

June 2007

## 2010 CENSUS

# Census Bureau Has Improved the Local Update of Census Addresses Program, but Challenges Remain



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# Highlights

Highlights of [GAO-07-736](#), a report to congressional addressees

## Why GAO Did This Study

The Department of Commerce's (Commerce) U.S. Census Bureau (Bureau) seeks updated information on the addresses and maps of housing units and group quarters from state, local, and tribal governments through the Local Update of Census Addresses (LUCA) Program. Prepared under the Comptroller General's authority, this report assesses (1) the status of the LUCA Program, (2) the Bureau's response to prior recommendations by GAO and others and new challenges related to the program, and (3) the Bureau's plans for conducting the program in areas affected by hurricanes Katrina and Rita.

GAO reviewed LUCA program documents, met with and surveyed participants in the LUCA Dress Rehearsal, and interviewed Bureau officials and local officials in the Gulf Coast region.

## What GAO Recommends

GAO recommends that the Secretary of Commerce direct the Bureau to take several actions to improve the LUCA Program, including further testing the MAF/TIGER Partnership Software (MTPS) and the computer-based training (CBT) software to assess ease of use and establishing a schedule for plans for conducting address canvassing and related operations in hurricane-affected areas. In commenting on a draft of this report, Commerce generally agreed with GAO's recommendations and offered technical comments.

[www.gao.gov/cgi-bin/getrpt?GAO-07-736](http://www.gao.gov/cgi-bin/getrpt?GAO-07-736).

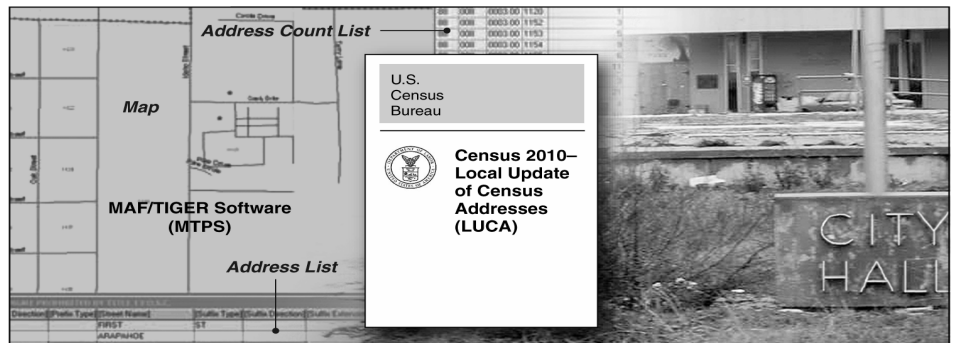
To view the full product, including the scope and methodology, click on the link above. For more information, contact Mathew J. Scire at (202) 512-6806 or [sciremj@gao.gov](mailto:sciremj@gao.gov).

## 2010 CENSUS

# Census Bureau Has Improved the Local Update of Census Addresses Program, but Challenges Remain

## What GAO Found

The Bureau has conducted its planned LUCA operations in accordance with its published timeline. The Bureau has also taken steps to reduce workloads and burdens and improve training for localities that participate in LUCA—all areas GAO and others had identified as needing improvement. For instance, to reduce participant workload and burden, the Bureau provided a longer period for reviewing and updating LUCA materials; provided options for submitting materials for the LUCA Program; combined the collection of LUCA addresses from two separate operations into one integrated program; and created MTPS, which is designed to assist LUCA Program participants in reviewing and updating address and map data. Also, the Bureau has planned improvements to the 2010 LUCA Program training (i.e., specialized workshops for informational and then technical training) and plans to supplement the workshops with CBT.



Source: GAO presentation of U.S. Census Bureau information, photo (GAO 2006).

Improvements made to LUCA program (such as MTPS), but challenges remain (such as uncertainty about the ability of localities in the Gulf Coast region to participate in LUCA).

However, the Bureau faces new challenges. For instance, the Bureau tested MTPS with only one local government. Other local officials we spoke with had problems converting Bureau-provided address files. In addition, the Bureau did not test its CBT software in the LUCA Dress Rehearsal. Additional challenges stem from the damage to the Gulf Coast region caused by hurricanes Katrina and Rita. Officials in localities in hurricane-affected areas questioned their ability to participate in the LUCA Program. The continuous changes in housing stock may hinder local governments' ability to accurately update their address lists and maps. The condition of the housing stock is likely to present additional challenges for the Bureau's address canvassing operation (in which the Bureau verifies addresses) in the form of decreased productivity for Bureau staff, workforce shortages, and issues associated with identifying vacant and uninhabitable structures. The Bureau created a task force to assess the implications of storm-related issues that proposed a number of mitigating actions. However, the Bureau has no plans for modifying the address canvassing operation or subsequent operations in the Gulf Coast region.

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## Abbreviations

BAS	Boundary and Annexation Survey
CBT	computer-based training
GPS	global positioning system
LUCA	Local Update of Census Addresses
MAF	Master Address File
MTPS	MAF/TIGER Partnership Software
NRC	National Research Council
TIGER	Topographically Integrated Geographic Encoding and Referencing

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United States Government Accountability Office  
Washington, DC 20548

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June 14, 2007

The Honorable Thomas R. Carper  
Chairman  
Subcommittee on Federal Financial Management, Government  
Information, Federal Services, and International Security  
Committee on Homeland Security and Governmental Affairs  
United States Senate

The Honorable Henry A. Waxman  
Chairman  
The Honorable Tom Davis  
Ranking Member  
Committee on Oversight and Government Reform  
House of Representatives

The Honorable Wm. Lacy Clay  
Chairman  
The Honorable Michael Turner  
Ranking Member  
Subcommittee on Information Policy, Census, and National Archives  
Committee on Oversight and Government Reform  
House of Representatives

The Honorable Carolyn B. Maloney  
House of Representatives

The decennial census is a constitutionally mandated activity undertaken by the U.S. Census Bureau (Bureau). The data that the census collects are used to reapportion the seats of the U.S. House of Representatives; redraw congressional districts; allocate billions of dollars each year in federal financial assistance; and provide a social, demographic, and economic profile of the nation's people to guide policy decisions at each level of government. Further, businesses use census data to market new services and products and to tailor existing ones to demographic changes.

To ensure it delivers quality data, the Bureau employs a number of quality assurance programs throughout the course of the census. One such program is the Bureau's Local Update of Census Addresses (LUCA) Program, which provides a mechanism for state, local, and tribal governments to contribute to complete enumeration of their jurisdictions

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by reviewing, commenting on, and providing updated information on the addresses and maps that the Bureau will use to deliver questionnaires within those communities.

The Bureau is testing the LUCA Program as part of the 2008 Census Dress Rehearsal in San Joaquin County, California, and nine counties in the area surrounding Fayetteville, North Carolina. Bureau officials state that they selected these sites to provide a comprehensive environment for demonstrating and refining planned 2010 Census operations, such as the LUCA Program and address canvassing.<sup>1</sup>

Because of the role LUCA plays in building complete and accurate address lists and maps, under the Comptroller General's statutory authority to initiate engagements, we reviewed the Bureau's LUCA Dress Rehearsal and 2010 LUCA Program. As agreed with your offices, we are providing this report to you, which contains information that will be useful for your oversight responsibilities of the decennial census. Our specific objectives were to (1) document the current status of the LUCA effort, (2) determine how the Bureau is addressing prior issues and new challenges associated with implementing the LUCA Program, and (3) examine how the Bureau is addressing the challenges in the areas affected by hurricanes Katrina and Rita that may affect the Bureau's successful implementation of the 2010 LUCA Program and related decennial census operations.

To address the first objective, we collected source documents from Bureau headquarters, the Charlotte Regional Office, and the Seattle Regional Office detailing the 2010 LUCA Program and LUCA Dress Rehearsal timelines. We also interviewed Bureau officials to determine the status of current operations for the 2010 LUCA Program and LUCA Dress Rehearsal. Finally, we visited and collected documents from 12 localities in California and North Carolina (the two LUCA Dress Rehearsal sites) to verify Bureau officials' testimonial evidence.

For the second objective, we reviewed recommendations for improving the LUCA Program that were found in reports by GAO, the National Research Council (NRC),<sup>2</sup> the Department of Commerce's (Commerce)

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<sup>1</sup> The address canvassing operation is a field check of all addresses done to verify housing unit addresses. The address canvassers add to the 2010 Census address list any additional addresses they find and make other needed corrections to the 2010 Census address list and maps using global-positioning-equipped handheld computers.

<sup>2</sup> NRC is part of the National Academy of Sciences.

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Office of the Inspector General, and a contractor hired by the Bureau.<sup>3</sup> We reviewed source documents and interviewed Bureau officials to determine how the Bureau addressed the recommendations and new challenges associated with the LUCA Program. We also conducted a Web-based survey of 42 LUCA Dress Rehearsal participants in California and North Carolina<sup>4</sup> to gauge their satisfaction with how the Bureau addressed these recommendations and challenges, and performed structured telephone interviews with LUCA Dress Rehearsal nonparticipants to determine why they did not participate in LUCA.

In order to address the third objective, we undertook fieldwork in areas of the Gulf Coast region affected by hurricanes Katrina and Rita (Louisiana, Mississippi, and Texas) by interviewing local officials and collecting photographic and documentary evidence to determine the challenges that implementing the LUCA Program in these areas presents. Additionally, we collected documents and interviewed officials from the Bureau's headquarters and Dallas Regional Office to determine Bureau plans for addressing these challenges and prior GAO recommendations addressing contingency planning for the affected areas. Appendix I provides additional details on our scope and methodology. We conducted our work from July 2006 through May 2007 in accordance with generally accepted government auditing standards.

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## Results in Brief

The Bureau conducted nearly all of its planned LUCA Dress Rehearsal operations in accordance with its published timeline. The Bureau has begun address canvassing, in which it will verify information that localities provided to the Bureau for the LUCA Program. The Bureau will also enable Dress Rehearsal participants to review feedback materials regarding their submissions from December 2007 through January 2008. The Bureau met the time frames listed in its published LUCA Dress

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<sup>3</sup> See GAO, *2010 Census: Census Bureau Needs to Take Prompt Actions to Resolve Long-standing and Emerging Address and Mapping Challenges*, [GAO-06-272](#) (Washington, D.C.: June 15, 2006); *2010 Census: Planning and Testing Activities Are Making Progress*, [GAO-06-465T](#) (Washington, D.C.: Mar. 1, 2006); and *2010 Census: Costs and Risks Must be Closely Monitored and Evaluated with Mitigation Plans in Place*, [GAO-06-822T](#) (Washington, D.C.: June 6, 2006). See also National Research Council, *Assessment of the 2000 Census LUCA Program* (Washington, D.C.: December 2002), and Department of Commerce, Office of the Inspector General, *Additional Steps Needed to Improve Local Update of Census Addresses for the 2000 Decennial Census* (Washington, D.C.: September 1998).

<sup>4</sup> See app. III for a full list of survey responses.

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Rehearsal timeline, but as we describe below, this timeline did not include testing of software to be used in the 2010 LUCA Program. Additionally, the Bureau completed the first step of the 2010 LUCA Program, sending local jurisdictions advance letters to notify them about the LUCA Program in January and February 2007.

The Bureau has taken steps to reduce participants' workloads and burdens and improve training—all areas NRC, GAO, and others had identified as needing improvement. Building on the progress it has made, the Bureau could take additional steps to address new challenges in these areas, as well as challenges related to measuring overall program effectiveness. For instance, to reduce participant workload and burden, the Bureau provided a longer period for reviewing and updating LUCA materials; provided options for how participants may submit updated information to the Bureau; combined the collection of addresses from two separate operations into one integrated and sequential operation; and created the MAF/TIGER<sup>5</sup> Partnership Software (MTPS), which is designed to assist LUCA participants in reviewing and updating address and map data. However, the Bureau did not test MTPS as part of the LUCA Dress Rehearsal, and tested MTPS with only one locality in preparation for the 2010 LUCA Program. Additionally, many participants experienced problems with converting Bureau-provided address files to their own software formats. Also, the Bureau has planned improvements to the 2010 LUCA Program training (i.e., specialized workshops for informational and then technical training), and plans to supplement the workshops with computer-based training (CBT). However, the Bureau did not test these improvements in the LUCA Dress Rehearsal. Finally, although the Bureau has not finalized its evaluation plans regarding the 2010 LUCA Program, Bureau officials have stated that the Bureau intends to assess the LUCA Program's contribution to address counts and will consider a plan to assess the program's contribution to the census population count. Such analysis would provide a measure of the ultimate impact of the LUCA Program on achieving a complete count of the population. Further, the Bureau does not currently collect information needed to measure the percentage of eligible local governments that had assessed the accuracy of Bureau-provided addresses and maps but had no changes to the addresses and maps. Without these data, the Bureau may not be able to fully estimate

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<sup>5</sup> The Bureau's address list is known as the Master Address File (MAF); its associated geographic information system is called the Topologically Integrated Geographic Encoding and Referencing (TIGER) database. TIGER is a registered trademark of the U.S. Census Bureau.



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the impact of the LUCA Program on the MAF database and the census population count.

In response to hurricanes Katrina and Rita, the Bureau has proposed steps to address LUCA-related issues in hurricane-affected areas. During the course of commenting on a draft of this report, the Bureau finalized plans for implementing these steps. Hurricane Katrina alone destroyed or made uninhabitable an estimated 300,000 homes; in New Orleans, the hurricanes damaged an estimated 123,000 housing units. The 2010 LUCA Program still faces challenges caused by the continuous changes in the housing stock in areas affected by storm damage or population influxes, which may hinder local governments' ability to accurately update their address lists and maps. Further, the condition of the housing stock is likely to present additional challenges to address canvassing and other decennial census operations in the form of decreased productivity for Bureau staff, issues associated with identifying vacant and uninhabitable structures, and workforce shortages. Officials in Bureau headquarters and the Dallas Regional Office have proposed and implemented several changes to the 2010 LUCA Program in the Gulf Coast region, such as conducting conference calls with the states of Louisiana and Mississippi and providing additional promotional workshops in areas hardest hit by hurricanes Katrina and Rita. Additionally, the Bureau is considering changes to its 2010 Census address canvassing operation in the Gulf Coast region (an operation that begins in April 2009).

We are recommending that the Secretary of Commerce direct the Bureau to (1) assess potential usability issues with the LUCA Program's CBT and MTPS by selecting localities to test the software packages or by providing alternative means to assess such issues before participants begin reviewing and updating materials for the 2010 LUCA Program in August 2007, and provide information on how localities can mitigate issues identified in such assessments via its public Web site and its LUCA technical help desk; (2) provide localities not using MTPS, via its public Web site, its LUCA technical help desk, and other appropriate means, instructions on converting files from the Bureau's format to the appropriate format for software most commonly used by participating localities to update address information; (3) assess the contribution of the LUCA Program to the final census population counts, as recommended by NRC (to permit an evaluation of the 2010 LUCA Program in preparation for 2020); (4) establish a process for localities that agreed to participate in the LUCA Program, but found no changes in their reviews to explicitly communicate to the Bureau that they have no changes; and (5) develop strategy, plans, and milestones for operations in areas in the Gulf Coast

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that address the challenges field staff are likely to encounter in conducting address canvassing and subsequent decennial operations in communities affected by the hurricanes.

The Secretary of Commerce provided written comments on a draft of this report (see app. II). Commerce generally agreed with our recommendations for the Bureau to (1) assess usability issues with MTPS and CBT; (2) provide localities not using MTPS with instructions on file conversion; (3) assess the contribution of the LUCA Program to the final census population counts; (4) establish a process for localities to indicate that they participated in the LUCA Program but found no changes; and (5) develop strategy, plans, and milestones for operations in the Gulf Coast that address the challenges that field staff are likely to face. The Bureau also agreed with the draft report's recommendation that the Bureau finalize its plans for conducting the LUCA Program in the areas affected by Katrina and Rita, noting that its plans were now final. We therefore deleted this recommendation. Commerce also provided some technical comments and suggestions where additional context might be needed, and we revised the report to reflect these comments where appropriate.

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## Background

A complete and accurate address list is the cornerstone of a successful census, because it identifies all living quarters that are to receive a census questionnaire and serves as the control mechanism for following up with living quarters that do not respond. If the address list is inaccurate, people can be missed, counted more than once, or included in the wrong locations. MAF is intended to be a complete and current list of all addresses and locations where people live or potentially live. The Topographically Integrated Geographic Encoding and Referencing (TIGER) database is a mapping system that identifies all visible geographic features, such as type and location of streets, housing units, rivers, and railroads.<sup>6</sup> The Bureau's approach to building complete and accurate address lists and maps consists of a series of operations that sometimes overlap and are conducted over several years. These operations include partnerships with the U.S. Postal Service and other federal agencies; state, local, and tribal governments; local planning organizations; the private sector; and nongovernmental entities. One such operation is the Bureau's LUCA Program.

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<sup>6</sup> The MAF and TIGER databases are also linked into what is called the MAF/TIGER database, through a process where the Bureau assigns every housing unit in MAF to a specific location in TIGER.

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The LUCA Program is mandated by the Census Address List Improvement Act of 1994<sup>7</sup> that expanded the methods the Bureau uses to exchange information with tribal, state, and local governments in order to support its overall residential address list development and improvement process. The LUCA Program is a decennial census geographic partnership program that allows participants to contribute to complete enumeration of their jurisdictions by reviewing, commenting on, and providing updated information on the list of addresses and maps that the Bureau will use to deliver questionnaires within those communities. The LUCA Program was first implemented for the 2000 Census;<sup>8</sup> under the program, the Bureau is authorized (prior to the decennial census) to share individual residential addresses with officials of tribal, state, and local governments who agreed to protect the confidentiality of the information.<sup>9</sup>

According to Bureau officials, one reason that participation in the LUCA Program is important is that local government officials may be better positioned to identify some housing units that are hard to find or are hidden because of their knowledge of or access to data in their jurisdictions. For example, local governments may have alternate sources of address information (such as utility bills, tax records, information from housing or zoning officials, or 911 emergency systems), which can help the Bureau build a complete and accurate address list. In addition, according to Bureau officials, providing local governments with opportunities to actively participate in the development of the MAF/TIGER database can have the added benefit for the Bureau of building local governments' understanding of and support for the census. Local governments have key roles in ensuring a successful census—not just in developing the address list, but during subsequent operations as well, especially those designed to boost public participation in the census.

The LUCA Program was first implemented for the 2000 Census, and of the 39,051 eligible entities—such as cities and counties—for the 2000 LUCA

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<sup>7</sup> Census Address List Improvement Act of 1994, Pub. L. No. 103-430, October 31, 1994.

<sup>8</sup> The 2000 LUCA Program had two separate components: the 1998 city-style address operation and the 1999 non-city-style address operation.

<sup>9</sup> Under 13 U.S.C. § 9(a), local governments that obtain access to Title 13 data are required to ensure the confidentiality of such data.

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Program, 18,333<sup>10</sup> (47 percent) agreed to participate.<sup>11</sup> Subsequently, for 2010, the Bureau has sent LUCA advance notification letters to approximately 40,000 entities and has set a participation goal of 60 percent. After localities that opted to participate in the LUCA Program have submitted their updated maps and address lists, the Bureau conducts a field check called address canvassing. At that time, the address canvassers—using handheld computers equipped with a global positioning system (GPS)—will go door to door updating the Census 2010 address list, verifying the information localities provided the Bureau during the LUCA Program, adding any additional addresses they find, and making other needed corrections to the address list and maps. The address canvassing operation will ensure that all addresses submitted during the LUCA Program actually exist and that they are assigned to the correct census block.

In preparation for the 2010 Census, both the LUCA Program and the subsequent address canvassing operation will be tested as part of the Bureau's Dress Rehearsal. The 2008 Census Dress Rehearsal is taking place in San Joaquin County, California, and nine counties in the Fayetteville, North Carolina area (see figs. 1 and 2). The Bureau states that the Dress Rehearsal will help ensure a more accurate and cost-effective 2010 Census by demonstrating the methods to be used in the nation's decennial headcount, and that the main goal of the Dress Rehearsal is to fine-tune the various operations planned for the decennial census in 2010 under as close to census-like conditions as possible. According to the Bureau, the Dress Rehearsal sites provide a comprehensive environment for demonstrating and refining planned 2010 Census operations and activities, such as the use of GPS-equipped handheld computers.

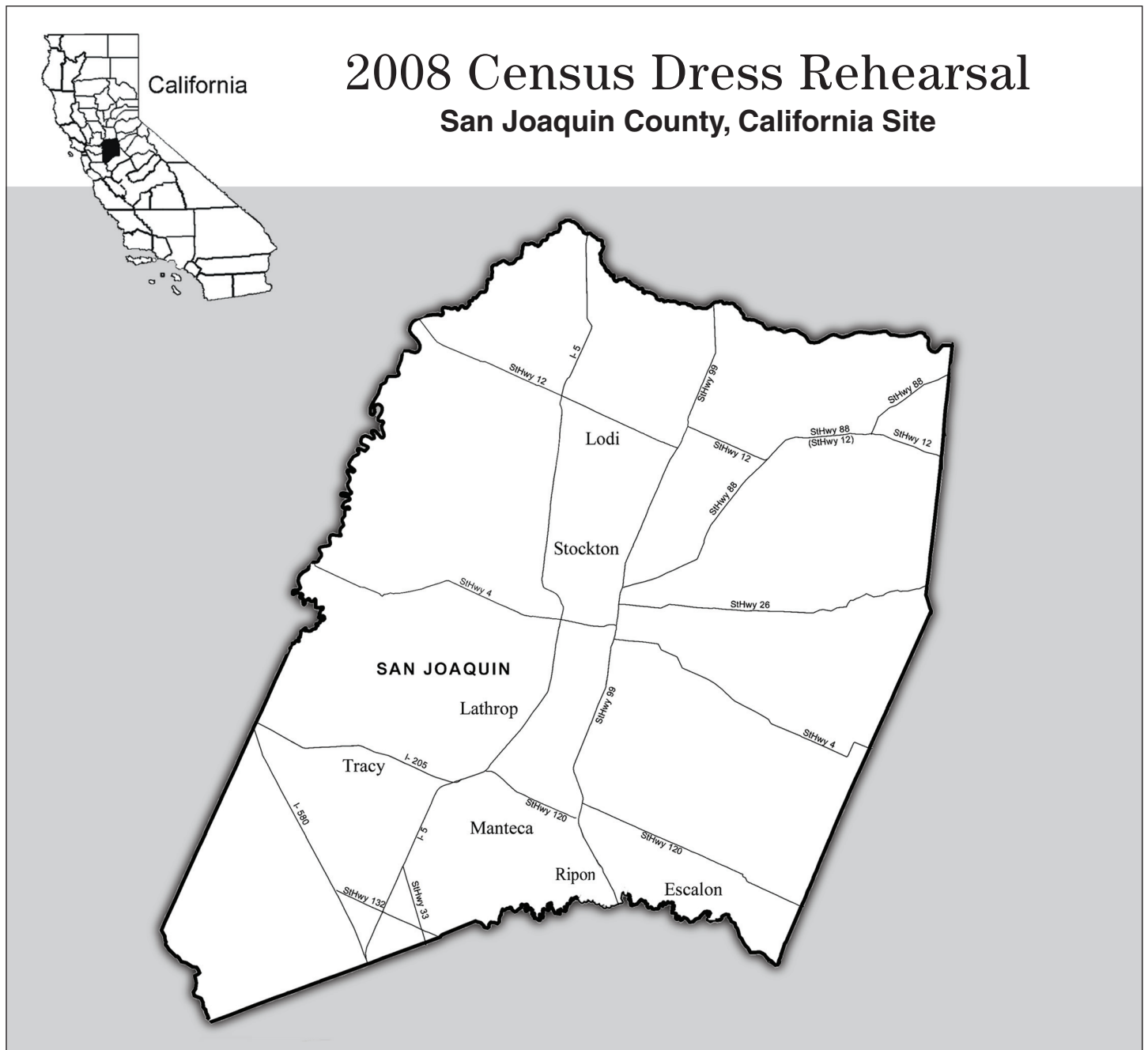
This report is the latest of several studies we have issued on the 2010 Census. See Related GAO Products at the end of this report for a list of selected products we have issued to date.

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<sup>10</sup> Of the 39,051 eligible entities, 20,718 chose not to participate, 5,525 entities signed participation agreements, 2,877 entities returned materials but recorded no updates or action, and 9,931 entities submitted at least one address action or challenged at least one block.

<sup>11</sup> National Research Council, *Assessment of the 2000 Census LUCA Program*.

Figure 1: Map of the Bureau's California Dress Rehearsal Site



Source: U.S. Census Bureau.

Figure 2: Map of the Bureau's North Carolina Dress Rehearsal Site



Source: U.S. Census Bureau.

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## The Bureau Has Completed Nearly All Planned Activities for the LUCA Dress Rehearsal and the First Step of the 2010 LUCA Program

The Bureau has completed nearly all planned operations for the LUCA Dress Rehearsal in accordance with the LUCA Dress Rehearsal timeline (see fig. 3).<sup>12</sup> The only components that are not yet completed are address canvassing (which is scheduled to take place from April through June 2007) and the Dress Rehearsal participants' review of feedback materials regarding their submissions (which is scheduled to take place from December 2007 through January 2008). The Bureau met the first date on its timeline when it sent out the LUCA advance notification letters and informational materials to the highest elected officials in February 2006. The Bureau sent out the official invitation to localities, provided participant training, and shipped LUCA materials on schedule. Additionally, localities reviewed and updated LUCA materials within the June to October 2006 period specified on the timeline. Most recently, the Bureau finished its review of participants' LUCA submissions and updated the MAF/TIGER geographic database in December 2006. Bureau officials state that they expect to meet the dates on the timeline for the remaining component—address canvassing.

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<sup>12</sup> Bureau headquarters and the Charlotte Regional Office provided us with internal timelines for the 2010 LUCA Program and the LUCA dress rehearsal operations held in parts of California and North Carolina from June through October 2006. Additionally, we obtained a public version of the Bureau's timelines for both the LUCA dress rehearsal and the 2010 LUCA Program from its Web site (see figs. 3 and 4).

**Figure 3: Bureau’s LUCA Dress Rehearsal Timeline and Status**

<b>2008 LUCA Dress Rehearsal Program Schedule</b>		
<b>Time frame</b>	<b>Activity</b>	<b>Status</b>
February 2006	LUCA advance notification letters and informational materials mailed to highest elected officials.	<b>Completed</b>
March to May 2006	Census Bureau invited local governments to participate in the LUCA Program.	<b>Completed</b>
May 2006	Census Bureau conducted training workshops for participants.	<b>Completed</b>
June 2006	Census Bureau shipped the LUCA review materials to each participating government.	<b>Completed</b>
June to October 2006	LUCA participants reviewed and updated the address list and returned their comments to the Census Bureau's regional office.	<b>Completed</b>
November to December 2006	Census Bureau reviewed the participants' LUCA submission and updated the MAF/TIGER geographic database.	<b>Completed</b>
April to June 2007	Census Bureau conducts address canvassing (field check) operation.	<b>Under way</b>
December 2007 to January 2008	Participants review feedback materials.	<b>To be completed</b>

Sources: U.S. Census Bureau and GAO analysis.

It is important to note that while the Bureau met the time frames listed in its published LUCA Dress Rehearsal timeline, some activities were not included in that timeline. For example, plans to test the newly developed MTPS (which is intended to assist participating localities in their 2010 LUCA reviews) and test the new computer-based LUCA training were not included in the Bureau’s LUCA Dress Rehearsal schedule—precluding the opportunity to test these software products under census-like conditions.

The 2010 LUCA Program is now under way. In January and February 2007, the Bureau sent advance notification letters for the 2010 LUCA Program to the highest elected officials in each of the eligible localities. Bureau officials expect to meet the remaining dates listed on the published timeline (see fig. 4).



**Figure 4: Bureau's 2010 LUCA Timeline**

<b>Tentative 2010 Census LUCA Program Schedule</b>	
<b>Time Frame</b>	<b>Activity</b>
January 2007 to February 2007	LUCA advance notice letters mailed to the highest elected officials and other contacts in all active functioning governments.
July 2007	LUCA invitation letters and registration materials mailed to the highest elected official and other contacts of each government.
July 2007 to January 2008	Invited governments register for LUCA and the Bureau ships the LUCA review materials to each participating government.
August 2007 to March 2008	LUCA participants review and update the address list and maps and return their comments to the Census Bureau's Regional Office.
April 2008 to October 2008	Census Bureau reviews the participant's LUCA submission and updates the Master Address File and the TIGER geographic database.
November 2008 to May 2009	Census Bureau prepares for and conducts the Address Canvassing Operation using GPS-equipped handheld computers.
June 2009 to October 2009	Census Bureau ships feedback materials to the LUCA participants showing how the Bureau processed each government's LUCA submissions.
September 2009 to December 2009	LUCA participants review their LUCA feedback and have the opportunity to appeal the results to the LUCA Appeals Office.
September 2009 to January 2010	LUCA Appeals Office reviews and adjudicates the appeals.

Source: U.S. Census Bureau.

Note: See the Bureau's Web site, <http://www.census.gov/geo/www/luca2010/luca.html>.

## Bureau Modified the LUCA Program to Address Issues from the 2000 Experience but Faces New Challenges

The Bureau has modified the 2010 LUCA Program to address issues stemming from the 2000 experience but faces new challenges with the program. To reduce the workload and burden on LUCA participants, the Bureau provided a longer period for reviewing and updating LUCA materials; provided options to submit materials for the LUCA Program; combined the collection of addresses from two separate operations into one integrated and sequential operation; and created MTPS, which is designed to assist LUCA participants in reviewing and updating address and map data. However, the Bureau tested MTPS with only one potential user for the 2010 LUCA Program, and did not test MTPS with any localities during the LUCA Dress Rehearsal. In addition, many participants experienced problems with converting Bureau-provided address files.

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Further, the Bureau has planned modified training for the 2010 LUCA Program, but the Bureau did not test each of these modifications in the LUCA Dress Rehearsal. Finally, although the Bureau will likely plan to assess the contribution that the LUCA Program makes to address counts, the Bureau does not have a plan to assess the contribution that the program makes to population counts. Such analysis would provide a measure of the ultimate impact of the LUCA Program on achieving a complete count of the population. Also, the Bureau has not collected the information needed to fully measure LUCA participation rates and is therefore limited in its ability to assess the cost and benefits of the LUCA Program to the Bureau. Without this information, the Bureau may not be able to fully measure the extent to which local review contributed to the MAF database and the census population count. Moreover, an additional improvement to the LUCA Program that the Bureau cited was the agency's expansion of direct LUCA participation to state governments. The Bureau noted that allowing states to participate directly can fill the gap when local governments do not participate because of a lack of resources or technical challenges.

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### Bureau Addressed Issues about Workload and Burden, but Challenges with Software and File Conversion Remain

Studies by us, NRC, and others highlighted concerns with the burden and workload placed on participants in the 2000 LUCA Program. In testimony given before the Subcommittee on the Census, House Committee on Government Reform in September 1999, we noted that LUCA may have stretched the resources of local governments and that the workload was greater than most local governments had expected.<sup>13</sup> According to a report contracted by the Bureau, two reasons cited by localities for not participating in the 2000 LUCA Program were the volume of work required and the lack of sufficient personnel to conduct the LUCA review.<sup>14</sup>

Recognizing that not all localities have the resources to participate effectively in the LUCA Program within imposed time constraints, the Bureau made several changes to the program. First, the Bureau provided a longer review period for LUCA participants. In 2004, NRC reported on the 2000 LUCA experience and concluded that the Bureau should clearly articulate realistic schedules for the periods when localities can review

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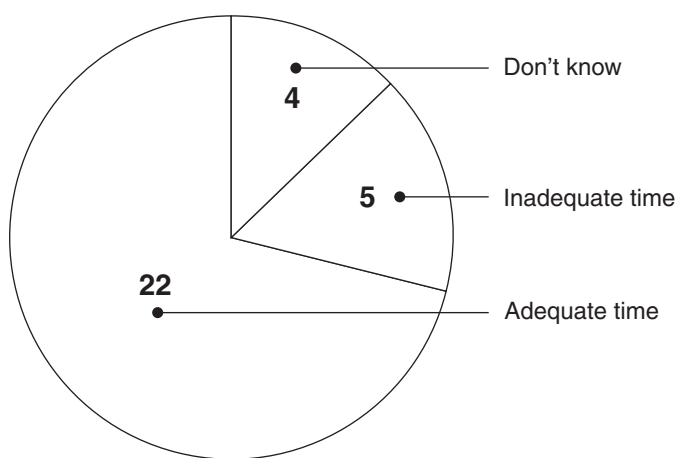
<sup>13</sup> GAO, *2000 Census: Local Address Review Program Has Had Mixed Results to Date*, GAO/T-GGD-99-184 (Washington, D.C.: Sept. 29, 1999).

<sup>14</sup> ITS Services, Inc., *Results of the Survey of Selected Governments Eligible for the Local Update of Census Addresses (LUCA) Program* (Fairfax, Va.: 2002), v.

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and update LUCA materials.<sup>15</sup> Concurrently, the Bureau itself recommended that it allow sufficient time for participants to complete LUCA updates before the Bureau begins address canvassing activities. As a result, the Bureau extended the review period for LUCA Program participants from 90 to 120 calendar days. The implementation of the review extension was well received by LUCA Dress Rehearsal participants; the majority of respondents to our survey of LUCA Dress Rehearsal participants indicated that 120 days allowed adequate time to complete the LUCA review (see fig. 5).

**Figure 5: LUCA Dress Rehearsal Participants' Views on the Adequacy of Time Allowed to Complete the Review**



Source: GAO Web-based survey of LUCA Dress Rehearsal participants.

Second, the Bureau provided localities with options for how they may participate in the LUCA Program, as recommended in a 2002 contractor study of the program.<sup>16</sup> Specifically, the Bureau now provides three options for how localities can submit address and map information to the Bureau: (1) full address list review with count review, (2) Title 13 local address list submission, and (3) non-Title 13 local address list submission (see fig. 6). The three options differ in the level of review of Bureau

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<sup>15</sup> National Research Council, *Reengineering the 2010 Census: Risks and Challenges* (Washington, D.C.: 2004), 96.

<sup>16</sup> ITS Services, Inc., *Recommended Communication Methods to Support Participation in the Ongoing LUCA Program* (Fairfax, Va.: 2002), 6.

materials by participating localities and in requirements to adhere to rules concerning confidentiality of information. For options one or two, participants may use MTPS to assist in their reviews.

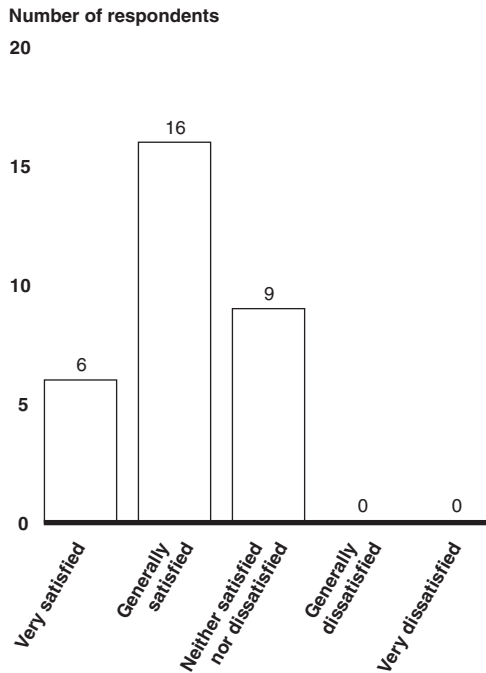
**Figure 6: Available Options for Participation in 2010 LUCA Program**

Name of option	Option 1	Option 2	Option 3
	Full address list review with count review	Title 13 local address list submission	Non-Title 13 local address list submission
Intended audience	Participants that have the time and resources to review and comment on the 2010 Census address list	Participants that may not have the time or resources to update the 2010 Census address list, but wish to review and compare the list to their local address list	Participants that do not want to sign confidentiality agreements in accordance with Title 13, United States Code
Items participants receive from Bureau	Address list, address counts, maps	Address list, address counts, maps	Address counts, maps
Bureau-provided formats of address list	Paper (for localities with less than 6,000 addresses), computer-readable	Computer-readable	N/A
Bureau-provided formats of address counts	Paper, computer-readable	Computer-readable	Computer-readable
Bureau-provided formats of maps	Paper, shapefile	Paper, shapefile	Paper, shapefile
Items participants can update for bureau	Address list, address counts, maps	Maps	Maps
Allowed to submit own address list in Bureau predefined format?	No	Yes	Yes
Allowed to use MTPS?	Yes	Yes	Yes
Allowed to appeal Bureau review of submitted materials?	Yes	Yes	No

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

Our survey of LUCA Dress Rehearsal participants found that the majority of localities were satisfied with the participation options provided by the Bureau (see fig. 7).

**Figure 7: LUCA Dress Rehearsal Participants' Satisfaction with Participation Options**



Source: GAO Web-based survey of LUCA Dress Rehearsal participants.

Third, the Bureau combined the collection of addresses from two separate operations for city-style and non-city-style addresses<sup>17</sup> into one integrated and sequential operation. In a 2004 report, NRC suggested that the Bureau coordinate efforts related to the decennial census so that the LUCA Program and other Bureau programs would not be unduly redundant and burdensome to localities.<sup>18</sup> Based on complaints about the multiphased LUCA Program from the 2000 experience (where some participants found the two separate operations confusing), the Bureau designed the 2010 LUCA Program to be a single review operation for all addresses. Bureau

<sup>17</sup> City-style addresses represent both the location of the housing unit on the ground and the mailing address for the housing unit (i.e., 101 Main St., Anytown, MD 12345). Non-city-style addresses, such as Post Office box and rural route numbers, indicate where mail is delivered to an addressee but do not necessarily designate the location of the addressee's housing unit on the ground.

<sup>18</sup> National Research Council, *Reengineering the 2010 Census: Risks and Challenges*, 97.

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officials also told us that the combined LUCA operation would be fully integrated with the decennial census schedule with address canvassing. As a result of the Bureau's efforts, localities could face a reduced burden, and participation in the 2010 LUCA Program could be less confusing. Further, the Bureau may be able to more effectively verify address information collected from LUCA Program participants during address canvassing.

Finally, the Bureau has created MTPS, which is a geographic information system application that will allow LUCA Program participants to update the Bureau's address list and maps electronically.<sup>19</sup> The application will also enable users to import address lists and maps for comparison to the Bureau's data and participate in both the LUCA Program and the Boundary and Annexation Survey (BAS)<sup>20</sup> at the same time. The Bureau noted that participants who sign up to participate in the LUCA Program by October 31, 2007, will be allowed to provide their boundary updates with their LUCA updates and thereby avoid having to separately respond to the 2008 BAS. A 2004 study by NRC recommended that the Bureau coordinate efforts so that the LUCA Program, BAS, and other programs are not unduly redundant and burdensome for local and tribal entities.<sup>21</sup> Consistent with that recommendation, the Bureau created MTPS, which Bureau officials said benefits participants by reducing their workloads and burdens in participating in the 2010 LUCA Program by allowing them to review and update address and map information together in one software package.

Building on the progress it has already made, the Bureau can take additional steps to address new challenges in reducing workload and burdens for LUCA participants. First, although the Bureau performed internal tests of the software, the Bureau did not test MTPS as part of the LUCA Dress Rehearsal and tested MTPS with only one locality in preparation for the 2010 LUCA Program. Properly executed user-based methods for software testing can give the truest estimate of the extent to which real users can employ a software application effectively, efficiently, and satisfactorily. In addition, multiple users are required to tease out

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<sup>19</sup> MTPS also incorporates the functions of the Boundary and Annexation Survey.

<sup>20</sup> The Bureau conducts the BAS annually to collect information about selected defined geographic areas. The BAS is used to update information about the legal boundaries and names of all governmental units in the United States.

<sup>21</sup> National Research Council, *Reengineering the 2010 Census: Risks and Challenges*, 97.

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remaining problems in a product that is ready for distribution.<sup>22</sup> The Bureau's statement of work regarding MTPS specifically required milestones for testing and review of the software by 10 local sites during its development. However, the Bureau's contract did not specify how many local sites would test the LUCA portion of MTPS. Further, meeting minutes between the Bureau and the MTPS contractor revealed that the contractor did not necessarily plan to test the LUCA portion of MTPS with local users during its development. The Bureau ultimately identified three local sites to test the LUCA portion of MTPS, but only performed the test with one. Of the other two proposed sites, one explicitly canceled testing, and the other did not respond to the Bureau's attempts at communication. Additionally, Bureau officials told us that user testing for the LUCA Program portions of MTPS was constrained by existing resource limitations and timing issues associated with the schedule for development of MTPS. Bureau officials also informed us that they will provide frequently asked questions regarding MTPS for the LUCA technical help desk.

Second, a majority of LUCA Dress Rehearsal participants experienced problems with converting Bureau address files from the Bureau's format to their own software formats. If participants in the 2010 LUCA Program choose not to use MTPS to update address and map information, they can review and update computer-readable files of census address lists in a pipe-delimited text file format.<sup>23</sup> While the Bureau included instruction for converting files in its LUCA Dress Rehearsal participation guide, it did not include information on specific commonly available types of software that localities are likely to use.<sup>24</sup> Participants in the LUCA Dress Rehearsal experienced problems with converting the files from the Bureau's format to their respective applications; our survey of LUCA Dress Rehearsal participants revealed that the majority of respondents had, to some extent, problems with file conversions to appropriate formats (see fig. 8). Our

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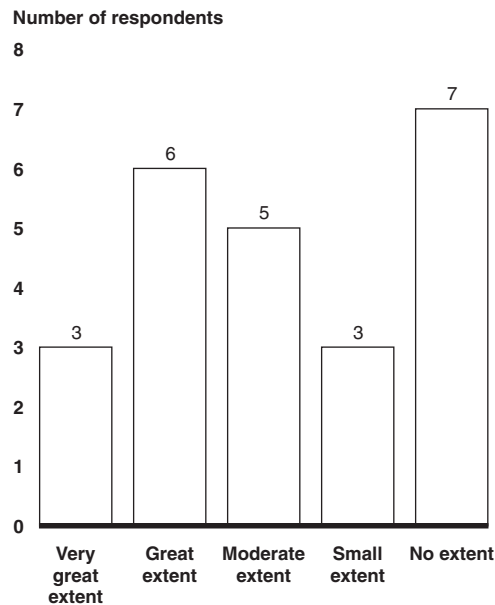
<sup>22</sup> See A. Dillon, "Usability Evaluation," *Encyclopedia of Human Factors and Ergonomics*, ed. W. Karwowski, 1930-1933 (London: Taylor and Francis, 2001). Andrew Dillon, PhD, is the dean of the University of Texas School of Information; he is also a professor of information, psychology, information, and risk and operations management at the University of Texas.

<sup>23</sup> Tab-delimited text is one of the more common data formats, defined by text separated by tabs. Pipe-delimited format is essentially the same kind of format, but uses the pipe symbol ("|") as its delimiting property.

<sup>24</sup> Such software may include Microsoft Excel, Microsoft Access, Lotus 1-2-3, Quattro Pro, and Oracle.

fieldwork also revealed issues pertaining to file conversion; for example, one local official noted that it took him 2 days to determine how to convert the Bureau's pipe-delimited files. To mitigate the potential burden on localities that choose not to use MTPS, the Bureau will provide technical guidance on file conversion through its LUCA technical help desk, but does not plan to provide instructions for converting Bureau-provided address files through other means. At present, the Bureau does not know how many localities will opt not to use MTPS for the 2010 LUCA Program, but those localities may face the same challenges faced by participants in the LUCA Dress Rehearsal.

**Figure 8: Extent of LUCA Dress Rehearsal Participants' Problems with File Conversion**



Source: GAO Web-based survey of LUCA Dress Rehearsal participants.

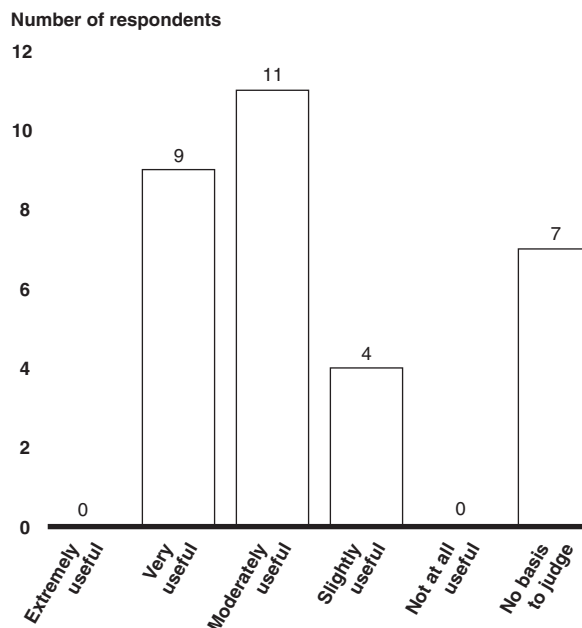
Note: Seven of the 31 respondents either had no basis to judge or did not respond to this question.



**Bureau Plans Improvements to the 2010 LUCA Program Training but Did Not Fully Test Improvements in the LUCA Dress Rehearsal**

Leading up to the 2000 Census, we reported that LUCA training received less favorable reviews than the other components of the LUCA Program.<sup>25</sup> The 2000 LUCA Program had one training session that encompassed all aspects of the LUCA Program. For the 2010 LUCA Program, the Bureau plans to separate LUCA classroom training into informational and technical training sessions and provide user guides tailored to the participation option chosen by LUCA Program participants. The Bureau provided localities with information on the participation options during the LUCA Dress Rehearsal. However, during the LUCA Dress Rehearsal, the Bureau conducted training sessions that combined promotional and technical components of training because it did not have time to conduct the promotional workshop prior to the LUCA Dress Rehearsal. Consequently, the Bureau was not able to obtain feedback from Dress Rehearsal participants about separating classroom training before the 2010 LUCA Program. Nevertheless, overall respondents to our survey found the LUCA Dress Rehearsal training session useful (see fig. 9).

**Figure 9: LUCA Dress Rehearsal Participants' Reports of the Usefulness of the Training Session**



Source: GAO Web-based survey of LUCA Dress Rehearsal participants.

<sup>25</sup> [GAO/T-GGD-99-184](#).

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The Bureau plans to further improve the 2010 LUCA Program by offering CBT modules to program participants. Though participants were not provided with CBT in the LUCA Dress Rehearsal, our work has found that this method of training is viewed by participants as helpful. Specifically, respondents to our survey ranked CBT higher than classroom training, in terms of being “extremely” or “very” useful. Additionally, local officials told us that CBT was more convenient for them because they need not leave their offices or adjust their schedules to learn how the LUCA Program works. However, the Bureau’s plans for testing the LUCA CBT include only one user. Properly executed user-based methods of software testing can provide the truest estimate of the extent to which real users can employ an application effectively.<sup>26</sup> The contractor responsible for creating the LUCA CBT was to have provided preliminary versions of the CBT to the Bureau for testing beginning in May 2007—7 months after the end of the LUCA Dress Rehearsal review and 3 months before participants begin reviewing and updating address lists and maps for the 2010 LUCA Program. This timing did not allow the Bureau to test the CBT under census-like conditions, and will leave little time to make any changes before the CBT is distributed to LUCA participants.

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### Bureau Has Not Collected Information Needed to Fully Assess LUCA Costs, Benefits, and Contributions

A 2002 study by a Bureau contractor recommended that the Bureau evaluate the cost and benefits of its LUCA-related activities. An NRC study of the LUCA Program recommended that the Bureau quantify the value of the program in both housing and population terms. The study indicated that quantifying the value of the LUCA Program is useful to show that the cost for the effort is worthwhile and persuade local officials that it is worth their time and resources to become involved in the LUCA Program<sup>27</sup> (for example, by showing how LUCA contributes to a more accurate count of their communities’ populations).

The Bureau said that it would mark and evaluate contributions (such as added, corrected, or deleted addresses) of the LUCA Program to the MAF database. The Bureau has not finalized its evaluation plans regarding the 2010 LUCA Program; these plans would include decisions about whether to conduct assessments of the program’s contribution to the census population count. The Bureau also stated that measuring whether the LUCA Program is cost beneficial “has not been a priority” for the agency,

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<sup>26</sup> See Dillon.

<sup>27</sup> National Research Council, *Assessment of the 2000 Census LUCA Program*, 134.

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given that the program is legally mandated. In addition, Bureau officials stated that they will not budget the LUCA Program separately until fiscal year 2008. They noted that the LUCA Program budget is currently combined with those of other geographic programs in the Decennial Management Division budget.

Our work in the area of managing for results has found that federal agencies can use performance information, such as that described above, to make various types of management decisions to improve programs and results. For example, performance information can be used to identify problems in existing programs, identify the causes of problems, develop corrective actions, develop strategies, plan and budget, identify priorities, and make resource allocation decisions to affect programs in the future. Finally, managers can use performance information to identify more effective approaches to program implementation and share those approaches more widely across the agency.<sup>28</sup>

One aspect of assessing the LUCA Program is determining the extent to which localities assess Bureau-provided counts, addresses, and maps. However, LUCA Program participation rates are currently difficult to measure because the Bureau does not have a method of tracking localities that agreed to participate in the program but did not submit updates to the Bureau because they found no needed changes to Bureau-provided information. Officials from the Bureau measure LUCA Program participation by whether localities agree to participate in the program, regardless of whether they actually take the time to review the materials the Bureau provides them. Inventory forms used by localities to inform the Bureau of updated LUCA materials do not include an option for localities to indicate whether they reviewed the materials and chose not to provide updates or had not identified any needed changes. This information would allow the Bureau to distinguish between localities that initially agreed to participate but did not and localities that agreed to participate and either did not review the materials or found no changes to submit. The Bureau would then have a unique estimate of localities that found the Bureau's data to be accurate. Without more precise information on localities that do not provide information, the Bureau cannot fully track localities that actually reviewed materials during participation in the LUCA Program, and therefore cannot ascertain the actual participation rates. More important,

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<sup>28</sup> GAO, *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, [GAO-05-927](#) (Washington, D.C.: Sept. 9, 2005).

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without this information, the Bureau cannot fully measure the extent to which local reviews have contributed to accurate address lists and population counts.

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## Bureau Has Proposed but Not Finalized Steps to Address Issues in Hurricane-Affected Areas

Hurricane Katrina made landfall in Mississippi and Louisiana on August 29, 2005, and caused \$96 billion in property damage—more than any other single natural disaster in the history of the United States. On September 24, 2005, Hurricane Rita followed when it made landfall in Texas and Louisiana and added to the devastation. Still today, the storms' impact is visible throughout the Gulf Coast region. Hurricane Katrina alone destroyed or made uninhabitable an estimated 300,000 homes. In New Orleans, the hurricanes damaged an estimated 123,000 housing units. The 2010 LUCA Program faces challenges caused by the continuous changes in the housing stock in areas affected by storm damage or population influxes, which may hinder the ability of local governments to accurately update their address lists and maps. Further, the condition of the housing stock is likely to present additional challenges for address canvassing and other decennial census operations in the form of decreased productivity for Bureau staff, issues associated with identifying vacant and uninhabitable structures, and workforce shortages. Early in 2006, based on our prior recommendations, the Bureau chartered a team to assess the impact of the storm damage on its address list and maps for the area. This team (working with other officials from Bureau headquarters and the Dallas Regional Office) proposed several changes to the 2010 LUCA Program and address canvassing in the Gulf Coast region. Officials in the Bureau headquarters and Dallas Regional Office have implemented several of these changes.

Many officials of local governments we visited in hurricane-affected areas said they have identified numerous housing units that have been or will be demolished as a result of hurricanes Katrina and Rita and subsequent deterioration. Conversely, many local governments estimate that there is new development of housing units in their respective jurisdictions. The officials we interviewed from localities in the Gulf Coast region indicated that such changes in the housing stock of their jurisdictions are unlikely to subside before local governments begin updating and reviewing materials for the Bureau's 2010 LUCA Program—in August 2007.<sup>29</sup> Local government officials told us that changes in housing unit stock are often caused by

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<sup>29</sup> The period for local review and update of addresses and maps for the 2010 LUCA Program is August 2007 through March 2008.

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difficulties that families have in deciding whether to return to hurricane-affected areas. Local officials informed us that a family's decision to return is affected by various factors, such as the availability of insurance; timing of funding from Louisiana's Road Home Program;<sup>30</sup> lack of availability of contractors; school systems that are closed; and lack of amenities, such as grocery stores.<sup>31</sup> As a result of the still-changing housing unit stock, local governments in hurricane-affected areas may be unable to fully capture reliable information about their address lists before the beginning of the LUCA Program this year or address canvassing in April 2009. Furthermore, operation of local governments themselves has been affected by the hurricanes (see fig. 10). These local governments are focused on reconstruction, and officials we spoke with in two localities questioned their ability to participate in the LUCA Program.

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<sup>30</sup> The Road Home Program was implemented by the State of Louisiana to provide compensation of up to \$150,000 for eligible homeowners affected by hurricanes Katrina and Rita.

<sup>31</sup> GAO, *Gulf Coast Rebuilding: Preliminary Observations on Progress to Date and Challenges for the Future*, [GAO-07-574T](#) (Washington, D.C.: Apr. 12, 2007).

**Figure 10: City Hall in Pass Christian, Mississippi, Destroyed by Hurricane Katrina (Below Left), and City Officials in Slidell, Louisiana, Forced to Operate Out of Trailers since the Hurricane (Below Right)**



Source: GAO (January 2007).

The mixed condition of the housing stock in the Gulf Coast region could cause a decrease in productivity rates during address canvassing. During our fieldwork, we found that hurricane-affected areas have many neighborhoods with abandoned and vacant properties mixed in with occupied housing units. Bureau staff conducting address canvassing in these areas may have decreased productivity because of the additional time necessary to distinguish between abandoned, vacant, and occupied housing units. We also observed many areas where lots included a permanent structure with undetermined occupancy, as well as a trailer. Bureau field staff may be presented with the challenge of determining whether a residence or a trailer (see fig. 11), or both, are occupied. Another potential issue is that because of continuing changes in the condition in the housing stock, housing units that are deemed vacant or abandoned during address canvassing may be occupied on Census Day (April 1, 2010).

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**Figure 11: Trailers in Front of Damaged Housing Units in New Orleans, Louisiana**



Source: GAO (January 2007).

Workforce shortages may also pose significant problems for the Bureau's hiring efforts for address canvassing. The effects of hurricanes Katrina and Rita caused a major shift in population away from the hurricane-affected areas. This migration displaced many low-wage workers. Should this continue, it could affect the availability of such workers for address canvassing and other decennial census operations.

In 2006, we recommended that the Bureau develop plans (prior to the start of the 2010 LUCA Program in August 2007) to assess whether new procedures, additional resources, or local partnerships may be required to update the MAF/TIGER database in the areas affected by hurricanes Katrina and Rita.<sup>32</sup> The Bureau responded to our recommendations by chartering a team to assess the impact of the storm damage on the Bureau's address lists and maps for areas along the Gulf Coast and develop strategies with the potential to mitigate these impacts. The chartered team recommended that the Bureau consult with state and regional officials (from the Gulf Coast region) on how to make the LUCA Program as successful as possible and hold special LUCA workshops for geographic areas identified by the Bureau as needing additional assistance.

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<sup>32</sup> [GAO-06-272](#) and [GAO-06-822T](#).

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In addition to the recommendations made by the Bureau's chartered team, officials from Bureau headquarters and the Dallas Regional Office proposed steps to address LUCA-related issues in hurricane-affected areas. For example, they proposed that the Bureau provide LUCA training in several areas of Louisiana and Mississippi during promotional workshops for the LUCA Program. Finally, Bureau documentation indicated that the Bureau is considering an "Update/Enumerate" operation to enumerate addresses in the most severely devastated parishes and counties in hurricane-affected areas.<sup>33</sup>

The Bureau has implemented several of the proposed changes, cited above, to the 2010 LUCA Program in the Gulf Coast region based on recommendations from its chartered team, other Bureau headquarters officials, and regional office officials. For example, the Bureau conducted conference calls with the states of Louisiana and Mississippi (in October and December 2006, respectively) to discuss the LUCA Program, and had the Dallas and Atlanta regional offices hold additional promotional workshops in hurricane-impacted areas. In addition, Bureau officials have stated that the regional offices will also encourage participants in these areas to sign up for LUCA as early as possible so that if they need more than 120 days for conducting their LUCA review, they can request an extension from the Bureau.

In addition to the changes in the 2010 LUCA Program, the Bureau has considered changes to the address canvassing and subsequent operations in the Gulf Coast region. For example, Bureau officials stated that they recognize issues with identifying uninhabitable structures in hurricane-affected zones and, as a result, that they may need to change procedures for address canvassing. The Bureau is still brainstorming ideas, including the possibility of using an "Update/Enumerate" operation in areas along the Gulf Coast. Bureau officials also said that they may adjust training for Bureau staff conducting address canvassing in hurricane-affected areas to help field staff distinguish between abandoned, vacant, and occupied housing units. Without proper training, field staff can make errors and will not operate as efficiently.<sup>34</sup> The Bureau's plans for how it may adjust address canvassing operations in the Gulf Coast region can also have

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<sup>33</sup> In an "Update/Enumerate" operation, interviewers enumerate a housing unit and update address registers and census maps at the time of their visit.

<sup>34</sup> GAO, *2010 Census: Census Bureau Should Refine Recruiting and Hiring Efforts and Enhance Training of Temporary Field Staff*, [GAO-07-361](#) (Washington, D.C.: Apr. 27, 2007).



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implications for subsequent operations. For example, instructing field staff to be as inclusive as possible in completing address canvassing could cause increased efforts to follow up on nonrespondents because the Bureau could send questionnaires to housing units that could be vacant on Census Day. In terms of the Bureau's workforce in the Gulf Coast region, officials from the Bureau's Dallas Regional Office recognize the potential difficulty of attracting field staff, and have recommended that the Bureau be prepared to pay hourly wage rates for future decennial staff that are considerably higher than usual. Further, Bureau officials noted that the Bureau's Dallas Regional Office, which has jurisdiction over hurricane-affected areas in Louisiana, Mississippi, and Texas, will examine local unemployment rates to adjust pay rates in the region and use "every single entity" available to advertise for workers in the New Orleans area. However, Bureau officials stated that there are "no concrete plans" to implement changes to address canvassing or subsequent decennial operations in the Gulf Coast region. For instance, Bureau documentation revealed that the Bureau has not yet decided whether to implement "Update/Enumerate" operations in areas along the Gulf Coast.

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## Conclusions

The Bureau has met the time frames for the LUCA Dress Rehearsal and the distribution of advance letters for the 2010 LUCA Program. The Bureau has also taken a number of steps to improve the LUCA Program, including providing a longer review period for program participants, providing localities options for program participation, combining the collection of addresses from two separate operations into one integrated and sequential operation, creating MTPS for participant use in the program, and modifying LUCA training.

However, there is more the Bureau can do to address information technology-based challenges to the LUCA Program prior to the 2010 Census and beyond. The Bureau performed little user testing of MTPS and no user testing of the CBT module for the 2010 LUCA Program; however, the Bureau can do more to assess the usability of MTPS and the LUCA CBT. For example, the Bureau could test MTPS and LUCA CBT software with localities before participants begin reviewing and updating materials for the 2010 LUCA Program in August 2007. These tests would help the Bureau identify issues associated with MTPS and LUCA CBT software. Following the tests, the Bureau can provide information on how localities can mitigate such issues via its public Web site and its LUCA technical help desk. Without these tests, localities participating in LUCA 2010 may unnecessarily encounter issues with the CBT software that may otherwise have been identified through testing. The Bureau can also provide

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additional information, via its public Web site, its LUCA technical help desk, and other means, on converting Bureau address files from the Bureau's format to specific software applications used by LUCA Program participants in order to mitigate difficulties in file conversion previously identified by LUCA Dress Rehearsal participants. Without such guidance, localities may have difficulty with the file conversion process, creating additional and unnecessary burdens for the localities that choose not to use MTPS.

NRC, in its assessment of the LUCA Program, concluded that quantifying the value of the LUCA program is worthwhile, citing for example its use in persuading local officials of the value of participating in the LUCA program. NRC suggests that an evaluation of the LUCA Program consider not only its contributions to address counts but also to population counts. We agree that the Bureau can use such information to measure the LUCA Program's contribution to the decennial census. In addition, the Bureau is limited in its ability to fully assess the impact of the program because it does not collect information on why localities that agreed to participate do not provide updated information. Without these data, the Bureau cannot determine whether nonresponding localities assessed the Bureau's information or whether these localities did assess the information but had no changes. Without these data, the Bureau may be hampered in its ability to estimate the impact of the LUCA Program on the MAF database and the census population count.

Bureau efforts to consult with state officials and consider changes in decennial census operations, including LUCA, in hurricane-affected areas along the Gulf Coast have helped the Bureau better understand issues associated with implementing these operations in the Gulf Coast region. However, the Bureau can do more to successfully implement address canvassing and other decennial census operations in the Gulf Coast. For example, Bureau efforts to address issues associated with address canvassing, such as adjusting wage rates for future decennial staff, may help the Bureau fulfill staffing requirements for the address canvassing operation (which is scheduled to take place in 2009) and other decennial census operations. Because the changing stock may affect the Bureau's ability to effectively conduct address canvassing and other operations in the Gulf Coast region, it is important for the Bureau to complete its planning for addressing the challenges that field staff would likely face.

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## Recommendations for Executive Action

In order for the Bureau to address the remaining challenges facing its implementation of the 2010 LUCA Program, we recommend that the Secretary of Commerce direct the Bureau to take the following five actions:

- Assess potential usability issues with the LUCA Program's CBT and MTPS by randomly selecting localities in which to test the software packages or by providing alternative means to assess such issues before participants begin reviewing and updating materials for the 2010 LUCA Program in August 2007, and provide information on how localities can mitigate issues identified in such assessments via its public Web site and its LUCA technical help desk.
- Provide localities not using MTPS, via its public Web site, its LUCA technical help desk, and other appropriate means, instructions on converting files from the Bureau's format to the appropriate format for software most commonly used by participating localities to update address information.
- Assess the contribution of the LUCA Program to the final census population counts, as recommended by NRC (to permit an evaluation of the 2010 LUCA Program in preparation for 2020).
- Establish a process for localities that agreed to participate in the LUCA Program but found no changes in their review to explicitly communicate to the Bureau that they have no changes.
- Develop strategy, plans and milestones for operations in areas in the Gulf Coast that address the challenges field staff are likely to encounter in conducting address canvassing and subsequent decennial operations in communities affected by the hurricanes.

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## Agency Comments and Our Evaluation

In written comments on a draft of this report, the Bureau generally agreed with our recommendations for the Bureau to assess usability issues with MTPS and CBT; provide localities not using MTPS with instructions on file conversion; assess the contribution of LUCA to the final census population counts; establish a process for localities to indicate that they participated in LUCA but found no changes; and develop strategy, plans, and milestones for operations in the Gulf Coast that address the challenges that field staff are likely to face. The Bureau also agreed with the draft report's recommendation that the Bureau finalize its plans for conducting the LUCA Program in the areas affected by the hurricanes, noting that its plans were now final. We therefore deleted this recommendation. The

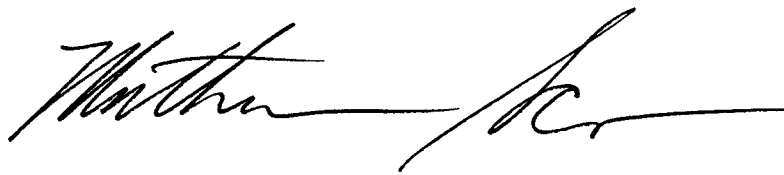
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Bureau also provided some technical comments and suggestions where additional context might be needed, and we revised the report to reflect these comments as appropriate. The Bureau's comments are reprinted in their entirety in appendix II.

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We are sending copies of this report to interested congressional committees and members, the Secretary of Commerce, and the Director of the U.S. Census Bureau. Copies will be made available to others on request. This report will also be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-6806 or [sciremj@gao.gov](mailto:sciremj@gao.gov). Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix IV.

A handwritten signature in black ink, appearing to read "Mathew J. Scire". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Mathew J. Scire  
Director, Strategic Issues

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# Appendix I: Scope and Methodology

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To assess the current status of the U.S. Census Bureau's (Bureau) Local Update of Census Addresses (LUCA) Program, we requested and obtained source documents from the Bureau's headquarters in Suitland, Maryland, and the Bureau's Web site regarding the updated timelines of the 2010 LUCA Program and the LUCA Dress Rehearsal. We also visited the Bureau's regional office in Charlotte, North Carolina; conducted a phone interview with the Bureau's regional office in Seattle, Washington; and obtained documents, including the Bureau's timeline for headquarters and regional office activities associated with the 2010 Census LUCA Program. Additionally, we analyzed the data to determine if the Bureau's actual timelines met the planned timelines for the LUCA Dress Rehearsal and the 2010 LUCA Program.

Additionally, we interviewed officials from the Bureau headquarters in Suitland, Maryland, to determine the extent to which activities associated with the 2010 LUCA Program and LUCA Dress Rehearsal (held June through October 2006) met their timelines. We also visited and obtained documentation from localities associated with the LUCA Dress Rehearsal in California and North Carolina.

To assess how the Bureau is addressing prior issues and new challenges associated with implementing the LUCA Program, we performed a review of publications created by GAO and other entities (i.e., the National Research Council, the Department of Commerce's Office of the Inspector General, and Anteon Corporation) regarding the LUCA Program to ascertain critiques of the program and recommendations for improving the program for the 2010 Census. We also obtained source documents and interviewed officials from the Bureau's headquarters in Suitland, Maryland, to determine how the Bureau addressed prior issues and new challenges related to the LUCA Program and what modifications the Bureau has made to the 2010 LUCA Program. To determine how the 2010 LUCA Program is being implemented, we undertook fieldwork in 12 localities (in California and North Carolina) that were eligible to participate in the LUCA Dress Rehearsal, which was held from June through October 2006. The 12 localities were selected because they were geographically diverse and varied in population. During our visits to the localities, we interviewed and obtained documentation from local government officials to determine how the Bureau implemented the LUCA Dress Rehearsal and addressed prior issues and new challenges related to the LUCA Program. We also conducted interviews and collected documentation from the Bureau's regional offices in Charlotte, North Carolina, (in person) and Seattle, Washington, (via telephone) to determine the Bureau's implementation of the LUCA Dress Rehearsal from

the perspective of Bureau officials responsible for the LUCA Dress Rehearsal sites.

To obtain further information on the experiences of participants with LUCA Dress Rehearsal activities, we administered a World Wide Web questionnaire accessible through a secure server to 42 local governments participating in the LUCA Dress Rehearsal. We collected data on participants' experiences with the review process, the census maps and addresses, work materials, and interactions with the Bureau and other agencies.

Because this was not a sample survey, it has no sampling errors. However, the practical difficulties of conducting a survey may introduce errors, commonly referred to as nonsampling errors. For example, difficulties in interpreting a particular question, or sources of information available to respondents, can introduce unwanted variability into the survey results. We took steps in developing the questionnaire, collecting the data, and analyzing them to minimize such nonsampling errors.

For example, the survey was tested with two LUCA Dress Rehearsal participants in order to check that the questions were clear and unambiguous, the information could be obtained by the respondents, and the questionnaire did not place an undue burden on the respondents. When we analyzed the data, an independent analyst checked all computer programs. Once the questionnaire was finalized, each of the 42 local governments was notified that the questionnaire was available online and provided with a unique password and user name. Therefore, respondents entered their answers directly into the electronic questionnaire, eliminating the need to key data into a database.

We included in our study population those local governments in California and North Carolina that participated in the LUCA Dress Rehearsal. We defined participants as those local governments that had signed up to participate and had not later indicated that they in fact did not participate in the LUCA Dress Rehearsal. The Bureau identified 44 state, county, and municipal governments that met our criteria as participating in the LUCA Dress Rehearsal. Questionnaires were sent to 42 local governments<sup>1</sup> and were completed by 31 such governments, for a response rate of 74 percent.

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<sup>1</sup> The questionnaire was sent to 42 local governments, not 44, because one local official was responsible for 3 localities, and we sent the questionnaire to that official only once.

There were a total of 62 localities eligible to participate in the LUCA Dress Rehearsal. In addition to our survey, we also performed structured interviews (in person and via telephone) with officials in 7 localities that were eligible to participate in the LUCA Dress Rehearsal but did not take part in the program.

To assess how the Bureau is addressing the challenges in areas affected by hurricanes Katrina and Rita that may affect the Bureau's successful implementation of the 2010 LUCA Program, we undertook fieldwork in eight localities situated in portions of the Gulf Coast region (Louisiana, Mississippi, and Texas) affected by hurricanes Katrina and Rita. We selected these localities because they varied in size and location in the Gulf Coast region. During the fieldwork, we obtained documentation and interviewed officials from each locality about what challenges, if any, the hurricane damage poses to the locality's successful participation in the 2010 LUCA Program.

We obtained source documents and interviewed officials from Bureau headquarters in Suitland, Maryland (in person), and the Bureau regional office in Dallas, Texas (via telephone), about how the Bureau is addressing the aforementioned challenges that are faced by eligible participants in the 2010 LUCA Program in the areas affected by hurricanes Katrina and Rita. We also obtained information, from the sources mentioned above, on the extent to which the Bureau has addressed prior GAO recommendations regarding performing decennial census operations in hurricane-affected areas.

We conducted our work from July 2006 through May 2007 in accordance with generally accepted government auditing standards.

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# Appendix II: Comments from the Department of Commerce

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

May 31, 2007

Mr. Mathew J. Scirè  
Director  
Strategic Issues  
U.S. Government Accountability Office  
Washington, DC 20548

Dear Mr. Scirè:

The U.S. Department of Commerce appreciates the opportunity to comment on the United States Government Accountability Office's draft report entitled *2010 Census: Census Bureau Has Improved the Local Update of Census Addresses Program, but Challenges Remain (GAO-07-736)*. On behalf of the Department of Commerce, I enclose Census's programmatic comments on the draft report.

Sincerely,

Carlos M. Gutierrez

Enclosure



Draft Report No. – GAO-07-736 – May 2007  
United States Government Accountability Office  
Draft Report Entitled *2010 Census: Census Bureau Has Improved the Local Update of  
Census Addresses Program, but Challenges Remain*  
U.S. Census Bureau Comments

The U.S. Census Bureau generally agrees with the recommendations in this report, but has some concerns and comments about various statements and conclusions.

Our specific comments and concerns about the report are as follows:

**Page 9**

The report includes the following statement: *“A complete and accurate address list is the cornerstone of a successful census, because it both identifies all households that are to receive a census questionnaire and serves as the control mechanism for following up with households that do not respond.”*

**Census Bureau Response:** The address list identifies living quarters not households. A household is considered a group of people living together. Our purpose is to identify any site where people live, stay, or could live.

**Page 11**

The report includes the following statement: *“Subsequently, for 2010, the Bureau has invited approximately 40,000 entities to participate in the LUCA Program and has set a participation goal of 60 percent.”*

**Census Bureau Response:** To be precise, the Census Bureau has not yet invited any governments to participate in LUCA—this does not happen until July 2007.

**Page 16**

The discussion regarding steps the Census Bureau has taken to address problems with the Census 2000 LUCA omits an important one—the expansion of direct LUCA participation eligibility to state governments. Allowing states to participate directly can fill the gap when local governments do not participate due to lack of resources or technical challenges. Additionally, we believe including the states as potential participants seems to have increased their awareness and promotional activities even if they ultimately choose not to participate.

Another omitted improvement is our allowing participants who sign up to participate by October 31, 2007, to provide their boundary updates with their LUCA updates and thereby avoid having to separately respond to the 2008 Boundary and Annexation Survey. This will lower costs and increase efficiency.

**Page 20**

The report displays the chart: “*Available Options for Participation in 2010 LUCA Program (Figure 6).*”

**Census Bureau Response:** There is an error in Option 3. Participants are allowed to use the MTPS to provide map updates to the Census Bureau.

**Pages 32-33**

In the section discussing the impact of the hurricanes, the report states: “*The mixed condition of the housing stock in the Gulf Coast region will increase the address canvassing workload.*”

**Census Bureau Response:** For clarity, the Census Bureau notes that this will not increase the overall workload because Address Canvassing already has to visit every address/structure. What will be affected is the productivity rate.

Regarding the recommendations that begin on page 40:

**GAO Recommendation 1:** “*Assess potential usability issues with the LUCA Program’s CBT and MTPS by randomly selecting localities in which to test the software packages or by providing alternative means to assess such issues before participants begin reviewing and updating materials for the 2010 LUCA Program in August 2007, and provide information on how localities can mitigate issues identified in such assessments via its public Web site and its LUCA technical help desk.*”

**Census Bureau Response 1:** The Census Bureau concurs with this recommendation. Regarding the LUCA CBT, the Census Bureau has contacted the local area’s regional planning commission to request its assistance in identifying nearby local government volunteers to test pilot a preliminary version prior to finalization. We are using the Help Desk contractors—who are new to the LUCA Program and the MTPS—to review the software, help improve the user instructions for the MTPS, and develop Frequently Asked Questions to Help Desk callers and the public via the Census Bureau website.

**GAO Recommendation 2:** *“Provide localities not using MTPS, via its public Web site, its LUCA technical help desk, and other appropriate means, instructions on converting files from the Bureau’s format to the appropriate format for software most commonly used by participating localities to update address information.”*

**Census Bureau Response 2:** The Census Bureau concurs with this recommendation. We, along with our Help Desk contractors, will develop (and continuously improve) supplemental instructions on file formatting and shape file use for non-MTPS users. We plan to disseminate them to the public via the Census Bureau website and to Help Desk callers.

**GAO Recommendation 3:** *“Assess the contribution of the LUCA Program to the final census population counts, as recommended by NRC (to permit an evaluation of the 2010 LUCA Program in preparation for 2020).”*

**Census Bureau Response 3:** The Census Bureau agrees this would be useful, and will try to provide this estimate given the following limitations. It would be extremely problematic to assess the LUCA contribution to the final census count of persons. Since many operations contribute to the creation of the final address list, we would not be able to identify what effect other operations would have had in the absence of a LUCA Program, thereby hampering any effort to estimate the contribution of LUCA to either the housing unit or population count.

**GAO Recommendation 4:** *“Establish a process for localities that agreed to participate in the LUCA Program but found no changes in their review to explicitly communicate to the Bureau that they have no changes.”*

**Census Bureau Response 4:** The Census Bureau agrees with this recommendation and will try to identify and analyze methods for gathering this information from entities that sign up to participate in LUCA but return no address list changes.

**GAO Recommendation 5:** *“Prior to August 2007, when localities begin to review and update Bureau-provided materials, finalize plans for conducting the 2010 LUCA Program in the areas affected by hurricanes Katrina and Rita, and establish milestones for implementing these plans.”*

**Census Bureau Response 5:** The Census Bureau concurs with this recommendation. The plans for conducting the 2010 LUCA Program in the areas impacted by the Gulf Coast Hurricanes are final. The recommendations of the Katrina/Rita working group with respect to the 2010 LUCA Program have been implemented. We have taken steps in the impacted areas to solicit feedback on LUCA implementation, and have conducted special promotional workshops. Technical workshops in the impacted areas are planned for the fall 2007, as they are for all LUCA participants; no special technical training sessions are planned. The 2010 LUCA implementation in the hurricane-impacted areas is on the same schedule as the 2010 LUCA implementation for the rest of the Nation.

**GAO Recommendation 6:** *“Develop strategy, plans and milestones for operations in areas in the gulf coast that address the challenges field staff are likely to encounter in conducting address canvassing and subsequent decennial operations in communities affected by the hurricanes.”*

**Census Bureau Response 6:** The Census Bureau concurs with this recommendation. We are planning to discuss strategies for developing supplemental procedures for disaster-affected areas by late summer 2007. It is our intention to have final procedures, English and Spanish versions, for 2010 Address Canvassing ready by late spring 2008.

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# Appendix III: Web-Based Survey of LUCA Dress Rehearsal Participants

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## Experiences with LUCA review

1. Between the time that the Census Bureau sent its invitation to take part in the LUCA dress rehearsal and your decision to participate, did the Bureau contact you to explain the importance of LUCA and encourage your participation?

*(Check only one answer.)*

*(Number of participants that selected that answer)*

- |   |      |
|---|------|
| 1. Yes  | (23) |
| 2. No (Click here to skip to Question 3.)       | ( 0) |
| 3. Not sure (Click here to skip to Question 3.) | ( 8) |

2. In what ways, if any did the Census Bureau contact you?

*(Check all that apply.)*

- |              |      |
|--------------|------|
| 1. Telephone | (11) |
| 2. E-mail    | ( 9) |
| 3. Mail      | (22) |
| 4. In-person | ( 7) |
| 5. Other     | ( 0) |
| 6. Not sure  | ( 0) |

3. Did the Census Bureau notify you about LUCA classroom training opportunities in you area?

*(Check only one answer.)*

- |   |      |
|---|------|
| 1. Yes  | (27) |
| 2. No (Click here to skip to Question 5.)       | ( 1) |
| 3. Not sure (Click here to skip to Question 5.) | ( 3) |

4. Did your participate in any LUCA classroom training provided by the Census Bureau?

*(Check only one answer.)*

- |        |      |
|--------|------|
| 1. Yes | (24) |
| 2. No  | ( 3) |

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**Appendix III: Web-Based Survey of LUCA  
Dress Rehearsal Participants**

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3. Not sure ( 0)
5. Did the Census Bureau contact you at any time after you agreed to participate in the LUCA dress rehearsal?  
*(Check only one answer.)*
- 1. Yes (28)
  - 2. No (Click here to skip to Question 7.) ( 0)
  - 3. Not sure (Click here to skip to Question 7.) ( 3)
6. In what ways, if any did the Census Bureau contact you after you agreed to participate in the LUCA dress rehearsal?  
*(Check all that apply.)*
- 1. Telephone (11)
  - 2. E-mail (11)
  - 3. Mail (23)
  - 4. In-person ( 4)
  - 5. Other ( 0)
  - 6. Not sure ( 1)
7. Have you completed and submitted the LUCA dress rehearsal materials to the Census Bureau?  
*(Check only one answer.)*
- 1. Yes (30)
  - 2. No ( 1)
  - 3. Not sure ( 0)
8. Which LUCA dress rehearsal participation option did you choose?  
*(Check only one answer.)*
- 1. Option 1 - Title 13 Full Address List Review in paper format ( 8)
  - 2. Option 1 - Title 13 Full Address List Review in computer readable format (14)
  - 3. Option 2 - Title 13 Local Address List Submission ( 5)

4. Option 3 - Non-Title 13 Local Address List Submission ( 4)

9. What are the reasons that you chose that participation option?

10. How satisfied were you with the participation options that were offered by the Census Bureau?  
(Check only one answer.)

- 1. Very satisfied ( 6)
- 2. Generally satisfied (16)
- 3. Neither satisfied nor dissatisfied ( 9)
- 4. Generally dissatisfied ( 0)
- 5. Very dissatisfied ( 0)

11. What other options, if any, would you have preferred to have offered to you and why?

12. How clear was guidance on the schedule for initiating and completing the LUCA  
dress rehearsal review?  
(Check only one answer.)

- 1. Very clear (11)
- 2. Clear (15)
- 3. Neither clear nor unclear ( 3)
- 4. Unclear ( 2)
- 5. Very unclear ( 0)
- 6. No basis to judge ( 0)

**Experiences with maps during your LUCA review**

13. Did you do a full review or a partial review of the maps?  
(Check only one answer.)

- 1. Full review (reviewed 100% of the maps) (Click here to skip to Question 15.) (21)
- 2. Partial review (targeted or sample checked) (Click here to skip to Question 14.) ( 7)

3. Neither (we are not reviewing the maps) (Click here to skip to Question 17.) ( 3)

14. If you did a partial review of the maps, what did you review and how did you decide which maps to review?

15. Did you request either shape files of the maps or paper maps from the Census Bureau?

*(Check only one answer.)*

1. Shape files (11)

2. Paper (17)

3. None ( 1)

16. Was the workload for reviewing the maps more or less than you expected?

*(Check only one answer.)*

1. Much more than we expected ( 4)

2. Somewhat more than we expected (11)

3. Neither more nor less than we expected (13)

4. Somewhat less than we expected ( 0)

5. Much less than we expected ( 0)

17. Which of the Census Bureau's Boundary and Annexation Surveys, if any, did your jurisdiction participate in over the last 3 years?

*(Check all that apply.)*

1. Participated in 2003 Boundary and Annexation Survey (11)

2. Participated in 2004 Boundary and Annexation Survey (14)

3. Participated in 2005 Boundary and Annexation Survey (16)

4. Did not participate in any Boundary and Annexation Surveys between 2003 and 2005 (Click here to skip to Question 19.) (12)



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18. Were map changes that your jurisdiction submitted between 2003 and 2005 as part of a Boundary and Annexation Survey incorporated into the LUCA dress rehearsal maps?

*(Check only one answer.)*

- |  |      |
|--|------|
| 1. All or almost all submitted changes were reflected in the LUCA dress rehearsal maps | ( 9) |
| 2. Some submitted changes were reflected in the LUCA dress rehearsal maps              | ( 6) |
| 3. Few or none of the submitted changes were reflected in the dress rehearsal maps     | ( 0) |
| 4. Don't know  | ( 4) |
| 5. Other (please specify in question below)  | ( 1) |

To what extent were your jurisdiction's Boundary and Annexation map changes incorporated into the LUCA dress rehearsal maps?

*(If you reach the end of the text box and need to type more, please continue; the box will scroll forward as needed.)*

### **Experiences with address lists during your LUCA review**

19. Did your jurisdiction do a full or partial review of the address list and/or address count?

*(Check only one answer.)*

- |  |      |
|--|------|
| 1. Full review (reviewed 100% of the addresses on the list and/or count)<br>(Click here to skip to Question 21.) | (21) |
| 2. Partial review (targeted or sample checked) (Click here to skip to Question 20.)                              | ( 7) |
| 3. Neither (we are not reviewing the Bureau's address list and/or count)<br>(Click here to skip to Question 25.) | ( 3) |

20. If you conducted a partial review of the address list and/or address count, what factors contributed to your decision to conduct a partial review?

21. In verifying the Census Bureau's address list, did you use a single or multiple sources of address data?

*(Check only one answer.)*

- 
1. A single source of address data for all or almost all addresses in paper format (9)  
(Click here to skip to Question 23.)
2. A single source of address data for all or almost all addresses (6)
3. Multiple sources of address data in electronic format (13)  
(Click here to skip to Question 23.)
22. What format did you use most for the multiple sources of address data?  
(Check only one answer.)
1. All or almost all sources in electronic format (4)
2. Majority of sources are in electronic format (7)
3. An approximately equal mix of electronic and paper formats (2)
4. Majority of sources are in paper format (4)
5. All or almost all sources are in paper format (2)
23. What sources did you use to obtain the address data for your LUCA review?
24. Was the workload for reviewing the address list and/or count more or less than what you expected?  
(Check only one answer.)
1. Much more than we expected (10)
2. More than we expected (6)
3. Neither more nor less than we expected (12)
4. Less than we expected (0)
5. Much less than we expected (0)

**Work Materials and Relationships**

25. How easy or difficult did you find the following to work with?  
(Check one for each row.)

**Appendix III: Web-Based Survey of LUCA  
Dress Rehearsal Participants**

	Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult	No basis to judge
25a. Address list	( 0)	( 7)	(12)	( 9)	( 2)	( 0)
25b. Address count	( 1)	(10)	(13)	( 4)	( 1)	( 1)
25c. Maps	( 1)	( 5)	(16)	( 6)	( 0)	( 1)
25d. Instructions on completing LUCA dress rehearsal submission	( 0)	( 7)	(14)	( 7)	( 2)	( 0)

26. To what extent, if any, did you experience problems with the following?  
(Check one for each row.)

	Very great extent	Great extent	Moderate extent	Small extent	No extent	No basis to judge
26a. Scheduling of LUCA training	( 0)	( 0)	( 4)	( 5)	16)	( 5)
26b. Accuracy and completeness of the addresses on the list	( 1)	( 3)	( 7)	(11)	( 5)	( 3)
26c. Accuracy and completeness of the address count	( 1)	( 1)	( 7)	(11)	( 5)	( 5)
26d. Accuracy and completeness of the maps	( 1)	( 2)	(10)	( 6)	( 7)	( 2)
26e. Media on which the Census Bureau provided information	( 3)	( 1)	( 5)	( 9)	(10)	( 1)
26f. Meeting Census Bureau requirements concerning the format and media for returning information	( 4)	( 5)	( 8)	( 5)	( 8)	( 0)
26g. File conversion to appropriate formats	( 3)	( 6)	( 5)	( 3)	( 7)	( 6)
26h. Other (specify in question below)	( 0)	( 3)	( 1)	( 0)	( 4)	( 6)

What other problems, if any, did you experience?

*(If you reach the end of the text box and need to type more, please continue; the box will scroll forward as needed.)*

27. How sufficient, if at all, are the following resources in your jurisdiction to conduct the LUCA dress rehearsal review?

*(Check one for each row.)*

**Appendix III: Web-Based Survey of LUCA  
Dress Rehearsal Participants**

	<b>Very sufficient</b>	<b>Sufficient</b>	<b>Moderately sufficient</b>	<b>Somewhat sufficient</b>	<b>Not at all sufficient</b>	<b>No basis to judge</b>
27a. Human resources available	( 2)	(12)	( 3)	( 6)	( 7)	( 1)
27b. Technical resources available	( 2)	(16)	( 2)	( 5)	( 4)	( 2)

28. To what extent, if any, did your staff doing the LUCA dress rehearsal review have the skills necessary for this type of work?

(Check only one answer.)

- 1. Very great extent ( 3)
- 2. Great extent (12)
- 3. Moderate extent ( 9)
- 4. Small extent ( 4)
- 5. Not at all ( 0)
- 6. No basis to judge ( 3)

29. How satisfied, if at all, were you with the following Census Bureau actions?

(Check one for each row.)

	<b>Very satisfied</b>	<b>Satisfied</b>	<b>Neither satisfied nor dissatisfied</b>	<b>Dissatisfied</b>	<b>Very dissatisfied</b>	<b>No basis to judge</b>
29a. Extent of training regarding address list and/or count review	( 0)	( 9)	(14)	( 4)	( 1)	( 3)
29b. Extent of training regarding map review	( 0)	(10)	(14)	( 1)	( 1)	( 5)
29c. Extent of training regarding the procedures used for submissions to the Bureau	( 0)	( 8)	(15)	( 4)	( 1)	( 2)
29d. Extent of Census Bureau assistance	( 3)	(15)	(10)	( 0)	( 2)	( 1)
29e. Timeliness of the Census Bureau's response to your questions	( 6)	(14)	( 7)	( 1)	( 0)	( 3)
29f. Adequacy of responses provided by the Census Bureau to any questions you asked	( 7)	(11)	( 8)	( 2)	( 0)	( 3)

**Appendix III: Web-Based Survey of LUCA  
Dress Rehearsal Participants**

30. Considering your experience completing the LUCA dress rehearsal, how helpful to you would the following types of training activities have been before you began your LUCA review?

*(Check one for each row.)*

	<b>Extremely helpful</b>	<b>Very helpful</b>	<b>Moderately helpful</b>	<b>Slightly helpful</b>	<b>Not at all helpful</b>	<b>No basis to judge</b>
30a. Classroom training at a regional site	( 3)	( 9)	(12)	( 2)	( 1)	( 2)
30b. Interactive computer-based training provided on CD-ROM or DVD	( 5)	(11)	( 3)	( 5)	( 2)	( 4)
30c. Interactive internet training	( 2)	(11)	( 7)	( 3)	( 2)	( 5)
30d. Self instruction using Census Bureau training guides	( 1)	( 9)	( 9)	( 8)	( 2)	( 2)

31. How helpful to you would the following types of training activities have been **during** your LUCA review?

*(Check one for each row.)*

	<b>Extremely helpful</b>	<b>Very helpful</b>	<b>Moderately helpful</b>	<b>Slightly helpful</b>	<b>Not at all helpful</b>	<b>No basis to judge</b>
31a. Classroom training at a regional site	( 4)	(11)	( 5)	( 5)	( 2)	( 2)
31b. Interactive computer-based training provided on CD-ROM or DVD	( 5)	(12)	( 3)	( 3)	( 2)	( 3)
31c. Interactive internet training	( 5)	(13)	( 4)	( 2)	( 2)	( 3)
31d. Self instruction using Census Bureau training guides	( 2)	( 7)	( 8)	( 9)	( 3)	( 1)

32. How helpful would guidance specific to your office's software have been in completing your LUCA review?

*(Check only one answer.)*

- 1. Extremely helpful (11)
- 2. Very helpful ( 8)
- 3. Moderately helpful ( 1)
- 4. Slightly helpful ( 3)
- 5. Not at all helpful ( 1)

**Appendix III: Web-Based Survey of LUCA  
Dress Rehearsal Participants**

6. No basis to judge ( 7)

33. Did your state data center assist you in completing the LUCA dress rehearsal review?

*(Check only one answer.)*

- 1. Yes ( 3)
- 2. No (24)
- 3. Don't Know ( 3)

34. How useful have the following sources of assistance been in doing your review and update of the address list and/or count and maps?

*(Check one for each row.)*

	Extremely useful	Very useful	Moderately useful	Slightly useful	Not at all useful	No basis to judge
34a. LUCA dress rehearsal training session	( 0)	( 9)	(11)	( 4)	( 0)	( 7)
34b. LUCA dress rehearsal reference manuals	( 0)	(12)	(11)	( 7)	( 0)	( 1)
34c. State data center	( 0)	( 0)	( 1)	( 4)	( 2)	(22)
34d. Other government entities, such as regional partnerships or county governments	( 2)	( 6)	( 3)	( 2)	( 0)	(17)
34e. Census Bureau's regional office	( 2)	( 4)	(12)	( 6)	( 1)	( 6)
34f. E-mail contact with the Census Bureau	( 0)	( 5)	( 6)	( 6)	( 1)	(12)
34g. Census Bureau's web site	( 0)	( 2)	( 5)	( 3)	( 4)	( 17)
34h. Other (please specify what type of assistance and who provided it in question below)	( 0)	( 3)	( 0)	( 0)	( 0)	(15)

What type of other assistance did you receive and who provided the assistance?

35. If a source of assistance in question 34 was of "little or no use", please elaborate on each type of assistance providing examples or illustrations where possible.

36. Which of the following best describes how much of the Census Bureau's LUCA materials your locality's review covered?

*(Check only one answer.)*

**Appendix III: Web-Based Survey of LUCA  
Dress Rehearsal Participants**

- 
- 1. Covered more than originally planned or expected ( 6)
  - 2. Covered about what was originally planned or expected (20)
  - 3. Covered less than originally planned or expected ( 5)

37. Was adequate time allowed to complete the review?  
(Check only one answer.)

- 1. Yes (22)
- 2. No ( 5)
- 3. Don't know ( 4)

38. Given your experiences completing the LUCA dress rehearsal, do you anticipate doing any of the following for the 2010 LUCA?  
(Check one for each row.)

	<b>Yes</b>	<b>No</b>	<b>Don't know</b>
38a. Start our LUCA review earlier	(19)	( 8)	( 4)
38b. Make completing LUCA a higher priority for staff	(14)	( 9)	( 8)
38c. Better prepare local materials prior to receiving LUCA documentation	(16)	( 8)	( 7)
38d. Solicit technical assistance from Census regional staff earlier in the process	(15)	( 9)	( 6)
38e. Other (please specify in question below)	( 1)	( 5)	(12)

What other activities would you do differently in future LUCA reviews?

39. Given your experiences with the LUCA dress rehearsal, what actions, if any, could the Bureau take to improve the program?

40. If you have any additional comments regarding any previous questions or other comments concerning LUCA, the Census Bureau, or this survey, please use the space provided below.

**Background Information**

41. Did your jurisdiction participate in any of the 2000 Decennial Census LUCA programs?

*(Check only one answer.)*

- |             |      |
|-------------|------|
| 1. Yes      | (10) |
| 2. No       | (9)  |
| 3. Not sure | (11) |

42. Have you had previous experience with any LUCA reviews?

*(Check only one answer.)*

- |             |      |
|-------------|------|
| 1. Yes      | (12) |
| 2. No       | (17) |
| 3. Not sure | (1)  |

43. How long have you served in your current position?

**Contact Information**

44. What is the name of the person we should contact if we have any questions?

Name

What is the telephone number of the person we should contact if we have any questions?

Phone number

What is the e-mail address of the person we should contact if we have any questions?

E-mail



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# Appendix IV: GAO Contact and Staff Acknowledgments

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## GAO Contact

Mathew J. Scirè, (202) 512-6806 or [sciremj@gao.gov](mailto:sciremj@gao.gov)

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## Acknowledgments

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