

***U.S. DEPARTMENT OF COMMERCE***  
***Office of Inspector General***

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**PUBLIC  
RELEASE**

***BUREAU OF THE CENSUS***

*2000 Decennial Census:  
Address-Building Program May Become More  
Complex, Costly, and Counterproductive*

*Audit Report No. ESD-9608-8-0001 / March 1998*

*Office of Audits / Economics and Statistics Audits Division*





March 31, 1998

**MEMORANDUM FOR:** James F. Holmes  
Acting Director  
Bureau of the Census

**FROM:**   
Johnnie Frazier  
Acting Inspector General

**SUBJECT:** Final Audit Report: 2000 Decennial Census Address-Building Program May Become More Complex, Costly, and Counterproductive (ESD-9608-8-0001)

This is our final report on the Census 2000 Master Address File (MAF) building program. The bureau generally agreed with our recommendations. Its written response was considered and, where appropriate, is reflected in the final report. Our recommendations begin on page 9, and our specific comments on the bureau's response begin on page 10. The bureau's comments are attached as Appendix I.

As required by DAO 213-5, please provide us with an audit action plan within 60 days. Any inquiries regarding this report should be directed to me, at (202) 482-4661, or to Charles Tegeler, Director, Economics and Statistics Audits Division, at (301) 457-1986. We appreciate the cooperation and courtesies extended to us during our review.

### **SUMMARY OF OBSERVATIONS**

In 1997, the bureau's Deputy Director initiated an assessment of the MAF-building program that centered on partnerships with the U.S. Postal Service and 39,000 local governments. Finding that this program was complex, risky, and could not provide an adequate final product, the bureau assessment team concluded that a 1990-style, 100 percent field address check is essential. Despite these conclusions and the associated need for an additional \$108.7 million, the team identified the percentage of local governments who participate in MAF building as a measure of program success. We are concerned that this measure appears to be on equal footing with measures that focus on quality. This apparent contradiction is troubling since evidence suggests that, on balance, local lists add more error than they correct. Unless the emphasis on local participation is focused on quality concerns, it will either further increase cost and complexity or decrease MAF accuracy.

## INTRODUCTION

The Census Bureau, in consultation with expert advisory panels, “reengineered” census-taking methods to meet the challenges of accurately and cost-effectively counting an increasingly hard-to-count population in 2000. An accurate census is crucial because the Constitution requires that it be used to apportion seats in the House of Representatives. Additionally, census data are used in support of a host of other important activities, including federal and state redistricting, implementation and enforcement of the Voting Rights Act, and distribution of billions of dollars of federal and state funds each year. Because of its centrality to decisions that last 10 years, the bureau must address concerns about the census raised by federal, state, and local governments and a myriad of advocacy groups whose constituents are affected by census results.

The 1990 census was long, expensive, and labor-intensive, a situation exacerbated by a lower-than-expected public response to the questionnaire mailed to every housing unit on the bureau’s national address list. The housing unit address list guides every aspect of census enumeration, including mailing and keeping track of returned questionnaires and determining which housing units need follow-up. Because of the low mail response in 1990, the bureau required additional appropriations from the Congress during the census to complete the count. Despite the census’ higher cost, post-analysis concluded that its accuracy decreased.

In response to the 1990 decennial’s shortcomings, the Congress convened a panel of experts from the National Academy of Sciences to provide advice on reforms for the 2000 census. In 1994, the panel concluded that the bureau should use statistical sampling and estimation as an integral part of the 2000 census design and then rethink and reengineer the entire census process and operations in light of that decision. Bureau officials agreed and incorporated sampling and estimation and other improved methods into the design to contain cost, increase accuracy, and save time.

In 1988, the bureau purchased commercial address lists, generally available only for metropolitan areas, to begin its address-building process. Temporary field staff went door-to-door nationwide in 1989 to develop a decennial Address Control File. Post-census analysis by the bureau identified that the resulting address file was the source of millions of errors and was therefore a good candidate for reengineering. Further, the address list was of particular interest to many local officials, who believed that they could help to improve it. In October 1994, in part to respond to local governments’ requests, the Congress passed Public Law 103-430, requiring the bureau to allow local governments to review its address list before the 2000 decennial census.

In addition to this legal requirement, senior bureau managers have identified building partnerships with local officials at every stage of the 2000 census process as an essential strategy for achieving success. Bureau managers believe that local leaders can help plan and implement an improved census. Therefore, bureau officials adopted and promoted an address-building program centered on partnerships with the U.S. Postal Service and up to 39,000 local governments to build and review the Census 2000 Master Address File before the census.

This program was to produce an improved list at a lower cost by assigning a unique geographic code to city-style addresses based on the bureau's Topologically Integrated Geographic Encoding and Referencing (TIGER) system. TIGER is a machine-readable nationwide geographic database. The bureau links the MAF to TIGER in order to identify the street segment upon which a city-style address exists and thus determine the geographic codes that locate the address. These addresses are merged from the Postal Service's Delivery Sequence File, 1990 Census lists, and local government lists submitted through the bureau's Program for Address List Supplementation (PALS). Rural address capture would still require temporary staff to completely canvass areas that did not have city-style addresses, but had rural delivery routes or post office boxes.

The address list that emerged from these activities would be sent to local governments for review, and any needed corrections, in a second phase known as the Local Update of Census Addresses (LUCA). In addition to meeting the legal requirement, the objectives of this second local review were to obtain the most current information available, receive early acceptance from local officials, and preclude challenges after the census. The bureau intended to limit its verifications of postal and local government information to targeted field operations, such as a search for hidden units and checks of the number of housing units in multi-unit structures.

Although the MAF-building program seemed sound in concept, when bureau staff began implementing it, a number of difficulties emerged. The Postal Service's and local governments' address lists varied greatly in their ability to provide high-quality, up-to-date, and usable datasets. Additionally, the bureau discovered that few local governments participated in the address-building part of the program.

Acknowledging these concerns and a potential need for additional funding to address them, the bureau's Deputy Director initiated in July 1997 a comprehensive assessment of the MAF-building process to examine problems and find solutions. The Deputy Director's Business Process Reengineering (BPR) effort involved not only cognizant bureau officials but also representatives from local governments expecting to play a major role in Census 2000 address building. The team's charge was to be forward-looking, rather than to investigate deficiencies in past activities. One question that prompted the BPR was how to increase local participation in MAF building.

## **PURPOSE AND SCOPE OF AUDIT**

The initial objective of our audit was to evaluate the status of the MAF-building and TIGER programs and to identify any deficiencies that could adversely affect the 2000 decennial. Toward the end of our field work, we discussed some of our preliminary observations with senior bureau managers. We found that they shared some of our concerns about the MAF and that the Deputy Director had initiated the BPR. Consequently, we extended our review until after the BPR to determine if our concerns had been addressed and to determine if new concerns were emerging.

We focused on how the BPR's conclusions and recommendations affect the census design's cost, schedule, performance, and public perception. To accomplish this objective, we reviewed test

plans and evaluations, advisory panel documentation, decision memoranda, status reports, and other internal and external documents concerning the MAF program.

We also analyzed relevant information on current and planned decennial activities and program interrelationships as presented in the Decennial Master Activity Schedule (the primary project management tool for the 2000 census) and the decennial cost model. More specifically, in reviewing the schedule, we examined MAF-related activities and the adequacy of the linkages among them. For the cost model, we reviewed the assumptions and the cost components for the MAF-building program and compared this information to changes made as a result of the BPR. We also interviewed bureau representatives at the Census Bureau's offices in Suitland, Maryland. We subsequently discussed the results of our audit with cognizant officials, including the bureau's Deputy Director and its Associate Director for Decennial Census.

We conducted our field work from June through September 1997. We did not examine the bureau's internal controls, nor did we rely on computer-generated data. The audit was conducted in accordance with generally accepted government auditing standards, 1994 revision, and under the authority of the Inspector General Act of 1978, as amended, and Department Organization Order 10-13, as amended.<sup>1</sup>

#### **EMPHASIZING LOCAL PARTICIPATION PLACES MASTER ADDRESS FILE ACCURACY AT RISK**

The objective of the recent BPR effort was to quickly design a system that would produce a Census 2000 Master Address File that is "(1) complete and accurate and (2) reviewable and reviewed." The effort included a quality team and a partnership team. The quality team, as its performance measure for "complete and accurate," identified quality indicators comparable to those used in the 1990 census. It recommended replacing plans for targeted field checks with a 1990-style 100 percent block canvass of city-style addresses, which it estimated would cost an additional \$95 million. The partnership team, as its performance measures for "reviewable and reviewed," identified the percentage of governmental entities to review addresses and the percentage of total housing units in participating jurisdictions. It recommended a number of actions, including conducting multiple rounds of local address list reviews and intensifying bureau technical support.

After identifying deficiencies in local address files, the quality team concluded that using local government data to improve city-style MAF coverage is not a reliable coverage improvement method. In fact, accepting local information without verification may actually increase errors. Conversely, verifying local information, ideally through exclusive use of the new 100 percent field canvass, may increase program complexity and cost. Depending on the extent of local participation and how local information will be verified, the estimated cost increase may not be

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<sup>1</sup>The OIG notes that audit team members accepted positions with the Census Bureau following completion of the audit field work; however, the OIG has determined that the audit was conducted and reported with full independence and impartiality.

sufficient to fund multiple MAF reviews and increased bureau support to localities. The bureau will likely be faced with a decision either to request even further funding increases or to accept almost inevitable decreases in MAF accuracy.

### **Business Process Reengineering Comes Late in Process, Recommending 100 Percent Canvass**

We learned during our review that, in 1993, bureau officials embarked on the MAF-building process without (1) addressing the crucial question of how complete and accurate the MAF needs to be, and (2) the benefit of sufficient information about the quality or feasibility of relying on the Postal Service and local government address lists. Before the BPR was initiated by the current Deputy Director in 1997, bureau officials had not identified either quality criteria for the MAF or indicators for ensuring that the criteria had been met. Also prior to the BPR, they had not considered, in any detail, the relationship between the quality of the MAF and the sampling and estimation applications planned for 2000. At first when we asked how complete or accurate the MAF needs to be for Census 2000, officials answered our question by responding that it should be as complete as possible.

At the same time, bureau officials were learning that the quality of a primary component of the MAF--the Postal Service's Delivery Sequence File--varied greatly by location, leading to proposals for targeted field operations to compensate for problems in selected areas. Efforts to assign geographic codes from the TIGER database to postal and 1990 census addresses--a necessary precursor to using the addresses in the census--also required more effort than initially expected. Further, during an extensive review of the schedule for completing the MAF, bureau officials acknowledged that no plan was in place to measure the quality of the current MAF-building process. In an additional complication, we discovered that bureau statisticians had not identified MAF quality requirements to support their sampling and estimation designs. Bureau officials began addressing these issues as part of the BPR.

Given few, if any, other options at this late date, the bureau's BPR quality team used the quality of the 1990 census address list as its criterion for MAF accuracy. The quality indicators included measurements of housing units missed or duplicated. To determine the quality of the current MAF-building process, the team analyzed all available operational data, which was limited to nine sites--seven counties and two cities. The team concluded that the MAF quality varies by area and is deficient in some areas for all quality indicators. For example, missed unit rates for the nine sites ranged from 0.0 percent to 6.7 percent, and duplicate unit rates ranged from 0.0 percent to 9.0 percent. These findings did not provide detailed predictors of housing unit types or areas likely to be missed or duplicated on census, postal, or local address lists. Furthermore, even if clear patterns were discovered, they could not be used in MAF building because data from those sites are not generalizable.

None of the nine sites was randomly selected, and the sample sizes were small. The counties were part of a survey still under development and were selected because they were expected to be easy to enumerate. The cities were part of the 1995 Census Test and were selected in part because they contained difficult-to-enumerate populations that had experienced high undercount

rates in the 1990 decennial. Since the team could not use the limited available information to reliably predict which city-style areas would require targeted additional checks and which would not, it concluded that a 100 percent block canvassing operation--similar to 1990--was necessary to ensure achieving stated accuracy goals.

Consequently, the quality team recommended that all city-style housing units be canvassed and estimated the additional cost of such canvassing at \$95 million. Senior bureau officials subsequently submitted a supplemental budget request for a \$108.7 million net increase in funding that includes the \$95 million for canvassing plus \$13.7 million for other redesign improvements. This estimate assumes that the funds originally planned for targeted field checks would be reapplied toward the redesigned 100 percent canvass.

To prepare for the possibility that a 100 percent block canvassing operation might not be implemented, the quality team identified a contingency plan. It recommended modifying the MAF Quality Improvement Program (QIP) survey, planned for fiscal year 1998, to determine whether, with additional information, it would be possible to target particular housing units that are prone to misses or duplication. Unfortunately, this plan was subject to serious timing conflicts. In the contingency plan, the QIP survey results would be used to define a new targeting program for fiscal year 1999. However, the bureau needed to make its fiscal year 1999 funding requests before the survey results would be available, and before the new program could be designed.

Based on the redesigned program, the team recommended dropping targeted field checks and ending early local submission of address lists through the Program for Address List Supplementation (PALS). Some of the original activities, such as linking postal and 1990 lists to TIGER, may be useful. However, the team did not reassess the full program in light of the new operations to determine if some original activities should or could be streamlined to further offset costs or improve address listing. For example, the team did not assess whether the clerical, office-based resolution of addresses that are difficult to match to TIGER, a program designed to accompany targeted field canvassing, would still be cost-effective in light of the 100 percent field canvass.

### **Local Review of MAF May Not Improve Quality and Could Be Counterproductive and Costly**

The bureau's goal is to develop a high-quality MAF to help ensure the most accurate census count possible. At the same time, it is recognized that the incentive for local governments is to add as many addresses to the MAF as possible to potentially maximize their counts. Unfortunately, this inherent conflict makes it more difficult for the bureau to achieve its accuracy objectives while concurrently satisfying local officials. Moreover, if program participation or intensity is high and leads to a larger-than-anticipated LUCA program, costs could rise beyond the amount allocated in the reengineered MAF budget.

We found that the quality team concluded that a 100 percent block canvass is the best proven method to ensure reaching the stated quality goal. It also concluded that using local government

data is not necessarily a reliable coverage improvement method for MAF building. This conclusion was based on the evidence from the first phase of local input, PALS, and from limited test implementations of the second phase, LUCA, indicating that:

- ! Many localities do not have usable data files of addresses;
- ! Localities that have such data files generally do not have one master source, making the files difficult to use;
- ! Local files contain addresses (e.g., vacant lots or commercial structures) that do not meet census definitions and are therefore essentially erroneous; and
- ! The MAF generally is more complete than local address files.

The bureau began the MAF-building program premised on using partners' lists, with little or no data about their existence, availability, quality, or format. Consequently, as noted, four years into the process, bureau analysts found this program to be much more complicated, time-consuming, and error-prone than they had envisioned.

One illustration of the magnitude of these problems involved a 5 percent sample from about 6,000 addresses, submitted during PALS by a large jurisdiction, that Census did not have in the MAF. During this field check, bureau staff found that most of the 300 supposedly residential addresses were vacant lots, and 10 were commercial buildings. At the end of the sample field check, the yield was 6 legitimate additions out of 300, or 2 percent. In other words, had the jurisdiction's list been used without verification, Census would have included 294 addresses in error because they did not represent existing housing units. One reason the bureau identified for the extraordinarily high rate of errors was that the local engineer's office retained addresses on the local list, even if a housing unit or other structure no longer existed.

If, as some evidence suggests, local governments possess source data that are less accurate than the MAF itself, then problems of local input could persist whether locals are providing lists as in PALS, or comparing lists as in LUCA. For example, in the 1995 Census Test evaluation of LUCA and the MAF, bureau analysts concluded that local review did improve the coverage of the precensus MAF by identifying valid housing unit additions and deletions. However, to distinguish the valid changes from the erroneous, the bureau field staff verified every local address submission. Bureau evaluations demonstrated that had the bureau accepted all local address information without verification, the number of overall MAF errors would have increased.

Despite this evidence that local lists introduce more erroneous addresses than accurate addresses, the partnership team identified the percentage of local governments participating in the MAF review as an indicator of whether the program is meeting its objectives of a reviewable and reviewed MAF. The partnership team recommended that local review of the MAF begin much earlier than planned to allow for multiple interactive reviews and that the planned technical support and assistance to localities be increased. The team cited as one advantage of the



proposed changes that they demonstrate the bureau's willingness to work with local governments. Conversely, the team identified as risks associated with these changes (1) the delay in completing MAF building related to stress on existing computer and human resource capacity and (2) the difficulty in determining the level and timing of local participation for planning and resource allocation.

Depending on the level of effort provided by bureau and local government participants, these risks could be realized as a potential enormous resource drain for which the bureau is not prepared. For example, local officials may require detailed geographic assistance to conduct reviews consistent with MAF and TIGER requirements, and/or technical assistance to match and unduplicate multiple lists using computer software. However, the current partnership program infrastructure calls for bureau staff whose primary skills are in public relations, not technical support. Further, according to bureau officials, the number of senior knowledgeable staff in both headquarters and the regions that could provide specialized assistance to local governments is limited.

In addition, the bureau may not have fully captured the cost growth associated with proposed changes. For example, in the final stages of the BPR, the partnership team and its local advisors were proposing a more intense, interactive LUCA approach that requires a greater investment of bureau personnel and equipment. However, the accompanying revised cost model for local review was produced by taking the earlier cost estimates--for a low-intensity, one-time review of the MAF by 25 percent of local governments in fiscal year 1999--and doubling the sum.

Because bureau managers have been promoting partnerships and assuring local officials that they will play a key role in developing the MAF, high expectations may exist. Given that the cost model does not include proposed changes and the absence of redesign details, current cost estimates are likely to increase. However, it is not clear how the MAF's cost could rise much more. Senior managers have established for the decennial census a \$4 billion ceiling, from which the \$108.7 million request already deviates, and which other program areas are struggling to meet. Further, the bureau has not yet decided how it will balance achieving accuracy and satisfying local officials within existing or even proposed funding constraints. This inherent conflict may be exacerbated by using the percentage of governments participating in the local reviews as a measure of MAF performance.

The bureau intends to combine local address verification with its 100 percent block canvass, which clearly is the most efficient approach to checking on local information. However, if participation rates are high, the extent and timing of interactions unpredictable, and bureau resources limited, it may not be feasible for the bureau to use the canvassing operation to verify local information. Until the planned interactive exchange between the bureau and up to 39,000 local governments is developed in detail, time and resource requirements cannot be accurately determined. Given the scarcity of funds and the potential enormity of the task, this ambiguity could require the bureau to either request even more funding increases or simply accept local data without verification.

## CONCLUSIONS

We recognize that the bureau is legally required to provide local governments with the opportunity to review their respective portions of the MAF and that such partnerships can be a helpful way for the bureau to foster local cooperation. However, in any census, the bureau's goal of an accurate address list creates an inevitable tension with local officials' desire for as high a count as possible. Use of a more substantive measure, such as cost-effectiveness or the percentage of valid additions or deletions, could mitigate the conflict while explicitly acknowledging the role of local lists.

The bureau's emphasis on partnerships throughout decennial planning, as well as the outcome of the BPR, demonstrates that for Census 2000, the bureau is working to satisfy local officials. Further, given bureau communications to date and local involvement in the BPR, local officials expect to have an interactive exchange of address lists and increased technical support from the bureau. Finally, if increasing the percent of local participation continues to be an internal bureau performance measure, then the projected participation rates may grow significantly, perhaps beyond current projections. The inherent risk is striking the right balance among MAF accuracy, cost containment, and local involvement. Clearly, accuracy must take precedence among the three, given the MAF's centrality to the census.

However, if accuracy and local involvement take equal precedence over cost containment, then costs may spiral upward, due to the complexity of reconciling multiple lists and verifying discrepancies for thousands of local governments--especially if a 100 percent canvass does not occur. On the other hand, if cost containment and local involvement take precedence over accuracy, then quality is likely to suffer. For these reasons, the bureau must move forward with MAF refinements, keeping in mind accuracy, cost, schedule, and local communities' perceptions, and communicate the results to local partners soon.

The risk to the program is clearly diminished if a 100 percent canvass is conducted, because that operation can "clean up" any deficiencies, if it is the last field operation before the census. However, since the battery of initial operations was designed to preclude extensive field work, we question the need to continue existing efforts that were designed in tandem with targeted canvassing, in addition to expanding local participation and conducting a 100 percent canvass. Consequently, we believe that possible savings from curtailing earlier MAF-building operations or plans to expand local review may partially offset the funding increase requested for canvassing.

## RECOMMENDATIONS

We recommend that the Acting Director of the Census Bureau take the necessary actions to:

1. Conduct a review of initial local address updates submitted through the reengineered MAF-building program to ascertain the cost-effectiveness of local address data in the MAF, including the (a) human resources required, (b) effects of not verifying local changes to the list, and (c) cost of verifying local changes.

2. Re-examine components of MAF building initially designed to obviate the need for field work, to determine whether savings (of funding, staff, and time) are possible to partially offset the costs of the new canvassing operation.
3. Adjust the MAF program accordingly and, as appropriate, communicate changes and justification for changes to local partners as soon as possible.

## **AGENCY RESPONSE AND OIG COMMENTS**

The Census Bureau generally agreed with our recommendations. In addition, the bureau offered, for clarification, information related to specific points in the report.

1. The Census Bureau noted that targeted field checks in areas with city-style addresses were included in initial MAF-building plans. The bureau is concerned that the introduction to the OIG report could be misconstrued to imply that targeted field checks were introduced into planning after most of the hands-on experience with the U.S. Postal Service's Delivery Sequence File and local address lists.

### **OIG Response**

We have clarified the wording of the report's introduction to preclude such misinterpretations.

2. The Census Bureau contends that the BPR's quality team did not intend to indict the use of local government data; rather, they found that having the bureau conduct a computer match of independent local lists and the MAF through PALS would not improve MAF coverage because local lists were not maintained for the purpose of preparing mailing lists. Based on this analysis, the bureau ended the PALS program.

### **OIG Response**

As described in the report, the OIG found that the BPR's quality team examined results both from LUCA tests and PALS in conducting its analysis. Furthermore, the team identified problems that reached beyond the formats of lists that were submitted during PALS. The team found that the MAF is generally more complete and accurate than local address files and that local files, as used in both PALS and LUCA, introduce erroneous addresses.

At the heart of this issue is the fact that the bureau began the MAF-building program premised on using partners' lists, with little or no data about their existence, availability, quality, or format. It is because the bureau is unable to resolve problems with lower-than-assumed accuracy in local address files and in the Postal Service's Delivery Sequence File that a 100 percent field canvass operation becomes necessary. We are concerned that the prioritization of local participation above MAF accuracy could

jeopardize the reengineered MAF-building schedule and lead to increased costs and complexity in the program.

3. The Census Bureau contends that the BPR's quality team concluded that a revised LUCA program would avoid many of the problems that were associated with PALS. LUCA would not encounter the shortcomings experienced in PALS because the bureau will not bear any costs of matching and unduplicating lists in LUCA, and because LUCA places the burden on participating local governments to provide address additions and revisions on the bureau's address list in the context of what already appears there.

#### **OIG Response**

We agree that LUCA is not vulnerable to all of the problems experienced in PALS. However, whether local partners are submitting independent lists as in PALS or comparing lists and then offering revisions as in LUCA, problems of unreliable source data persist. Because the MAF is generally more complete and accurate than local address files, and because local files contain erroneous addresses, we believe that the bureau will continue to face quality concerns in processing local governments' additions and revisions to the MAF during LUCA.

4. The Census Bureau recognizes that current and planned staff may not have the computer skills to provide technical support to local governments, and has therefore arranged for a technically qualified contractor to provide technical assistance to local governments.

#### **OIG Response**

We commend the bureau for the measures it has taken to reduce demands for bureau staff to provide technical support to local governments during LUCA.

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Our comments on the bureau's responses to our recommendations follow.

*Recommendation #1: Conduct a review of initial local address updates submitted through the reengineered MAF-building program to ascertain the cost-effectiveness of local address data in the MAF, including the (a) human resources required, (b) effects of not verifying local changes to the list, and (c) cost of verifying local changes.*

The Census Bureau generally agreed, advising that it will review initial address list corrections and additions provided through the reengineered MAF-building process. The bureau will assess the quality of the submissions along with associated costs and demands on staff resources. However, the bureau believes that because of highly localized and highly variable local address information, it will not be able to make nationwide determinations about local participation based on this data.

### **OIG Response**

We commend the bureau for the actions it is taking to conduct quantitative analysis on the costs and quality of reengineered address list reviews. Even if the resulting information does not allow for nationwide analysis about the LUCA program, we suggest that the bureau assess whether the data at hand will allow for targeted or localized determinations about LUCA operations.

*Recommendation #2: Re-examine components of MAF building initially designed to obviate the need for field work, to determine whether savings (of funding, staff, and time) are possible to partially offset the costs of the new canvassing operation.*

The Census Bureau generally agreed, advising that it will assess all components of the MAF-building program and seek out cost-savings opportunities. To this end, the bureau has (a) dropped plans to conduct Targeted Canvassing and Targeted Multi-Unit Checks in fiscal year 1998, (b) eliminated performance measures related to the percent of local participation, and (c) reviewed the process for using the U.S. Postal Service's Delivery Sequence File to identify areas where TIGER updates are needed. The bureau has found the latter operation to be highly successful and believes it is improving automated address geocoding capabilities.

### **OIG Response**

We believe that dropping Targeted Canvassing and Targeted Multi-Unit Checks and eliminating performance measures related to the percent of local participation are necessary steps in improving the efficiency, accuracy, and cost-effectiveness of the MAF-building process. We look forward to receiving updates as the bureau reassesses additional MAF-building components in light of plans for 100 percent canvassing.

*Recommendation #3: Adjust the MAF program accordingly and, as appropriate, communicate changes and justification for changes to local partners as soon as possible.*

The Census Bureau generally agreed, advising that it will refine the address list review program and inform local governments of the most productive approaches to participation. The bureau will redirect the emphasis of the local address list review program to allow local governments to focus their attention on (a) blocks in which counts of addresses differ on bureau lists and local lists, (b) blocks that have had rapid growth, (c) blocks that are in transition between commercial and residential use or between single-family and multiple-family occupancy, and (d) blocks located along jurisdictional boundaries.

### **OIG Response**

We commend the bureau for taking steps to inform local partners of effective strategies to target their participation in address list review.



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Bureau of the Census**  
 Washington, DC 20233-0001

OFFICE OF THE DIRECTOR

MAR 9 1998

MEMORANDUM FOR Johnnie Frazier  
 Acting Inspector General

Through: Lee Price *Lee Price*  
 Acting Under Secretary for Economic Affairs

From: James F. Holmes *James F. Holmes*  
 Acting Director

Subject: Census Bureau Responses to Recommendations in  
 Draft Audit Report No. ESAD-9608-7-XXXX

The Census Bureau appreciates receiving the observations in the draft report from the Office of the Inspector General reviewing the Census 2000 address list building effort. We accept the recommendations and note that the Census Bureau either has begun to or will in the future implement the recommendations contained in the report.

By way of clarification, we offer a few items of information related to specific points in the report:

- The first paragraph on page 3 of the draft report suggests that plans to conduct limited and targeted field checks to improve address list coverage in areas with city-style addresses (the formerly planned Targeted Canvassing and Targeted Multiunit Checks) were developed in response to difficulties experienced in using the U.S. Postal Service's Delivery Sequence File (DSF) and local address lists. Actually, the planning assumptions related to these operations predated the Census Bureau's hands-on experience with local address lists and most of its experience working with the DSF. The original assumption was that the DSF would provide more consistency of results than it now appears to provide.
- The second paragraph on page 4 of the draft report states that the conclusion of the Reengineering Quality Team was "... using local government data to improve city-style MAF coverage was not a reliable coverage improvement method." It was not the Team's intent to indict the use of local or tribal government data; their intent was far more limited. Specifically, they noted that MAF coverage would not be improved by having the Census Bureau computer-match independently developed local address lists to the Census Bureau's MAF—an approach known as the Program for Address List Supplementation or PALS—because the Census Bureau found that the local lists were not maintained for purposes of preparing mailing lists. To preclude incurring potentially excessive costs associated with this originally planned program for local and tribal government participation, the Census Bureau dropped this program for accepting local and tribal address.

- The report then suggests that the same logic applies to the reengineered Local Update of Census Addresses (LUCA) process. The latter is not the case. The Team's belief was that the revised address list review process—although not risk free—could be designed to avoid many of the problems with the PALS by focusing the efforts of local and tribal partners on reviewing and improving the Census Bureau's list. In doing so, the Census Bureau will not incur the costs of matching or unduplicating local and tribal lists. Instead, the planned program places the burden of making correct address additions and revisions on the participating governments by requiring that they annotate these changes on the Census Bureau's address list in the context of what already appears there.
- The second paragraph on page 8 of the draft report notes that the current partnership program infrastructure calls for staff whose primary skills are in public relations, not technical support. Recognizing that current and planned Census Bureau staff may not have the requisite computer skills to provide the technical support needed by those governments that prefer to use automated address list review processes, the Census Bureau has arranged for a technically qualified contractor to answer questions about the computer hardware and software requirements, how to load the Census Bureau's address information into various spreadsheets and databases, and so forth. This approach will allow Census Bureau geographic and partnership staffs to concentrate on assuring understanding of the revised goals for participants.

Responding to the specific recommendations in the draft report, the Census Bureau will:

1. Review the address list corrections and additions provided by the local and tribal governments initially participating in the reengineered address list review process. From this review, we will determine the Census Bureau staff resources required, the costs to the Census Bureau associated with supporting these reviews, and assess the quality of the submissions. Because of the highly localized and highly variable nature of local and tribal address information, the Census Bureau will not be able to make any nationwide determinations about the effectiveness of local and tribal participation.
2. Continue to assess all components of the address list building process to identify activities that can be done more efficiently or effectively. We will continue to seek cost-saving opportunities and use any savings to support remaining aspects of the program. For example:
  - \* The Census Bureau has dropped its earlier plans to conduct the Targeted Canvassing and Targeted Multiunit Check operations in fiscal year 1998 and redirected the funds slated for those operations to support the redesigned address list development approach.

- \* In continuing its revision of the plan for developing the Census 2000 address list, the Census Bureau eliminated from its *Case for Change* report all reference to performance measures related to the percentage of local and tribal government participation. It did this by sequencing the local and tribal participation phase before the 100 percent block canvass, thus assuring that all local and tribal suggestions will benefit from the same field review as other addresses on the list.
  - \* The Census Bureau has looked at the major component of the address list building process underway to date—the portion involving use of the DSF from the U.S. Postal Service to identify areas where updates are needed to the TIGER database. The Census Bureau has determined that, at the moment, this operation is highly successful; production has exceeded expectations, as recorded in the MAF Building Model used for planning and managing this phase of the program. Continuing the current process will assure the Census Bureau that it has the improved automated address geocoding capability it requires for all remaining Census 2000 operations.
3. Continue to refine the address list review program and inform local and tribal governments of the most productive approaches to participation. To further improve the address list review process, the Census Bureau is redirecting the emphasis of the program. We have found that many governments may find the full line-by-line review originally planned for LUCA to be too burdensome. In response, at the local government's option, the Census Bureau will provide for a procedure that will allow them to focus their attention on:
- \* Blocks in which counts of addresses on the Census Bureau's list differ from counts of addresses on local or tribal lists.
  - \* Blocks that have had rapid growth.
  - \* Blocks that are in transition from residential to commercial uses (or vice versa) or from single-family to multiple-family occupancy.
  - \* Blocks that are located along the boundary of the participating government, where addresses are most likely to be assigned incorrectly to/from a different jurisdiction.

cc: US/EA