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The 2010 Decennial Census: Background and Issues

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Summary

The 23rd decennial census of the U.S. population began on January 25, 2010, in Noorvik, AK, where the U.S. Bureau of the Census (Census Bureau) Director, among others, traveled by snowmobile and dogsled to enumerate the residents. Most households in the United States—about 120 million—received their census forms by mail in March, ahead of the official April 1 Census Day, and 74% of the households that received forms mailed them back. From May through July, the Census Bureau contacted about 47 million nonresponding households and on December 21, 2010, released the official state population figures and total U.S. resident population count of 308,745,538 as of Census Day.

The Bureau's constitutional mandate to enumerate the U.S. population every 10 years has been summarized with deceptive simplicity: count each person whose usual residence is in the United States; count the person only once; and count him or her at the right location. In reality, the attempt to find all U.S. residents and correctly enumerate them is increasingly complicated and expensive, and attracts congressional scrutiny. This report discusses the major innovations that were planned for 2010; problems encountered; and issues of census accuracy, coverage, fairness, and objectivity.

For 2010, the Bureau devised a short-form questionnaire that asked for the age, sex, race, and ethnicity (Hispanic or non-Hispanic) of each household resident, his or her relationship to the person filling out the form, and whether the housing unit was rented or owned by a member of the household. The census long form, which for decades collected detailed socioeconomic and housing data from a sample of the population, was replaced by the American Community Survey, a "continuous measurement" survey of about 250,000 households per month from 2005 through 2011 (now about 295,000 per month), which gathers largely the same data as its predecessor.

Another innovation for 2010 was to have been the development of highly specialized handheld computers to automate two essential census field operations: address canvassing and nonresponse follow-up (NRFU). The goal of pre-census address canvassing was to verify and correct census maps and addresses for mailing census forms and sending enumerators. During NRFU, census workers tried repeatedly to visit or telephone people who had not completed their questionnaires and obtain information from them. Testing had revealed such serious problems with the handheld devices that although the Bureau used them for address canvassing, it resorted to the traditional paper-based approach for NRFU. The change required the Bureau to hire and train more NRFU staff, at increased expense. In 2012, the total life-cycle cost of the 2010 census was estimated at about $13 billion, instead of the previously estimated $11.5 billion. The problems with the handhelds fueled concerns that the success of the census could be at risk. Some feared, in particular, that the late-date changes to NRFU could impair census accuracy, reduce coverage, and exacerbate the recurrent likelihood of differential undercounts—the greater tendency for minorities and less affluent members of society than for whites and wealthier people to be undercounted.

Estimates of 2010 census coverage, released on May 22, 2012, indicated a net percentage overcount of 0.01% for the total population, 0.84% for non-Hispanic whites, and 1.95% for American Indians off reservations; but a net percentage undercount of 2.07% for non-Hispanic blacks, 0.08% for non-Hispanic Asians, 1.34% for native Hawaiians or other Pacific Islanders, 4.88% for American Indians on reservations, and 1.54% for Hispanics.

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Introduction

The U.S. Constitution—Article 1, Section 2, clause 3, as modified by Section 2 of the Fourteenth Amendment—requires a population census every 10 years, to serve as the basis for apportioning seats in the House of Representatives. Decennial census data also are used for within-state redistricting and in certain formulas that determine the annual distribution of more than $450 billion in federal funds to states and localities.[1] Census numbers, moreover, are the foundation for constructing national and state estimates of current population size and projections of future size.[2] The Constitution stipulates that the enumeration is to be conducted "in such Manner as they [Congress] shall by Law direct." Congress, through Title 13 of the *United States Code*, has delegated this responsibility to the Secretary of Commerce and, within the Department of Commerce (DOC), the Census Bureau. Both the Commerce Secretary and the Census Bureau Director are appointed by the President, by and with the advice and consent of the Senate.

The Census Bureau's task in conducting the once-a-decade enumeration has been summarized very simply: count each person whose usual residence is in the United States; count that person only once; and count him or her at the right location, where the person lives all or most of the time.[3] Far from being simple, however, the attempt to find and correctly enumerate 100% of U.S. residents is increasingly complicated and expensive, even though Title 13 U.S.C., Section 221, requires compliance with the census and provides for a fine of up to $100 for nonresponse. In accordance with provisions of the Sentencing Reform Act of 1984, Title 18 U.S.C., Sections 3559 and 3571, the possible fine has been adjusted to not more than $5,000.

This report discusses the major innovations that were planned for the 2010 census, problems encountered with the attempt to automate certain census field operations, the persistent differential census undercount of less advantaged groups in the population, and efforts to ensure an equitable census. **Table 1** shows the completion of key census activities; the production and release of 2010 census products continued through 2013.

The 23rd census began north of the Arctic Circle on January 25, 2010, in Noorvik, AK, where the then-Bureau Director, among others, traveled by snowmobile and dogsled to enumerate the residents.[4] Most U.S. households—about 120 million—received their census forms by mail in

[1] Testimony of then-Census Bureau Director Robert M. Groves in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Health Care, District of Columbia, Census, and the National Archives, *The Pros and Cons of Making the Census Bureau's American Community Survey Voluntary*, hearing, 112th Cong., 2nd sess., March 6, 2012, at http://oversight.house.gov/wp-content/uploads/2012/03/3-6-12-Census-Groves.pdf. Groves resigned from the Bureau on August 10, 2012, to become Provost at Georgetown University. On August 2, 2013, John H. Thompson was confirmed as the Bureau's new Director. Georgetown University, "U.S. Census Bureau Director Tapped for Georgetown Provost," at http://www.georgetown.edu/news/new-provost.html; and U.S. Bureau of the Census, "Director's Corner," at http://www.census.gov/newsroom/releases/archives/directors_corner/.

[2] U.S. Bureau of the Census, "Methodology for the United States Resident Population Estimates by Age, Sex, Race, and Hispanic Origin (Vintage 2009): April 1, 2000 to July 1, 2009," at http://www.census.gov/popest/methodology/2009-nat-meth.pdf; and U.S. Bureau of the Census, "Population Projections," at http://www.census.gov/population/projections/.

[3] See, for example, the testimony of then-Census Bureau Director Steve Murdock in U.S. Congress, House Committee on Appropriations, Subcommittee on Commerce, Justice, Science, and Related Agencies, *The Fiscal Year 2009 Budget*, hearing, 110th Cong., 2nd sess., April 3, 2008 (Washington: 2008), p. 4.

[4] Testimony of Associate Census Bureau Director Arnold Jackson in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *2010 Census: A Status Update of Key Decennial Operations*, March 25, 2010, pp. 2-3, at http://www.census.gov/newsroom/releases/pdf/AAJ_Testimony_3-25-10.pdf.

March,[5] ahead of the official April 1 Census Day, and 74% of the households that received forms mailed them back.[6] From May through July, about 565,000 census takers[7] contacted approximately 47 million households that either did not receive a questionnaire or did not answer and return it.[8] On December 21, 2010, 10 days before the legal deadline, the Bureau released the official state population figures for House apportionment and the total U.S. resident population count of 308,745,538 as of Census Day.[9]

Table 1. Timeline for the 2010 Census

Date	Action
January 2008	The Bureau opened regional 2010 census offices.
Fall 2008	Recruitment began for workers to staff "early" local census offices.
Spring through Mid-Summer 2009	Census field workers completed address canvassing nationwide to update census maps and verify addresses for delivering census questionnaires and contacting nonrespondents.
Fall 2009	The Bureau opened the remaining local census offices and began recruiting enumerators needed for the peak census workload in 2010.
March 2010	Most U.S. households received their census forms by mail.
April 1, 2010	Census Day arrived.
May through July 2010	Census enumerators conducted nonresponse follow-up.
September through December 2010	Regional and local census offices closed.
December 31, 2010	By this deadline, the Bureau had to transmit to the President the official state population counts for House apportionment.
March 31, 2011	By this deadline, the Bureau had to deliver redistricting data to the states.
April 2011 through 2013	The Bureau produced and delivered the remaining 2010 census products.

Sources: Adapted from U.S. Bureau of the Census, "Interactive Timeline," at http://www.census.gov/2010census/about/timeline-flash.php, and unpublished information from the Bureau.

[5] U.S. Government Accountability Office, *2010 Census: Cooperation with Enumerators Is Critical to a Successful Headcount*, GAO-10-665T, April 30, 2010, p. 3.

[6] U.S. Bureau of the Census, "Nation Achieves 74 Percent Final Mail Participation in 2010 Census," press release CB10-CN.81, October 21, 2010, p. 1. This percentage matched the 2000 census mail participation rate. The Bureau termed this rate a "fairer measure" of census compliance than the "mail response rate." The reason is that the denominator for the participation rate excludes housing units from which the U.S. Postal Service returned forms as "undeliverable" (an indication that these units were vacant), but the response rate includes these units in the denominator. U.S. Bureau of the Census, "2010 Census Participation Rates," copy available to congressional clients from the CRS author upon request. The national mail response rate as of April 19, 2010, was 63.2%; the Bureau had predicted that it would be between 59% and 65%. U.S. Government Accountability Office, *2010 Census: Cooperation with Enumerators Is Critical to a Successful Headcount*, GAO-10-665T, April 30, 2010, highlights page.

[7] U.S. Bureau of the Census, "$1.6 Billion in 2010 Census Savings Returned," press release CB10-CN.70, August 10, 2010, p. 1.

[8] U.S. Bureau of the Census, "Nation Achieves 74 Percent Final Mail Participation in 2010 Census," press release CB10-CN.81, October 21, 2010, p. 1.

[9] U.S. Bureau of the Census, "U.S. Census Bureau Announces 2010 Census Population Counts—Apportionment Counts Delivered to President," press release CB10-CN.93, December 21, 2010.

The Short-Form-Only Census and the American Community Survey

A brief overview of modern census-taking shows how the Bureau has collected the decennial data from 1940 onward. In that year, for the first time, the census questionnaire contained 16 supplementary questions asked of a 5% sample of the population.[10] Sampling continued to be done in conjunction with the 1950 through 2000 censuses, and in 1970 the census became primarily a mail-out, mail-back operation.[11] In 2000, for example, the Bureau sent a set of basic questions on a short form to most housing units; a sample of units—about 17%—received a long form containing these questions and others designed to gather socioeconomic and housing data for various legislative and program purposes. The forms were delivered to housing units on the Bureau's address list, with instructions that respondents were to complete and return them.[12]

Departing from recent enumerations, the 2010 census questionnaire was a short form only. It asked for the age, sex, race, and ethnicity (Hispanic or non-Hispanic) of each person in a household, as well as the individual's relationship to the person filling out the form. The form also included a question about tenure, that is, whether the housing unit was rented or owned by a member of the household.[13]

The long form was replaced by the American Community Survey (ACS), a "continuous measurement" survey of, from 2005 to 2011, about 250,000 households per month, totaling about 3 million annually (now about 295,000 households per month, totaling about 3.54 million a year), which, with few exceptions, gathers the same data as its predecessor.[14] The Bureau highlights the

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[10] The Bureau's earlier use of sampling was not in the decennial census, but in a 1937 survey to gauge the extent of unemployment in the nation during the Great Depression. U.S. Bureau of the Census, "History: 1930 Overview," at http://www.census.gov/history/www/through_the_decades/overview/1930.html; and U.S. Bureau of the Census, "History: 1940 (Population)," at http://www.census.gov/history/www/through_the_decades/index_of_questions/1940_population.html.

[11] U.S. Bureau of the Census, "History: 1970 (Population)," at http://www.census.gov/history/www/through_the_decades/index_of_questions/1970_population.html.

For the 2020 census, the Bureau is planning an Internet response option that will alter the mail-out, mail-back feature of the decennial count. See the testimony of then-Census Bureau Director Robert M. Groves in U.S. Congress, Senate Committee on Homeland Security and Governmental Affairs, Subcommittee on Federal Financial Management, Government Information, Federal Services, and International Security, *Census: Planning Ahead for 2020*, hearing, 112th Cong., 2nd sess., July 18, 2012, at http://www.hsgac.senate.gov/subcommittees/federal-financial-management/hearings/census-planning-ahead-for-2020.

[12] U.S. Bureau of the Census, *Measuring America: The Decennial Censuses from 1790 to 2000* (Washington: GPO, 2002), p. 98.

[13] U.S. Bureau of the Census, "Explore the Form," at http://www.census.gov/2010census/about/interactive-form.php. The short form asked certain additional questions for administrative purposes, such as the number of people living in the housing unit on April 1, 2010, their names, and the telephone number of the person completing the form. The Bureau collected this information "to ensure response accuracy and completeness and to contact respondents whose forms have incomplete or missing information." Ibid.

[14] For a discussion of the ACS, see CRS Report R41532, *The American Community Survey: Development, Implementation, and Issues for Congress*, by Jennifer D. Williams.

In January 2013, the Internet response option became available to most households selected for participation in the ACS. The Bureau sends a letter notifying these households that they can access and complete the survey online. Any household that does so within about two weeks of receiving the notification letter does not receive a questionnaire by mail. Any household that does not respond online within this time frame receives a mailed questionnaire with instructions to answer it and return it by mail. U.S. Bureau of the Census, "Census Bureau to Offer American Community Survey Internet Response," press release CB12-247, December 17, 2012.

more timely availability of information as a key benefit of the ACS.[15] It provides annual data for areas with populations of at least 65,000 people, including the total United States, all states and the District of Columbia, all congressional districts, about 800 counties, and about 500 metropolitan and micropolitan statistical areas. For less populous areas, the Bureau produces multi-year estimates based on ACS data collected over several years. In 2008, the Bureau released the first three-year estimates for areas with 20,000 or more people,[16] and on December 14, 2010, the first five-year estimates became available for areas from the most populous to those with fewer than 20,000 people.[17]

Automated Field Operations

Another innovation for 2010 was to have been the automation of two major census field operations: address canvassing and nonresponse follow-up (NRFU). The goal of pre-census address canvassing was for temporary Bureau field staff to verify and correct census addresses and maps, technically called the "Master Address File" (MAF) and "Topologically Integrated Geographic Encoding and Referencing" (TIGER) system. An accurate MAF/TIGER was essential for directing the census forms to the right housing units and successfully conducting nonresponse follow-up. Indeed, as the Bureau has noted, "MAF/TIGER is the foundation of the Census—it creates the universe for all other operations that collect information from the public."[18] NRFU required that enumerators try repeatedly to visit or telephone people who had not completed their census questionnaires and convince them to respond. Because of the problems discussed below, only address canvassing was automated; NRFU was not.

Problems Encountered

As part of its 2010 census preparations, the Bureau contracted with the Harris Corporation for Field Data Collection Automation (FDCA). The objective was the development of highly specialized handheld computers to automate address canvassing and update maps with global positioning software, as well as conduct nonresponse follow-up. Testing eventually revealed significant flaws in the handhelds, such as slow operation, memory problems, and a tendency to lock up when users entered large quantities of data.[19] In April 3, 2008, congressional testimony, then-Bureau Director Steve Murdock acknowledged that the Bureau had abandoned the plan to use the handhelds for NRFU, would resort to the traditional paper-based approach, and would rely on the handhelds only for address canvassing.[20] The change required the Bureau to hire and train more NRFU staff, at increased expense.[21] The Government Accountability Office (GAO)

[15] U.S. Bureau of the Census, *American Community Survey, Design and Methodology* (Washington: GPO, 2009), p. 2-1.

[16] Ibid., p. 2-4.

[17] U.S. Bureau of the Census, "American Community Survey, 2005-2009 ACS 5-Year Estimates," at http://www.census.gov/acs/www/data_documentation/2009_release/.

[18] U.S. Bureau of the Census, *United States Census 2010, High Risk Improvement Plan*, version 7-2, November 4, 2008, p. 2.

[19] U.S. Government Accountability Office, *Information Technology: Census Bureau Testing of 2010 Decennial Systems Can Be Strengthened*, GAO-09-262, March 2009.

[20] Testimony of then-Census Bureau Director Steve Murdock in U.S. Congress, House Committee on Appropriations, Subcommittee on Commerce, Justice, Science, and Related Agencies, *The Fiscal Year 2009 Budget*, hearing, 110th Cong., 2nd sess., April 3, 2008 (Washington: 2008).

[21] U.S. Department of Commerce, Office of Inspector General, *Top Management Challenges Facing the Department of*

testified to Congress on June 11, 2008, that the Bureau had re-estimated the total life-cycle cost of the 2010 census at between $13.7 billion and $14.5 billion, instead of the previously estimated $11.5 billion.[22] A 2009 House Committee on Appropriations report raised the estimate to $14.7 billion,[23] where it remained in March 2010. NRFU was expected to account for about $2.3 billion of the $14.7 billion.[24]

Early Assessments by the DOC Inspector General and GAO

On November 18, 2008, the Commerce Department's Office of Inspector General (OIG) issued a report that identified the top management challenges DOC faced as it prepared for the transition to a new President and new Commerce Secretary. Heading the list was the need to "overcome the setbacks experienced in reengineering decennial processes and conduct a successful 2010 Census." The failure of the handhelds was prominent among the setbacks noted. According to the report, the Bureau "originally intended to develop the handhelds in-house and tested prototypes in ... 2004 and 2006. The devices had serious problems in both tests," which, in the OIG's view, "should have better informed the Bureau's efforts to define requirements."[25] The decision to contract for FDCA came "too late in the decade ... to meet ambitious fixed deadlines for the dress rehearsal tests starting in 2007 and decennial operations starting in 2009." Not until January 2008, almost two years after awarding the contract, did the Bureau deliver "a first draft of a complete,

Commerce, Final Report no. OIG-19384 (Washington: U.S. Department of Commerce, 2008), p. 1.

[22] U.S. Government Accountability Office, *2010 Census: Plans for Decennial Census Operations and Technology Have Progressed, but Much Uncertainty Remains*, GAO-08-886T, June 11, 2008, p. 1.

[23] U.S. Congress, House Committee on Appropriations, *Commerce, Justice, Science, and Related Agencies Appropriations Bill, 2010*, report to accompany H.R. 2847, 111th Cong., 1st sess., H.Rept. 111-149 (Washington: GPO, 2009), p. 18. For information about the Bureau's FY2010 appropriations, see CRS Report R40644, *Commerce, Justice, Science, and Related Agencies: FY2010 Appropriations*, coordinated by Nathan James, Oscar R. Gonzales, and Jennifer D. Williams. For subsequent fiscal years, see CRS Report R41161, *Commerce, Justice, Science, and Related Agencies: FY2011 Appropriations*, coordinated by Nathan James, Oscar R. Gonzales, and Jennifer D. Williams; CRS Report R41721, *Commerce, Justice, Science, and Related Agencies: FY2012 Appropriations*, coordinated by Nathan James, Jennifer D. Williams, and John F. Sargent Jr.; CRS Report R42440, *Commerce, Justice, Science, and Related Agencies: FY2013 Appropriations*, coordinated by Nathan James, Jennifer D. Williams, and John F. Sargent Jr., and CRS Report R43080, *Commerce, Justice, Science, and Related Agencies: FY2014 Appropriations*, coordinated by Nathan James, Jennifer D. Williams, and John F. Sargent Jr.

[24] U.S. Government Accountability Office, *2010 Census: Cooperation with Enumerators Is Critical to a Successful Headcount*, GAO-10-665T, April 30, 2010, p. 3.

Shortly after NRFU ended, however, the Bureau reported that it had not had to draw on $1.6 billion of the funds available for the 2010 census. The Bureau attributed the savings to the relatively high 74% mail participation rate, which meant less nonresponse follow-up; to the greater productivity of NRFU workers in 2010 than in 2000; and to the absence of "disasters or major operational breakdowns" that would have necessitated the Bureau's use of contingency funds. U.S. Bureau of the Census, "$1.6 Billion in 2010 Census Savings Returned," press release CB10-CN.70, August 10, 2010, p. 1; and U.S. Bureau of the Census, "Nation Achieves 74 Percent Final Mail Participation in 2010 Census," press release CB10-CN.81, October 21, 2010, p. 1. Accordingly, in 2011 and 2012, GAO presented a lower 2010 census cost estimate of about $13 billion. U.S. Government Accountability Office, *2010 Census: Preliminary Lessons Learned Highlight the Need for Fundamental Reforms*, GAO-11-496T, April 6, 2011, p. 7; and U.S. Government Accountability Office, *2020 Census: Additional Steps Are Needed to Build on Early Planning* GAO-12-626, May 2012, p. 1.

[25] U.S. Department of Commerce, Office of Inspector General, *Top Management Challenges Facing the Department of Commerce*, Final Report no. OIG-19384 (Washington: U.S. Department of Commerce, 2008), p. 2.

user-validated set of requirements for the handhelds and supporting infrastructure."[26] By then, the MITRE Corporation, which periodically advised the Bureau about its information technology (IT) programs for the 2010 census, had found that

> FDCA is in serious trouble. It is not clear the system will meet Census' operational needs and quality goals. The final cost is unpredictable. Immediate, significant changes are required to rescue the program. However, the risks are so large considering the available time that we recommend immediate development of contingency plans to revert to paper operations.[27]

The OIG report acknowledged that the Bureau had taken important actions, such as management changes and better oversight, to address these problems, but stated that "significant risks remain for the 2010 decennial."[28]

Similarly, the Government Accountability Office pointed out vulnerabilities in the Bureau's management of its information technology systems, including the handheld computers.[29] In a November 6, 2008, press release to announce its presidential transition website, GAO included the upcoming census among its 13 "urgent issues ... needing the attention of [then-] President-Elect Obama and the 111th Congress during the transition and the first year of the new administration and Congress."[30] The 2010 census, in large part because of IT problems and a substantial total estimated cost, remained one of the areas GAO designated as "high risk" in a January 2009 update of its high-risk series.[31] Among the concerns GAO noted in a March 2009 report were the following:

> The Dress Rehearsal[32] was originally conceived to provide a comprehensive end-to-end test of key 2010 census operations; however, ... because of the problems encountered with the handheld devices, among other things, testing was curtailed. As a result, although several critical operations underwent end-to-end testing in the Dress Rehearsal, others did not. According to the Associate Director for the 2010 census, the Bureau tested approximately 23 of 44 key operations during the Dress Rehearsal. Examples of key operations that underwent end-to-end testing ... are address canvassing and group quarters validation.[33] An example of a key operation that was not tested is the largest field operation—nonresponse follow-up....

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[26] Ibid.

[27] Ibid., pp. 3-4. The MITRE quotation appeared earlier in Allan Holmes, "Census program to use handheld computers said to be in 'serious trouble'," GovernmentExecutive.com, January 2, 2008, at http://www.govexec.com/oversight/2008/01/census-program-to-use-handheld-computers-said-to-be-in-serious-trouble/26029/. This article contained a link to the source of the quotation, MITRE's November 29, 2007, "Talking Points for Meeting with [then-Census Bureau Deputy Director] Jay Waite."

[28] U.S. Department of Commerce, Office of Inspector General, *Top Management Challenges Facing the Department of Commerce*, Final Report no. OIG-19384 (Washington: U.S. Department of Commerce, 2008), p. 2.

[29] See, for example, U.S. Government Accountability Office, *Information Technology: Census Bureau Needs to Improve Its Risk Management of Decennial Systems*, GAO-08-79, October 5, 2007.

[30] U.S. Government Accountability Office, Office of the Comptroller General, "GAO Lists Top 'Urgent Issues' for Next President and Congress; Unveils New Transition Web Site," press release, November 6, 2008, p. 1.

[31] U.S. Government Accountability Office, *High-Risk Series: An Update*, GAO-09-271, January 22, 2009.

[32] GAO wrote that the Dress Rehearsal period spanned February 2006 through June 2009. During it, the Bureau developed and tested "systems and operations, and it held a mock Census Day on May 1, 2008." U.S. Government Accountability Office, *Information Technology: Census Bureau Testing of 2010 Decennial Systems Can Be Strengthened*, GAO-09-262, March 2009, p. 9. Beyond the Dress Rehearsal tests, the Bureau did "supplementary testing to prepare for the 2010 Decennial Census." Ibid., p. 10.

[33] Group quarters, the addresses of which had to be validated, cover a wide variety of group housing, including college residence halls, military barracks, nursing homes, and prisons. U.S. Government Accountability Office, *Information*

> In December 2008, after additional development and improvements to the handheld computers, the Bureau conducted a limited field test for address canvassing, intended to assess software functionality in an operational environment. We observed this test and determined that users were generally satisfied with the performance of the handhelds.... However, the test ... included only a limited subset of functionality to be used during the 2009 address canvassing operations.[34]

GAO further observed that although nonresponse follow-up was paper based in previous censuses, the paper-based NRFU in 2010 would rely on "newly developed systems" that had "not yet been fully tested in a census-like environment.... Any significant change to an existing IT system introduces the risk that the system may not work as intended; therefore, testing all systems after changes have been made ... is critical to the success of the 2010 census."[35] GAO noted that testing had "only recently started" for the 2010 NRFU,[36] including the IT systems and infrastructure necessary to support this operation and certain other activities, such as group-quarters enumeration.[37]

Their Assessments in 2010

At a March 25, 2010, congressional hearing, as nonresponse follow-up was about to begin, the Commerce Department's OIG again identified "serious issues" facing the Bureau:[38]

> Much of the ... plan is on track, but the success of NRFU—which is critical—hinges on how effectively Census controls the enormous NRFU workload and workforce.... [I]t must do so using a Paper-Based Operations Control System (PBOCS) with less functionality than planned and currently experiencing significant performance problems. PBOCS is essential for efficiently making assignments to enumerators, tracking enumeration forms, and reporting on the status of operations. And Census must recruit, hire, and pay its massive temporary workforce with a Decennial Applicant, Personnel, and Payroll System (DAPPS) also experiencing persistent performance limitations.[39]

At the same hearing, GAO, too, expressed reservations about the Bureau's IT systems, especially DAPPS and PBOCS. GAO called them "the most significant risk jeopardizing the cost and quality of the enumeration.... Indeed, neither system has yet demonstrated the ability to function reliably under full operational loads."[40] Since December 2009, GAO noted, the Bureau had "completed many steps to improve DAPPS performance," and more were planned. The system still, however, was "experiencing capacity limitations and slow response ... even though approximately 100,000 temporary employees were ... being paid using the system versus the more than 600,000" who would require payment "at the peak of field operations."[41] With respect

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Technology: Census Bureau Testing of 2010 Decennial Systems Can Be Strengthened, GAO-09-262, March 2009, p. 3.

[34] Ibid., pp. 21-22.

[35] Ibid., p. 28.

[36] Ibid., p. 17.

[37] Ibid., p. 4.

[38] Testimony of Commerce Department Associate Deputy Inspector General Judith Gordon in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *The 2010 Census: An Assessment of the Bureau's Preparedness*, March 25, 2010 (Washington: 2010), p. 2.

[39] Ibid.

[40] U.S. Government Accountability Office, *2010 Census: Data Collection Is Under Way, but Reliability of Key Information Technology Systems Remains a Risk*, GAO-10-567T, March 25, 2010, p. 3.

[41] Ibid., pp. 7-8.

to PBOCS, continued GAO, early releases in January and February 2010 had "known defects, such as limited functionality, slow performance, and problems generating certain progress and performance reports."[42] Moreover, testing for "the component of the second release that will be used to manage NRFU" was incomplete as of mid-March. The third PBOCS release had to be developed and tested before being "ready for later field operations," among them "the final check of housing unit status (known as field verification), scheduled to begin in August 2010."[43]

In April 30, 2010, congressional testimony, GAO reiterated that "the reliability of the Bureau's automated systems, and in particular an information technology ... system used for managing the Bureau's field operations, is an open question.... The Bureau has taken steps to mitigate the risks posed by the unreliable IT systems, including upgrading hardware and software, but time will tell whether they will be able to perform as needed under full operational loads."[44]

In a December 2010 report, GAO revisited the performance of PBOCS, observing that "despite efforts to upgrade its hardware and software, PBOCS continued to experience system outages, slow performance, and problems generating and maintaining timely progress reports" at the beginning of nonresponse follow-up. The Bureau attributed these problems, GAO continued, "in part, to the compressed development and testing schedule, as well as to inadequate performance and interface testing."[45] The problems led to a backlog of census questionnaires in local census offices, and impaired the Bureau's ability to monitor NRFU workers' productivity and the quality of their interviews.[46]

GAO's Statement in 2012

Nevertheless, in July 18, 2012, congressional testimony, GAO offered this largely positive assessment of the Bureau's 2010 census operations: "despite some significant initial setbacks that raised the cost of the enumeration, the Bureau eventually developed workarounds to the challenges facing the 2010 Census and it was ultimately an operational success as the Bureau generally completed its peak census data collection activities consistent with its plans."[47]

Census Accuracy and Coverage

As noted at the beginning of this report, the idealized expectation that the decennial census should count every person once, only once, and in the right place is deceptively simple. In reality, the task is immense and a perfect count elusive. The failure of the handhelds for nonresponse follow-up fueled concerns, like those of the Commerce Department OIG and GAO cited previously, that the late-date alterations to NRFU could threaten the success of the 2010 census.

The attempt to achieve complete, accurate population coverage is challenging not only because the U.S. population is large, tends to be mobile, and is distributed over a wide geographic area, but also because the population is increasingly heterogeneous. Many households consist of racial

[42] Ibid., p. 8.

[43] Ibid., pp. 8-9.

[44] U.S. Government Accountability Office, *2010 Census: Cooperation with Enumerators Is Critical to a Successful Headcount*, GAO-10-665T, April 30, 2010, p. 8.

[45] U.S. Government Accountability Office, *2010 Census: Data Collection Operations Were Generally Completed as Planned, but Long-standing Challenges Suggest Need for Fundamental Reforms*, GAO-11-193, p. 20.

[46] Ibid., p. 21.

[47] U.S. Government Accountability Office, *2020 Census: Sustaining Current Reform Efforts Will Be Key to a More Cost-Effective Enumeration*, GAO-12-905T, July 18, 2012, p. 2.

and ethnic minorities; multiple families; low-income people; inner-city residents; those whose living circumstances are atypical; international migrants to the United States who may lack English language proficiency, lack legal status in this country, or distrust all governmental activities; or various combinations of these attributes. Any of them can make enumeration difficult, and some of them contribute markedly to recurrent undercounts of racial and ethnic minorities.

Overcounts of some groups within the population can occur to the extent that the Bureau receives multiple census forms from the same people or households, then does not capture and eliminate the duplications. A husband and wife, for example, might own a vacation home and fill out a questionnaire there as well as at their usual residence. Another example would be parents who erroneously list a child on the form for their household, when the child actually is away at college and, in accordance with census residence rules, has been correctly enumerated there.

The greater tendency for minorities and less affluent members of society than for whites and wealthier people to be undercounted can lead to differential undercounts of the former. Differential undercounts are a persistent problem in the decennial census and can diminish the perception that the count is equitable to the entire population.

Estimates of Census Coverage from Demographic Analysis

Following the 1940 census, "Census Bureau statisticians and academic researchers refined a statistical technique known as Demographic Analysis" (DA)[48] that was used to evaluate coverage and estimate net undercounts[49] for each of the past seven censuses preceding 2010. DA uses administrative records, including birth and death records, together with estimates of net international migration to the United States during a decade, to estimate the population size at a given census date. This figure was compared with the population count for each actual census from 1940 through 2000 to arrive at estimates of coverage and net undercount. After the 2000 census, the Bureau described the DA process as follows:

> The traditional DA population benchmarks are developed for the census date by analyzing various types of demographic data essentially independent of the census, such as administrative statistics on births, deaths, authorized international migration, and Medicare enrollments, as well as estimates of legal emigration and net unauthorized immigration. The difference between the Demographic Analysis benchmarks and the census count provides an estimate of the census net undercount. Dividing the net undercount by the DA benchmark[s] provides an estimate of the net undercount rate.[50]

Despite its utility, demographic analysis has limitations. Among them are the feasibility of producing estimates only at the national level, not at lower geographic levels, and only for broad racial categories (black and non-black).[51] Uncertainty in estimating the components of net international migration to the United States, particularly emigration, temporary migration, and

[48] U.S. Bureau of the Census, *Accuracy and Coverage Evaluation, Statement on the Feasibility of Using Statistical Methods to Improve the Accuracy of Census 2000*, June 2000 (unpublished document), p. 4.

[49] "The difference between the true, but unknown, population count and an original census count is called the net undercount." Kirk M. Wolter, "Accounting for America's Uncounted and Miscounted," *Science*, vol. 253 (July 1991), p. 12.

[50] U.S. Bureau of the Census, *Coverage Measurement from the Perspective of March 2001 Accuracy and Coverage Evaluation*, Census 2000 Topic Report no. 4 (Washington: U.S. Bureau of the Census, February 2004), p. 7.

[51] Ibid., p. 9.

unauthorized migration, is another concern with DA.[52] According to the Bureau, "the research effect on immigration, births, and deaths led to Revised DA estimates" for 1990 and 2000. "The Revised DA lowered the estimated net undercount rates from 1.85% to 1.65% in 1990, and from 0.32% to 0.12% in 2000, but did not alter the DA finding that the estimated net undercount rate in 2000 was substantially lower than in 1990."[53]

Table 2 shows net percentage undercount estimates for the 1940 through 2000 censuses, as derived by demographic analysis. The last two columns of the table, for 1990 and 2000, reflect the revised DA estimates discussed above. The table indicates a decrease in the estimated net undercount rates for the total population, blacks, and non-blacks in every census year except 1990, when the rates increased for the overall population and the two groups within it. In each of the seven censuses, a differential undercount was noted: the estimated net rate was higher for blacks than for non-blacks.

Table 2. Percentage Net Decennial Census Undercount by Race, as Estimated by Demographic Analysis, 1940 through 2000

	1940	1950	1960	1970	1980	1990	2000
Total population	5.4%	4.1%	3.1%	2.7%	1.2%	1.65%	0.12%
Black	8.4%	7.5%	6.6%	6.5%	4.5%	5.52%	2.78%
Non-Black	5.0%	3.8%	2.7%	2.2%	0.8%	1.08%	-0.29%

Sources: Estimates for 1940 through 1980 are from J.G. Robinson, et al., "Estimates of Population Coverage in the 1990 United States Census Based on Demographic Analysis," *Journal of the American Statistical Association*, vol. 88 (September 1993), p. 1065, reprinted in U.S. Bureau of the Census, *Accuracy and Coverage Evaluation, Statement on the Feasibility of Using Statistical Methods to Improve the Accuracy of Census 2000*, June 2000 (unpublished document). Estimates for 1990 and 2000 are from U.S. Bureau of the Census, *Coverage Measurement from the Perspective of March 2001 Accuracy and Coverage Evaluation*, Census 2000 Topic Report no. 4 (Washington: U.S. Bureau of the Census, February 2004), p. 9.

Note: All estimates except one indicate net percentage undercounts of the total population or groups within the population. The exception, -0.29% for non-blacks in 2000, indicates a net overcount of this group.

On December 6, 2010, the Bureau issued DA estimates of the population as of Census Day. They were presented in five series, ranging from low to high.[54] The middle estimate of 308,475,178 (revised in 2012 to 308,345,764)[55] most closely approximated the official April 1, 2010, census resident population count of 308,745,538. Contrary to past practice, the Bureau stated that it would not use demographic analysis to produce net undercount or overcount estimates. The Bureau attributed the change to the uncertainties inherent in constructing DA estimates.[56]

[52] Ibid., p. 7.

[53] Ibid.

[54] U.S. Bureau of the Census, "U.S. Census Bureau Releases 2010 Demographic Analysis Population Estimates," CB10-CN.87, December 6, 2010.

[55] U.S. Bureau of the Census, "Revised 2010 DA Estimates," May 2012, at https://www.census.gov/popest/research/demo-analysis.html.

[56] U.S. Bureau of the Census, "U.S. Census Bureau Releases 2010 Demographic Analysis Population Estimates," CB10-CN.87, December 6, 2010.

Survey Estimates of Census Coverage

The 1980 Through 2000 Censuses

To evaluate coverage in the three most recent enumerations before 2010, the Bureau used not only demographic analysis, but other means as well: in 1980, the Post Enumeration Program; in 1990, the Post Enumeration Survey; and in 2000, Accuracy and Coverage Evaluation. Each evaluation involved taking a post-census survey, designed to be statistically independent of the census, and comparing the survey with the census results to estimate omissions from the census and erroneous enumerations. These surveys were, as all are, subject to sampling and other errors.

- The 1980 census Post Enumeration Program yielded informative studies of the estimation methods and results, rather than specific coverage estimates.[57]
- The 1990 census Post Enumeration Survey estimates indicated a net percentage undercount of 1.61% for the total population, 0.68% for non-Hispanic whites, 4.57% for blacks, 2.36% for Asians or Pacific Islanders, 12.22% for American Indians on reservations, and 4.99% for Hispanics.[58]
- The presentation of data by race and ethnicity changed somewhat between the 1990 and 2000 censuses, making certain categories (for example, blacks in 1990 versus non-Hispanic blacks in 2000) not perfectly comparable. The final 2000 census Accuracy and Coverage Evaluation estimates indicated a net percentage overcount of 0.49% for the total population, 1.13% for non-Hispanic whites, 0.75% for non-Hispanic Asians, and 0.88% for American Indians on reservations. The estimated net percentage undercount for non-Hispanic blacks was 1.84%; for native Hawaiians or other Pacific Islanders, 2.12%; for American Indians off reservations, 0.62%; and for Hispanics, 0.71%.[59]

The 2010 Census

The Bureau's Census Coverage Measurement (CCM) program was the 2010 census counterpart to earlier coverage evaluations involving post-census surveys. Reporting on the status of CCM in April 2010, GAO explained that

> The Bureau has developed separate address lists—one for the entire nation of over 134 million housing units that it will use to conduct the census and one for coverage measurement sample areas—and will collect each set of data through independent operations. For the 2010 Census, census operations will begin collecting population data from households in January 2010 and continue through the end of July, while CCM operations will collect data by visiting each of the housing units in the coverage measurement sample during an operation called Person Interviewing from August through October.[60]

[57] U.S. Bureau of the Census, *Accuracy and Coverage Evaluation, Statement on the Feasibility of Using Statistical Methods to Improve the Accuracy of Census 2000*, June 2000 (unpublished document), p. 20.

[58] U.S. Bureau of the Census, *A.C.E. Revision II, Summary of Estimated Net Coverage*, Memorandum Series PP-54, December 31, 2002, p. 3, at http://www.census.gov/dmd/www/ace2.html.

[59] Ibid.

[60] U.S. Government Accountability Office, *2010 Census: Plans for Census Coverage Measurement Are on Track, but Additional Steps Will Improve Its Usefulness*, GAO-10-324, April 2010, p. 4.

> The statistical methodology the Bureau uses to estimate net coverage errors relies on an assumption that the chance that a person is counted by the census is not affected by whether he or she is counted in the independent coverage measurement sample, or vice versa. Because violating this "independence" assumption can bias coverage estimates, the Bureau takes special measures to maintain CCM's separation from the census, such as developing a separate address list for the coverage measurement sample.[61]

GAO noted that in December 2009 the then-Bureau Director approved several changes in CCM, including higher "reinterview rates for CCM field work to improve quality assurance"; additional training of workers for person interviewing, to help them deal with "special situations due to current economic conditions," such as increased homelessness; higher "supervisor-to-employee field staffing ratios to improve quality ... of field work"; and a new "telephone-based study" of "how well respondents recall information about their residence and possible movement since Census Day."[62] To offset the expense of these extra measures, the Bureau authorized an almost 45% reduction in CCM sample size.[63] The cut, in GAO's assessment, would "reduce precision of the estimates, yet the proposed changes should reduce nonsampling errors and thus provide users with more reliable estimates."[64] Perhaps because of what the 2010 census was estimated to cost, the option of making changes to improve CCM data quality without decreasing sample size was not addressed.

The report critiqued certain aspects of the CCM program. One observation was that even though the Bureau had "stated the importance of using 2010 evaluation data ... for 2020 Census design," it had "not yet taken steps to link CCM data" to improvements for 2020.[65] Another point, particularly relevant for future census evaluations, was that the Bureau should ascertain the "optimal time" to start person interviewing for coverage evaluation. If this operation begins too early, it can overlap "with census data collection, possibly compromising the independence of the two different operations and introducing a 'contamination bias' error" into the data for coverage evaluation. Starting person interviewing too late "increases the chance that respondents will not accurately remember household information from Census Day ... introducing error (known as 'recall bias')" into the coverage evaluation data. Either error "could affect the Bureau's conclusions about the accuracy of the census."[66]

The Bureau announced on November 1, 2010, that it had completed all CCM interviews, but that the results of the program would not be available until mid-2012.[67] The CCM estimates were released on May 22, 2012.[68] They indicated a net percentage overcount of

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[61] Ibid.

[62] Ibid., p. 6.

[63] Ibid. A year earlier, the Bureau had estimated that the sample size would be about 300,000 housing units, the same as in the 2000 census Accuracy and Coverage Evaluation survey. See the testimony of then-Acting Census Bureau Director Thomas Mesenbourg in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *Critical Operations of the 2010 Census—Status Update*, hearing, 111th Cong., 1st sess., March 5, 2009 (Washington: 2009).

[64] U.S. Government Accountability Office, *2010 Census: Plans for Census Coverage Measurement Are on Track, but Additional Steps Will Improve Its Usefulness*, GAO-10-324, April 2010, p. 6.

[65] Ibid., p. 10.

[66] Ibid., p. 8.

[67] U.S. Bureau of the Census, "Operational Press Briefing," transcript, November 1, 2010, pp. 2, 14.

[68] U.S. Bureau of the Census, "Census Bureau Releases Estimates of Undercount and Overcount in the 2010 Census," press release CB12-95, May 22, 2012.

- 0.01% for the total population (compared with the net overcount estimate of 0.49% in the 2000 census);
- 0.84% for non-Hispanic whites (compared with their 1.13% estimated net overcount in 2000); and
- 1.95% for American Indians off reservations (versus their 0.62% estimated net undercount in 2000).[69]

Every other racial category was undercounted to some extent in 2010, the CCM estimates suggested:[70]

- non-Hispanic blacks by 2.07% (compared with their 1.84% estimated net undercount in 2000);
- non-Hispanic Asians by 0.08% (versus their 0.75% estimated net overcount in 2000);
- native Hawaiians or other Pacific Islanders by 1.34% (compared with their 2.12% estimated net undercount in 2000); and
- American Indians on reservations by 4.88% (versus their 0.88% estimated net overcount in 2000).

The CCM estimates indicated a net percentage undercount of 1.54% for Hispanics in 2010 (compared with their 0.71% estimated net undercount in 2000).[71]

Among all racial groups and people of Hispanic ethnicity, only American Indians on reservations showed a statistically significant difference in estimated census coverage from 2000 to 2010.[72]

GAO testified to Congress on July 18, 2012, that although CCM indicated the continued tendency toward census undercounts of racial minorities and Hispanics, it also "found that the 2010 Census generally accurately counted the total population of the country as well as each state."[73]

Coverage Evaluation Surveys and the Census Adjustment Issue

Although conducting surveys to evaluate census coverage is an established practice, the survey results never have been used to correct or "adjust" miscounts in the decennial numbers that constitute the official state population counts for House apportionment. The Supreme Court ruled in 1999 (525 U.S. 316 (1999)) that adjustment of the apportionment numbers would be illegal under Title 13 U.S.C., Section 195, but was silent about whether it would be unconstitutional. The issue was contentious for at least two decades before the 1999 Court ruling and, despite it, continues to generate occasional controversy. Whereas supporters of adjustment argue that it is necessary to rectify the undercount problem, opponents maintain that using the procedure would make the census vulnerable to political manipulation.

Then-Acting Bureau Director Thomas Mesenbourg, when asked by the ranking Member of the House Subcommittee on Information Policy, Census, and National Archives at a March 5, 2009,

[69] U.S. Bureau of the Census, "2010 Census Coverage Measurement Results," news conference background material, May 22, 2012, pp. 11, 19.

[70] Ibid., p. 19.

[71] Ibid.

[72] Ibid.

[73] U.S. Government Accountability Office, *2020 Census: Sustaining Current Reform Efforts Will Be Key to a More Cost-Effective Enumeration*, GAO-12-905T, July 18, 2012, p. 2.

census oversight hearing if the Bureau would conduct a census coverage evaluation survey in 2010, replied that it would.[74] "The focus of the 2010 coverage measurement program," he explained, would be "to provide better information about the components of error. So we'll be providing data not only on the net error, but also components of error such as duplicates, omissions, and so on."[75] Responding to a question about whether the Bureau intended to use the program for adjustment, Mesenbourg said that it did not.[76]

Nevertheless, the Obama Administration's nominations of Gary Locke, the former governor of Washington, to be Commerce Secretary and Robert M. Groves, a survey research expert and demographer, as Census Bureau Director provided occasions for some Members of Congress to seek further assurance that sampling for adjustment would not play a role in the 2010 census.

Locke told the Senate Committee on Commerce, Science, and Transportation at his March 18, 2009, confirmation hearing, "The Supreme Court has made it very clear that statistical sampling is not permissible for apportionment purposes. That is the law. We will enforce the law."[77] The committee's ranking Member then noted that "the Supreme Court did not specifically mention ... intrastate redistricting" and asked whether sampling would be used to adjust the data for this purpose.[78] The nominee replied, "It is my understanding that there are no plans in the Department of Commerce or the Census Bureau to use any type of statistical sampling with respect to [the] population count."[79] On March 24, 2009, the Senate confirmed Locke's nomination.[80]

The Senate approved Groves's nomination on July 13, 2009.[81] Groves previously headed the University of Michigan's Survey Research Center. From 1990 to 1992, he was an Associate Director of the Census Bureau,[82] where, according to press reports, he differed with George H. W. Bush Administration officials over his support for 1990 census adjustment.[83]

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[74] Testimony of then-Acting Census Bureau Director Thomas Mesenbourg in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *Critical Operations of the 2010 Census—Status Update*, hearing, 111th Cong., 1st sess., March 5, 2009 (Washington: 2009).

[75] Ibid.

[76] Ibid.

[77] U.S. Congress, Senate Committee on Commerce, Science, and Transportation, "Senator Hutchison Presses Commerce Nominee Locke to Ensure a Fair and Open Census Process," press release, March 18, 2009, p. 2.

[78] Ibid.

[79] Ibid.

[80] "Department of Commerce, Gary Locke, of Washington, to Be Secretary of Commerce," *Congressional Record*, daily edition, vol. 155 (March 24, 2009), p. S3734.

On October 21, 2011, John Bryson replaced Gary Locke as the Secretary of Commerce. Bryson resigned on June 21, 2012, and on June 26, 2013, Penny Pritzker was sworn in as the new Commerce Secretary. U.S. Department of Commerce, "Secretary John Bryson," at http://www.commerce.gov/print/about-commerce/commerce-leadership/secretary-john-bryson; and U.S. Department of Commerce, "Penny Pritzker, Secretary of Commerce," at http://www.commerce.gov/About%20Commerce/Commerce%20Leadership/Penny_Pritzker_Secretary_of_Commerce.

[81] "Nomination of Robert M. Groves to Be Director of the Census," *Congressional Record*, daily edition, vol. 155 (July 13, 2009), p. S7402.

[82] The White House, Office of the Press Secretary, "President Obama Announces More Key Administration Posts," press release, April 2, 2009.

[83] See Carrie Dann, "Census Nomination Renews 'Statistical Adjustment' Debate," *Congress Daily AM*, NationalJournal.com, April 3, 2009, copy available to congressional clients from the CRS author upon request; Randy James, "Robert M. Groves: Obama's Pick for Census Chief," Time.com, April 7, 2009, at http://www.time.com/time/nation/article/0,8599,1889793,00.html; and "Obama Taps Robert Groves to Be Census Director," Fox News.com, April 2, 2009, at http://www.foxnews.com/politics/2009/04/02/obama-taps-robert-groves-census-director/.

Groves's written opening remarks at his May 15, 2009, confirmation hearing before the Senate Committee on Homeland Security and Governmental Affairs stated, however, "I agree fully with [then-] Secretary Locke's testimony that statistical adjustment of the census is eliminated as an option for apportionment and further that statistical adjustment will not be used for redistricting. The 2003 decision of [then-Census Bureau] director Kincannon, consistent with this, assured that no implementation infrastructure for adjustment was put in place for 2010."[84]

The committee's ranking Member observed that although sampling could not be used to adjust the census apportionment numbers, "There is ... some question over whether sampling could be used for redistricting and for the allocation of federal funds." She then asked Groves, "Will you advocate for the statistical adjustment or use of sampling during the 2010 Census?" He answered, "No, Senator," and added in response to the same query about the 2020 census, "I have no plans to do that for 2020."[85]

In April 2010, as previously discussed, GAO reported its findings to that point about the 2010 Census Coverage Measurement program. The report, requested by the ranking Members of the House Oversight and Government Reform Committee and the Information Policy, Census, and National Archives Subcommittee, repeated others' earlier assurances that the "Bureau is not planning to use CCM to adjust the 2010 Census. Instead, CCM will be used to evaluate coverage error to improve the 2020 and future censuses."[86]

Efforts Toward an Equitable Census

Communications Outreach

Because accuracy and coverage persisted as issues for the 2010 census, the Bureau addressed the need to publicize the decennial count, then convince as many people as possible to complete and return their census questionnaires, or to respond if contacted by an enumerator. The various components of the Bureau's integrated communications strategy were designed to meet this two-part goal. As GAO observed, however, motivating the public to respond to the census was "a far thornier task" than raising awareness about it.[87]

On September 6, 2007, the Bureau announced that it had awarded the 2010 census communications contract to Draftfcb of New York City. Draftfcb headed a team of communications firms that specialize in reaching minority groups: Global Hue, for blacks and Hispanics; IW Group, for Asians, Native Hawaiians, and other Pacific Islanders; G&G, for American Indians and Alaska Natives; and Allied Media, for "emerging" groups, such as Arabic-speaking people and Eastern Europeans.[88] The integrated communications strategy was built on

[84]Testimony of Robert M. Groves in U.S. Congress, Senate Committee on Homeland Security and Governmental Affairs, *Nomination of Robert M. Groves to Be Director of the Census*, hearing, 111th Cong., 1st sess., May 15, 2009 (Washington: 2009). For the full text of his opening remarks, see http://hsgac.senate.gov/public/_files/051509Groves.pdf.

[85] Questions by Senator Collins in U.S. Congress, Senate Committee on Homeland Security and Governmental Affairs, *Nomination of Robert M. Groves to Be Director of the Census*, hearing, 111th Cong., 1st sess., May 15, 2009 (Washington: 2009).

[86] U.S. Government Accountability Office, *2010 Census: Plans for Census Coverage Measurement Are on Track, but Additional Steps Will Improve Its Usefulness*, GAO-10-324, April 2010, p. 3.

[87] U.S. Government Accountability Office, *2010 Census: Communications Campaign Has Potential to Boost Participation*, GAO-09-525T, March 23, 2009, p. 2.

[88] U.S. Bureau of the Census, "Census Bureau Announces Award of 2010 Census Communications Contract," press

the partnership and Census in Schools programs, as well as on paid advertising via network and cable television, radio, the Internet, newspapers, and magazines.[89]

For the 2010 census, as for that in 2000, the Bureau partnered with local governments, businesses, community organizations, neighborhood groups, and the media to help inform the public about the census and encourage participation in it, including cooperation with enumerators during nonresponse follow-up. The Bureau's website presented partnership information, for example, a list of partners.[90]

Among the Bureau's suggested activities for partners were distributing census promotional materials, sponsoring events to raise awareness of the census, and disseminating information about it through newsletters. Partnership staff, working with elected officials, formed Complete Count Committees to reach groups with a history of being undercounted. Early in 2009, the Bureau mailed Complete Count Committee guides to the highest elected officials in 39,000 state, local, and tribal governments.[91]

Partners also could identify possible candidates for temporary census work, such as enumerators to conduct NRFU, and provide space for testing job applicants and training new hires. The Bureau's website gave information about 2010 census employment.[92] As of April 11, 2010, the Bureau had slightly exceeded its goal of recruiting 3.7 million applicants for more than 600,000 census-taker and other positions related to NRFU.[93] The weak economy may have given the Bureau a recruitment advantage, even for short-term, often part-time, jobs.

The Bureau invited local-government partners to participate, as they did for the 2000 census, in the Local Update of Census Addresses (LUCA) campaign. LUCA was made possible by P.L. 103-430 (108 Stat. 4394) to assist the Bureau in improving the Master Address File. Under the program, local, state, and tribal governments could review MAF and document any mistakes they found in it. LUCA for the 2010 census began in January 2007. According to the Bureau, it received the LUCA data and entered them into MAF.[94] LUCA participants could review the changes made and appeal requested changes that were not accepted.[95]

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release, September 7, 2007.

[89] U.S. Bureau of the Census, *2010 Census Integrated Communications Campaign Synopsis*, March 2009, at http://www.census.gov/2010census/partners/pdf/Census_Plan_Synopsis_5-9-09.pdf.

[90] U.S. Bureau of the Census, "Current 2010 Census Partners," at http://www.census.gov/2010census/partners/partners/current-partners.php.

[91] Testimony of then-Acting Census Bureau Director Thomas Mesenbourg in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *Census 2010: Assessing the Bureau's Strategies for Reducing the Undercount of Hard-to-Count Populations*, hearing, 111th Cong., 1st sess., March 23, 2009 (Washington: 2009), p. 5.

[92] For information about temporary 2010 census workers, see U.S. Bureau of the Census, "Jobs," at http://www.census.gov/2010census/news/releases/jobs/.

[93] U.S. Government Accountability Office, *2010 Census: Cooperation with Enumerators Is Critical to a Successful Headcount*, GAO-10-665T, April 30, 2010, p. 6.

[94] Information obtained at a December 18, 2008, meeting between the CRS author and officials from the Census Bureau's Decennial Management Division, Office of the Associate Director for Communications, and Office of Congressional and Intergovernmental Affairs.

[95] U.S. Bureau of the Census, "2010 Decennial Census Local Update of Census Addresses (LUCA)," copy available to congressional clients from the CRS author upon request. For appeals procedures, see U.S. Office of Management and Budget, U.S. Department of Commerce, Bureau of the Census, "Procedures for Participating in the Appeals Process for the 2010 Decennial Census Local Update of Census Addresses (LUCA) Program; Notice," 74 *Federal Register* 47424-47429, September 15, 2009.

The Census in Schools initiative for 2010 focused on educating children in kindergarten through 12th grade about the importance of census participation, so that they could convey this message to their parents.[96] Scholastic, Inc., joined with the Bureau to produce English and Spanish teaching guides, lesson plans, maps, brochures, and take-home materials for students, all of which were posted on the Census-in-Schools website[97] and on Scholastic.com.[98] Printed materials were distributed to public and private schools nationwide.[99]

Questionnaire Outreach

The conventional mail-out of 2010 census questionnaires to about 120 million U.S. households was discussed earlier in this report. Noted below are other operations, which focused on the hard-to-count.

Approximately 13 million bilingual census forms, in English and Spanish, were mailed to neighborhoods with high concentrations of Spanish-speaking residents.[100] Questionnaires in Spanish, Chinese, Korean, Vietnamese, and Russian, along with guides in 59 languages other than English, were made available upon request.[101] In addition, for people who did not receive census forms at their homes, "Be Counted" forms in English and the five other languages listed above were placed in various public locations, such as libraries, community centers, convenience stores, and places of worship. The Bureau also provided telephone assistance, including assistance for the hearing impaired, as well as Braille and large-print questionnaire guides.[102]

In March and April 2010, the Bureau undertook the enumeration of residents in what GAO has termed "diverse dwellings," including migrant-worker housing, boats, college dormitories, nursing homes, and prisons.[103] Service-based enumeration, which took place at the end of March, was designed to count the homeless at places where they receive assistance, such as soup kitchens and mobile food vans. A count of people living outdoors occurred at the same time.[104]

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[96] Testimony of then-Census Bureau Director Steve Murdock in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *The 2010 Census Communications Campaign*, hearing, 110th Cong., 2nd sess., July 10, 2008 (Washington: 2008), pp. 4-5.

[97] U.S. Bureau of the Census, "What's New for the 2010 Census? The Census in Schools Program: It's About Us," at http://www.census.gov/schools/2010_census/.

[98] Scholastic, Inc., "2010 Census: About Census in Schools," at http://www.scholastic.com/browse/article.jsp?id=3752152.

[99] Testimony of then-Acting Census Bureau Director Thomas Mesenbourg in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *Census 2010: Assessing the Bureau's Strategies for Reducing the Undercount of Hard-to-Count Populations*, hearing, 111th Cong., 1st sess., March 23, 2009 (Washington: 2009), pp. 3-4.

[100] U.S. Government Accountability Office, *2010 Census: Data Collection Is Under Way, but Reliability of Key Information Technology Systems Remains a Risk*, GAO-10-567T, March 25, 2010, p. 18.

[101] Testimony of Associate Census Bureau Director Arnold Jackson in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *2010 Census: A Status Update of Key Decennial Operations*, March 25, 2010, p. 5, at http://www.census.gov/newsroom/releases/pdf/AAJ_Testimony_3-25-10.pdf.

[102] Ibid. See also the testimony of then-Census Bureau Director Steve Murdock in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *The 2010 Census Communications Campaign*, hearing, 110th Cong., 2nd sess., July 10, 2008 (Washington: 2008), p. 5.

[103] College dormitories, nursing homes, and prisons, along with military barracks, are examples of group quarters noted previously in this report. U.S. Government Accountability Office, *2010 Census: Cooperation with Enumerators Is Critical to a Successful Headcount*, GAO-10-665T, April 30, 2010, p. 3.

[104] U.S. Government Accountability Office, *2010 Census: Data Collection Is Under Way, but Reliability of Key*

The Bureau also implemented procedures whereby address listers, during address canvassing, could identify possibly inhabitable housing units in areas of Louisiana, Mississippi, and Texas that were damaged by Gulf Coast hurricanes Katrina and Rita in 2005 and Ike in 2008. Then, in a March 2010 update-leave operation, field workers hand delivered about 1.2 million census forms to these units, some of which were not on the Bureau's address list. Besides leaving questionnaires to be completed and returned by mail, the workers made any necessary updates to addresses and maps.[105]

Update leave was used as well in places throughout the United States "where the 'address' may not reflect the actual location of the housing unit," and in areas "that do not receive either regular or at-home mail delivery."[106] About 12 million questionnaires were hand delivered, including the previously mentioned 1.2 million in certain Gulf Coast areas.

Protecting Data Confidentiality and Quality, Public Safety, and Census Objectivity

The Census Bureau is staffed primarily by federal career civilians, many of whom are trained as statisticians, demographers, and IT professionals. Title 13 U.S.C. provides for a series of penalties against any Bureau officer or employee found to have committed certain offenses. These penalties have been adjusted in accordance with provisions of the Sentencing Reform Act of 1984, Title 18 U.S.C., Sections 3559 and 3571. Whoever neglects or refuses to perform his or her duties (Title 13, Section 212) can be fined not more than $5,000. A Bureau officer or employee can be fined not more than $250,000 or imprisoned for not more than five years, or both, if the person "willfully and knowingly swears or affirms falsely as to the truth of any statement required" of him or her; "willfully and knowingly makes a false certificate or fictitious return"; or "knowingly or willfully" supplies or supplied "any false statement or false information with reference to any inquiry" for which the person "was authorized and required to collect information" (Title 13, Section 213). Wrongful disclosure of confidential information (Title 13, Section 214) can result in a fine of not more than $250,000 or not more than five years' imprisonment, or both.

Besides operating under these constraints, 2010 census workers were subject to Federal Bureau of Investigation (FBI) background checks of their names and fingerprints, at an estimated cost of $450 million for fingerprinting.[107] According to March 25, 2010, congressional testimony by GAO, about 22% of those hired for address canvassing had unclassifiable prints, generally due to local census office workers' errors in taking the prints for submission to the FBI.[108] The Census Bureau tried to obtain clearer prints of nonresponse follow-up hires through improved training of the local census office workers and by supplying each office with at least one digital fingerprint scanner. The Bureau estimated that about 10% to 12% of workers, instead of 22%, would have

Information Technology Systems Remains a Risk, GAO-10-567T, March 25, 2010, p. 19.

[105] Ibid., pp. 22-23.

[106] Testimony of Associate Census Bureau Director Arnold Jackson in U.S. Congress, House Committee on Oversight and Government Reform, Subcommittee on Information Policy, Census, and National Archives, *2010 Census: A Status Update of Key Decennial Operations*, March 25, 2010, p. 4, at http://www.census.gov/newsroom/releases/pdf/AAJ_Testimony_3-25-10.pdf.

[107] U.S. Government Accountability Office, *2010 Census: Census Bureau Should Take Action to Improve the Credibility and Accuracy of Its Cost Estimate for the Decennial Census*, GAO-08-554, June 2008, p. 16.

[108] U.S. Government Accountability Office, *2010 Census: Data Collection Is Under Way, but Reliability of Key Information Technology Systems Remains a Risk*, GAO-10-567T, March 25, 2010, p. 11.

unclassifiable prints when the scanners were used.[109] If, as GAO testified, the fingerprint check during address canvassing revealed "a criminal record that made an employee unsuitable for employment, the Bureau either terminated the person immediately or placed the individual in a nonworking status until the matter was resolved."[110] Address-canvassing hires whose prints were unclassifiable "were allowed to continue working if their name background check was acceptable." GAO "did not receive a response from the Bureau" about whether it would "allow ... workers with unclassifiable prints to continue" NRFU work.[111] Congress could choose to review the problems encountered in the fingerprinting operation, their implications for public safety, the delayed decision to use digital scanners, and the operation's final cost.

The Bureau Director, in contrast to other Bureau officers and employees, is a presidential appointee. News articles,[112] early in the Obama Administration, stating that the Director might report to the White House, instead of, as Title 13 U.S.C. stipulates, the Commerce Secretary,[113] raised concern among some Members of Congress that the 2010 count could be subject to political manipulation. Subsequent articles[114] about Administration assurances that the Director would continue reporting to the Secretary did not entirely allay this concern. Gary Locke, speaking to the Senate Commerce, Science, and Transportation Committee on March 18, 2009, before his confirmation as Commerce Secretary, emphasized that the decennial census "will be run out of the Department of Commerce and by a Director who will work with the Congress, the Administration, and our state and local leaders ... in making this a successful count."[115] Robert M. Groves's written opening remarks to the Senate Homeland Security and Governmental Affairs Committee at the May 15, 2009, hearing on his nomination to be Bureau Director stated that

[109] Ibid., pp. 11-12.

[110] Ibid., p. 11.

[111] Ibid., p. 12.

[112] See, for example, Jonathan Allen, "White House to Bypass Commerce—and Gregg—on Census," CQ Today Online News, CQ.com, February 5, 2009, 5:54 a.m., at http://www.cq.com/document/display.do?dockey=/cqonline/prod/data/docs/html/news/111/news111-000003024858.html@allnews&metapub=CQ-NEWS&binderName=latest-news-binder&seqNum=13.

[113] H.R. 1254, 111th Congress, introduced on February 3, 2009, by Representative Maloney and referred to the House Oversight and Government Reform Committee, Information Policy, Census, and National Archives Subcommittee, would have removed the Census Bureau from the Commerce Department and made it an independent establishment. The Director would have been a presidential appointee with a five-year term of office. Two other proposals would have kept the Bureau in the Commerce Department, but given the Director a five-year term and somewhat greater autonomy within DOC than is now the case. The measures were H.R. 4945, which Representative Maloney introduced on March 25, 2010, and S. 3167, a companion bill introduced the same day by Senator Carper. The House bill was referred to the Oversight and Government Reform Committee. S. 3167, referred to the Homeland Security and Governmental Affairs Committee, Federal Financial Management, Government Information, Federal Services, and International Security Subcommittee, was ordered to be reported favorably, as amended, on April 28, 2010. The Senate passed S. 3167 on December 8, 2010, but the bill failed in the House on December 14, 2010. P.L. 112-166 (126 Stat. 1283), enacted on August 10, 2012, provides, in Section 3, for a five-year term of office for the Census Bureau Director, who is to serve no more than two full terms; have demonstrated qualifications for the position; be nominated by the President, without regard to the nominee's political affiliation; and be confirmed by the Senate. The Census Bureau remains in DOC.

[114] See, as examples, Jonathan Allen, "White House: Census Director to 'Work Closely' with West Wing," *CQ Today Online News*, CQ.com, February 5, 2009, 6:34 p.m., at http://www.cq.com/document/display.do?dockey=/cqonline/prod/data/docs/html/news/111/news111-000003025792.html@allnews&metapub=CQ-NEWS&binderName=latest-news-binder&seqNum=12; and Keith Koffler, "Census Control Clarified," *Roll Call*, March 11, 2009, pp. 1, 22.

[115] Testimony of Gary Locke in U.S. Congress, Senate Committee on Commerce, Science, and Transportation, *Nomination of Gary Locke to Be U.S. Secretary of Commerce*, hearing, 111th Cong., 1st sess., March 18, 2009 (Washington: 2009), p. 2.

"government statistical agencies must be independent of partisan politics" and that "this country needs an objective, nonpartisan, professional Census Bureau."[116]

The Bureau, in all matters related to the decennial enumeration and the rest of its activities under Title 13 U.S.C., is subject to oversight. In the 111th Congress, the House Oversight and Government Reform Committee, Information Policy, Census, and National Archives Subcommittee, and the Senate Homeland Security and Governmental Affairs Committee, Federal Financial Management, Government Information, Federal Services, and International Security Subcommittee, conducted decennial census oversight hearings. A change in the 112th Congress was that the House Oversight and Government Reform Committee's Health Care, District of Columbia, Census, and National Archives Subcommittee had Census Bureau oversight. In the 113th Congress, Bureau oversight rests with this committee's Federal Workforce, U.S. Postal Service, and the Census Subcommittee, and with the full Senate Homeland Security and Governmental Affairs Committee. The Bureau's operations and funding requests receive further attention from the House and Senate Appropriations Committees. The relevant Appropriations Subcommittees in the 113th Congress are those on Commerce, Justice, Science, and Related Agencies, as they were in the 111th and 112th Congresses. The Government Accountability Office also evaluated various aspects of the 2010 census and issued many reports, some of which this CRS report has cited. In addition, the MITRE Corporation advised the Bureau periodically about its IT programs for the 2010 census and, as previously mentioned, noted serious problems with the plans the Bureau once had for Field Data Collection Automation.[117] The National Academy of Sciences' Committee on National Statistics (CNSTAT), established in 1972 "to provide an independent and objective resource for evaluating and improving the work of the highly decentralized U.S. federal statistical system,"[118] evaluated the 2010 census research program, especially in relation to 2020 census planning.[119]

More than a decade ago, the bipartisan Census Monitoring Board, established under Section 210 of P.L. 105-119 (111 Stat. 2440), scrutinized the objectivity of the 2000 census. Section 210 provided for an eight-member board, with two members appointed by the Senate majority leader; two by the Speaker of the House; and four by the President, one at the recommendation of the Senate minority leader and one as recommended by the House minority leader.

The function of the board was "to observe and monitor all aspects of the preparation and implementation of the 2000 decennial census." Each co-chairman of the board, along with any staff designated by the co-chairs, was to have "access to any data, files, information, or other matters maintained by the Bureau of the Census (or received by it in the course of conducting a decennial census of population) which they may request."

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[116] Testimony of Robert M. Groves in U.S. Congress, Senate Committee on Homeland Security and Governmental Affairs, *Nomination of Robert M. Groves to Be Director of the Census*, hearing, 111th Cong., 1st sess., May 15, 2009 (Washington: 2009). For the full text of his opening remarks, see http://hsgac.senate.gov/public/_files/051509Groves.pdf.

[117] See Allan Holmes, "Census program to use handheld computers said to be in 'serious trouble'," GovernmentExecutive.com, January 2, 2008, at http://www.govexec.com/oversight/2008/01/census-program-to-use-handheld-computers-said-to-be-in-serious-trouble/26029/. This article contained a link to MITRE's November 29, 2007, "Talking Points for Meeting with [then-Census Bureau Deputy Director] Jay Waite."

[118] See Committee on National Statistics, "Overview of the Committee on National Statistics," at http://sites.nationalacademies.org/DBASSE/CNSTAT/DBASSE_070712.

[119] See, as examples, Lawrence D. Brown, Michael L. Cohen, et al., *Experimentation and Evaluation Plans for the 2010 Census* (Washington: National Academies Press, 2008); and Robert M. Bell and Michael L. Cohen, eds., *Coverage Measurement in the 2010 Census* (Washington: National Academies Press, 2009).

The board was to prepare interim and final reports for Congress. The final report, due by September 1, 2001,[120] was to "contain a detailed statement of the findings and conclusions of the Board." All reports were to address, among other points, the degree to which the Census Bureau's preparations for Census 2000 "shall achieve maximum possible accuracy at every level of geography"; "shall be taken by means of an enumeration process designed to count every individual possible"; and "shall be free from political bias and arbitrary decisions."

The law authorized $4 million in appropriations for the board in each fiscal year from FY1998 through FY2001. The board went out of existence on September 30, 2001, and had no 2010 census counterpart.

Concluding Observations

The Census Bureau's mandate to conduct the 2010 decennial census, which would have been demanding and costly under the best circumstances, faced additional challenges because the Bureau's contract with the Harris Corporation to produce handheld computers for Field Data Collection Automation yielded only partial success. The Bureau's decision not to use the handhelds for nonresponse follow-up called into question whether a paper-based NRFU, with persistent IT problems, could account adequately for historically under-enumerated population groups. The Bureau reported an encouraging national participation rate of 74% for the mail-out, mail-back part of the 2010 census, which matched the rate in 2000. The Census Coverage Measurement estimates indicated a net percentage overcount of the total population and of non-Hispanic whites in 2010, as the Accuracy and Coverage Evaluation estimates indicated for the 2000 census. The estimates suggested that in 2010, as in previous decades, the census tended to undercount racial minorities and Hispanics. Concerns about possible bias in the enumeration, and about whom the census counts, miscounts, or omits, likely will persist into the future because the census numbers serve such important national, state, and local purposes.

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[120] The Board's presidential members and congressional members prepared separate final reports, both dated September 1, 2001.

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