



General Government Division

B-281080

November 20, 1998

The Honorable Fred Thompson
Chairman
The Honorable John Glenn
Ranking Minority Member
The Honorable Max Cleland
Committee on Governmental Affairs
United States Senate

Subject: Decennial Census: Additional Information for Hearing Record on the Initial Results of the Census Dress Rehearsal

This letter responds to your requests for additional information on the 2000 Census following the testimony we presented before the Committee on July 30, 1998.¹ Our responses, contained in the enclosures, are based on our ongoing and prior work, including our review of the Census Bureau's dress rehearsal for the 2000 Census as well as information readily available from Census Bureau officials. The Bureau held the dress rehearsal at three locations: Sacramento, CA; Columbia, SC, and 11 surrounding counties; and Menominee County in Wisconsin, including the Menominee American Indian Reservation. Because comprehensive data on the dress rehearsal are not yet available, our observations in this letter should be considered preliminary.

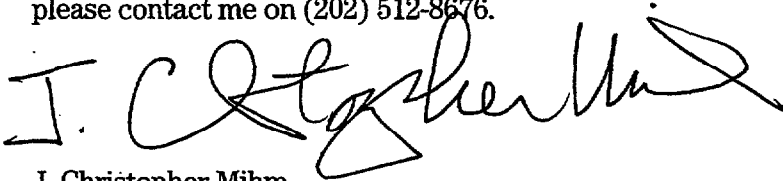
On October 20, 1998, we requested official comments on a draft of this letter from the Secretary of Commerce, or his designated representative, by November 3, 1998. None were provided. On November 17, 1998, senior Bureau officials provided us with some minor technical revisions, which we incorporated where appropriate.

¹ Decennial Census: Preliminary Observations on the Results to Date of the Dress Rehearsal and the Census Bureau's Readiness for 2000 (GAO/T-GGD-98-178, July 30, 1998).

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We hope this information is helpful to you. We are sending copies of this letter to the Chairman and Ranking Minority Member, Subcommittee on the Census, House Committee on Government Reform and Oversight. We will also make this letter available to other interested parties on request. If you have any further questions or wish to discuss these responses, please contact me on (202) 512-8676.

A handwritten signature in black ink, appearing to read "J. Christopher Mihm". The signature is fluid and cursive, with a large initial "J" and a stylized "M" at the end.

J. Christopher Mihm
Associate Director
Federal Management
and Workforce Issues

Enclosures - 3

Questions From Chairman Thompson and GAO's Response

1) As I understand it, the Census Bureau's plan for 2000 assumes a mail response rate of 67%. This seems optimistic, considering that the mail response rate in 1990 was 65% and the mail response rates in the dress rehearsal have hovered around 50%.

a) Do you think the Bureau is on track for achieving a 67% mail response rate?

Answer: Although the Census Bureau generally met its response rate goals for the dress rehearsal, significant concerns remain about the degree to which the Bureau will be able to meet its 67 percent mail response rate goal for 2000. To achieve this goal, the Census Bureau is relying on a package of design improvements, including expanded outreach and promotion, simplified census questionnaires, and paid advertising, that the Census Bureau estimates will increase the mail response rate by 12 percentage points over the 55-percent rate that is expected without these efforts. However, according to Census Bureau officials, a key component of the original improvement package—a second questionnaire mailing to all households—will not be included in the 2000 Census design unless further research indicates that the number of duplicate submissions from households that already responded would not be significant.

During the census dress rehearsal, at both the South Carolina and Sacramento test sites, the Census Bureau increased the response rates by approximately 7 percentage points by sending a second questionnaire to all households located in the mailout-mailback areas. For 2000, if the Bureau abides by its decision to forego a second questionnaire mailing, the Bureau estimates a 61 percent response rate and has indicated that its nonresponse follow-up plans are being adjusted accordingly. Given the potential impact that a second questionnaire mailing may have on response rates, the Bureau may need to reconsider its decision to use a single questionnaire mailing.

Although the Census Bureau expects the use of the outreach and promotion initiatives to encourage participation, especially in hard-to-enumerate areas, we are concerned that the Census Bureau's planned improvements may not bring the high rates of response hoped for because of larger demographic, economic, and attitudinal variables in our society that cannot easily be overcome. Simply raising awareness of the census is insufficient; the Census Bureau must also motivate people to return their questionnaires. The difficulty in doing this was demonstrated during the 1990 Census when the Bureau found that although about 93 percent of the public was aware of the census, the mail response rate was only 65 percent.

b) What are the consequences if the Bureau fails to achieve a 67% mail response rate?

Answer: A critical factor affecting the cost of a census is the necessity for the Census Bureau to follow up on nonresponding housing units, as we reported in July 1997.¹ A declining response rate to census questionnaires has increased the Census Bureau's costly nonresponse workload. In 1990, the Bureau planned for a 70 percent mail response rate but ultimately achieved only a 65-percent rate, creating a higher-than-expected nonresponse workload. The actual nonresponse workload of over 34 million cases represented approximately 3 million more addresses than were budgeted for. Because of this extra workload, the Census Bureau obtained a supplemental appropriation of \$110 million in new funding and permission to reallocate another \$70 million originally appropriated for other activities. The Census Bureau estimates that the follow-up on each 1 percent of nonresponding housing units is to cost about \$25 million in the 2000 Census.

Also, as we reported in 1992, as mail response rates decrease, the rate of errors—persons missed or erroneously included in the census—increases sharply. In 1990, for persons from neighborhoods with the lowest response rates—under 55 percent—the Post Enumeration Survey estimated an omission rate of 18.7 percent and an erroneous enumeration rate of 9.9 percent. A high mail response is therefore important to both reduce the numbers of persons missed by the census and avoid overcounts and other errors.

c) Does the Bureau have a contingency plan to fall back on if it fails to achieve a 67% mail response rate?

Answer: Should the Bureau fail to achieve a 67 percent response rate, it will most likely need to hire additional numbers of census enumerators to handle the higher nonresponse follow-up workload. This was the course the Bureau followed in 1990 when the response rate fell several percentage points below expectations.

2. The Bureau spent over 4 million dollars to advertise the census dress rehearsal, including 2 million dollars to develop and produce radio and television ads. How will the Bureau evaluate the extent to which the paid advertising campaign prompted people to return their census questionnaires? What performance measures will GAO use in tracking the Bureau's evaluation?

Answer: The Bureau has contracted with a private survey research firm to evaluate the effectiveness of the paid advertising campaign. The evaluation is to consist of a telephone survey of a random sample of residents of the Sacramento and South Carolina dress rehearsal sites at two points in time—before the advertising campaign began on March 1, 1998, and after it was completed. The survey is designed to measure public awareness of the census,

¹ 2000 Census: Progress Made on Design, but Risks Remain (GAO/GGD-97-142, July 14, 1997).

the likelihood of residents completing and returning census forms, and attitudes that might affect that likelihood. Responses to the first set of telephone interviews are to be compared with responses to the second round of interviews, thus providing the Bureau with data on the impact of the advertising campaign.

Although the survey was designed to measure the effectiveness of the paid advertising campaign, an important limitation—acknowledged by the research firm—is that the survey cannot isolate the effect of the advertising campaign from other promotional efforts and news reports that occurred at the same time. Consequently, the precise results of the paid advertising will not be known. We will continue monitoring the advertising evaluation, and we plan on reporting the results as part of our future work.

In terms of the performance measures we will use to track the Bureau's evaluation, we plan on assessing the general validity of the study (e.g., whether the Bureau measured the right things in the right way); whether the results are made available to Bureau decisionmakers in a timely fashion; and how the Bureau uses the results.

3. An important part of the Census Bureau's outreach and promotion efforts are the Complete Count Committees and the Questionnaire Assistance Centers established in the communities. However, I understand there have been a number of difficulties in establishing these organizations and that fewer than half of these dress rehearsal counties have active Complete Count Committees.

3a) Based on your dress rehearsal observations, how would you characterize the value of the Census Bureau's Complete Count Committee effort in promoting awareness and participation in the census?

Answer: The Bureau has recommended to local governments that Complete Count Committees (CCC) could, among other activities, form subcommittees to reach targeted population groups; sponsor promotional events; work with businesses to promote and support the census; provide the Bureau with facilities to test and train enumerators; and obtain local media coverage of census activities. Our dress rehearsal observations suggest that the CCCs had different capability and commitment levels, and thus their value in promoting the census varied widely. This mismatch between the Bureau's expectations and what the CCCs could realistically accomplish was particularly apparent among the rural governments in the South Carolina and Menominee dress rehearsal sites. Indeed, a message we consistently heard from local officials associated with the CCCs was that they lacked the human and financial resources to promote the census.

For 2000, the Bureau continues to expect that CCCs will assume a major role in conducting the census. This was evident in a Complete Count Committee handbook the Bureau sent to local governments this past spring. The handbook describes nearly 60 activities that CCCs

can undertake to promote the census as well as help the Bureau carry out other operations, such as data collection and enumerator recruiting. Given the dress rehearsal experience, however, it is unclear whether the Bureau has realistic expectations about the contributions that CCCs will be able to make.

In terms of the CCCs' effectiveness in raising participation in the census, we have no data on this. Also, as noted in our response to question #2, it would be difficult to separate the impact any one initiative had on increasing participation in the census because various initiatives are used in conjunction with one another.

3b) Compare and contrast the success of the Questionnaire Assistance Centers between the Sacramento and South Carolina dress rehearsal sites. What worked well and what did not?

Answer: Based on our observations at the dress rehearsal sites, the Sacramento and South Carolina Questionnaire Assistance Centers (QAC) differed in two important respects: visibility and staffing. Around the time of Dress Rehearsal Census Day (April 18, 1998), both Sacramento and South Carolina had QACs located in churches, community centers, schools, social service organizations, and other places where particular segments of the local population were likely to congregate. However, Sacramento also had QACs located in highly visible places more easily accessible to the general public, such as shopping centers, Post Offices, and supermarkets. With few exceptions (e.g. libraries), the South Carolina QACs were generally not located in similar, highly visible locations.

The QACs also differed in that Sacramento staffed its QACs with paid enumerators. In contrast, South Carolina used volunteers. However, according to the Bureau, it was difficult finding volunteers to staff some QACs. As a result of this experience as well as an internal review, the Bureau now plans on hiring as many as 15,000 temporary paid employees to supplement volunteers in running QACs. With this many employees, the Bureau estimates that it will be able to staff one QAC in about a quarter of all neighborhoods in the weeks following the questionnaire mailing. The paid employees are to be used in neighborhoods where a significant portion of the population cannot speak or read English well.

3c) Summarize your overall observations on the success of the Census Bureau's outreach and promotion effort during the dress rehearsal and the lessons learned for 2000.

Answer: Quantitative data on the success of the Bureau's outreach and promotion effort during the dress rehearsal will not be available from the Bureau for several months; therefore, it would be premature to draw any firm conclusions. However, based on our observations to date, the following appear to be some preliminary lessons learned.

First, with regard to local partnerships, the Bureau needs to ensure that it has realistic expectations about the contributions that Complete Count Committees will be able to make in promoting the census, building the response rate, and assisting the Bureau in its other census-taking activities. We also observed the important role that Bureau assistance and guidance played in supporting Complete Count Committees' efforts. Finally, although quantitative data on the impact of the Bureau's advertising campaign are not yet available, data from the 1990 Census suggest that the Bureau faces the challenge of not only raising awareness of the census, but the more difficult task of motivating people to complete their forms.

4. I understand that the quality of the maps provided to enumerators doing the field work is poor—so poor that some enumerators have discarded the Bureau's maps and are relying on maps they bought at the local convenience store. Please elaborate on this problem and whether the Bureau has taken steps to correct it.

We first heard about problems with maps last year when local governments were reviewing Bureau addresses and maps during Local Update of Census Addresses (LUCA). More recently, when we were observing dress rehearsal activities this past June, we were told by the manager of the Sacramento Local Census Office that the maps provided by the Bureau for nonresponse follow-up were of poor quality. The Bureau maps had streets where there were no streets, and no streets where there were streets. This led some enumerators to use commercially produced maps. We also heard concerns about the quality of maps in Columbia, South Carolina, where some enumerators and crew leaders said that the Bureau's maps were confusing and, as a result, they used commercially available street atlases in place of the Bureau's maps. Further, in one of the rural areas of South Carolina we visited, a crew leader and an enumerator said that maps were missing "map spots" indicating where housing units were located. This made finding rural houses difficult. Although our observations and discussions may not be indicative of the quality of all maps used for the dress rehearsal overall, they do suggest that the Bureau's maps may be of uneven quality.

The Bureau has recognized the inconsistent quality of its maps and has taken several actions to improve them. For example, the Bureau plans on using field staff to update maps and address lists as part of its procedures for building and verifying the address file for the 2000 Census. This was not done during the dress rehearsal. We plan on reviewing the Bureau's improvement efforts as part of our future work.

5. In its March 1998 report, GAO identified mistakes in preparing for the ICM operation, which is the sampling method used to adjust for undercount or overcount, and stated, "...we are concerned about the Bureau's ability to detect and correct problems in a timely manner." Does GAO continue to have these concerns? Has the Bureau taken steps to address them?

Enclosure I

Questions From Chairman Thompson and GAO's Response

Because the 2000 Census will be conducted on a much larger scale than the dress rehearsal, the concerns we raised over the challenges facing the Bureau in implementing the Integrated Coverage Measurement (ICM) remain. Nevertheless, the Bureau has taken steps to refine the sample design, data collection, and estimation procedures necessary to collect and use ICM data in 2000. Noteworthy are activities designed to measure the number of residents who move after Census Day, maximize the accuracy of state population estimates, and incorporate the multirace responses that are now required by the Office of Management and Budget.

Questions From Ranking Minority Member Glenn and GAO's Response

1. In our exchange I asked what kind of accuracy would be achieved if we spent an estimated \$750 to \$850 million more than the Bureau's current plan to conduct a "1990 style" census without the use of statistical methods. It is my understanding that such a census would not even reach the accuracy of the 1990 census. Is that correct? If so, what is the estimated undercount for such a census?

Answer: In a June 1997 summary of the projected costs and accuracy of alternative 2000 Census designs, the Census Bureau estimated that the net undercount rate in 2000 is projected to be 1.9 percent of the population if a "1990 style" census is conducted without the use of statistical methods but includes other improved procedures (such as multiple mail strategy, questionnaire redesign, and enhanced outreach and promotion). The design estimate assumes an overall mail response rate of about 67 percent. The Census Bureau stated that this net undercount estimate is based on growth rates in the populations most difficult to count and means that the 2000 Census would likely fail to include more than 5.2 million people. In the 1990 Census, the Bureau estimated that there were 4.4 million gross erroneous enumerations (duplications and those otherwise improperly included), and 8.4 million persons were missed.

As part of its planning effort for a 2000 Census that does not include statistical sampling, the Census Bureau is exploring a variety of options to reduce the undercount—including the addition of coverage improvement programs that were used in 1990. For example, one such program would provide local governments the opportunity to review census counts and maps for inconsistencies and work with Bureau staff to resolve differences. The Bureau is currently researching how to increase the effectiveness of these programs for 2000. We are monitoring these efforts at the request of the Subcommittee on the Census, House Committee on Government Reform and Oversight.

2. Were the procedures planned for developing the address list for 2000 modeled after those used in 1990? If so, what was the accuracy of the 1990 address list? Is there any reason to expect that the procedures planned for 2000 would produce an address list with lower accuracy than 1990? Do your concerns about the address list center around whether we can improve the 1990 accuracy to the targeted 99 percent level? Which of the components of the 2000 address list procedures have not been tested either in the 1990 Census or in preparation for the 2000 Census?

Answer: The procedures planned for developing the address list for 2000 are similar in many respects to the procedures used in 1990. However, there are a few differences. In 1990, for predominantly urban mail delivery areas, the Bureau purchased address lists from commercial vendors. After the Bureau reviewed them, the Postal Service checked the commercial lists for completeness and accuracy and suggested additions. The Bureau then used temporary census workers to physically verify the address list. Lastly, the updated list was again sent to the Postal Service for another check.

The Bureau's procedures for building its list of suburban addresses in 1990 were also different from the 2000 approach. In 1990, the Bureau hired temporary census workers to canvass suburban areas to collect mailing addresses and identify the physical locations of housing units on maps. This list was then checked by the Postal Service, and differences between the Bureau and Postal Service addresses were reconciled by additional Bureau fieldwork.

Local governments were given two opportunities to verify the accuracy of the Bureau's address list. In early 1990, before the census, local governments in urban and suburban areas were given block-level housing unit counts. Later, in 1990, after major census data collection efforts were completed, all of the nation's 39,000-plus local governments were provided block-level counts for their review. Together, the Bureau's address building procedures generated an address file with a gross error of about 5 percent.

Currently, the Bureau's planned procedures for compiling the address list for the 2000 Census are similar to those used in 1990 but instead of using commercial address lists, it plans to use U.S. Postal Service mail delivery sequence files (DSF) as well as its own file from the 1990 Census. The Bureau believes that using the DSF will result in a more accurate address list because the Bureau has been updating its own files with the DSF on a monthly basis since 1996. The Bureau plans on continuing these updates through January 2000. It also plans to provide local governments an opportunity to review address lists, in lieu of housing unit counts. These changes are required by the Census Address List Improvement Act of 1994 (P.L. 103-430).

For the 2000 Census, the Bureau hopes to produce an address list that is 99 percent complete and accurate. Our concern with the Bureau's planned procedures for 2000 is that it is not clear, given the similarities between the 2000 and 1990 procedures (which, as previously noted, had a gross error rate of about 5 percent), where the Bureau will find opportunities to better enhance the quality of the address list.

3. During the discussion about the address lists at the hearing, you noted that in the dress rehearsal, 12 percent of the questionnaires were returned as "undeliverable as addressed." What percentage of such forms were returned because the housing unit was subsequently found to be vacant? What percentage were returned because the address was no longer in existence? How do these rates compare to those observed in the 1988 dress rehearsal?

Answer: According to Census Bureau officials, of the 48,108 questionnaires returned as "undeliverable as addressed" in the census dress rehearsal, 32.4 percent, or 15,569, of these questionnaires were returned because the housing unit was subsequently found to be vacant. 67.6 percent, or 32,539, of these questionnaires were returned because of "other" reasons, including the address no longer being in existence. In 1990, 6 percent, or 5.3 million, census

questionnaires were returned as undeliverable. The Census Bureau's 1990 data on undeliverable questionnaires showed that 33.6 percent, or 1.8 million, of those questionnaires were identified as mailed to vacant housing units; the remaining 66.4 percent, or 3.5 million, were returned because of "other" reasons.

During the dress rehearsal, the Bureau evaluated the number of undeliverable as addressed questionnaires that were later found to be mailed to occupied units. However, Census Bureau officials told us that this data will not be made available until the evaluation results are finalized and issued in January 1999.

According to a Census Bureau official, the Bureau did not collect information on the number of questionnaires marked undeliverable as addressed during the 1988 Census dress rehearsal because census questionnaires were mailed out under Postal Service bulk mail rates and did not receive return to sender designations.

4. Some have argued that problems with the address list make a census without sampling preferable to a census with sampling. Do you agree with this statement?

Answer: Accurate address building procedures are essential for drawing representative samples for sample-based nonresponse follow-up and the Integrated Coverage Measurement survey that are incorporated into the census design that uses sampling. On the other hand, the goal of a traditional, full-enumeration design is to count every person in the country, and this cannot be achieved unless every occupied housing unit in the country is included in the address list. An error-prone address list not only results in an incomplete enumeration but also risks a "differential undercount" to the extent that certain types of housing units are more prone to be missed than others. Such a differential undercount would misrepresent the distribution of different demographic or subnational groups in the population. We have noted in earlier reports that an accurate address list is a critical requirement for an accurate census, regardless of which design is ultimately chosen.

5. There was considerable discussion about the possibility of using administrative records for the census. Of course, the key to using such records is collecting individual social security numbers on the census form. In the first half of this decade the Census Bureau tested collecting social security numbers on the census form. What was the percent decrease in response when respondents were asked to list social security numbers to all members of the household? Based on those findings, what would be the effect on the expected 65 percent mail response rate in 2000 if the Bureau requested social security numbers?

Answer: The Census Bureau's 1992 Simplified Questionnaire Test (SQT) was designed, among other things, to determine the effect on return rates from requesting Social Security numbers on census questionnaires. The test results highlighted the problems the Bureau

faces in securing a level of public cooperation that is consistent across diverse population groups and geographic areas. The 1992 SQT included a user-friendly short form with and without the request for a Social Security number for each household member. According to Census Bureau 1992 SQT research findings, asking for a Social Security number significantly lowered completion rates overall and for areas that had the lowest response in 1990, but not for areas that had higher response rates in 1990.

Overall, in the SQT, the form without the Social Security numbers had a 71.4 percent return rate; the form with the Social Security numbers had a 68.0 percent return rate. For areas of low response in 1990, the form without Social Security numbers had a 55.1 percent return rate; the form with Social Security numbers had a 48.9 percent return rate. However, for areas of higher response rates in 1990, the form without Social Security numbers had a 73.5 percent return rate; the form with the Social Security numbers had a 70.5 percent return rate. Furthermore, the test showed that among those respondents returning the form with the Social Security numbers, approximately 14 percent failed to provide a Social Security number, and over 17 percent of the households failed to provide a Social Security number for at least one household member.

We have not done work that would allow us to conclude the effects on the expected 65 percent mail response rate in 2000 if the Census Bureau requested Social Security numbers from respondents.

6. You indicated at the hearing that the cost of following up on one percent of the population that does not return the form by mail will be \$25 million. How does that figure compare to 1990? Based on our experience in the 1990 census, wouldn't the cost of nonresponse follow-up (NRFU) for each one percent of the population increase substantially for the hardest-to-count households? If the Bureau must make direct contact with all non-responding households (as it tried to do in 1990), what is the estimated cost per one percent of the population for the final 10 percent of the NRFU workload?

Answer: Data needed to perform this analysis were not received from the Bureau in time to be included in this letter. We will supply the information when it becomes available.

7. You testified that one of the challenges the Census Bureau faces in 2000 is that it has decreased the time in the field for collecting information from households that do not return the form by mail. Chapter 5 of your March 1998 report (page 41) states, "as currently designed, the schedules for completing certain phases of the census – including mail response, nonresponse follow-up, and ICM – are compressed when compared to the 1990 Census." If the Census Bureau is in the field longer than the 6 weeks currently planned for NRFU, what would be the effect on data quality? Would you recommend that the 6 weeks for NRFU be extended and, if so, for how

long? Based on evaluations of the 1990 census, what level of error can we expect to see in data collected as part of the NRFU phase in June, July, and August? Does the experience from the dress rehearsal raise serious concerns about the Bureau's time schedule for the two completed phases, mail response and nonresponse follow-up?

Answer: Extending data collection for nonresponse follow-up (NRFU) might produce some improvements in data quality but could also degrade data quality in other ways. On the positive side, allowing additional time for NRFU would give enumerators additional time to obtain information from nonresponding households that they had been unable to reach or convince to participate during the planned collection period.

However, Bureau studies have demonstrated that the accuracy of NRFU data is related to the amount of time that passes between Census Day and the date NRFU data are collected. Data collected earlier in the nonresponse follow-up process tend to be more accurate than data gathered later. In 1990, erroneous enumeration rates by month were as follows:

Table 1: 1990 Erroneous Enumeration Rate by Month

| Month of check-in | NRFU erroneous enumeration rate (percent) | All data collection activities (percent) ^a |
|-------------------------|---|---|
| May | 7.1 | 6.7 |
| June | 13.8 | 13.7 |
| July | 32.6 | 18.8 |
| August through December | 21.6 | 28.4 |

^aIncludes mailback, NRFU, field follow-up, list/enumerate, and list/enumerate with field follow-up.

Source: Table 6 from Eugene P. Ericksen, Leobardo F. Estrada, John W. Tukey, and Kirk M. Wolter, Report on 1990 Decennial Census and the Post-Enumeration Survey, submitted to the Secretary of Commerce (Washington, D.C.: June 21, 1991).

Based on the Bureau's experience in 1990, it appears that extending NRFU data collection may increase errors in the data because of the amount of time that will have elapsed between Census Day and the extended NRFU data collection activities. There are a number of possible sources for these errors:

- Residents may have more difficulty remembering who was living at the address on April 1 as time passes.
- Residents on April 1 are more likely to have moved.
- The Bureau may have to rely increasingly on "last resort" or "closeout procedures" to collect incomplete or third-party data on those households that are difficult to contact or who have moved.

Extending NRFU data collection creates additional problems if the sampling design is selected for the Census, because it would affect other Census activities. Under 13 U.S.C. 141(b), census data must be delivered to the President within 9 months of Census Day. Consequently, extending NRFU data collection will compress activities that must await completion of NRFU but must also be completed before data are delivered. These activities include ICM data collection. Compressing ICM data gathering may increase the use of last resort or close-out procedures for this survey, which may degrade ICM data quality and consequently the accuracy of ICM-based adjustments for undercount in the enumeration.

Given that extending NRFU could have mixed consequences for census data quality, it would be premature at this point to recommend an optimal length for NRFU data collection. Dress rehearsal performance measures on adherence to data collection schedules for NRFU and ICM will be useful in fine-tuning these schedules for 2000. Performance data from all three dress rehearsal sites show that NRFU was completed either on or ahead of schedule, which is a promising outcome. However, a number of factors may come into play in 2000 that could affect our expectations for NRFU data collection.

First, the Census Bureau may be unable to fully staff its NRFU enumerator workforce. Second, the response rate for mail-back questionnaires may be lower than anticipated. Either of these developments would place additional burdens on NRFU, making a longer data collection period necessary. In addition, because it is not yet available from the Bureau, we have not examined the quality of NRFU data, particularly its reliance on last-resort or close-out data. Data quality concerns may affect our evaluation as to whether 6 weeks is a reasonable amount of time to allow for this activity.

8. Your testimony indicated that there are still problems with the promotion and outreach effort. Would you recommend that the Census Bureau hire more community outreach specialists? If so, how many should be hired? Where should the funds to cover this expense come from? Should those costs be covered by reducing other planned activities, or should the funds be in addition to what is already planned?

Answer: For 2000, the Bureau plans on filling 320 full-time partnership specialist positions nationwide, and this could result in a heavy workload similar to that experienced in South Carolina during the dress rehearsal. However, before an appropriate staffing level can be recommended, the Census Bureau needs to clearly acknowledge its expectations concerning the degree of impact these outreach specialists will realistically have on promoting community involvement in the census. Indeed, such a recommendation would depend in part on the impact the specialists had on increasing people's awareness of, and their participation in, the census. Although the Bureau had initially planned to evaluate the success of its partnership program during the dress rehearsal, this study was one of several that were subsequently cancelled, thus limiting the amount of quantitative data available to assess the

adequacy of the Bureau's partnership staffing levels. We will continue to examine the Bureau's use of partnership specialists as part of our ongoing review of the Bureau's outreach and promotion efforts.

9. Chapter 3 of your March 1998 report noted on page 29 that "efforts to establish CCCs [Complete Count Committees] in South Carolina have had mixed results" and that "officials from five South Carolina counties and the city of Columbia indicated that resources to carry out promotional activities were limited." For the Census Bureau to provide substantially more staff support and printed materials to satisfy all the Complete Count Committees, as some have suggested, would have budget consequences. Do you believe that the Census Bureau should substantially raise the budget for this purpose or should it help the Committees to learn to adjust the level of resources the Bureau provided in the dress rehearsal?

Answer: Such a decision would depend on the comparative return on a broader range of options. Our work to date at the dress rehearsal sites suggests that the effectiveness of the Bureau's local partnership efforts were undermined by an apparent mismatch between the Bureau's expectations of the CCCs and what the CCCs could realistically accomplish. Until the Bureau can clearly explain what it expects from the CCC program or identifies the level of support the Bureau is truly capable of providing to CCCs, we can not determine whether CCC resources should be adjusted for 2000.

For 2000, a handbook sent to the highest elected official in approximately 39,000 local and tribal governments suggests that the Bureau expects local governments to put forth a substantial level of effort to promote the census as well as perform a number of other census-taking activities. The handbook is less explicit as to what the Bureau plans to contribute as part of its share of the partnership. Thus, although we cannot currently address whether the Bureau should spend more money on its CCC activities, it is clear that the success of the Bureau's efforts will depend in large part on whether the Bureau's expectations are aligned with what local governments can implement.

10. Chapter 4 of your March 1998 report (page 36) noted "we are concerned that the Bureau's decision to focus its recruitment efforts on moonlighters and retirees was based on limited data" and that "the implicit assumptions" used in the analysis relied upon by the Bureau "may or may not be valid." Does the evidence from the dress rehearsal indicate that the Bureau's new recruiting and wage strategy has succeeded in reducing turnover and raising productivity?

Answer: The Bureau's personnel database (PAMS-ADAMS) does not systematically collect information on whether the applicant is a retiree or moonlighter in a manner that would permit us to evaluate the impact of its recruiting strategy on turnover and productivity. The PAMS-ADAMS system contains previous employer information voluntarily supplied by the

applicant. However, from the information supplied, the Bureau would be able to determine only whether the applicant was currently employed when he or she applied for a job. It would not know whether the applicant subsequently quit, kept both jobs, took other employment, or retired.

Concerning the Bureau's wage strategy, we noted in our report that the Bureau was implementing a new wage-setting program using locality-based pay and productivity bonuses. During our visits to the dress rehearsal sites and discussions with Bureau officials, we found that the wage strategy may have had a positive impact on turnover and productivity. For example, as we observed in our July 1998 testimony, job offer acceptance rates, applicant quality, and turnover were all better than the Bureau anticipated. Productivity came very close to its goal, and key operations were completed on schedule. Further, we also noted that the Bureau used its new pay flexibility in South Carolina by raising pay rates when it began having recruiting difficulties. Bureau officials told us that the decision to raise pay was based on analyses and recommendations from the consulting firm Westat and that the firm will continue to analyze and recommend adjustments to the Bureau's wage strategy as necessary.

Questions From Senator Cleland and GAO's Response

1) At the request of Chairman Thompson and Senator Glenn, last March the GAO prepared a report entitled 2000 Census: Preparations for Dress Rehearsal Leave Many Unanswered Questions. Page 2 of your report stated:

The 1990 Census was the most costly in history and it produced data that were less accurate than those from the 1980 Census, leaving millions of Americans uncounted. GAO, Congress, the Bureau, and others concluded that the established approach used for taking the census in 1990 had exhausted its potential for counting the population cost-effectively, and that fundamental design changes were needed to reduce census costs and improve the quality of the data collected.

How long has the GAO believed that the “established approach” has “exhausted its potential for counting the population cost-effectively”? Do you still believe that?

Answer: In our June 1992 summary report on the 1990 Census, we stated that the current approach to taking the census appears to have exhausted its potential for counting the population cost effectively and is in need of change.¹ A similar conclusion was reached independently by the Department of Commerce task force for designing the 2000 Decennial Census and by two expert panels of the National Academy of Sciences. We still believe that if the 1990 model were followed in 2000 without significant change, we would find the same pattern in the 2000 Census that we observed in 1990—a census more costly and less accurate than its predecessor.

The Bureau's plans for the 2000 Census call for a number of significant changes to what was done in 1990. In addition to sampling, these changes include an expanded outreach and promotion effort, a streamlined census questionnaire form, and greater use of partnerships, among other activities. It is too early to tell if these additional changes will improve the results of the 2000 Census compared to 1990.

Does the GAO concur with the vast majority of scientists in this country, including the National Academy of Sciences, that scientific sampling is an option which improves on the established approach, both in terms of improved accuracy and lower costs?

Answer: In 1992, after comprehensively studying the 1990 Census, we urged the Census Bureau to consider using statistical sampling to develop information on nonrespondents in an effort to achieve significant cost savings. In our July 1997 report, we stated that Bureau

¹ Decennial Census: 1990 Results Show Need for Fundamental Reform (GAO/GGD-92-94, June 9, 1992).

simulations show that the Bureau's plan, if effectively implemented, had the potential, on average, for producing a more accurate and less costly census than if only conventional procedures were used.² According to Census Bureau cost estimates prepared in 1997, the Census Bureau's plan for the 2000 Census would save between \$700 million and \$800 million of the cost of using a plan that incorporated all of the new initiatives proposed for the 2000 Census, except those involving sampling and statistical estimation. In addition, the simulation results suggest that the new statistical methods the Census Bureau proposes to use in the 2000 Census, if effectively implemented, would likely produce results that appear more accurate or more equitable according to at least three broad criteria: (1) better average levels of error, (2) error distributions compressed closer to the average levels, and (3) an apparently better cumulative error distribution.

As we noted, if a decision to proceed with sampling is made,³ the key to the success of the Census Bureau's sample-based data collection activities would be how well these plans are implemented. This sample-based design may face several operational, methodological, technological, and quality control challenges. The schedules for completing certain phases of the census—including mail response, nonresponse follow-up, and ICM—are compressed when compared to the 1990 Census. Given these time constraints, the Bureau may have to limit repeated call-backs to hard to enumerate housing units and rely more heavily on other sources for last-resort or closeout census data to complete the nonresponse follow-up phase on time. The sample surveys the Bureau intends to employ in 2000 are large and complex. Consequently, a major challenge confronting the Bureau is whether all components of its plan can be implemented effectively and with limited errors in a decennial census environment. One reason for concern in this regard is that several months after the July 1991 census adjustment decision, the Bureau discovered a computer coding error in the 1990 Post Enumeration Survey estimation procedures.

2) I'd like to reiterate the concern Sen. Glenn succinctly expressed in the hearing. The issue of sampling has become so mired in politics that it's unclear how we are going to base our judgements on its success or failure. How can we monitor the process to help ensure that impartial judgements prevail over politics?

Answer: First, if a decision to proceed with sampling is made, the Bureau must be as forthcoming as possible in informing Congress and the public about its plans for statistical

² GAO/GGD-97-142.

³ Two federal district courts have recently ruled that the use of sampling to determine the population for the purpose of apportionment of representatives among the states violates the Census Act, specifically 13 U.S.C. sec. 195. *Glavin v. Clinton*, No. 98-207-A, 1998 U.S. LEXIS 15068, (E.D. Va. Sept. 24, 1998); *United States House of Representatives v. Dept. of Commerce*, 11 F. Supp. 2d 76 (D.D.C. 1998).

sampling and estimation. A range of different audiences with varying expertise in statistics has a stake in these plans, and the Bureau needs to present its plans in a variety of formats so that all interested audiences may assess these plans on the basis of their merits. A failure to describe these plans adequately opens the door for misunderstanding and misinformation. The Bureau also needs to make clear any assumptions or trade-offs that dictated the selection of one design over another, so that these decisions may be evaluated. Second, strong and continuing congressional oversight is essential, as we stated in our summary report for the 1990 Census⁴ and in our 1997 report on the Bureau's plans for 2000.⁵ Such oversight will both help the Bureau develop a clear understanding of Congress' expectations for the Census and also facilitate Congress in determining whether its expectations are being addressed. Third, the Bureau and other agencies, such as the Department of Commerce Inspector General and GAO, will evaluate Bureau procedures and data collection practices. Important components of these evaluations are on-site monitoring and independent analysis of census dress rehearsal data.

3. From your observations of the dress rehearsal, does it appear that the Census Bureau has attempted to implement the open and transparent process that GAO had wanted?

Answer: We have consistently called on the Bureau to conduct the census in a manner as open and transparent as possible and to keep its stakeholders fully informed. For example, as we noted in the previous question, in our June 1992 report, we said that the success of the Bureau's efforts to reform the census would depend in part on the openness of the process involving all interested parties. We also noted that strong and continuing congressional oversight of the Bureau's planning and preparations for the 2000 Census was essential in part because of the importance and political sensitivity of the census.⁶ Similarly, in our July 1997 report, we recommended that the Bureau, among other actions, should provide Congress and other stakeholders with detailed data to meet the objective of full and open disclosure on the anticipated effects of the Bureau's design proposal.⁷

Based on our observations of the dress rehearsal, it appears that the Bureau has generally made a good faith effort to maintain an open process. For example, the Bureau has consistently given us access to its personnel and installations; and it was accommodating in facilitating our visits to the dress rehearsal sites, which allowed us to observe key census-

⁴ GAO/GGD-92-94.

⁵ GAO/GGD-97-142.

⁶ GAO/GGD-92-94.

⁷ GAO/GGD-97-142.

taking activities. Further, the Bureau has not denied any of our requests for information and/or documents.

Nevertheless, the Bureau does not always fully document its various operations, making them difficult to assess. For example, as we reported in our March 1998 testimony, following our review of the Bureau's evaluation program, we could not determine whether needed evaluation data would be available on a timely basis because the Bureau's plans were not sufficiently defined.⁸

4. You testified that based on your preliminary observations on the dress rehearsal, obtaining the public's cooperation remains a challenge for the Census Bureau. Do you have any suggestions for helping the Bureau meet its target of a 67 percent mail response rate for Census 2000?

Answer: Increasing the public's participation in the census is important because it improves the accuracy and completeness of census counts and reduces the cost of expensive nonresponse follow-up operations. The Bureau has already considered and tested a number of options for raising participation; and, at this point in the census cycle, it is too late to adopt any major new initiatives. Therefore, careful evaluation and consideration of the various methods used to increase public participation during the dress rehearsal, including, for example, the Bureau's paid advertising campaign, local partnership efforts, and the questionnaire mailing strategy, will be essential for helping the Bureau meet its mail response targets.

5. In your testimony you reiterated your long-standing concerns about the Bureau's ability to build a "complete and accurate address list"—which we would all agree is key to an accurate census in the year 2000. Senator Durbin posed one solution to the problem—having other agencies share their data with the Bureau. He specifically asked you if there was any prohibition on other agencies sharing information with the Census Bureau, information such as IRS returns, INS data, and Postal records. You answered that the prohibition usually goes the other way, that the Census Bureau does not share its information with other agencies. I do not think this is a satisfactory answer, and I will therefore repeat Senator Durbin's question: Is there a prohibition on agencies sharing their data banks with the Bureau, and if not, shouldn't this procedure be implemented for Census 2000? What suggestions do you have for expediting this procedure?

⁸ Decennial Census: Preparations for the Dress Rehearsal Underscore the Challenges for 2000 (GAO/T-GGD-98-84, March 26, 1998).

Answer: Generally, there is no prohibition on the ability of agencies to share data with the Census Bureau. Indeed, as noted earlier, the Bureau already uses the U.S. Postal Service's list of addresses to update its own files. The Bureau has general statutory authority to request information from other federal departments and agencies for purposes of carrying out the Bureau's duties under the law.⁹ The Bureau may also acquire, by purchase or otherwise, records, reports, and other material from states or other governmental units as part of conducting a decennial census.¹⁰ Moreover, the Bureau may, to the maximum extent possible and consistent with the kind, timeliness, quality, and scope of the statistics required, acquire and use information available from the above-mentioned authorities instead of conducting direct inquiries.¹¹

The Privacy Act, which prescribes the conditions under which an agency may disclose records maintained on individuals, specifically exempts an agency from the requirement to get prior written consent of the person to whom a record pertains before release of the record if the record goes to the Census Bureau "for purposes of planning or carrying out a census or survey" pursuant to the Bureau's statutory authority.¹² Once the Bureau acquires information, through whatever authority, it is statutorily required to keep it confidential.¹³

Although the Census Bureau has general statutory authority to acquire information from other agencies, both the National Academy of Sciences and GAO concluded that conducting the 2000 Census completely, or even primarily, through the use of administrative records would not be viable because of formidable technical, policy, and legal obstacles. These included identifying and securing access to administrative records that contain data collected in the census and matching administrative records together. In February 1997, the Census Bureau decided to drop plans to use administrative records to derive the census count for some nonresponding households because of (1) an increasing concern that questions about the quality and coverage of administrative records may involve long-term research, well beyond the 2000 Census; and (2) a lack of broad acceptance from Census Bureau stakeholders due to data quality issues. However, to augment its address list development for 2000, the Census Bureau is piloting the use of address records from the Internal Revenue Service to assist in identifying pockets of addresses missing from the Bureau's address file.

⁹ 13 U.S.C. sec. 6(a).

¹⁰ 13 U.S.C. sec. 6(b).

¹¹ 13 U.S.C. sec. (6).

¹² 5 U.S.C. sec. 552a(b)(4).

¹³ 13 U.S.C. sec. 9.

Moreover, the Bureau has said that expanding the use of administrative records in 2000 is one of the options it is exploring in the event the decision is made against the use of sampling.

Recently, Congress has considered the long-standing issue of data sharing among federal agencies and proposed legislation to allow the greater sharing of data and information sources among agencies. Title II of Senate Bill 1404 is intended to provide uniform safeguards for the confidentiality of information acquired for exclusively statistical purposes and improve the efficiency and quality of federal statistical programs by permitting limited sharing of records among designated agencies. The Census Bureau is continuing to consider an administrative records census as an option for its 2010 Census design and will be including testing of this alternative design in its 2000 Research and Experimentation Program.

6. Your March 1998 report raised questions about whether the Bureau could collect data on time under its more compressed schedule. With regard to the Bureau's capacity to meet its deadlines for data collection, does the dress rehearsal increase your concerns or decrease them?

Answer: Data collection for all dress rehearsal activities has not yet been completed. Consequently, we must reserve judgement on the full process. However, Bureau information on nonresponse follow-up data collection shows that this activity was completed on or ahead of schedule in all three dress rehearsal sites. Based on this incomplete information, the Bureau has demonstrated an ability to complete data collection activities in this limited test on schedule. However, as we stated in our response to Senator Glenn's question, a number of factors may make this performance an imperfect predictor of problems the Bureau may face in 2000. A lower-than-expected return rate for mail-back questionnaires and difficulties in recruiting enumerators may strain the Bureau's ability to complete nonresponse follow-up on time. In addition, we have not yet been able to examine dress rehearsal data, so we are not able to judge whether the amount of time allowed for data collection activities was appropriate for gathering data of acceptable quality.

7. Senator Glenn asked you if GAO thought an accurate census should be run in 2000. You responded, "using the 1990 system, No." If, for whatever reasons, it is decided that sampling is not an option, what are our alternatives?

As I noted in the response to question #1, we believe that the census-taking techniques used during the 1990 Census have exhausted their potential for ensuring a complete and accurate census count. If sampling is prohibited, certain operations, such as nonresponse follow-up and outreach and promotion, would need to be carried out more intensively. Other coverage improvement efforts that the Bureau had not planned on using during the 2000 Census, such as its Parolee/Probationer Coverage Improvement Program, might be added. The Bureau described its strategy for a nonsampling census in its recent report, Status Report on

Enclosure III
Questions From Senator Cleland and GAO's Response

Planning for a Decennial Census in Year 2000 Without the Use of Scientific Sampling as of April 1998.

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