

January 2004

# 2010 CENSUS

## Cost and Design Issues Need to Be Addressed Soon



G A O

Accountability \* Integrity \* Reliability

  
**Highlights**

Highlights of [GAO-04-37](#), a report to congressional requesters

## Why GAO Did This Study

The key to a successful census is meticulous planning as it helps ensure greater cost-effectiveness. However, the 2000 and previous censuses have been marked by poor planning, which unnecessarily raised the costs and risks of those efforts. GAO was asked to (1) review the U.S. Census Bureau's (Bureau) current plans for 2010 and whether they might address shortcomings of the 2000 Census, (2) analyze the Bureau's cost estimates, and (3) review the rigor of the Bureau's 2010 planning process.

## What GAO Recommends

GAO recommends that the Secretary of Commerce direct the Bureau to combine information on goals, costs, and other key planning elements into a single integrated project plan that is updated as needed. The Bureau should also study the feasibility of procedures that could allow it to adjust census results for those purposes where it is both legal and appropriate to do so.

Further, the Director of the Office of Management and Budget should ensure that the Bureau take steps to improve the transparency of census life cycle costs. In commenting on a draft of this report, both agencies disagreed with our interpretation of key findings. They also disagreed with our recommendations. We believe our findings and recommendations still apply.

[www.gao.gov/cgi-bin/getrpt?GAO-04-37](http://www.gao.gov/cgi-bin/getrpt?GAO-04-37).

To view the full product, including the scope and methodology, click on the link above. For more information, contact Patricia Dalton at (202) 512-6806 or [daltonp@gao.gov](mailto:daltonp@gao.gov).

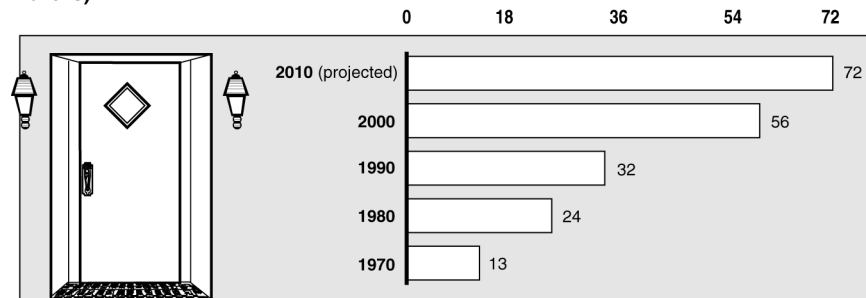
# 2010 CENSUS

## Cost and Design Issues Need to Be Addressed Soon

### What GAO Found

While preparations for the 2010 Census appear to be further along compared to a similar point prior to the 2000 Census, cost and design information had to be pieced together from various documents. The Bureau's plans also lack a substantial amount of supporting analysis, budgetary transparency, and other information that made it difficult to verify the Bureau's assertions concerning the costs and benefits of its proposed approach. Further, unlike in previous censuses, the Bureau does not intend to develop coverage measurement procedures that would allow it to adjust census data for certain purposes. Although its experience in 2000 shows that its coverage measurement methodology needs improvement, GAO believes the Bureau should have researched alternative approaches more thoroughly and disclosed the results of its research before making a decision. In designing the 2010 Census, the Bureau hoped to address several shortcomings of the 2000 enumeration, namely to (1) increase the relevance and timeliness of data, (2) reduce operational risk, (3) increase coverage and accuracy, and (4) contain costs. To achieve these goals, three components—all new operations—are key to the Bureau's plans for 2010. They include enhancing procedures for building the census address list and associated maps, replacing the census long-form questionnaire with a more frequent sample survey, and conducting a short-form-only census.

**Census Costs Are Increasing (Average Cost per Housing Unit in Constant Fiscal 2000 Dollars)**



Source: GAO analysis of Census Bureau figures.

The Bureau's approach has the potential to achieve the first three goals, but reducing operational risk could prove to be more difficult as each of the three components actually introduces new risks. The Bureau will also be challenged to control the cost of the 2010 Census, now estimated at over \$11 billion. The current budget reporting process masks the long-term costs of the census, most of which will be incurred in 2010; making it difficult for Congress to monitor the Bureau's planned expenditures. Certain actions by the Office of Management and Budget could produce greater fiscal transparency, and thus help inform congressional deliberations on how to best balance the need for an accurate census, with the need to ensure a reasonable cost for this endeavor.

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United States General Accounting Office  
Washington, D.C. 20548

January 15, 2004

The Honorable Wm. Lacy Clay  
Ranking Minority Member  
Subcommittee on Technology,  
Information Policy, Intergovernmental Relations  
and the Census  
Committee on Government Reform  
House of Representatives

The Honorable Danny K. Davis  
The Honorable Charles A. Gonzales  
The Honorable Carolyn B. Maloney  
House of Representatives

In designing the 2010 Census, the U.S. Census Bureau (Bureau) faces the daunting challenge of cost effectively counting a population that is growing steadily larger, more diverse, and increasingly difficult to enumerate, with a design that meets the sometimes competing requirements and interests of a vast spectrum of stakeholders that include Congress, government agencies, the statistical community, advocacy groups, and the public.

Planning a successful census—one that is acceptable to Congress and other stakeholders and achieves desired outcomes—requires the Bureau to assess the lessons learned from past enumerations, identify initiatives that show promise for producing a better census while controlling costs, test the feasibility of these initiatives, and convince stakeholders of the value of the proposed plans.<sup>1</sup> However, the Bureau's planning efforts for the 2000 and earlier censuses contained a number of weaknesses that unnecessarily increased the cost and risk of those efforts.

In January 2003, we named the 2010 Census a major performance and accountability challenge because of our growing concern over the numerous obstacles to a cost-effective head count. Already, current estimates of the cost of the 2010 Census exceed \$11 billion. You asked us to examine the decision-making process for the 2010 Census. As agreed with your offices, our objectives for this report were to review the Bureau's current plans for the 2010 Census and the extent to which they might

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<sup>1</sup> See, for example, U.S. General Accounting Office, *2000 Census: Progress Made on Design, but Risks Remain*, GAO/GGD-97-142 (Washington, D.C.: July 14, 1997).

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address shortcomings with the 2000 Census, analyze the Bureau's cost estimates, and assess the rigor of the Bureau's 2010 planning process.

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## Results in Brief

The Bureau's preparations for the 2010 Census appear to be further along than at a similar point during the planning cycle for the 2000 Census. Still, considerable risks and uncertainties lie ahead. This does not necessarily mean that the Bureau's design is flawed. Indeed, the difficulties in conducting a successful head count call for the Bureau to consider bold and innovative initiatives, and these are not risk free. However, the uncertainties could jeopardize a cost-effective head count if not addressed soon.

In designing the 2010 Census, the Bureau had four goals in mind, based on its desire to address shortcomings with the 2000 enumeration: (1) increase the relevance and timeliness of data, (2) reduce operational risk, (3) increase coverage and accuracy, and (4) contain costs. To achieve these goals, three components—all new operations—are key to the Bureau's plans for 2010:

- enhancing procedures for building its address list, known as the Master Address File (MAF), and its associated geographic information system, called the Topologically Integrated Geographic Encoding and Referencing (TIGER) database;<sup>2</sup>
- replacing the census long-form questionnaire with the American Community Survey (ACS); and
- conducting a short-form-only decennial census supported by early research and testing.

The Bureau's approach has the potential to achieve all but its goal to reduce operational risk. However, this is no minor shortcoming as the Bureau's 2010 design actually introduces new risks as the Bureau will be challenged to (1) secure early congressional agreement on its design, (2) resolve methodological and other uncertainties surrounding ACS, and (3) successfully implement all three components of the Bureau's design. Because the three components are interrelated (e.g., the ACS is critical to a

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<sup>2</sup> TIGER is a registered trademark of the U.S. Census Bureau.

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short-form-only census), failure to successfully carry out any one component of the plan could doom the success of the other two, thereby reducing the overall cost-effectiveness of the census.

A fourth challenge will be slowing the mushrooming cost of the 2010 Census, now estimated at more than \$11.3 billion in current dollars. Put another way, it will cost the nation an estimated \$72 to count each household in 2010, compared to \$56 in 2000 and \$13 in 1970 (in constant 2000 dollars), in large part because it is getting increasingly difficult to locate people and get them to participate in the census. The growing cost of the head count, at a time when the nation is facing historic budget deficits, highlights the importance of congressional deliberations on the extent to which each additional dollar spent on the census results in better data, as well as how best to balance the need for a complete count, with the need to ensure the cost of a complete count does not become unreasonable.

In a departure from previous decennial censuses, the Bureau has decided against developing coverage measurement procedures that would allow it to adjust 2010 Census data for certain purposes. Although its experience during the 2000 Census shows that its approach to measuring coverage needs to be improved, we believe the Bureau should have researched alternative methods more thoroughly and disclosed the results of its research before making its decision.

Current budget reporting masks the long-term cost implications of the census, and this could hamper or delay discussions concerning cost containment alternatives because annual budget requests and information provided to Congress early in the decennial life cycle do not reflect the full cash consequences of the annual spending. Most of the early spending will be on planning and development costs, but most of the expenses will be incurred in 2010. As Congress begins funding the 2010 Census at relatively low levels, it will have implicitly accepted a future spike in costs without requiring the Bureau to define more clearly what those costs might be, why they are justified, and what alternatives might exist. Greater fiscal transparency, including more robust information on the Bureau's underlying budget assumptions, could help policymakers control escalating census costs.

In some respects, the Bureau's planning for the 2010 Census appears to be more rigorous than that for the 2000 Census. For example, the Bureau has involved experienced staff in the design process, organized multidivision

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planning groups, assigned roles and responsibilities, and taken steps to address issues such as the attrition of key experienced staff. Still, other aspects of a rigorous planning process were lacking. They include (1) a comprehensive project plan with information on operational milestones, measurable performance goals, and costs and (2) productivity and other data on the results of key operations from the 2000 Census to inform lessons learned for 2010.

To improve the 2010 Census planning process, we recommend that the Secretary of Commerce direct the Bureau to consolidate information on goals, performance measures, costs, and other key planning elements into a single project plan that would be updated as needed. Further, to help ensure the nation has at its disposal the best possible data should there be problems with the quality of the census numbers, the Secretary should also direct the Bureau, with input from both majority and minority parties in the Senate and House of Representatives, to research the feasibility of procedures that could allow the Bureau to adjust census results for those purposes for which it is both legal and appropriate to do so and, if found to be feasible, test those procedures during the 2006 census test and 2008 census dress rehearsal.

In addition, to highlight for Congress the long-term fiscal exposure associated with the census, signal emerging cost issues, and prompt congressional deliberations on affordability and trade-offs, we recommend that the Director of the Office of Management and Budget (OMB) ensure that the Bureau take steps to increase the transparency of census life cycle costs. Specific steps include displaying such information as updated estimates of census life cycle costs and the amount of money the Bureau expects to spend in each year of the cycle as a note in the Program and Financing schedule of the President's budget. The information should also explain any material changes from previous budgets, the sensitivity of the cost figures to specific assumptions, and the likelihood of those assumptions.

The Secretary of Commerce forwarded written comments from the U.S. Census Bureau on a draft of this report. The comments are reprinted in appendix I. The Bureau agreed that to bring closure on issues relevant to the 2010 Census, it was important to have informed discussions with stakeholders, especially Congress, but disagreed with the recommendations we believe are necessary for such discussions to be fruitful. However, based on our evaluation of the Bureau's comments, we believe all of our recommendations still apply.



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For example, the Bureau took exception to our recommendation to improve the rigor of its planning process by developing a consolidated project plan, noting that existing documents already provide this information. We believe our recommendation is still pertinent because, while we agree with the Bureau that some of this information is already available, it is disjointed and one can only obtain it by piecing together several different documents, such as the Bureau's budget submission and strategic plan. And even then, it would still lack such important information as performance goals.

The Director of OMB also prepared written comments on a draft of this report that are reprinted in appendix II. OMB shared our view that the costs and risks associated with the 2010 Census must be carefully monitored and evaluated throughout the decade. OMB also agreed that it is essential to understand the key cost drivers and said that it is working with the Census Bureau to ensure the Bureau develops high-quality, transparent life cycle cost estimates. However, OMB disagreed with our recommendation that it highlight for Congress the long-term fiscal exposure associated with the census, noting that its existing internal procedures are sufficient. Nevertheless, we do not believe the information OMB currently reports to Congress is sufficiently timely or detailed to provide the level of transparency needed for effective congressional oversight and cost control, and thus stand by our recommendation.

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## Background

Thorough and comprehensive planning and preparation are crucial to the ultimate cost-effectiveness of any large, long-term project, particularly one with the scope, magnitude, and immutable deadlines of the decennial census. Indeed, the Bureau's past experience has shown that the lack of proper planning can increase the costs and risks of downstream operations. Moreover, sound planning is critical to obtaining congressional support and funding because it helps demonstrate that the Bureau has chosen the optimal design given various trade-offs and constraints and that it will effectively manage operations and control costs.

However, Congress, GAO, the Department of Commerce Inspector General, and even the Bureau itself have noted how the 2000 Census was marked by poor planning, which unnecessarily added to the cost, risk, and controversy of the last national head count. For example, our earlier work, and that of the Department of Commerce Inspector General, reported that in planning the 2000 Census, the Bureau, among other shortcomings,

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- did not involve key operations staff in the initial design phases;
  - did not translate key performance goals into operational, measurable terms that could be used as a basis for planning;
  - did not develop and document a design until mid-decade; and
  - initially failed to provide sufficient data to stakeholders on the likely effects of its initiatives for addressing the key goals for the census—reduced costs and improved accuracy and equity.

Planning weaknesses were not limited to the 2000 Census. In fact, a variety of problems plagued the planning of the 1990 Census.

To help prevent the Bureau from repeating those mistakes as it plans the 2010 Census, in our October 2002 report, we recommended that the Secretary of Commerce direct the Bureau to provide comprehensive information backed by supporting documentation in its future funding requests for planning and development activities, including, but not limited to,

- specific performance goals for the 2010 Census and information on how the Bureau's programs would contribute to those goals;
- detailed information on program feasibility, priorities, and potential risks;
- key implementation issues and decision milestones; and
- performance measures.<sup>3</sup>

The consequences of a poorly planned census are high given the billions of dollars spent on the enterprise and the importance of collecting quality data. The Constitution requires a census as a basis for apportioning seats in the House of Representatives. Census data are also used to redraw congressional districts, allocate billions of dollars in federal assistance to state and local governments, and provide information for many other public and private sector purposes.

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<sup>3</sup> U.S. General Accounting Office, *2000 Census: Lessons Learned for Planning a More Cost-Effective 2010 Census*, GAO-03-40 (Washington, D.C.: Oct. 31, 2002).

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## Scope and Methodology

As agreed with your offices, our objectives for this report were to review the Bureau's current plans for the 2010 Census and the extent to which they might address shortcomings with the 2000 Census, analyze the Bureau's cost estimates, and assess the rigor of the Bureau's 2010 planning process.

To achieve these three objectives, we interviewed officials from the Bureau's Decennial Management Division and other units involved with planning the 2010 Census. We also reviewed relevant design and budget documents as well as our prior work and that of the Department of Commerce Inspector General, on planning the 2000 and earlier censuses.<sup>4</sup> We also reviewed reports by the National Academy of Sciences on planning the 2010 Census.<sup>5</sup> We did not independently verify the cost information the Bureau provided. To help determine the key elements for successful project planning, we reviewed a number of guides to project management and business process reengineering.<sup>6</sup>

Our work was performed from January through September 2003 in accordance with generally accepted government auditing standards. We requested comments on a draft of this report from the Secretary of Commerce and the Director of the Office of Management and Budget. On November 6, 2003, we received the Secretary's written comments on the draft (see app. I). On October 14, 2003, the Director of OMB forwarded OMB's comments on the draft (see app. II). They are addressed in the Agency Comments and Our Evaluation section of this report.

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<sup>4</sup> See, for example, U.S. General Accounting Office, *2000 Census: Progress Made on Design, but Risks Remain*, GAO/GGD-97-142 (Washington, D.C.: July 14, 1997).

<sup>5</sup> National Research Council, *Planning the 2010 Census: Second Interim Report* (Washington, D.C.: July 22, 2003).

<sup>6</sup> The guides include: *A Guide to the Project Management Body of Knowledge*, Project Management Institute Standards Committee, © 1996.

*Project Management for Mission Critical Systems*, a Handbook for Government Executives, Information Technology Resource Board, April 5, 2001.

*Capability, Maturity Model Integration Project Planning Guide*, Carnegie Mellon Software Engineering Institute, March 2001.

U.S. General Accounting Office, *Business Process Reengineering Assessment Guide*, GAO/AIMD-10.1.15 (Washington, D.C.: May 1997).

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## 2010 Design Has Potential, but Introduces New Risks

In designing the 2010 Census, Bureau officials had four principal goals in mind: (1) increase the relevance and timeliness of census long-form data, (2) reduce operational risk, (3) increase the coverage and accuracy of the census, and (4) contain costs. The goals were a direct response to problems the Bureau experienced in conducting the 2000 Census, such as untimely long-form data; inaccurate maps; coverage difficulties; and expensive, labor-intensive, and paper-laden field data collection.

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## Census Reforms Have Three Key Components

The Bureau recognized that its traditional approach to counting the population was insufficient for meeting these four objectives. In its place, the Bureau developed what it believes is a paradigm shift to taking the census, basing its reform efforts on three interrelated components the Bureau refers to as a “three-legged stool.”

### Modernizing and Enhancing the MAF/TIGER Address File and Geographic Database

The mainstay of a successful census is an accurate address list and its associated maps. The Bureau uses MAF and TIGER to provide (1) maps for field operations and data reference, (2) the geographic location of every structure, (3) address lists for the decennial census, and (4) names and codes of entities for data tabulation and data for use by the commercial geographic information systems industry.

The Bureau’s experience in conducting the 2000 Census highlighted the need to update and modernize MAF/TIGER prior to 2010. For example, the centerlines of streets in TIGER did not accurately reflect their true geographic locations, which could cause houses to be placed in the wrong census blocks. Also, according to the Bureau, the 1980s software used to develop TIGER is now outdated and cumbersome to update. To fix these and other problems, the Bureau launched the MAF/TIGER Enhancements Program (MTEP) as part of the 2010 Census modernization efforts. Its objectives include

- correcting the locations of each MAF address, street, and other map features;
- developing and deploying a new MAF/TIGER processing environment;
- expanding and encouraging geographic intergovernmental partnership programs;

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- implementing the Community Address Updating System (CAUS), an initiative to partner with local governments to update MAF data; and
  - initiating quality assurance evaluation activities.

The Bureau estimates the total cost for these five objectives to be \$536 million. According to Bureau officials, while some elements of MAF will be improved as part of the overall MAF/TIGER enhancements program, the primary focus of the effort is on TIGER modernization and data correction. This modernization program will not reengineer the MAF process.

### Implementing ACS to Collect Long-Form Data on an Ongoing, Annual Basis

ACS is intended to be a monthly survey of 250,000 households that would replace the long form used in past decennial censuses. According to the Bureau, the benefits of ACS include (1) more timely long-form data at detailed geographic levels that would be as accurate as subnational annual data from existing surveys, such as the Current Population and American Housing Surveys, and (2) the ability to improve the accuracy of the decennial census population counts by eliminating the long-form questionnaire.

The ACS data will be published annually for geographic areas with populations over 65,000; as a 3-year average for geographic areas with populations of 20,000 to 65,000; and as a 5-year average for geographic areas with populations under 20,000. According to the Bureau, because of the larger sample size associated with long-form data, the annual and 3-year average data will be significantly less accurate than the long-form data. The 5-year data would be about as accurate as the long form.

### Developing, Testing, and Implementing a Short-Form-Only Census; Taking Advantage of the Benefits Gained by the First Two Efforts

The Bureau believes that eliminating the long form will result in a number of benefits to decennial data collection and general field operations. For example, according to the Bureau, the reduction in paper will enable it to process data with three data capture centers instead of the four centers used during Census 2000. The Bureau also would not need as many local census offices, thereby allowing it to reduce the rolls of clerical and administrative staff.

According to the Bureau, a short-form-only census also allows the Bureau to use such technology as handheld mobile computing devices so that enumerators can locate and update data on housing units, help conduct interviews, transmit data directly to the data capture centers, and receive regularly updated field assignments. The devices will be linked to the

satellite-based Global Positioning System (GPS) to enable field workers to locate addresses more precisely and efficiently. The Bureau also plans to incorporate changes that are not dependent on ACS and MAF/TIGER. For example, the Bureau plans to expand the respondents' ability to complete their questionnaires via the Internet.

**2010 Design Is Linked to Goals, but Challenges Remain**

As shown in table 1, the Bureau's three-legged stool strategy is generally aligned with three of its four key goals for the 2010 Census and, if successful, could put the Bureau on track toward achieving them.

**Table 1: The Three-Legged Stool Strategy Could Help the Bureau Progress toward Its Key Goals for the 2010 Census**

Goal	Strategy for achieving goal	Rationale
Increase the relevance and timeliness of census long-form data	Implement ACS	ACS, if implemented nationwide, is to replace the long form and provide annual data for areas with populations over 65,000 and multiyear averages for smaller geographic areas. This compares to the long form's once-every-10-year data.
Reduce operational risk	Early planning and testing, short-form-only census questionnaire	The Bureau believes that testing a design early in the decade will identify design flaws and allow the Bureau to correct them early in the process. Also, a short-form-only census should be easier to implement since Bureau staff will only have to plan systems for one type of form and handle much less paper.
Increase coverage and accuracy	Short-form-only census, MAF/TIGER enhancements	The Bureau believes that a short-form-only census will increase the mail response rate by 8 percentage points because, historically, more people have responded to the short form than the long form, and the Bureau has found that the quality of the data is better when supplied directly by respondents. The Bureau also plans to do a targeted second mailing to nonresponders that should also boost the response rate. These efforts combined with other planned improvements, such as the MAF/TIGER enhancements, would improve overall accuracy and coverage.
Contain costs	Short-form-only census	The higher response rates produced by the short form will reduce the Bureau's nonresponse follow-up workload, one of the largest drivers of census costs. The Bureau also believes that a short-form-only census will result in less paper, and thus enable the Bureau to get by with three rather than four data capture centers (as was the case in 2000) and fewer local census offices.

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

Less clear is how the Bureau will achieve its goal of reducing operational risk using its current plan. Although the Bureau's position that early testing will enable it to identify and correct flaws is both a common sense business practice and supported by its past experience (assuming its testing

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program is adequately designed), as described below, the operational and other hurdles associated with successfully implementing the three-legged stool actually introduce new risks and challenges. This does not necessarily mean that the Bureau's design is flawed. To the contrary, the obstacles to a cost-effective head count call for the Bureau to consider bold and innovative initiatives, and these are not risk free.

At the same time, given the enormity of the census and all of its complexities, the three-legged stool by itself will not automatically guarantee the successful accomplishment of the Bureau's goals. Our work on transforming agencies into high-performing organizations has underscored the importance of an agency's leadership and core business practices. Critical success factors include, among others, effective communication strategies to ensure coordination, synergy, and integration; strategic planning; aligning the agency's organization to be consistent with the goals and objectives established in the strategic plan; and effective performance, financial, acquisition, and information technology management. In all, the Bureau faces at least three key challenges.

### Challenge #1: Securing Congressional Approval

Among the more significant challenges the Bureau faces is securing congressional approval for its proposed approach. As we noted in our January 2003 performance and accountability report, congressional support for the 2010 design is necessary to ensure adequate planning, testing, and funding levels.<sup>7</sup> Conversely, the lack of an agreed-upon design raises the risk that basic design elements might change in the years ahead, while the opportunities to test those changes and integrate them with other operations will diminish. In other words, in order for the Bureau to conduct proper planning and development activities, the basic design of the 2010 Census needs to be stable.

According to the Bureau, a go/no-go decision on key aspects of the design—a short-form-only census and replacing the long form with ACS—will need to be made around 2006. Bureau officials told us that if ACS were dropped after 2007, the Bureau would not be able to reinstate the long form with the short form in 2010 because of logistical obstacles. They noted that the Bureau is already testing the short-form-only census and, in late-2005 or early-2006, expects to sign a contract for data capture operations. If the

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<sup>7</sup> U.S. General Accounting Office, *Major Management Challenges and Program Risks: Department of Commerce*, [GAO-03-97](#) (Washington, D.C.: January 2003).

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Bureau had to revert to a long-form census at that point, it would add significant risks and costs to the 2010 Census.

During the 2000 Census, the lack of an agreement between the administration and Congress on the fundamental design—and particularly, the Bureau’s planned use of sampling—increased the likelihood of an unsuccessful head count and was one of the principal reasons why, in 1997, we designated the 2000 Census a high-risk area. Members of Congress questioned the use of sampling and estimation for legal and methodological reasons. Contributing to Congress’s skepticism was the Bureau’s failure to provide sufficiently detailed data on the effects of its proposed approach. Although the U.S. Supreme Court settled the dispute in January 1999,<sup>8</sup> the Bureau ultimately wound up having to plan for both a “traditional” census and one involving sampling, which added to the costs and risks of the 2000 decennial census.

To help secure congressional support for its 2010 reform efforts, it will be important for the Bureau to convincingly demonstrate that it has chosen the optimum design given various resource and other constraints and that it will effectively manage operations and costs. A critical first step in this regard is to have comprehensive and transparent information that lays out the specifics of the Bureau’s plans, explains their benefits, and supports assumptions. However, as discussed more fully in the next section, while the Bureau’s planning for the 2010 Census has improved compared with its efforts for the 2000 Census, certain information gaps remain. For example, the Bureau’s most recent budget submissions have not included complete life cycle cost estimates that could enable Congress to make more informed decisions about the cost implications of the three-legged stool design, including ACS.

Challenge #2: Resolving  
Uncertainties That Surround  
ACS

Most of the reforms, savings, and improvements in accuracy the Bureau anticipates will not be possible unless it conducts a short-form-only census. However, the Bureau’s planned replacement for the long form, ACS, faces methodological and other questions that need to be resolved soon.<sup>9</sup> Consequently, the Bureau is taking a significant risk by pinning the success

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<sup>8</sup> *Department of Commerce vs. United States House of Representatives*, 525 U.S. 316 (1999).

<sup>9</sup> For a more complete discussion of ACS, see U.S. General Accounting Office, *The American Community Survey: Accuracy and Timeliness Issues*, [GAO-02-956R](#) (Washington, D.C.: Sept. 30, 2002).



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of its reform efforts largely on a survey that may not be an adequate replacement for the long form. The Bureau believes that without ACS, it will need to repeat the Census 2000 design.

One methodological question is whether to administer ACS as a mandatory or voluntary survey. Under the Bureau's current approach, survey recipients will be legally required to respond to ACS. However, in response to congressional concerns that a mandatory survey is intrusive, the Bureau tested conducting ACS as a voluntary survey. Based on the results of the test, the Bureau estimates that a voluntary survey could produce a response rate around 4.2 percentage points lower than a mandatory survey. The Bureau estimates that costs would increase by \$59.2 million per year to maintain the same level of reliability achieved from a mandatory survey.

Moreover, the Bureau's efforts to ensure that ACS data will serve as a satisfactory replacement for the long-form data are not yet complete. Among the remaining issues, most of which are critical to the reliability of the small geographic area ACS data, are the following:

1. Benchmarking ACS data or small geographic areas to the population counts and characteristics from the 2010 short form.
2. Inconsistency of ACS residency rules—which determine the geographic area in which a person is supposed to be counted—with those used for the census.
3. Consistency of ACS data with long-form data from the 2000 Census.
4. For multiyear averages of ACS data for small areas, consistency with annual ACS data for larger areas and utilization as a measure of change.

### Challenge #3: Successfully Implementing Each Leg of the Bureau's Design

Each leg of the Bureau's three-legged stool is dependent on the other; that is, the implementation of one leg allows the other two legs to operate successfully. For example, ACS is facilitated by first updating the MAF/TIGER database for the ACS sample. Similarly, as noted above, the Bureau's plan to conduct a short-form-only enumeration depends on ACS. Consequently, the Bureau's design assumes that by 2008, (1) ACS will be in place nationwide and producing data, (2) a GPS-aligned and modernized MAF/TIGER will be available, and (3) all reengineering efforts will be complete to allow for a true dress rehearsal. Completing any one of these tasks would be a considerable undertaking; for 2010, the Bureau plans to develop, refine, and integrate all three in the space of just a few years.

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Moreover, the Bureau has no contingency plans other than to revert to a “traditional” census. According to the Bureau, while the failure of any one leg would not doom the census, it could jeopardize the Bureau’s goals. For example, if the MAF/TIGER modernization is not completed on schedule, the Bureau would be unable to employ the GPS-enabled handheld mobile computing devices that enumerators are to use when conducting nonresponse follow-up. This in turn could affect the efficiency of the effort and the quality of the data collected. In addition, the Bureau would not have time to conduct the research and testing necessary to improve the long form based on lessons learned in the 2000 Census.

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## The Bureau’s Plans for Measuring Accuracy and Coverage in 2010

Because of limitations in census taking methods, some degree of error in the form of persons missed or counted more than once is inevitable. Since 1980, the Bureau has used statistical methods to generate detailed measures of the undercounts of particular ethnic, racial, and other population groups. To assess the quality of population data for the 2000 Census and to possibly adjust for any errors, the Bureau conducted the Accuracy and Coverage Evaluation (A.C.E.) program. Although the U.S. Supreme Court ruled in 1999 that the Census Act prohibited the use of statistical sampling for purposes of apportioning seats in the House of Representatives, the Court did not specifically address the use of statistical sampling for other purposes.<sup>10</sup>

In March 2001, the Acting Director of the U.S. Census Bureau recommended to the Secretary of Commerce that only *unadjusted* data be released for purposes of congressional redistricting. The Acting Director made this recommendation when, after considerable research, the Bureau was unable to conclude that the adjusted data were more accurate for use in redistricting. Specifically, the Acting Director cited the apparent inconsistency in population growth over the decade as estimated by the A.C.E., and demographic analysis, which estimated the population using birth, death, and similar records. He noted that the inconsistency raised the possibility of an unidentified error in either the A.C.E. estimates or the census numbers, and the inconsistency could not be resolved prior to April 1, 2001, the legally mandated deadline for releasing redistricting data. Later that year, following additional research, the Acting Director decided against using adjusted census data for nonredistricting purposes, such as

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<sup>10</sup> *Department of Commerce v. United States House of Representatives*, 525 U.S. 316 (1999).

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allocating federal aid, because A.C.E. estimates failed to identify a significant number of people erroneously included in the census. The Acting Director noted that “this finding of substantial error, in conjunction with remaining uncertainties, necessitates that revisions, based on additional review and analysis, be made to the A.C.E. estimates before any potential uses of these data can be considered.”

As the Bureau turned toward the 2010 Census, it needed to decide whether it would have a coverage measurement program and how the results would be used. Because of the 1999 U.S. Supreme Court ruling noted earlier, the Bureau could not use coverage measurement results to adjust census data for purposes of congressional apportionment. However, adjusting census data for other purposes remained an open question.

In our January 2003 report on the objectives and results of the 2000 A.C.E. program, we noted that an evaluation of the accuracy and completeness of the census is critical given the many uses of census data, the importance of identifying the magnitude and characteristics of any undercounts and overcounts, and the cost of the census overall.<sup>11</sup> We cautioned that the longer the 2010 planning process continues without a firm decision on the role of coverage measurement, the greater the risk of wasted resources and disappointing results.

Consequently, we recommended that the Bureau, in conjunction with Congress and other stakeholders, come to an early decision on whether and how coverage measurement will be used in the 2010 Census. In reaching this decision, we recommended that the Bureau (1) demonstrate both the operational and technical feasibility of its coverage measurement methods, (2) determine the level of geography at which coverage can be reliably measured, (3) keep Congress and other stakeholders informed of its plans, and (4) adequately test its coverage measurement methodology prior to full implementation.

The Bureau agreed with our recommendations, noting that we had identified important steps that should be followed in developing a coverage measurement methodology for the 2010 Census. While certain aspects of the Bureau’s coverage measurement plans are still being developed, the

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<sup>11</sup> U.S. General Accounting Office, *2000 Census: Coverage Measurement Programs’ Results, Costs, and Lessons Learned*, [GAO-03-287](#) (Washington, D.C.: Jan. 29, 2003).

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Bureau is not currently planning to develop a procedure that would allow it to adjust census numbers for purposes of redistricting.

According to the Director of the U.S. Census Bureau, although the Bureau plans to evaluate the accuracy of the coverage it achieves in the 2010 Census, its experience during the 2000 Census demonstrated “that the science is insufficiently advanced to allow making statistical adjustment to population counts of a successful decennial census in which the percentage of error is presumed to be so small that adjustment would introduce as much or more error than it was designed to correct.”

Furthermore, irrespective of whether it is both legal and appropriate to do so, the Bureau does not believe that it can both collect coverage measurement data and complete the analysis of those data’s accuracy in time to deliver the information to the states to meet their redistricting deadlines.

Although the Bureau’s experience during the 2000 Census shows that its approach to measuring coverage needs to be improved if it is to be used to adjust census numbers, the Bureau has not yet determined the feasibility of refinements to the 2000 approach or alternative methodologies. Consequently, the Bureau’s decision on how coverage evaluation data will be used in 2010 appears to be premature. Indeed, while the Bureau has reported that the 2000 Census had better coverage compared to the 1990 Census, as noted below, the U.S. population is becoming increasingly difficult to count, a factor that could affect the quality of the 2010 Census.

More generally, the decennial census is an inherently fragile endeavor, where an accurate population count requires the near-perfect alignment of a myriad of factors ranging from the successful execution of dozens of census-taking operations to the public’s willingness to cooperate with enumerators. External factors such as the state of the economy and world events might also affect the outcome of the census. The bottom line is that while the census is under way, the tolerance for any breakdowns is quite small.

Therefore, the Bureau’s ability to maintain the level of quality reported for the 2000 Census is far from guaranteed. Thus, to ensure that the nation uses the best available census data, it will be important for the Bureau to research procedures that depending on what the results of the coverage evaluation say about the quality of the census data, would allow adjustment, if necessary, for those purposes for which it is both legal and

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appropriate to do so. The Bureau should conduct this effort on a timetable that allows it to adequately test and refine those procedures, as well as obtain input from both majority and minority parties in the Senate and House of Representatives.

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## Escalating Census Costs Call for Transparent Budget Data and Better Reporting

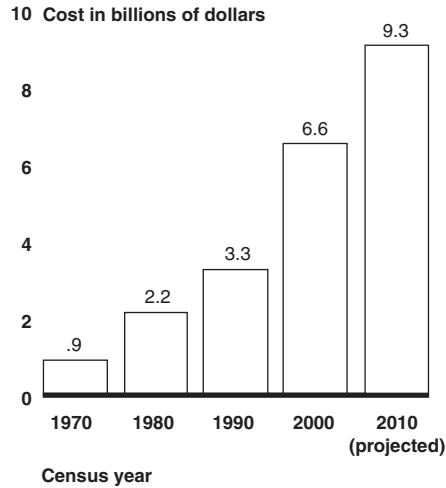
In June 2001, the Bureau estimated that the reengineered 2010 Census would cost \$11.3 billion in current dollars. This would make the 2010 head count the most expensive in the nation's history, even after adjusting for inflation. According to the Bureau estimates in June 2001, a repeat of the 2000 approach would cost even more, over \$11.7 billion. This estimate of repeating the 2000 approach was revised to approximately \$12.2 billion in April 2003. Moreover, the actual cost of the census could end up considerably higher as the Bureau's initial cost projections for previous censuses proved to be too low because of such factors as unforeseen operational problems or changes to the fundamental design. For example, while the Bureau estimated that the 2000 Census would cost around \$4 billion using sampling, and that a traditional census without sampling would cost around \$5 billion, the final price tag for the 2000 Census (without sampling) was over \$6.5 billion.

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## Census Costs Continue to Grow

The Bureau's cost projections for the 2010 decennial census continue an escalating trend. As shown in figure 1, in constant 2000 dollars, the estimated \$9.3 billion cost of the 2010 Census represents a tenfold jump over the \$920 million spent on the 1970 Census (as noted above, the Bureau estimates the 2010 Census will cost \$11.3 billion in current dollars).

**Figure 1: Decennial Census Costs from 1970 through 2010 (Projected) in Constant 2000 Dollars**

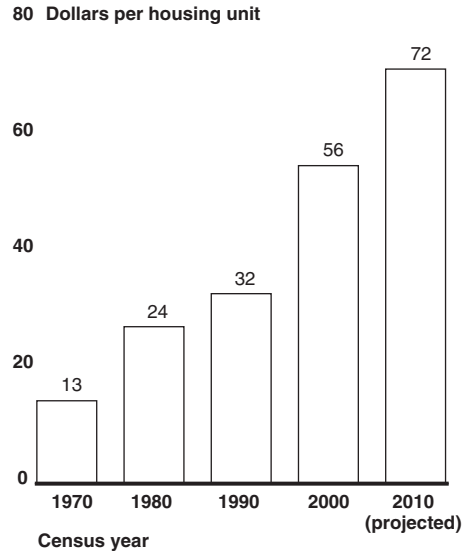


Source: GAO analysis of U.S. Census Bureau figures.

Although some cost growth can be expected in part because the number of housing units—and hence the Bureau’s workload—has gotten larger, the cost growth has far exceeded the housing unit increase. The Bureau estimates that the number of housing units for the 2010 Census will increase by 10 percent over 2000 Census levels. Meanwhile, the average cost per housing unit for 2010 is expected to increase by approximately 29 percent from 2000 levels (from \$56 to \$72), nearly five and a half times greater than the \$13 it cost to count each household in 1970 (see fig. 2).<sup>12</sup>

<sup>12</sup> These figures include the 10-year costs for ACS replacement for the census long form and the costs of MAF/TIGER.

**Figure 2: Decennial Census Average Cost per Housing Unit (in Constant Fiscal Year 2000 Dollars)**



Source: GAO analysis of U.S. Census Bureau figures.

As for previous censuses, the major cost for the 2010 Census is what the Bureau calls “field data collection and support systems.” Over half of decennial census life cycle costs are attributed to this area. Specific components include the costly and labor-intensive nonresponse follow-up operation as well as support activities such as the opening and staffing of hundreds of temporary local census offices.

One reason why field data collection is so expensive is because the Bureau is finding it increasingly difficult to locate people and get them to participate in the census. According to Bureau officials, societal trends, such as the increasing number of respondents who do not speak English, the growing difficulty of finding respondents at home, and the general increase of privacy concerns, impede a cost-effective head count. Further, the legal requirement to count everyone leads the Bureau to employ operations that only marginally improve coverage but that are relatively expensive to conduct.

Societal changes have also reduced the cost-effectiveness of the census, and it has become increasingly difficult to simply stay on par with the results of previous enumerations. For example, during the 1990 Census, the Bureau spent \$0.88 per housing unit (in 2000 dollars) to market the

census and encourage participation and achieved a response rate of 65 percent. During the 2000 Census, the Bureau spent \$3.19 per housing unit (in 2000 dollars) to promote participation, but the response rate was 64 percent.

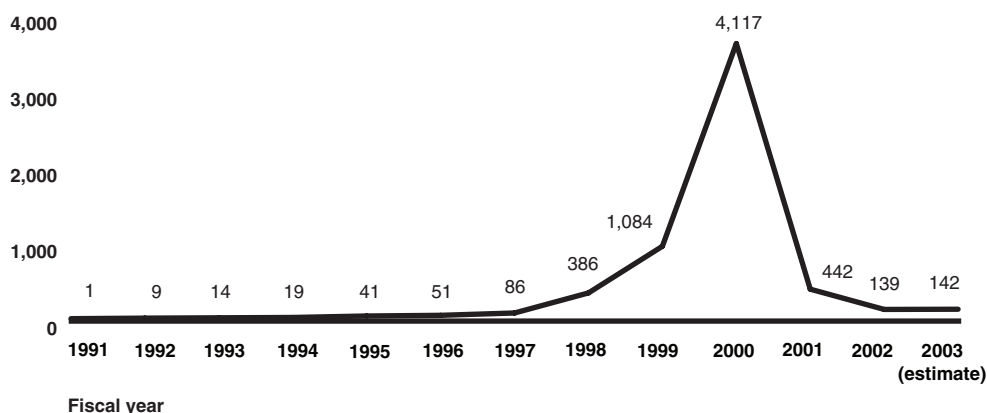
## Cost Estimates Need Greater Transparency

The constitutional mandate to count the nation’s population explicitly commits or “exposes” the government to spending money on the census each decade. In this way, the census is similar to other fiscal exposures such as retirement benefits, environmental cleanup costs, and the payment of Social Security benefits in that the government is obligated to a certain level of future outlays.

Early in each census cycle, expenditures are relatively low as the Bureau plans the census and conducts various tests. As the decade continues, spending increases, spiking during the decennial year when costly data collection activities take place. As shown in figure 3, during the 2000 Census, \$4.1 billion—almost two-thirds of the money spent on the entire census—was spent in fiscal year 2000 alone.

**Figure 3: 2000 Census Life Cycle Costs by Fiscal Year**

5,000 Dollars in millions



Source: GAO.

Current budget reporting, however, does not always fully capture or require explicit consideration of some future fiscal exposures. In fact, this is particularly true with the census, as annual budget requests and reports



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provided to Congress early in the decennial census life cycle do not reflect the full cash consequences of the spending and policy decisions. Thus, as it begins funding the 2010 Census early in the decade at relatively low levels, Congress will have implicitly accepted a future spike in costs—essentially a balloon payment in 2010—without requiring the Bureau to clearly define what those costs might be, why they are justified, and what alternatives might exist.

As we noted in our January 2003 report on improving the budgetary focus on long-term costs and uncertainties, information on the existence and estimated cost of fiscal exposures needs to be considered along with other factors when making policy decisions.<sup>13</sup> With respect to the census, not capturing the long-term costs of annual spending decisions limits Congress's ability to control the government's exposure at the time decisions are made, consider trade-offs with other national priorities, and curtail the growth in census costs. Consequently, fiscal transparency is critical to better reflect the magnitude of the government's long-term spending on the census and signal unanticipated cost growth. Greater fiscal transparency can also facilitate an independent review and provide an opportunity to improve stakeholder confidence and commitment to the Bureau's reengineered decennial census design.

Our January 2003 report noted that increased supplemental reporting could help improve fiscal transparency and described several options for how to accomplish this. Although that report recommended that OMB consider implementing these options governmentwide, at least two options could be adapted specifically for the Bureau and its parent agency, the Department of Commerce. The two options are (1) annually reporting the planned life cycle cash flow and explaining any material changes from previous plans (currently, the Bureau does not make this information available) and (2) setting triggers to signal when the amount of money expected to be spent in any one year exceeded a predetermined amount. Combined, these actions could prompt more explicit deliberations on the cost and affordability of the census and help inform specific cost control measures by Congress, if warranted.

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<sup>13</sup> U.S. General Accounting Office, *Fiscal Exposures: Improving the Budgetary Focus on Long-Term Costs and Uncertainties*, [GAO-03-213](#) (Washington, D.C.: Jan. 24, 2003).

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## More Information Needed on Underlying Budget Assumptions

The assumptions the Bureau used to develop the life cycle cost estimate could also benefit from greater transparency.<sup>14</sup> More robust information on the likelihood that the values the Bureau assigned to key cost drivers might differ from those initially assumed, and the impact that any differences would have on the total life cycle cost, could provide Congress with better information on the range and probability of the fiscal exposure the nation faces from the upcoming census.

As shown in figure 4, the Bureau derived the baseline for its 2010 cost estimate using the actual cost of the 2000 Census and assumptions about certain cost drivers, estimating the cost of the 2010 Census as if the Bureau were to repeat its 2000 design. The key assumptions include

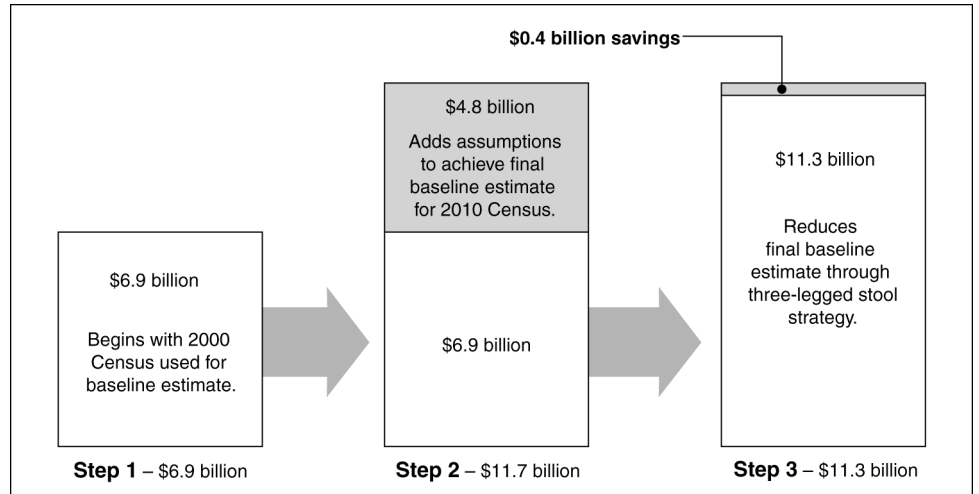
- a 35 percent decrease in enumerator productivity,
- a pay rate increase for census workers from 2000 levels,
- a mail-back response rate lower than Census 2000 levels,<sup>15</sup> and
- inflation.

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<sup>14</sup> OMB Circular A-94 provides guidelines for cost-benefit analysis of federal programs and recommends that agencies develop a sensitivity analysis for major projects with significant uncertainty. The circular provides a method for determining how sensitive outcomes are to changes in assumptions.

<sup>15</sup> A lower mail-back response rate means that more costly nonresponse follow-up activities are needed to obtain census data from a household.

**Figure 4: Bureau's June 2001 Estimating Methodology for Census 2010 Life Cycle Costs**



Source: GAO analysis of U.S. Census Bureau figures.

The projected costs and savings of repeating the 2000 design versus the Bureau's approach based on the three-legged stool, are shown in table 2.

**Table 2: Projected Costs from June 2001 Estimate of Reengineering the 2010 Census**

Dollars in millions

<b>Budget frameworks</b>	<b>Repeated 2000 Census design (baseline)</b>	<b>Reengineered 2010 Census (three-legged stool)</b>	<b>Savings (increases)</b>
Program Development and Management	183	247	(64)
Data Content and Products	765	705	60
Field Data Collection and Systems	7,880	5,640	2,240
Address List Compilation	610	455	155
Automated Data Processing	1,265	840	425
Testing, Evaluation, and Rehearsal	391	467	(76)
Island Areas	163	153	10
Marketing and Communications	468	518	(50)
ACS		1,720	(1,720)
MAF/TIGER		535	(535)
<b>Total</b>	<b>11,725</b>	<b>11,280<sup>a</sup></b>	<b>445</b>

Source: U.S. Census Bureau.

Note: ACS and MAF/TIGER modernization spending is not included under the scenario of repeating the 2000 Census design for the 2010 Census.

<sup>a</sup>The Bureau revised its estimates in April 2003, but we did not have the breakdown by budget framework to revise this table.

Transparent information is especially important since decennial cost estimates are sensitive to many key assumptions. In fact, for the 2000 Census, the Bureau's supplemental funding request for \$1.7 billion in fiscal year 2000 primarily involved changes in assumptions related to increased workload, reduced employee productivity, and increased advertising.

Given the cost estimates' sensitivity to key assumptions, greater transparency could be obtained by showing the range and likelihood of how true cost drivers could differ from those assumed and how those differences would affect estimates of total cost. Thus, if early research and testing show that response rates may be higher than originally anticipated, or that enumerator productivity could be better than expected, the Bureau can report on the nature of its changing assumptions and its effect on life cycle costs. Also important, by providing information on the likely accuracy of assumptions concerning cost drivers, the Bureau would better enable Congress to consider funding levels in an uncertain environment.

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Other key areas in which changes in assumptions can greatly affect costs are salary rates for enumerators, the future price of handheld mobile computing devices, and inflation.

Our prior work has described how agencies provide supporting information when developing budget assumptions. For example, the Nuclear Regulatory Commission identifies a basis and a certainty level for its budget assumptions used for internal reporting. A basis summarizes the facts that were evaluated to justify the assumption, while a certainty level depicts the likelihood of its occurrence as high, medium, or low.<sup>16</sup>

Finally, it is important to have timely cost information for congressional decision making. The Bureau's life cycle estimates were updated in April 2003 after being first presented in June 2001—nearly a 2-year interval. In addition, when we requested additional information on life cycle costs the Bureau took several months to provide information on its life cycle cost estimates and assumptions, ultimately revising its total cost estimates before providing us with the data.

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## 2010 Planning Process Is Better Than Past Efforts, but Rigor Is Uneven

The Bureau has taken several positive steps to correct problems encountered planning past censuses, and the Bureau appears to be further along in planning the 2010 Census than at this same point during the 2000 Census cycle. Although an improvement over past efforts, the Bureau's 2010 planning process still contains certain weak points that if not addressed could undermine a cost-effective head count and make it more difficult to obtain the support of Congress and other stakeholders.

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## The Bureau Improved Its Planning Process, but Key Elements Are Still Lacking

The characteristics of the census—long-term, large-scale, high-risk, costly, and politically sensitive—together make a cost-effective enumeration a monumental project management challenge, one that demands meticulous planning. To help determine the principal ingredients of successful project planning, we reviewed a number of guides to project management and business process reengineering. Although there is no one best approach to

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<sup>16</sup> U.S. General Accounting Office, *Managing for Results: Efforts to Strengthen the Link Between Resources and Results at the Nuclear Regulatory Commission*, [GAO-03-258](#) (Washington, D.C.: Dec. 10, 2002).

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project planning, the guides we reviewed contained many elements in common, including the following:

- Developing a project plan. The plan should consider all phases of the project and should have clear and measurable goals; all assumptions, schedules, and deadlines clearly stated; and needed skills and resources identified.
- Evaluating human resource implications. This includes assessing needed competencies and how they will be acquired and retained.
- Involving stakeholders and incorporating lessons learned. Stakeholders—both internal and external to an organization—have skills and knowledge that could contribute to a project and should be involved in the decision-making process. An organization should focus on the highest priority stakeholder needs and mission goals. Evaluating past performance and capitalizing on lessons learned is also important for improving performance.
- Analyzing and mitigating risks. This involves identifying, analyzing, prioritizing, and documenting risks. Ideally, more than one alternative should be assessed.
- Monitoring progress. Measurable performance goals should be identified and performance data should be gathered to determine how well the goals are being achieved.

The Bureau has made considerable progress in planning the 2010 Census, and some of the positive steps taken to date include the following efforts.

- Early in the decade, senior Bureau staff considered various goals for the 2010 Census and articulated a design strategy to achieve those goals. Senior Bureau officials collaborated on this initial design plan to set the stage for further refinements during later field testing and research activities.<sup>17</sup>

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<sup>17</sup> Details are documented in U.S. Census Bureau, Decennial Management Division, *Reengineering the Decennial Census: The Vision of a Baseline Design for 2010* (Washington, D.C.: January 2003).

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- The Bureau has involved experienced staff in the design process through cross-divisional planning groups. Staff involved in these planning groups will ultimately be responsible for implementing the 2010 Census. According to Bureau officials, this is a departure from the 2000 Census planning effort when Bureau staff with little experience in conducting the census played a key role in designing the decennial census, which resulted in impractical reforms that could not be implemented.
  - The Bureau has recognized the importance of strategically managing its human capital to meet future requirements. The planning and development of the 2010 Census will take place at a time when the Bureau could find itself experiencing substantial employee turnover (three senior Bureau managers left the agency in 2002, and according to a report by the Department of Commerce Inspector General, the Bureau could lose through retirement around half of the senior staff who carried out the 2000 Census).<sup>18</sup> The Bureau, as part of a broader risk assessment, plans to provide less experienced staff the opportunity to obtain operational experience prior to the actual 2010 Census. In addition, the Bureau has provided training in project management and has encouraged staff to take training courses in management and planning.

However, other aspects of the Bureau's 2010 planning process could be improved. A more rigorous plan would better position the Bureau to fulfill its key objectives for the 2010 Census and help demonstrate to Congress and other stakeholders that it can effectively design and manage operations as well as control costs.

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<sup>18</sup> U.S. Department of Commerce, Office of Inspector General, *Improving Our Measure of America: What Census 2000 Can Teach Us in Planning for 2010*, OIG-14431 (Washington, D.C.: Spring 2002).

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## Developing a Project Plan

Although the Bureau has developed project plans for some of the key components of its 2010 strategy, the Bureau has not yet crafted an overall project plan that (1) includes milestones for completing key activities; (2) itemizes the estimated cost of each component; (3) articulates a clear system of coordination among project components; and (4) translates key goals into measurable, operational terms to provide meaningful guidance for planning and measuring progress. OMB Circular A-11<sup>19</sup> specifies that an agency's general goals should be sufficiently precise to direct and guide agency staff in actions that carry out the agency's mission and aid the agency in developing annual performance goals.

The importance of this information for improving accountability and performance can be seen, for example, in the Bureau's principal goal to increase coverage and accuracy. Though laudable, the Bureau has yet to assign any numbers to this goal. This makes it difficult to evaluate the costs and benefits of alternative designs, determine the level of resources needed to achieve this goal, measure the Bureau's progress, or hold managers accountable for results.

Bureau managers provided us with several documents that pieced together present 2010 Census goals and strategies, life cycle costs, and schedules, but no single, comprehensive document exists that integrates this information. For example, the Bureau's life cycle cost estimates and information on its performance goals were contained in two separate documents, making it hard to see the connection between cost and the Bureau's objectives. Likewise, a draft document, entitled *2010 Reengineered Census Milestone Schedule*, included various milestones by fiscal quarter, but did not contain information on dependencies and interrelationships among the various aspects of the project.

In its 2001 letter to the Bureau's acting director, the National Academy of Sciences' (NAS) Panel on Research on Future Census Methods raised similar concerns about the need for a coherent project plan. The panel noted that it wanted "to see a clearer case for components of the 2010 census strategy, itemizing the goals, costs, and benefits of each initiative and indicating how they integrate and contribute to a high quality census." To that end, NAS recommended that the Bureau develop what it called a business plan for 2010.

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<sup>19</sup> OMB Circular A-11, as revised July 2003, provides guidance to agencies on budget preparation, performance reporting, and capital asset acquisition.



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## Incorporating Lessons Learned

The Bureau is making an effort to develop and incorporate the lessons learned from the 2000 Census and, in fact, created an elaborate evaluation program to help inform this effort. Moreover, the Bureau chartered 11 planning groups consisting of knowledgeable census staff (see app. III for the 2010 planning organization). However, the Bureau's ability to build on the results of 2000 could be hampered by the fact that while the evaluation program assessed numerous aspects of the census, the Bureau still lacks data and information on the performance of key census activities, as well as on how specific census operations contributed to two of the Bureau's key goals for 2000: improved accuracy and cost-effectiveness.

For example, as noted earlier, the cost of the 2010 Census is increasing relative to 2000 partly because the Bureau expects nonresponse follow-up enumerators will be less productive in 2010. Because of various societal factors, it will simply take enumerators more time to complete their work. And yet, despite the importance of accurate productivity data to inform the Bureau's planning and budgeting processes for 2010, the Bureau had trouble obtaining quality productivity data following the 2000 Census. Although the Bureau later committed additional resources to refine the numbers, the adjustment was coarse and addressed just one of the two known problems. Moreover, because of differences in the way the Bureau measured staffing levels and hours worked from census to census, none of the productivity data from the last few censuses are comparable.<sup>20</sup>

Another area in which the Bureau lacks useful performance information is in the extent to which the dozen or so separate activities used to build MAF in 2000 contributed to its overall accuracy relative to one another. Without this information, the Bureau has limited data with which to guide investment and trade-off questions for 2010, such as which activity provided the biggest "bang for the buck" and should thus be repeated, or whether it would be more effective for the Bureau to improve accuracy and coverage by putting more resources into MAF-building activities or some other operation altogether, such as marketing.

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<sup>20</sup> For more information on the difficulties the Bureau encountered generating reliable productivity data, see U.S. General Accounting Office, *2000 Census: Better Productivity Data Needed for Future Planning and Budgeting*, [GAO-02-4](#) (Washington, D.C.: Oct. 4, 2001).

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To date, the Bureau's planning groups have incorporated a variety of lessons learned from the evaluations of the 2000 Census. As an example, the Coverage Improvement Planning Group observed an increase in inconsistent responses from 2000 Census compared to the previous census (e.g., some questionnaires were marked "uninhabited," but individuals were enumerated at the sites). According to a Bureau official, one hypothesis for the higher rate of inconsistent responses was that enumerators were encouraged to fill in information even when not all of the relevant information was known. The Bureau plans to address this issue by building in "edits" to its planned handheld mobile computing devices so that inconsistent data cannot be entered.<sup>21</sup> In addition, the Coverage Improvement Planning Group also looked at the 2000 Census experience to provide recommendations for the Bureau's 2004 test.

## Analyzing and Mitigating Risks

Risk management is important for preparing for contingencies or changes in the external operating environment. At the time of our review, the Bureau had completed a risk assessment of some aspects of its operations as part of its OMB Circular A-11, Exhibit 300 submission,<sup>22</sup> and for certain aspects of the reengineering efforts.<sup>23</sup> However, the Bureau had not developed a risk assessment that addressed the entire 2010 Census, including ACS and the MAF/TIGER modernization.

The risk assessment for the reengineering effort uses a consistent scoring system to assess the severity of the risks identified and addresses various contingencies and mitigation strategies, such as preparing for the retirement of key personnel and using succession planning to offset the attrition. The scoring system and how it was applied is clearly described in the plan, making it easy to evaluate the way it was used.

However, the assessment does not provide extensive detail on the mitigation actions proposed. Also, it does not indicate how risks were identified and whether any risks were excluded. A notable exclusion was that it did not address the risks if ACS or MAF/TIGER fail or are not funded and the impact this might have on the census as a whole.

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<sup>21</sup> For example, if an address is noted to be vacant, an error message will appear if the enumerator attempts to count people at that address.

<sup>22</sup> Exhibit 300 is a capital asset plan required under OMB Circular A-11, Section 300.

<sup>23</sup> U.S. Census Bureau, Decennial Management Division, *2010 Decennial Census Risk Management Plan* (Washington, D.C.: Mar. 4, 2003).

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As mentioned earlier, the Bureau's three-legged stool strategy assumes that all three legs must work together to achieve its goals. One of the reasons for doing a risk analysis is to prepare to make trade-offs when faced with inevitable budgetary pressures, operational delays, or other risks. Lacking information on trade-offs, the Bureau maintains that its only alternative to the reengineering is to repeat the 2000 Census design, an approach that Bureau officials believe will be extremely expensive.

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## Conclusions

The obstacles to conducting a cost-effective census have grown with each decade, and as the Bureau looks toward 2010, it confronts its biggest challenge yet. Consequently, the Bureau will need to balance the growing cost, complexity, and political sensitivity of the census with meticulous planning. As the Bureau's past experience has shown, early investments in planning can help reduce the costs and risks of its downstream operations.

Moreover, a rigorous plan is essential for securing early agreement between the Bureau and Congress on the Bureau's fundamental strategy for 2010. Congressional support—regardless of whether the Bureau's current approach or an alternative is ultimately selected—is crucial for creating a stable environment in which to prepare for the census and avoiding a repeat of the 2000 Census when disagreement over the Bureau's methodology led to late design changes and additional costs and risks. The Bureau has laid out an ambitious schedule of planning, testing, and evaluation for the coming years, culminating with a "dress rehearsal" in 2008. While midcourse corrections are to be expected as a result of these efforts, it will be important for the Bureau to proceed with as few alterations to its fundamental strategy as possible so that all of the operations used in 2010 have been thoroughly road tested.

The Bureau appears to be further along in planning the 2010 Census compared to a similar point during the 2000 Census cycle, and its efforts to enhance past planning practices are commendable. Focusing its activities on early design, research, and testing and organizing its reengineering activities around cross-divisional planning groups, are just some of the noteworthy improvements the Bureau has made.

However, the Bureau's plans for 2010, while not unreasonable on the surface, lack a substantial amount of supporting analysis, budgetary transparency, and other information, making it difficult for us, Congress, and other stakeholders to properly assess the feasibility of the Bureau's

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design and the extent to which it could lead to greater cost-effectiveness compared to alternative approaches.

Questions surrounding the Bureau's underlying budget assumptions; uncertainties over ACS; the failure to translate key goals into measurable, operational terms; and the lack of important performance data from the 2000 Census to inform 2010 decision making are just some of the problematic aspects of the 2010 planning process. More than simply paperwork or documentation issues, this information is essential for improving the performance and accountability of the Bureau and of the decennial census in particular.

To be sure, some challenges are to be expected in an endeavor as demanding as counting a population that is mobile and demographically complex and whose members reside under a multitude of living arrangements. Further, shortcomings with prior censuses call for the Bureau to consider bold initiatives for 2010 that entail some risk. However, if Congress is to accept and fund the Bureau's approach—now estimated at more than \$11 billion—then the Bureau needs to more effectively demonstrate that it has (1) selected a design that will lead to the most cost-effective results and (2) establish a rigorous capacity to manage risks, control costs, and deliver a successful head count. Moreover, to ensure the nation uses the best available data, it will be important for the Bureau to research procedures that would allow it to adjust census results for purposes for which it is both legal and appropriate to do so, if it is determined that the adjusted figures would provide greater accuracy than the enumeration data. Such procedures could function as a safety net should there be problems with the initial census count.

It will also be important for policymakers to consider, early in the decade, the long-term costs associated with the census and finding the right balance between controlling mushrooming costs and improving accuracy. Although initial spending on the census is relatively low, it will accelerate in the years ahead, culminating with a balloon payment in 2010 when data collection and other costly operations take place. Greater fiscal transparency prior to getting locked into a particular level of spending could help inform deliberations on the extent to which (1) the cost of the census is reasonable, (2) trade-offs will need to be made with competing national priorities, and (3) additional dollars spent on the census yield better quality data.

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Just over 6 years remain until Census Day 2010. While this might seem like an ample amount of time to shore up the Bureau's planning process and take steps to control costs, past experience has shown that the chain of interrelated preparations that need to occur at specific times and in the right sequence leave little room for delay or missteps.

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## Recommendations for Executive Action

To help control the cost of the 2010 Census and inform deliberations on the acceptability of those costs, we recommend that the Director of the Office of Management and Budget take steps to ensure that the Bureau improves the transparency of the fiscal exposure associated with the census. Specifically, OMB should ensure that the Bureau, in a notational item in the Program and Financing schedule of the President's budget, include an updated estimate of the life cycle costs of the census and the amount of money the Bureau expects to spend in each year of the cycle, as well as an explanation of any material changes from previous plans. The information should also contain an analysis of the sensitivity of the cost figures to specific assumptions, including a range of values for key cost assumptions, their impact on total cost estimates of the census, the likelihood associated with those ranges, and their impact on the total estimated cost of the census.

As part of this process, OMB should establish triggers that would signal when the yearly 2010 Census costs, total 2010 Census costs, or both exceeded some predetermined amount. In such instances, the Bureau should then be required to prepare a special report to Congress and OMB justifying why the additional costs were necessary and what alternatives were considered.

Further, to enhance the Bureau's performance and accountability, as well as to help convince Congress and other stakeholders that the Bureau has chosen an optimum design and will manage operations and control costs effectively, we recommend that the Secretary of Commerce direct the Bureau to improve the rigor of its planning process by developing an operational plan that consolidates budget, methodological, and other relevant information about the 2010 Census into a single, comprehensive project plan that would be updated as needed. Individual elements could include

- specific performance goals, how the Bureau's efforts, procedures, and projects would contribute to those goals, and what performance measures would be used;

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- risk and mitigation plans that fully address all significant potential risks;
  - detailed milestone estimates that identify all significant interrelationships; and
  - annually updated life cycle cost estimates, including a sensitivity analysis, and an explanation of significant changes in the assumptions on which these costs are based.

Moreover, to help ensure that the nation has at its disposal the best possible data should there be problems with the quality of 2010 Census, the Bureau, with input from both majority and minority parties in the Senate and House of Representatives, should research the feasibility of procedures that could allow it to adjust census results for those purposes for which it is both legal and appropriate to do so and, if found to be feasible, test those procedures during the 2006 census test and 2008 census dress rehearsal.

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## Agency Comments and Our Evaluation

The Secretary of Commerce forwarded written comments from the U.S. Census Bureau on a draft of this report that we received November 6, 2003. The comments are reprinted in appendix I. The Bureau generally disagreed with many of our key findings, conclusions, and recommendations.

The Bureau believes that the report, in its discussion of escalating census costs, ignores the fact that a key cost driver is stakeholders' demand for better accuracy. We agree with the Bureau that its mandate to count each and every resident in the face of countervailing societal trends is an important reason for the cost increases. As we noted in the report, societal changes have reduced the cost-effectiveness of the census, and it has become more and more difficult to stay on par with the results of previous enumerations. Similarly, we stated that "the legal requirement to count everyone leads the Bureau to employ operations that only marginally improve coverage but that are relatively expensive to conduct."

Further, we do not, as the Bureau asserts, treat the cost issue in a vacuum, and agree with the Bureau that little would be gained by focusing on the cost of the 2010 Census alone. Rather, any deliberations on the 2010 Census need to focus on how changes in spending on the census might affect the quality of the count. Our draft report emphasized this exact point noting that "The growing cost of the head count, at a time when the nation

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is facing historic budget deficits, highlights the importance of congressional deliberations on the extent to which each additional dollar spent on the census results in better data, as well as how best to balance the need for a complete count, with the need to ensure the cost of a complete count does not become unreasonable.” Similarly, we concluded that “it will also be important for policymakers to consider, early in the decade, the long-term costs associated with the census and finding the right balance between controlling mushrooming costs and improving accuracy.”

The Bureau also believes the report implies that the cost increases are caused by the reengineering effort. Our draft report did not state, nor did we intend to imply, that the reengineering effort would cause most of the projected cost increases for the 2010 Census. In fact, our report even notes that the Bureau's reengineering strategy has the potential to reduce costs relative to a design that would repeat the Census 2000 approach. To help clarify this point, we added text that describes how a repeat of the 2000 approach would be more costly than the reengineered design, according to Bureau estimates.

The Bureau disagreed with our recommendation to OMB regarding the need for greater budgetary transparency, noting that the real reason for the vagueness of out-year cost estimates stems from a fundamental difference of opinion between the administration and Congress over the appropriate time to share that information. We believe that it is important for the administration to provide details of out-year cost projections for the decennial census for the reason stated in our draft report: annual budget requests and reports provided to Congress early in the decennial census life cycle do not reflect the full cash consequences of the spending in later years of the decade. We understand that the Bureau has followed the administration's guidance on providing out-year cost estimates; this is also why we directed our recommendation for greater fiscal transparency to OMB, which we discuss in greater detail below.

The Bureau disagreed with our recommendation to improve the rigor of its planning process by developing an operational plan that consolidates budget, methodological, and other relevant information into a single, comprehensive project plan. The Bureau noted that these documents already exist and are widely available, and the Bureau already shares them with Congress, us, the National Academy of Sciences (NAS) Panel on Research on Future Census Methods—the panel responsible for reviewing the census, and other stakeholders.

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While we agree with the Bureau that some of this information is available (and we noted this fact in our draft report), it is piecemeal—one can only obtain it by cobbling together the Bureau’s budget submission, its strategic plan, and several other documents, and even then, key information such as performance goals would still be lacking. Further, although the Bureau notes that it has provided this information to the NAS panel, as we stated in our report, NAS, like us, also found the information wanting. As we described in the report, the panel shared our concerns over the need for a coherent project plan, and called on the Bureau to develop a business plan that among other things, itemized the goals, costs, and benefits of each census component and a describes how they contributed to a high-quality census. Whether it is called a business plan or a project plan, such information is not, as the Bureau maintains, simply “more process.” Quite the contrary, this information is essential for improving performance; facilitating a thorough, independent review of the Bureau’s plans; and demonstrating to Congress and other stakeholders that the Bureau can effectively design and manage operations and control costs.

The Bureau incorrectly asserts that our report criticizes it for not completing the evaluations of the 2000 Census in a timely manner. Our report did not address this matter, although NAS’s *Second Interim Report on Planning the 2010 Census* urged the Bureau to “give high priority to evaluation studies” and complete them as expeditiously as possible. We agree that the Bureau’s planning staff do have access to the draft evaluations, and in fact, we noted in the report that they are using them in planning for the 2010 Census.

The key point, however, is the Bureau’s ability to build on the results of the 2000 Census. This could be hampered by the fact that while the evaluation program assessed numerous aspects of the census, the Bureau still lacks data on the performance of key census activities as well as how specific census operations contributed to two of the Bureau’s key goals for 2000: improved accuracy and cost-effectiveness.

The Bureau agreed with us that it is important to bring closure to the discussion on whether and how coverage measurement will be used in the 2010 Census. However, the Bureau believes that the approach used for the 2000 Census proved that it was not feasible to produce a final analysis of coverage measurement in time to meet redistricting requirements. We agree with the Bureau’s assessment that the coverage measurement approach used in the 2000 Census needs to be reworked. However, this should not preclude it from researching alternative approaches for the 2010



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Census in light of the fact that the Bureau's ability to maintain the level of quality reported for the 2000 Census is less than certain.

Finally, the Bureau questioned our assessment that the only contingency plan for conducting the 2010 Census, if the reengineered effort fails, was to fall back on the Census 2000 methods. The Bureau maintains that the 2000 Census was by most accounts a very successful census and, accordingly, the Bureau already has available the methods and procedures for taking an excellent census. Our report does not advocate the development of another set of census methods. Rather, we were trying to illustrate the challenge the Bureau faces in implementing its reengineering plans, where the failure of any one leg could compromise the other two, thereby requiring the Bureau to rely on the approach it used for the 2000 Census. According to Bureau officials, this in turn could make it difficult for the Bureau to accomplish its goals for the 2010 Census, which include cost containment and better quality data.

On October 14, 2003, the Associate Director for General Government Programs, OMB, provided written comments on a draft of this report, which are reprinted in appendix II. OMB shared our view that the costs and risks associated with the 2010 Census must be carefully monitored and evaluated throughout the decade. OMB also agreed that it is essential to understand the key cost drivers and said that it is working with the U.S. Census Bureau to ensure that the Bureau develops high-quality, transparent life cycle cost estimates.

However, OMB disagreed with our recommendation that it ensure that the Bureau, include a notational item in the Program and Financing (P&F) schedule of the President's Budget with an updated estimate of the life cycle costs of the census and the amount of money the Bureau expects to spend in each year of the cycle, as well as an explanation of any significant changes from previous plans. OMB believes that the Bureau's report on the life cycle costs, which is updated regularly, is the best mechanism to present estimates of the total life cycle costs and explanations for any material changes from previous plans. Further, OMB noted that presenting this information in the P&F schedule is cumbersome and unnecessary because the Analytical Perspectives volume of the President's Budget currently shows out-year estimates that incorporate anticipated programmatic changes of the Decennial Census within the Periodic Censuses and Program account.

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As noted in our report, we do not believe the information OMB currently reports to Congress is sufficiently timely or detailed to provide the level of transparency needed for effective congressional oversight and cost control. Indeed, while OMB cites the Bureau's life cycle report, the document that we reviewed for this report took the Bureau nearly 2 years to revise. Moreover, the revised estimates, like the original estimates, overstated the life cycle cost estimate by \$300 million because the Bureau did not take into account a surplus of that amount that it identified near the end of fiscal year 2000. Although the Bureau is to reissue the 2010 life cycle cost estimates early in calendar year 2004, the incorrect estimates will have been in circulation for more than 2 years.

Additionally, the information contained in the Analytical Perspectives volume of the President's Budget is limited. For example, it only provides information on out-year estimates for 5 years. As a result, the volume will not include estimates for the high-cost year of 2010 until the release of the President's fiscal year 2006 budget. Further, the Analytical Perspectives volume lacks information on the sensitivity of cost figures to specific assumptions and the likelihood of these estimates. It also does not contain any explanations of changes in cost estimates from year to year. Complete and transparent information on out-year costs is important to inform deliberations on the acceptability of these costs and to ensure that Congress understands the possible range of census life cycle costs.

OMB also disagreed with our recommendation to establish triggers to signal when the yearly 2010 Census costs, total 2010 Census costs, or both exceeded some predetermined amount. OMB noted that it has established internal procedures within its budget reviews to monitor 2010 Census costs and believes they are sufficient for ensuring that estimates are not exceeded without clear justification. OMB added that this justification could be included in the Bureau's updates to its life cycle cost estimates.

Although OMB's internal procedures might be sufficient for OMB's requirements, they do little to address the fundamental need for greater fiscal transparency. Continued reliance on these procedures would inhibit independent review by congressional and other external stakeholders, as well as limit informed discussion of the trade-offs of dollars versus accuracy and what cost control measures, if any, might be needed to make the 2010 Census more affordable.

In closing, OMB commented that the Bureau's reengineering plan is being reviewed by NAS as well as seven advisory committees. OMB stated that

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the analyses stemming from these reviews, such as NAS's recently issued report on census planning, enhance the Bureau's accountability and help ensure "that the ultimate 2010 Census design is optimal."

We agree with OMB that NAS and the advisory committees are important for reviewing the Bureau's plans and holding the Bureau accountable for a cost-effective census in 2010. And this is precisely why we made the recommendations that we did. Without a transparent budgeting and planning process, a thorough, independent review by these and other external groups would be difficult to impossible. That greater transparency is needed in both these areas is highlighted not just in our report, but in the very NAS study that OMB cites. Indeed, NAS found that "a major conclusion of the panel is that discussion of the 2010 Census design needs to be more fully informed by the evaluation of various trade-offs—the costs and benefits of various reasonable approaches in order to make wise decisions."<sup>24</sup>

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As agreed with your offices, unless you release its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time we will send copies to other interested congressional committees, the Secretary of Commerce, the Director of the U.S. Census Bureau, and the Director of the Office of Management and Budget. Copies will be made available to others upon request. This report will also be available at no charge on GAO's Web site at <http://www.gao.gov>.

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<sup>24</sup> National Research Council, Panel on Research on Future Census Methods, Committee on National Statistics, *Planning the 2010 Census: Second Interim Report* (Washington, D.C.: 2003).

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If you or your staff have any questions concerning this report, please contact me at (202) 512-6806 or [daltonp@gao.gov](mailto:daltonp@gao.gov) or Robert Goldenkoff, Assistant Director, at (202) 512-2757 or [goldenkoffr@gao.gov](mailto:goldenkoffr@gao.gov). Key contributors to this report were Richard Donaldson, Ty Mitchell, Robert Yetvin, and Christine Bonham.



Patricia A. Dalton  
Director  
Strategic Issues

# Comments from the Department of Commerce



**THE SECRETARY OF COMMERCE**  
Washington, D.C. 20230

October 9, 2003

Ms. Patricia A. Dalton  
Director, Strategic Issues  
U.S. General Accounting Office  
Washington, DC 20548

Dear Ms. Dalton:

The U.S. Department of Commerce appreciates the opportunity to comment on the U.S. General Accounting Office draft report entitled *2010 Census: Cost and Design Issues Need to Be Addressed Soon*. I enclose the Department's comments on this report.

Sincerely,

A handwritten signature in black ink, appearing to read "D. L. Evans".

Donald L. Evans

Enclosure

Enclosure

**Comments from the U.S. Department of Commerce,  
U.S. Census Bureau, Regarding the U.S. General Accounting Office (GAO) Draft  
Report Entitled *2010 Census: Cost and Design Issues Need to Be Addressed Soon***

**General Comments on the Report**

Thank you for providing the opportunity to comment on your draft report, 2010 Census: Cost and Design Issues Need to Be Addressed Soon.”

First, the discussion about the escalating costs of census programs over recent decades completely ignores one of the major drivers of cost increases since the inception of revenue sharing in 1970—namely, the ever-increasing demands for improved coverage accuracy made by the Congress; state, tribal, and local governments; advisory committees; and other stakeholders. If the GAO believes the Congress and others need to have a serious conversation about whether this Nation can afford to spend over \$11 billion for the next decennial census program, then the conversation must begin by asking if “perfect” coverage still must be the goal. Very little will be gained from these conversations if cost is treated in a vacuum or as the only dimension.

Second, the Bureau is concerned with the fact that the report’s discussion of the estimated \$11.3 billion cost for the reengineered 2010 census program is presented in a way that implies that much of the increase from 2000 will be caused by the reengineering effort. In fact, the Bureau currently estimates that repeating the Census 2000 approach would cost much more—\$12.2 billion—and that the reengineering effort will reduce this by nearly \$1 billion.

Third, the Bureau disagrees with most of the report’s assertions about an alleged lack of transparency in budget details for later years in the decade. We believe these assertions are misdirected—the underlying issue stems from a fundamental difference of opinion between the Administration and the Congress about the appropriate time to share detailed outyear cost estimates. In this same vein, the Bureau disagrees with the report’s recommendations regarding the Director of the Office of Management and Budget (OMB) suggesting that we display updated estimates of census life-cycle costs and the amount of money that we expect to spend in each year of the cycle, as a note in the Program and Financing schedule of the President’s budget. This recommendation implies that the Bureau is unwilling to share such outyear cost information.

Fourth, the Bureau strongly disagrees with the report’s finding that the 2010 planning process is somehow lacking because all of the key documents about goals, assumptions, and plans are not combined in a single, comprehensive document. These key documents exist and are widely available; the Census Bureau has shared them with the GAO, the Congress, the OMB, advisory committees, and any other stakeholders expressing interest

in these matters. Recipients include the National Academy Panel mentioned in the report, which received these documents earlier this year.

The Bureau is confident that no prospective census in history has ever been as thoroughly documented regarding goals and methods this early in the decade. We thus disagree with GAO's recommendation for the Secretary of Commerce to establish a new documentation process to ensure that the Department and the OMB are kept informed of plans and progress about the 2010 census program. Such a process already exists, and the Secretary and the OMB already receive a great deal of information each year through that process, primarily via the annual budget submission (including Exhibit 300, *Capital Asset Plan and Business Case* for information technology), through regular updates to the Department's and Census Bureau's Strategic Plan, through the Annual Performance Plan process, and now through the OMB's new Program Assessment and Rating Tool process. Yet more "processes" would only serve to delay and to increase the costs of 2010 census planning.

Fifth, the report criticizes the Census Bureau because a number of evaluations from Census 2000 have not been completed. The report asserts that these evaluations cannot be used to inform decisions for the 2010 census. However, the fact that a report is not final or published does not mean the information is unavailable to Census Bureau staff involved with the 2010 census planning efforts. Planning staff do have access to draft reports. In addition, many of these staff members were directly involved with the same operations in 2000, so they know many of the issues and experiences firsthand. It should also be noted that the Bureau conducted many more evaluations than in previous decades, yet has completed the evaluation program earlier than in any of those same decades.

Sixth, the Census Bureau plans to conduct research on coverage measurement methodologies for use in 2010. It also plans to test those methods in the 2006 Census Test and then use them in the 2008 Dress Rehearsal. As noted in the report, however, the Census Bureau believes it is not feasible to produce final analyses of coverage measurement data in time to meet legal deadlines. Further, the statutory deadline itself is not the only impediment to adjusting the census. Experience with Census 2000 demonstrated both that full assessment of the Accuracy and Coverage Evaluation (A.C.E.) data required time far beyond that required by states to meet redistricting requirements under any realistic scenario, and that the difficulties in uses of coverage measurement methodologies to improve the accuracy of census counts at the tract level may well be insurmountable.

We agree with the GAO that it is important to bring to closure at an early time the discussion on whether and how coverage measurement will be used in the 2010 census. An early conclusion of this matter is important. Therefore, the Director has spoken with interested Members of Congress, and the Bureau has clearly indicated through its budget process that it does not plan to seek funds for developing a coverage measurement procedure designed to be used to adjust data for redistricting purposes. The Census 2000

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**Appendix I**  
**Comments from the Department of**  
**Commerce**

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and A.C.E. was a definitive test of this approach and provided more than ample evidence that this goal cannot be achieved.

Finally, the Bureau is troubled by the report's assertion that the only contingency plan for conducting the reengineered 2010 census (that incorporates the American Community Survey, a GPS-aligned and modernized MAF/TIGER, and a short-form-only questionnaire) seems to be "falling back" to Census 2000 methods. Census 2000 was by most accounts a very successful census. Accordingly, the Bureau already has available the methods and procedures for taking an excellent census. As part of the reengineering effort, the Bureau is incorporating lessons learned from the Census 2000 evaluations and investigating improvements to those methods. There is no need, and certainly no time or resources available, to develop yet another set of census methods—different from those used in Census 2000—to serve as a contingency plan for the reengineering approach.



# Comments from the Office of Management and Budget



EXECUTIVE OFFICE OF THE PRESIDENT  
OFFICE OF MANAGEMENT AND BUDGET  
WASHINGTON, D.C. 20503

October 14, 2003

Ms. Patricia Dalton  
Director  
Strategic Issues Team  
US General Accounting Office  
Washington, DC 20548

Dear Ms. Dalton:

Thank you for the opportunity to comment on the draft report titled, "2010 Census: Cost and Design Issues Need to be Addressed" (GAO-04-37).

The 2010 Census will be an important investment, and we share GAO's view that the costs and risks must be carefully monitored and evaluated throughout the decade. In addition, we agree that it is essential to understand the key cost drivers and we are working with the Census Bureau to ensure development of high-quality, transparent, life cycle cost estimates.

We believe the Census Bureau's report on the life cycle costs, which is updated regularly, is the best mechanism to present updated estimates of the total life-cycle cost and an explanation of any material changes from previous plans. Presenting this information in the Budget's Program and Financing (P&F) schedules is cumbersome and unnecessary. The Analytical Perspectives volume of the President's Budget currently shows out-year estimates that incorporate anticipated programmatic changes of the Decennial Census within the Periodic Censuses and Programs (PC&P) account. These out-year estimates are not considered binding by the Administration. However, they serve as a general guideline for future Budget requests when the Administration could be faced with different resource constraints and national priorities.

We also do not agree that establishing triggers within the President's Budget is appropriate for this program. We have established internal procedures within our budget reviews to carefully monitor 2010 Census costs and believe they are sufficient for ensuring that estimates are not exceeded without clear justification. Further, this justification could be included within the Census Bureau's updates to the life cycle cost

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**Appendix II**  
**Comments from the Office of Management**  
**and Budget**

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report. In addition, the Census Bureau's reengineering plan is being reviewed by the National Academy of Sciences as well as seven advisory committees -- the Decennial Census Advisory Committee, five separate Race and Ethnic Advisory Committees, and the Census Advisory Committee of Professional Association. Analyses stemming from these reviews, such as the National Research Council's recently issued *Planning the 2010 Census, Second Interim Report*, serve to enhance the Bureau's accountability and to help ensure that the ultimate 2010 Census design is optimal.

Thank you again for providing us with a draft copy of the report to review and comment upon.

Sincerely,



Stephen S. McMillin  
Associate Director for  
General Government Programs

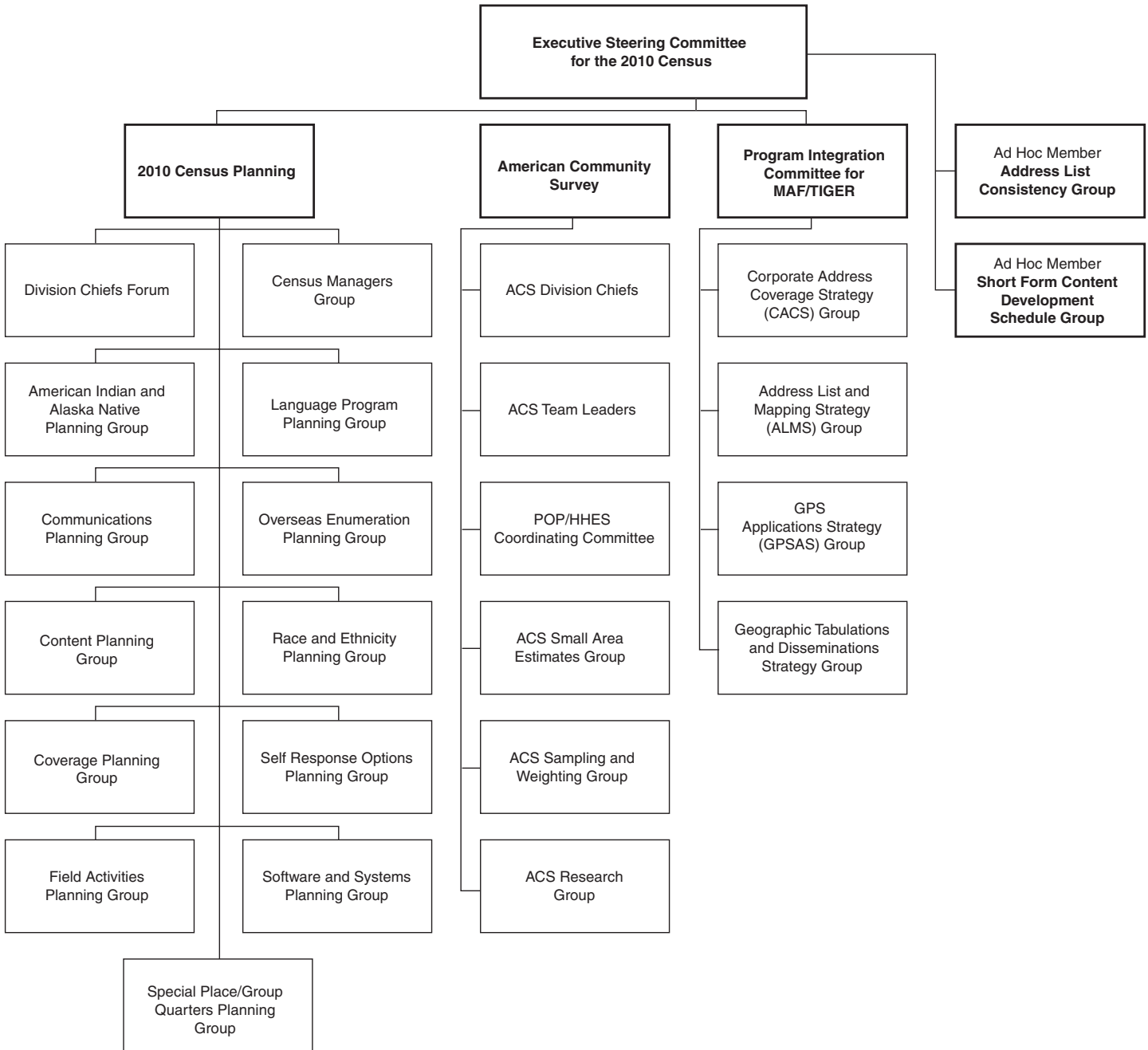
# 2010 Census Planning Organization

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The U.S. Census Bureau (Bureau) has given its Decennial Management Division responsibility for planning the 2010 Census, including the American Community Survey (ACS) and the Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) enhancements. The division established an executive steering committee, shown in figure 5, for this purpose.

**Appendix III  
2010 Census Planning Organization**

**Figure 5: Decennial Management Division's Organizational Structure for Planning the 2010 Census**



Source: U.S. Census Bureau.

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Each group under the 2010 Census planning organization has specific activities that it was charged with studying. Listed below are the research and development planning groups chartered at the time of our review and a list of these activities.

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**2010 Census Reengineering:  
Research and Development  
Planning Groups**

**The Content Planning Group**

- determines alternatives for question wording and order;
- develops consistent questions across multiple response modes;
- develops consistent forms design across multiple response modes;
- researches use of administrative records for missing data;
- researches and documents analysis of tabulated items' quality, including item response rate for misreported, underreported, or generally nonreported questions;
- researches other methods of imputing characteristics;
- researches information on administrative records and aggregate census tract modeling;
- explores attitudinal trends on the mailing package and questionnaire;
- develops alternative formats for race and Hispanic origin question layout;
- researches printing alternatives and new technologies;
- researches United States Postal Service requirements and alternative services related to addressing, barcodes, and delivery;
- coordinates content development and congressional approval of ACS;
- assesses appropriate questionnaire wording to ensure conformance with the enumeration and residence rules; and
- defines and assesses appropriate question wording for "usual home elsewhere" on any self-response and enumerator instrument(s).

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### **The Special Place/Group Quarters Planning Group**

- reviews definitions of housing units and group quarters, including transient locations, and where necessary, modifies the definitions to reflect current living arrangements to reduce census classification errors;
- determines the best methods for implementing housing unit and group quarters definitions in 2010 Census operations that reduce decennial census classification errors;
- determines what operations are required to improve the accuracy of the current Census 2000 inventory file and the geographic reference base, including geographic assignment;
- determines what coverage improvement operations are required to ensure complete coverage of special places and group quarters;
- develops a process that ensures the integration of special place/group quarters addresses with housing unit addresses and subsequent updates into the MAF/TIGER system;
- determines the appropriate enumeration methods for the group quarters population;
- determines the appropriate enumeration method for embedded housing units within special place/group quarters that will reduce 2010 Census error;
- determines improvements to the enumeration process, including appropriate requirements regarding the implementation of mobile computing devices;
- determines questionnaire requirements;
- assesses the quality of administrative records for the group quarters population and determines how and if administrative records should be incorporated into the enumeration process; and
- determines privacy issues, legal issues, or both and solutions and identifies a process to implement these findings into operational procedures.

### **The Self Response Options Planning Group**

- identifies the optimal mix of options, including mail, Internet, and telephone, by which the public can respond to the census;
- identifies options for accommodating responses by people who believe they have not been counted by the traditional methods;
- identifies messages and methods to inform, advertise, and motivate census questionnaire response in a multimode self-response environment;
- determines the optimal mailing strategy;
- identifies methods and options for delivering a replacement questionnaire;
- examines methods for making the identification number shorter and easier to handle;
- develops an integrated self-response that optimizes requirements from other program areas, such as language and self-initiated response requirements; and
- develops strategies for accommodating response by people with disabilities.

### **The Overseas Enumeration Planning Group**

- makes recommendations to the Bureau's executive staff on key policy issues, such as applying residence rules overseas, goals of counting Americans living overseas, the definition of this universe, and conducting a count that would take a different form than the stateside enumeration;
- determines possible methods for enumerating Americans overseas in accordance with decisions on the policy issues;
- determines the type of evaluations that will be conducted to assess the quality of data captured during this operation; and
- defines a process and plan for consultations with stakeholders.

### **The Field Activities Planning Group**

- determines the optimal fit of new technologies, such as mobile computing devices, within the enumeration methods and processes;
- determines the optimal and most cost-effective field infrastructure to support field activities;
- determines the possible enumeration methods, such as Update/Leave, Urban Update/Leave, and Update/Enumerate and their feasibility for the 2010 short-form-only census;
- determines how to apply the criteria established for the areas in which each type of enumeration method will be used;
- determines how best to target for special methods areas where mail delivery methods are not optimal, for example, areas where residents use post office boxes;
- determines the most effective special methods or tool kit approaches for enumerating housing units in hard to enumerate areas, such as gated communities;
- determines the most efficient use of the telephone data collection methodology to reduce personal field visits;
- determines the most effective management and implementation approach that will ensure integrated quality assurance in field activities;
- determines the best methodology for delineating assignment areas; and
- determines data requirements for field instruments relating to management and quality control needs.

### **The Coverage Planning Group**

- proposes content rules for identifying which addresses to include in the 2010 Census;
- proposes consistent and accurate approaches for improving matching rules to reduce duplication of addresses;



- determines the appropriate use of administrative records for MAF activities, such as targeting and/or updating MAF;
- determines areas in which MAF and TIGER need improvement;
- determines best methods for targeting areas that need updating;
- develops requirements for the positional accuracy of MAF/TIGER in coordination with the Global Positioning System Applications Strategy Group;
- defines and assesses methods to improve the address list and coverage of the 2010 Census after mail-out address file is final;
- defines criteria for determining the areas in which each type of enumeration method will be used;
- in coordination with the Special Place/Group Quarters Planning Group, develops a process that ensures the integration of special place/group quarters addresses with housing unit addresses and subsequent updates of the MAF/TIGER system;
- reviews the enumeration and residence rules, taking into consideration implementation issues, and recommends appropriate revisions;
- defines and assesses appropriate methods for dealing with usual home elsewhere situations on all questionnaires and instruments;
- determines methods for avoiding multiple listings of persons within and between households;
- determines methods for improving within household coverage, including the Be Counted program;
- develops thresholds reasonable for count imputations; and
- determines best count imputation method, including the use of spatial analysis tools, to determine locational relationships.

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### **The Software and Systems Planning Group**

- determines acceptable industry standards and practices for the software process;
- identifies and assesses alternative standards and practices for decennial applications for requirements development, software analysis and design, testing methods, quality assurance, configuration management, documentation of all components, and risk management;
- recommends standards and practices for the software process;
- identifies and assesses the need for a common data dictionary, including integrating it with the corporate meta-data project;
- recommends whether to develop a common data dictionary solution, and if adopted, develops a rationale for its use and defines its functional requirements;
- reviews deliverables and recommends requirements for the Technical Architecture and Infrastructure contract in preparation for development of the 2010 Census systems architecture;
- evaluates potential systems components;
- recommends approach for developing and selecting the 2010 Census physical architecture;
- recommends physical architecture solution;
- for mobile computing devices (MCD),
  - determines which operations will test the use of the MCDs,
  - determines what functionality will be employed in MCDs for testing,
  - determines which specific type(s) of MCDs and which software applications the Bureau will test, and
  - considers the implications for field infrastructure, particularly with respect to the technology needed to support MCD applications;

- for Internet response mode,
  - tests alternatives for validating/confirming receipt of census questionnaire/response,
  - researches and tests mechanisms for respondents to generate e-mail to the Bureau,
  - identifies options for e-mail to respondents with “census message,” questionnaire, or both,
  - researches and tests alternatives for serving multiple forms (such as those needed for the language program and overseas enumeration),
  - researches and tests use of census housing unit identification,
  - determines effective ways to maintain security,
  - researches and tests alternative interfaces, and
  - identifies alternatives for meeting accessibility needs;
- for high technology data collection modes,
  - researches ways to utilize Web television,
  - researches ways to utilize kiosks, and
  - identifies alternatives for meeting accessibility needs; and
- for telephone response modes,
  - researches and tests alternatives for initial response by voice recognition/IVR/touch tone/agent assisted,
  - tests alternatives for automated dial-up “census message,”
  - researches and tests alternatives for languages,
  - determines effective ways to maintain security, and
  - identifies alternatives for meeting accessibility needs.

### **The Communications Planning Group**

- determines how the public will be divided into groups in order to target specific messages;
- determines the most appropriate messages that will resonate with the Bureau's audiences and motivate them to respond and the strategies for creating a brand (name/image) for the Bureau;
- develops innovative strategies using 2000 Census and ACS data to reach the
  - hard to count population,
  - emerging populations,
  - rural communities, and
  - non-English-speaking populations;
- develops media strategies and messages for media outlets, operations that need specific advertising or publicity, and crisis communications management;
- considers 2010 Census cost implications; and
- determines the best methods for evaluating the effectiveness of the components of the integrated marketing strategy.

### **The Language Programs Planning Group**

- researches the availability, design, and use of bilingual forms;
- researches and develops alternative operational testing requirements for
  - alternatives for an English/Spanish mail-out questionnaire,
  - the languages the 2010 Census will support,
  - questionnaire assembly,

- process for requesting a questionnaire in a specific language,
  - questionnaire/guide distribution,
  - validation of a bilingual questionnaire,
  - alternatives for a bilingual enumerator instrument,
  - questionnaire data capture,
  - data entry for all collection modes,
  - accessibility for in-language respondents (Braille, audio, etc.), and
  - partnership responsibilities; and
- considers Advisory Committee lessons learned and recommendations.

#### **The Race and Ethnicity Planning Group**

- determines if revised instructions to the questions on race and Hispanic origin convey the federal government's distinction of race and Hispanic origin as two separate concepts that require responses that reflect the intent of each question;
- determines alternative wording to the questions on race and ethnicity;
- determines the type of analyses and evaluations needed to assess the quality of race and ethnicity data from the 2000 Census and ACS;
- determines if the exclusion of a "Some other race" response category in the question on race will affect race reporting;
- determines if changing the order of the race response categories affects race reporting;
- determines what effect the inclusion of examples for "Other Asian" and "Other Pacific Islander" have on race reporting;
- determines if the use of shortened response categories during telephone and other data collection modes will affect respondents' understanding of the response options;

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- determines whether alternative terminology (e.g., “Print race or races” instead of “Print category or categories”) will affect race reporting;
  - determines whether a revised Hispanic question that does not include “Spanish” as an identifier will increase reporting of specific Hispanic origin responses in the “Other Hispanic” response category; and
  - determines whether the inclusion of examples for detailed Hispanic groups will increase specified responses in the “Other Hispanic” response category.

**The American Indian and Alaska Native (AIAN) Planning Group**

- determines what enumeration methods will be tested in AIAN areas;
- determines outreach and partnership strategies for testing in AIAN areas;
- determines strategies and explores methodologies for improving coverage; and
- assesses developments or innovations needed for mapping and enumeration activities.

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