response rate, employee productivity, and enumerator replacement rates, contributed to the lower cost for NRFU. While the bureau should be commended for containing the cost of this operation—the savings constituted a significant portion of Census's nearly \$1.9 billion surplus for FY 2010—it must take steps to improve its budget estimating process. To improve 2020 cost estimates, the Census Bureau should conduct an analysis into the causes of the significant cost savings and incorporate those findings into any future validation study to generate a more accurate final cost estimate.

2. Employees not adhering to enumeration procedures could have adversely affected the quality of the operation. To ensure that the nearly one-half million NRFU enumerators nationwide collected data in a consistent manner, enumerators were trained to follow standard procedures during their interviews. Those procedures included asking each question in the questionnaire exactly as written and recording the respondent's answers as provided. We found that, while most enumerators generally followed these procedures, others did not, potentially affecting the quality of the information collected.¹²

Some enumerators deviated from interview procedures. During NRFU, enumerators did not read their interview scripts verbatim, despite being required and trained to do so. In particular, enumerators made assumptions about household members regarding race and Hispanic origin rather than asking respondents directly. In addition, we found that some enumerators did not ask the questions designed to measure whether a household was over- or undercounted. Increasing self-response options—such as the Internet or other emerging technologies—that would reduce the NRFU workload would also help eliminate the effects of such enumerator bias.

Some NRFU enumerators sought out proxies for occupied units too early. A proxy interview occurs when the enumerator collects questionnaire information from someone other than a household member (such as a neighbor or some other knowledgeable person). Enumerators should seek out a proxy only after trying six times to contact respondents. However, we found that approximately a third of all interviews conducted during the first 3 weeks of NRFU were proxy interviews—a high number for the start of the operation. We

also observed enumerators using Internet sources, such as online directories, government websites, and online real estate sites to find respondent and proxy information. For occupied housing units, relying on proxies and online information can affect the quality of enumeration because the information is less reliable than that obtained from actual respondents.

3. Census enumeration maps were not fully utilized, and the maps and address list contained inaccuracies. Enumerators were to use Census maps to confirm that a housing unit address is correctly associated with an exact location on the map. However, enumerators used Census maps in only 94 OIG observations (41 percent). For the remaining observations, enumerators used alternate maps, GPS, or their personal knowledge of an area to locate the housing unit. Our observations of enumerators who did use maps identified 33 instances of map inaccuracies. For VDC, we noted map problems in In Soledad, CA, an enumerator stated that maps were too broad and lacked some basic features like roads.

In Burlington, VT, the local Census office manager reported 6 cases where entire apartment buildings, ranging in size from 20 to 100 units, did not receive questionnaires in the mail.

In Beckley, WV, a manager at a local Census office found map spots placed on the wrong side of the road, missing housing units, and poor descriptions of housing units, making enumeration difficult.

¹² We raised several of these issues with the Census Bureau in a report addressed to senior managers based on our initial observations during the first 2 weeks of NRFU. The Census Bureau quickly reminded local Census offices to ensure field employees follow appropriate enumeration procedures.

14 of 64 observations (22 percent). Examples of problems observed or reported on include

- inaccurate or missing map spots,
- incorrect housing unit numbers and street names,
- duplicate addresses,
- missing neighborhoods or apartment buildings, and
- housing units located in the wrong place on the map.

As part of our site visits, OIG staff collected and reviewed copies of NRFU-specific *Information Communications* (INFO-COMMs)¹³ from field workers to office managers. Our review of the forms identified 269 instances of the same map and address list issues listed above. Both office managers and enumerators attributed the map problems to the address canvassing operation—suggesting that listers failed to follow procedures or experienced problems obtaining a GPS signal.

4. The new VDC operation's use of proxies and designating duplicates was inefficient. The main focus of the VDC operation was an independent verification of addresses coded as vacant or nonexistent during NRFU. However, Census required VDC enumerators to follow the same procedures as the NRFU operation—to make six attempts to contact the household resident before enlisting the assistance of a proxy. Addresses in the VDC workload had already been coded as vacant or deleted; allowing VDC enumerators to contact proxies earlier could reduce the number of visits enumerators had to make to confirm an address status. For the 2020 Census, the bureau should consider allowing VDC enumerators to contact proxies earlier in the process than they would for NRFU.

Supplemental addresses constituted 36 percent of the VDC workload. These addresses were address additions that were processed after the identification of the initial NRFU workload, such as new construction, and required verification. Our observations confirmed that many addresses were duplicates, obtained from a prior operation's questionnaire, or nonexistent, such as telephone pole locations and a shopping center. VDC enumerators were not trained to compare the VDC address list to the NFRU list to identify potential duplicate addresses. Instead, we observed enumerators completing what may have been duplicate questionnaires for the same household. Only in mid-July, several weeks into the operation, did Census provide guidance to local Census offices on how to identify potential duplicate addresses.

5. Respondent reluctance affected VDC production. During VDC, respondent "fatigue" from being questioned repeatedly during multiple Census operations hindered participation. For example, large apartment complex managers were typically the only knowledgeable proxies for multiple vacant addresses. Apartment managers were repeatedly contacted by multiple enumerators throughout NFRU and VDC to determine the status of vacant housing units.

¹³ An INFO-COMM is a paper form that local Census offices used to document anomalous situations that census field workers encountered during the conduct of their duties.

Often the managers refused to provide information to enumerators who were not the first to make contact. This also occurred in rural locations where a few individuals were relied upon to provide information for a fairly large geographical area. In 2020, Census should allow VDC enumerators to contact proxies earlier in the process for vacant units than the NRFU procedures require for occupied units.

6. OIG observations revealed areas for improvement in NRFU enumerator training. As described in chapter 4, Census employed a verbatim training approach to ensure consistent training of thousands of temporary staff members. In late April 2010, OIG staff attended NRFU training at locations near our offices in Atlanta, Denver, Seattle, and Washington, D.C. Based on our observations, OIG staff concluded that enumerators could have benefitted from additional role-playing and practice with conducting mock interviews. One crew leader said that more time should have been allotted for atypical interview scenarios. Crew leaders (the trainers) suggested, and our observations confirmed, that incorporating interactive instructional materials and visual aids and encouraging more participation would keep the class engaged and improve the training. Using instructional videos would also allow the training to continue without interruption while crew leaders complete administrative work each training day.

Training several hundred thousand enumerators in such a short period of time is a major endeavor for the Census Bureau. For 2020, the bureau should consider modifying its verbatim training approach in order to encourage more class participation and reinforce Census procedures learned through classroom instruction. Similar to our fourth quarterly report recommendation, the bureau should evaluate its training approach and incorporate new technologies and more interactive training methods for the 2020 Census NRFU operation.

7. Fundamentally changing NRFU—the largest, most expensive field operation—could significantly contain 2020 costs. If properly managed, probably the most promising approach to reducing the cost and improving the quality of the decennial census is automation. Census could offer alternative response options—such as Internet or web-based applications—that potentially reduce the nonresponse workload. Successfully automating field data collection would help contain costs and increase accuracy.

Census should also consider fundamentally different approaches, such as utilizing administrative records to reduce the nonresponse workload and improve enumeration accuracy. Administrative records could be used to fill out a questionnaire after several unsuccessful interview attempts, rather than interview non-household members—such as neighbors—who may not be able to answer any or all of the questions. This innovation would reduce or eliminate enumerators' proxy enumeration workload and decrease the burden on the public; it could also reduce the number of visits enumerators must pay to unoccupied households.

To accomplish these and other suggested changes will require extensive testing. Conducting smaller tests of new processes and procedures throughout the decade, using the American Community Survey (ACS) as a test environment, is one mechanism. It would require expanding the ACS sample to accommodate testing, but smaller continuous tests could facilitate using new technologies, including the Internet and other web-based applications, to

build systems that could be used multiple times for other census and surveys rather than just once for the decennial.

8. Census Bureau, the Department, law enforcement agencies, and Congress should explicitly address enumerator safety. NRFU highlighted many instances of Census employee risk at the hands of respondents. The bureau's internal incident reports documented 693 threats against enumerators, including physical and verbal assaults, phone threats, and animal attacks. In addition, our review of 1,034 INFO-COMMs¹⁴ completed by Census enumerators during this operation found nearly half (474) described respondents (including proxies) refusing to provide survey information and enumerators unable to enumerate a household that was deemed unsafe. Refusals ranged from nonphysical interactions— involving respondents yelling at, cursing, and slamming the door on the enumerator—to direct threats and physical assaults by respondents.

Although other laws, such as Title 18, make it a crime to harm federal employees, Title 13 does not more specifically address assaults, threats, and other criminal conduct directed towards Census staff. Further, Title 13 confidentiality provisions criminalize the disclosure of Census data in most instances. Our review of the Census INFO-COMMs and incident reports indicated that not all threats and other criminal conduct directed at enumerators generated either a formal review (incident report) or an enforcement action. There have been inconsistent interpretations as to whether Census confidentiality requirements limit the use of information observed during the course of enumeration as evidence in criminal prosecutions of individuals who harm enumerators or who commit other crimes, such as the falsification of Census data by enumerators.

Given the importance of the safety and well-being of Census employees, we suggest that the Census Bureau, the Department, law enforcement agencies, and Congress explicitly address enumerator safety. A review of Title 13 and other laws associated with data collection and federal employee safety is necessary to determine the legislative and/or agency action that will best protect Census employees collecting information at the doorstep. A complete solution must—while continuing to strongly protect the confidentiality of respondent information—clearly authorize the use of such Title 13 information in the limited situations where it is needed for the investigation and prosecution of crimes committed against Census employees who are collecting survey and census information.

¹⁴ We examined INFO-COMMs relating to various areas of oversight priority. Those pertaining to enumerator safety were specifically selected to support our concern for the safety of enumerators and should not be considered reflective or representative of all INFO-COMMs.

Chapter 8: Coverage Follow-up (CFU), Field Verification (FV), and Count Review

After NRFU, OIG covered three additional operations that helped ensure the population was counted once, only once, and in the right place in the 2010 Census: *coverage follow-up, field verification*, and *count review*. Our limited reviews of these three activities found no significant problems to report on during operation implementation.

CFU Operation: A method to identify and contact, by telephone, housing units with potential missing or duplicate household members to clarify who was living at the address on April 1

Final Workload	Actual Cost	Percent Budget Spent
4,874,410 completed cases	\$82.1 million	96

CFU—which ran from April 11 through August 14, 2010, attempted to resolve erroneous enumerations and omissions on mail-in questionnaires or from Census enumeration operations such as NRFU and U/E. Census designed CFU to (1) identify cases, (2) conduct telephone



Employees at a CFU call center. Source: U.S. Census Bureau

interviews, and (3) collect response data. A Washington, DC, area operations control center oversaw and monitored 11 nationwide call centers, tracking progress and data quality for the entire operation.

Using funds allocated through the American Recovery and Reinvestment Act, Census was able to add 1.1 million cases to the CFU workload, resulting in an estimated initial workload of 8 million. After originally calculating a 65 percent completion rate of the total workload, Census completed 4,874,410 cases (66.1 percent) through the scheduled August 14 end date.

OIG staff members observed interviewers and service quality assurance monitors at the Kennesaw, Georgia, CFU call center on

July 26 and 27, 2010. The Kennesaw site employed a large staff and could process calls with respondents who were non-English speakers or who required assistance due to disabilities. In addition, we observed quality assurance calibration sessions at the operations control center in order to sample the work of interviewers and service quality assurance monitors nationwide. We did not identify any major problems during our review of this operation.

Field Verification Operation: A method to (1) verify the existence of living quarter addresses that do not match address records already contained in the Census universe and (2) resolve suspected address duplicates contained within the same census block

Final Workload	Actual Cost	Percent Budget Spent	
455,913	\$21 million	62	

Field verification began on August 6, 2010, and concluded on September 8, 2010. It verified the existence of respondent-provided addresses and located those housing units on Census maps. This operation also made a final determination about potentially duplicate housing units identified in later operations.

OIG staff reviewed procedures and tracked the operation's progress using the Census cost and progress system. We also observed field operations in Towson, Maryland, on August 10, 2010. In Towson, enumerators followed procedures as written in the enumerator manual. Local Census office staff stated that most of the workload did not consist of duplicate addresses, suggesting that the address canvassing operation failed to thoroughly identify all of the housing units in the area.

Census completed the operation before the September 8 deadline and spent only \$21 million of the almost \$34 million budget. We did not identify any major problems during our review of this operation.

Count Review: A number of activities to (1) enhance the accuracy of the census and (2) provide specific federal and state stakeholders with the opportunity to review and provide feedback on count tabulations prior to release of census data

The count review process had three components: a *traditional count review* (population and housing tabulations), a *housing unit address review*, and a *group quarters review*. Before 2010, decennial census operations only performed the traditional count review, a reasonableness check for the tabulations of data collected during decennial operations. Census made the 2010 count review process more proactive, adding the housing unit address review (to compare addresses located during address canvassing with satellite maps and GPS locations compiled by Google, Bing, and others)—which added 88,000 new housing units to the 2010 decennial workload—and the group quarters review.

OIG examined the group quarters review and traditional count review components of the 2010 count review program. The 2010 group quarters review aimed to ensure that state apportionment counts included all group quarters homes (e.g., prisons, universities, and nursing homes). To conduct the review, members of the Federal–State Cooperative Program (FSCPE) from 42 states

and Puerto Rico assembled lists of statewide group quarters. During the week of August 13, the participating FSCPE officials traveled to the Census Bureau to compare their group quarters lists with the Census results, investigating missing and misplaced group quarters. OIG staff observed the weeklong review process, which looked for inefficiencies, inconsistent procedures, and ways to improve the program. After the review, OIG staff spoke with program supervisors and almost all participating FSCPE officials to assess the process. We did not identify any significant problems with the group quarters review; however, based on our observations and feedback from FSCPE officials, additional resources—such as more time and additional staff from both the states and Census—could improve the program.

During traditional count review, Census analysts reviewed five different Census files between August 2010 and February 2011. To complete the reviews, analysts compared data from each Census file with benchmark population estimates. They then identified tracts with large population (or population percentage) increases or decreases or tracts with a zero population. Census's review of the first two files found no anomalous tracts that warranted further investigation. OIG met with traditional count review managers to examine the bureau's methodology for the first two file reviews. No issues were identified; therefore, we did not review the remaining three files.

Part III: OIG Recommendations

Over the previous decade and throughout last year's decennial field operations, OIG provided oversight of the Census Bureau's efforts to plan and carry out the 2010 Census. Through our quarterly reports and audits, inspections, and evaluations, we kept Congress, the bureau, and the public informed about the obstacles Census faced to successfully complete a cost-effective, efficient, and accurate decennial.

From our oversight, we also developed findings on ways to improve the 2020 Census. The table below contains recommendations resulting from these findings. In our view, these are the crucial challenges the bureau needs to resolve successfully in order to conduct the 2020 Census on time, within budget, and with manageable risk.

	Recommendation	Applicable Challenge (Part I of this report)	Relevant OIG Report
1.	Conduct an analysis of the causes of the significant cost savings for 2010 field operations and incorporate those findings into any future validation studies to generate a more accurate final cost estimate.	Challenge 1	New in this Final Report to Congress
2.	Obtain and use independent cost estimates to validate internally derived cost estimates (that include contingency reserves).	Challenge 1	New in this Final Report to Congress
3.	Develop a transparent decision documentation strategy to account for 2020 census program and spending decisions.	Challenge 1	Quarterly Report
4.	Improve the transparency of the decennial budget process, especially the presentation of surplus (or elimination of the surplus) as shown in the monthly financial management reports.	Challenge 1	Quarterly Report 4
5.	Reevaluate the practice of frontloading and develop a better process for developing workload and cost assumptions.	Challenge 1	Quarterly Report 4

6.	Explore alternative approaches for conducting the 2020 Census that include (1) Internet and web-based response options, (2) automated field data collection alternatives, (3) utilizing administrative records, and (4) incorporating into the decennial process experienced field representatives who conduct nondecennial Census surveys each year.	Challenge 2	New in this Final Report to Congress
7.	Improve communication with the public on concurrent enumeration surveys and better inform people who did not receive decennial census forms at their homes how they might participate.	Challenge 2	Quarterly Report 4
8.	Increase the sample size of the American Community Survey (or other surveys) to use as a test environment for conducting smaller tests of new processes, procedures, and systems.	Challenge 3	New in this Final Report to Congress
9.	Thoroughly review and improve decennial census training methods.	Challenge 3	Quarterly Report 4
10.	Explicitly address enumerator safety in collaboration with the Department, law enforcement agencies, and Congress.	Challenge 3	New in this Final Report to Congress
11.	Regarding requirements management: a. Institutionalize effective requirements management processes that balance Census stakeholder needs and make appropriate cost, schedule, and performance tradeoffs; b. Ensure that major stakeholders fully participate throughout the entire acquisition process; and c. Maintain accurate cost estimates on cost reimbursement contracts to align them with identified requirements and subsequent changes.	Challenge 4	New in this Final Report to Congress
12.	Align system development schedules with operational deadlines to allow adequate time to test systems before their deployment.	Challenge 4	New in this Final Report to Congress
13.	Continuously update the maps and address lists throughout the decade, supplementing these activities with targeted address canvassing at the end of the decade.	Challenge 5	New in this Final Report to Congress
14.	Review both address canvassing practices and post- data collection processing to minimize errors on the maps that support subsequent operations.	Challenge 5	Quarterly Report 4

15.	Develop acquisition lifecycle oversight procedures to manage project risk that correspond to government and industry best practices.	Challenge 6	New in this Final Report to Congress
16.	Strengthen and implement a risk management strategy and relevant contingency plans before starting 2020 decennial census operations.	Challenge 6	Quarterly Report
17.	Develop a 2020 decennial lifecycle schedule early in the decade, finalizing the operational schedules as soon as practicable after research and testing are completed.	Challenge 6	Quarterly Report 1
18.	Regarding the partnership program and special enumeration operations:		
	a. Improve advance coordination with partnership organizations,		
	b. Ensure Partnership specialist skills are aligned with project requirements,	Challenge 7	Quarterly Report 4
	c. Establish procedures to mitigate the risk of duplicate enumerations, and		
	d. Institute a more effective process for selecting and confirming sites to enumerate.		
19.	a. Specify how to align Partnership activities and objectives with local Census office schedules to remedy current systemic shortcomings.		
	b. Ensure joint Partnership- local Census office manager training as part of the decennial process.	Challenge 7	Partnership
	c. Refine the recruitment and hiring process and training of Partnership assistants.		riogram Report
	d. Provide Partnership assistants adequate electronic resources to do their job.		

^aThis recommendation was presented as a suggestion, rather than a formal recommendation, to the Census bureau in our fifth quarterly report to Congress.

^b See OIG report number OIG-11-023-I: 2010 Census: Cooperation Between Partnership Staff and Local Census Office Managers Challenged by Communication and Coordination Problems. April 8, 2011.

Summary of Agency and OIG Comments

In addition to introducing new recommendations, this report includes many previously reported findings and recommendations. On June 23, 2011, the Census Bureau provided a formal response to our draft report, which we have incorporated into our final report as appropriate. The full text of the response is included as appendix D.

In its response, Census stated that comments and formal action plans for existing recommendations had already been provided to OIG. Census also stated that it had no fundamental disagreements with the new recommendations in this report and that all of our recommendations are consistent with the stated strategies and principles of the bureau's 2020 planning efforts.

Although Census concurred with most of our findings and recommendations, it did disagree with our recommendation to include law enforcement agencies in a review of Title 13 to ensure clear measures for enforcing Census laws and protecting the safety of Census employees. In its response, the bureau expressed concern that law enforcement personnel would receive Title 13 information or other confidential census information as part of these discussions. However, law enforcement agencies do not need to receive Title 13 information or other confidential census information or other confidential census information as part of these discussions. However, law enforcement agencies do not need to receive Title 13 information or other confidential census information to participate in discussions of how Title 13 could better address enumerator safety. Given their responsibility for responding to and prosecuting attacks on Census enumerators, law enforcement personnel have particular insight into the types of changes that may be needed to facilitate prosecution of census-related crimes and further improve enumerator safety. We further note that the language to which Census has objected was included in OIG's *Fifth Quarterly Report to Congress*, which had been provided to the bureau for review and comment prior to its release. Census did not object at that time. Therefore, OIG continues to recommend that the bureau collaborate with law enforcement agencies on ways to ensure enumerator safety under Title 13.

<u>Appendix A:</u> <u>Objectives, Scope, and Methodology</u>

The 2010 decennial census enumerated a population of more than 308 million people living in the United States. Decennial operations included the enumeration of the population in households and other living quarter types, including enumeration of the homeless, the accurate and secure processing of personal information, and the effective and efficient use of government resources. Our review focused on the numerous activities required to conduct an accurate census. The primary objective of this review was to evaluate the quality and efficiency of the 2010 decennial census operations.

To accomplish our objectives, we

- reviewed operational manuals and other documentation;
- monitored the 2010 Census field operations for conformity to specifications and accuracy of the list development and enumeration;
- monitored and evaluated decennial systems;
- ascertained the adequacy of physical, personal, and information technology security controls to protect the privacy of information respondents provided to the Census Bureau;
- monitored the Census Bureau's effectiveness at managing the operations' costs, schedules, and risks;
- reviewed 2010 enumeration payroll and progress;
- determined whether any fraudulent enumerations occurred; and
- monitored 2010 decennial census-related OIG hotline complaints.

As part of our intensive planning efforts, we prioritized our 2010 sample of local Census office areas for analysis and observations. We chose these areas based on their highest perceived risk (e.g., 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). Throughout the 2010 decennial census operations, we assigned more than 100 OIG staff members to Census projects. To ensure nationwide coverage, we initially selected at least one early local Census office per Census region. Next, we identified a smaller sample conveniently located near OIG offices. Additional selections ensured adequate representation of population density and specific hard-to-count populations (for example, we 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. Finally, we reviewed areas where reported or perceived problems arose. (For the scope of our review, see the chapters on specific field operations in part II.)

Our field operation reviews included observation of operation-specific 2010 Census enumerator training classes; field operations (e.g., administration of the Census questionnaire properly, updating and correcting maps and address list correctly where applicable); and local Census office procedures, practices, and conditions. We also conducted interviews with Census headquarters, regional and local managers, and staff. By the close of our review, we had conducted observations in all 50 states.

We conducted the review from April 2008 through November 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.

<u>Appendix B:</u> Local Census Offices Visited by OIG Staff During 2010 Census

Mobile, AL
Little Rock, AR
Flagstaff, AZ
Peoria, AZ
Phoenix, AZ
Tucson, AZ
Bakersfield, CA
El Dorado Hills, CA
Fresno, CA
Hollywood, CA
Los Angeles, CA
Salinas, CA
Stockton, CA
Vista, CA
Denver, CO
Lakewood, CO
New Haven, CT
Washington, DC
New Castle, DE
Fort Myers, FL
Hialeah, FL
Jacksonville, FL
Miami, FL
Punta Gorda, FL
Sarasota, FL

Atlanta, GA Savannah, GA Honolulu, HI Waianae, HI Sioux City, IA Idaho Falls, ID Champaign, IL Chicago, IL Fort Wayne, IL Lafayette, IN Kansas City, KS Louisville, KY Houma, LA New Orleans, LA Woburn, MA Baltimore, MD Catonsville, MD Frederick, MD LaPlata, MD Largo, MD Rockville, MD Towson, MD Waldorf, MD Augusta, ME Bangor, ME

Portland, ME Dearborn, MI Detroit, MI Duluth, MN St. Louis, MO Jackson, MS Meridian, MS Southaven, MS Asheville, NC Greenville, NC Wilmington, NC Omaha, NE Concord, NH Middlesex-Union, NJ Rocky Hill, NJ Las Vegas, NV Reno, NV Bronx, NY Brooklyn, NY New York, NY Queens, NY Rochester, NY Watertown, NY Canton, OH Lawton, OK

Oklahoma City, OK Beaverton, OR Folcroft, PA Providence, RI Beaufort, SC Charleston, SC Columbia, SC Nashville, TN Houston, TX Laredo, TX League City, TX Provo, UT Henrico, VA Richmond, VA Burlington, VT Everett, WA Olympia, WA Seattle, WA Tacoma, WA Eau Claire, WI Green Bay, WI Superior, WI Mt. Hope, WV Charleston, WV Morgantown, WV

American Indian Reservations Visited by OIG Staff During 2010 Census

Reservations	Location(s)
Houlton Maliseet	Houlton, ME
Penobscot	Indian Island, ME
Menominee	Keshena, WI; Bowler, WI; Gresham, WI
Oneida	Oneida, WI
Lac Courte Oreiles	Hayward, WI
Fond du Lac	Lake Nebagamon, WI
Yavapai-Prescott	Prescott, AZ
Yavapai-Apache	Camp Verde, AZ; Clarkdale, AZ
Норі	Mesa, AZ; Keams Canyon, AZ; Shungopavi, AZ; Kykotsmovi, AZ;
	Polacca, AZ; Sipaulovi, AZ
Gila River	Bapchule, AZ Casa Blanca, AZ; Laveen, AZ
Navajo Nation	Window Rock, AZ; Fort Defiance, AZ; Sawmill, AZ; Chinle, AZ,
	McKinley County, NM; Crownpoint, NM; Rock Springs, NM;
	Standing Rock, NM
Pine Ridge	Jackson County, SD; Bennett County, SD
Rosebud	Mission, SD
Cheyenne River	Ridgeview, SD; Eagle Butte, SD; Cherry Creek, SD
Eastern Cherokee	Cherokee, NC
Standing Rock	Standing Rock, ND
Wind River	Riverton, WY; Fort Washakie, WY; Crowheart, WY
Crow	Big Horn County, MT

<u>Appendix C: Bibliography:</u> <u>OIG Reports and Testimony on the 2010 Decennial Census</u>

Below is a list of all reports produced by OIG that are related to the 2010 Census. We have provided cross-referencing where these reports directly contributed to the information, findings, and recommendations in this final report. These documents are available in the OIG Census Reading Room at <u>www.oig.doc.gov</u>.

OIG Products:	See Part II, Chapter(s):
U.S. Department of Commerce Office of Inspector General, April 2011. <i>Top Management Challenges for the 2020 Census</i> , testimony before the Senate Committee on Homeland Security and Governmental Affairs. Washington, DC: Department of Commerce OIG.	1, 2, 7
——, April 2011. 2010 Census: Cooperation Between Partnership Staff and Local Census Office Managers Challenged by Communication and Coordination Problems. Washington, DC: Department of Commerce OIG.	
 —, February 2011. 2010 Census: Contract Modifications and Award- Fee Actions on the Decennial Response Integration System (DRIS) Demonstrate Need for Improved Contracting Practices, OIG-11-020- A. Washington, DC: Department of Commerce OIG. 	
—, January 2011. 2010 Census: Fifth Quarterly Report to Congress, OIG-11-017-I. Washington, DC: Department of Commerce OIG.	3,7, 8
——, November 2010. 2010 Census: Partner Support Program Lacked Adequate Controls for Monitoring Purchases and Ensuring Compliance, OIG-11-013-A. Washington, DC: Department of Commerce OIG.	6
 —, December 2010. Top Management Challenges Facing the Department of Commerce, OIG-11-015. Washington, DC: Department of Commerce OIG. 	
——, September 2010. <i>Respondent Data Safeguards in the Decennial</i> <i>Response Integration System (DRIS)</i> , OIG-19888. Washington, DC: Department of Commerce OIG.	

OIG Products:	See Part II, Chapter(s):
——, July 2010. <i>Review of Leases of Maryland Local Census Offices</i> . Washington, DC: Department of Commerce OIG.	
—, July 2010. Whistleblower Allegations Concerning Census Operations in Brooklyn, New York, testimony before House Committee on Oversight and Government Reform. Washington, DC: Department of Commerce OIG.	7
—, June 2010. Letter to Senators Mikulski and Shelby regarding 2010 Decennial Census Oversight. Washington, DC: Department of Commerce OIG.	
——, June 2010. Letter to Representatives Mollohan and Wolf regarding 2010 Decennial Census Oversight. Washington, DC: Department of Commerce OIG.	
—, June 2010. Early Observations Indicate That Some Nonresponse Follow-up Procedures Are Not Being Followed and Others Are Lacking, OAE-19893-01. Washington, DC: Department of Commerce OIG.	7
——, May 2010. 2010 Census: Fourth Quarterly Report to Congress, OIG-19791-4. Washington, DC: Department of Commerce OIG. ^a	3, 4, 5, 6, 7
——, March 2010. 2010 Census: An Assessment of the Census Bureau's Preparedness, testimony before the House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives. Washington, DC: Department of Commerce OIG.	7
 —, February 2010. 2010 Census: Update of Schedule, Cost Risk Management, and Communications Activities, testimony before the Senate Committee on Homeland Security and Governmental Affairs, Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security. Washington, DC: Department of Commerce OIG. 	
——, February 2010. 2010 Census: Third Quarterly Report to Congress, OIG-19791-3. Washington, DC: Department of Commerce OIG.*	1, 2, 7

OIG Products:	See Part II, Chapter(s):
—, January 2010. Top Management Challenges Facing the Department of Commerce, OIG-19884. Washington, DC: Department of Commerce OIG.	
—, December 2009. 2010 Census: Second Quarterly Report to Congress, OIG-19791-2. Washington, DC: Department of Commerce OIG.	1, 2, 7
 , October 2009. Census 2010: Importance of the Master Address File and Steps Census Can Take to Strengthen Its Quality, testimony before the House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives. Washington, DC: Department of Commerce OIG. 	2
 , October 2009. 2010 Census: Update of Key Decennial Operations, testimony before the Senate Committee on Homeland Security and Government Affairs, Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security. Washington, DC: Department of Commerce OIG. 	2
 —, September 2009. 2010 Census and Integrated Communications Campaign, testimony before the House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives. Washington, DC: Department of Commerce OIG. 	
 —, August 2009. Problems Encountered in the Large Block Operation Underscore the Need for Better Contingency Plans, OIG-19171-02. Washington, DC: Department of Commerce OIG. 	2
——, August 2009. 2010 Census: First Quarterly Report to Congress, OIG-19791-1. Washington, DC: Department of Commerce OIG.*	1
 May 2009. Observations and Address Listers' Reports Provide Serious Indications That Important Address Canvassing Procedures Are Not Being Followed, OIG-19636-01. Washington, DC: Department of Commerce OIG. 	2

OIG Products:	See Part II, Chapter(s):
 March 2009. Census 2010: Revised Field Data Collection Automation Contract Incorporated OIG Recommendations, But Concerns Remain Over Fee Awarded During Negotiations, CAR 18702. Washington, DC: Department of Commerce OIG. 	1
——, February 2009. Census 2010: Delays in Address Canvassing Software Development and Testing, Help Desk Planning, and Field Office Deployment Have Increased Operational Risk, OIG-19171. Washington, DC: Department of Commerce OIG.	1
——, November 2008. <i>Top Management Challenges Facing the Department of Commerce</i> , OIG-19384. Washington, DC: Department of Commerce OIG.	
——, October 2008. Census 2010: Dress Rehearsal of Address Canvassing Revealed Persistent Deficiencies in Approach to Updating the Master Address File, OSE-18599. Washington, DC: Department of Commerce OIG.	2
 August 2008. Census 2010 Decennial: Census Should Further Refine Its Cost Estimate for Fingerprinting Temporary Staff, OIG-19058-1. Washington, DC: Department of Commerce OIG. 	
——, June 2008. Census 2010 Decennial: OIG Reviews Through the Decade Identify Significant Problems in Key Operations, OIG-19217. Washington, DC: Department of Commerce OIG.	
——, September 2007. Follow-up Review of the Workers' Compensation Program at the Census Bureau Reveals Limited Efforts to Address Previous OIG Recommendations, IPE-18592. Washington, DC: Department of Commerce OIG.	
 —, September 2007. Census 2010: Key Challenges to Enumerating American Indian Reservations Unresolved by 2006 Census Test, OSE-18027. Washington, DC: Department of Commerce OIG. 	4
—, September 2006. Enumerating Group Quarters Continues to Pose Challenges, OIPE-18046-09-06. Washington, DC: Department of Commerce OIG.	

OIG Products:	See Part II, Chapter(s):
 March 2006. Valuable Learning Opportunities Were Missed in the 2006 Test of Address Canvassing, OIG-17524-03-06. Washington, DC: Department of Commerce OIG. 	2
——, August 2005. FDCA Program for 2010 Census Is Progressing, but Key Management and Acquisition Activities Need to be Completed, OSE-17368. Washington, DC: Department of Commerce OIG.	1
 September 2004. Improving Our Measure of America: What the 2004 Census Test Can Teach Us in Planning for the 2010 Decennial Census, OIG-16949-1. Washington, DC: Department of Commerce OIG. 	
—, September 2003. MAF/TIGER Redesign Project Needs Management Improvements to Meet Its Decennial Goals and Cost Objective, OSE- 15725. Washington, DC: Department of Commerce OIG.	
 March 2002. Selected Aspects of Census 2000 Accuracy and Coverage Evaluation Need Improvements Before 2010, OIG-14226. Washington, DC: Department of Commerce OIG. 	
 March 2002. Improving Our Measure of America: What Census 2000 Can Teach Us in Planning for 2010, OIG-14431. Washington, DC: Department of Commerce OIG. 	
^a Recommendations for the first, third, and fourth quarterly reports were prov separate memorandums.	ided to Census in

Appendix D: Agency Response to Draft Report



UNITED STATES DEPARTMENT OF COMMERCE Economics and Statistics Administration U.S. Census Bureau Washington, DC 20233-0001 OFFICE OF THE DIRECTOR

MEMORANDUM FOR	Todd J. Zinser
	Inspector General for Audit and Evaluation
Through:	Rebecca M. Blank MP for
	Under Secretary for Economic Affairs
From:	Robert M. Groves TLM Jan
	Director
Subject:	U.S. Census Bureau's Response to the Office of Inspector
	General's Draft Final Report titled Census 2010: Draft Final
	Report to Congress, May 12, 2011

This document is in response to your draft report titled *Census 2010: Draft Final Report to Congress, May 12, 2011.* The U.S. Census Bureau appreciates the comments and recommendations developed by the Office of Audit and Evaluation, Office of Inspector General, in producing this draft report.

Attachment

cc: US/EA

USCENSUSBUREAU Helping You Make Informed Decisions

www.census.gov

U.S. Census Bureau's Response to the Office of Inspector General's Draft Final Report titled *Census 2010: Draft Final Report to Congress* May 12, 2011

The U.S. Census Bureau appreciates the opportunity to review and comment on the draft version of this report. As noted in the report, many of the findings and recommendations were included in previous OIG reports. The Census Bureau previously provided comments on those reports and, as appropriate, prepared formal action plans in response to any recommendations, so we have not repeated those comments or planned actions here.

Regarding the new recommendations in this report, the Census Bureau has no fundamental disagreements with them. We believe they are consistent with the stated strategies and principals of our 2020 Census planning efforts.

We have, however, provided a few minor comments directly to the OIG report authors. In addition, we offer the following comment regarding a statement made in the report:

Page 46 of the draft report recommends that the Census Bureau work with the U.S. Department of Commerce (DOC), law enforcement agencies, and Congress to take steps to explicitly address enumerator safety in Title 13.

<u>Census Bureau comment</u>: As previously stated, the Census Bureau supports a review of Title 13 to ensure that clear measures are specified to enforce Census laws and protect the safety of Census employees, and we will work with the DOC in that regard. We do not believe, however, that law enforcement agencies should be involved in such discussions since they are not entitled to receive confidential census information, except when such information is being released in furtherance of a prosecution of a violation of the Census Act.