

**OVERSIGHT OF THE CENSUS BUREAU:  
PREPARATIONS FOR THE 2000 CENSUS**

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**HEARING**  
BEFORE THE  
SUBCOMMITTEE ON NATIONAL SECURITY,  
INTERNATIONAL AFFAIRS, AND CRIMINAL JUSTICE  
OF THE  
COMMITTEE ON GOVERNMENT  
REFORM AND OVERSIGHT  
HOUSE OF REPRESENTATIVES  
ONE HUNDRED FOURTH CONGRESS  
FIRST SESSION

—————  
OCTOBER 25, 1995  
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## **OVERSIGHT OF THE CENSUS BUREAU: PREPARATIONS FOR THE 2000 CENSUS**

**WEDNESDAY, OCTOBER 25, 1995**

**U.S. HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON NATIONAL SECURITY, INTERNATIONAL  
AFFAIRS, AND CRIMINAL JUSTICE,  
COMMITTEE ON GOVERNMENT REFORM AND OVERSIGHT,  
Washington, DC.**

The subcommittee met, pursuant to notice, at 12:05 p.m., in room 311, Cannon House Office Building, Hon. William H. Zeliff, Jr. (chairman of the subcommittee) presiding.

Present: Representatives Zeliff, Ehrlich, and Thurman.

Ex officio present: Representative Clinger.

Also present: Representative Sawyer.

Staff present: Robert Charles, staff director and chief counsel; Jane Cobb, professional staff member; Sean Littlefield, special assistant and clerk; David McMillen, minority professional staff member; and Elisabeth Campbell, minority staff assistant.

Mr. ZELIFF. Good afternoon. The Subcommittee on National Security, International Affairs, and Criminal Justice will now come to order. I want to welcome everyone to this oversight hearing on a very important issue, the Census Bureau's planning for the 2000 decennial census.

I would like to especially welcome our three witnesses: the Inspector General of the U.S. Department of Commerce, Mr. Francis DeGeorge; the Director of Federal Management and Workforce Issues in the General Government Division of the General Accounting Office, Mr. Nye Stevens; and the Director of the Bureau of Census at the Department of Commerce, Martha Farnsworth Riche. We welcome all three of you. We look forward to your testimony today.

Our questions will be narrow in scope, in general, and will focus on information gathering and the technical side of the census process. The process—and I have to tell you that I will be the first one to admit it—is very complex. We are basically here to get educated and to learn. Let me say up front that this hearing is strictly for information-gathering purposes.

As most of us know, the Census Bureau is responsible for a decennial census. The decennial census, in turn, is mandated by our Constitution for reapportionment and redistricting purposes. Most are also aware that during the 1990 census we encountered new and significant problems. For a variety of reasons, we witnessed declining accuracy and increasing cost, and I guess the same is projected this time.

One measure of accuracy is the undercount. The undercount had been dropping since 1940. But in 1990, for the first time, it rose from 1.2 to 1.8 percent. In addition, the 1990 census seems to have missed more Americans than suggested by the official net undercount. As the Nation's population becomes more complex, and it will, issues of sampling and accuracy will continue to hold center stage.

Cost containment is another matter and an important one. The 1980 census cost \$1.8 billion over 10 years. The 1990 census cost \$2.6 billion. Cost projections for the 2000 census, under the current approach, would rise to a projected \$4.8 billion. Costs of this magnitude obviously raise serious questions and should cause us all to think about alternative approaches.

The proposed census adjustment is another issue and one that we will touch on today. In sum, the Bureau is considering a so-called "one-count" census. This would involve a new methodology, incorporating an adjustment for those missed into the initial count. This proposal, too, affects accuracy and cost. There are also questions about the form itself. Would a shortened form improve response rates?

The subcommittee is interested in a snapshot, kind of, where are we right now, and understanding where the Bureau stands in its total planning for the 2000 census. This means that we will be asking some pretty basic questions:

How is the Bureau structured, organizationally and managerially, to handle the many decisions that lead up to the 2000 census enumeration? What new methodologies should be considered or are being considered? Are forms going to be more user-friendly? Are you cooperating well enough with other agencies to get the proper addresses and information? What measures is the Bureau taking to reduce costs? How can we collect the necessary and accurate data while keeping costs down?

I know that there are political questions that arise in discussing the 1990 adjustment decision, but I would like to stay away from these as much as we can today. I think we will leave the 1990 adjustment issue to be decided by the Supreme Court, and that's where it is today. I want to direct the witnesses and members to the nuts and bolts of the census process, to the methodology, how it works, and what it costs. The rest of it we will have to address later.

The Chair now recognizes the ranking member of the subcommittee, my good friend Karen Thurman from the great State of Florida.

Mrs. THURMAN. Thank you, Mr. Chairman.

I am pleased that the subcommittee is undertaking this important area of inquiry. All of us have a vested interest in ensuring that the census is the most accurate possible. All of us should also want to make sure that everyone is counted in the census.

There are three key issues as we approach the 2000 census: making sure that everyone is counted, maintaining the public confidence in the numbers, and cost. These are not ranked in priority, because no one of these concerns can be allowed to dominate the other two. A census that saves millions of dollars at the expense of public confidence or accuracy is no bargain. Neither can we af-

ford the attitude that has prevailed in the past: Spend whatever it takes to count everyone. My concern is that we strike an appropriate balance so that each of these concerns is appropriately addressed.

I would like to congratulate the chairman for holding this hearing. As we saw in 1990, there are a lot of stakeholders in this game. It is our responsibility to see that the relevant issues are raised and that the appropriate balance is achieved between coverage, cost, and confidence.

Not that I don't want to welcome our other panelists today, but I also would like to take this opportunity to welcome Dr. Martha Riche, Director of the Census Bureau. I think we are very fortunate to have a woman of her caliber running the Census Bureau in these most difficult times.

Mr. Chairman, for the purpose of time, I did not read my entire statement, so I would like to ask unanimous consent for it to be, in its entirety, entered into the record.

Mr. ZELIFF. Without objection, so ordered.

[The prepared statement of Hon. Karen L. Thurman follows:]

STATEMENT OF HON. KAREN THURMAN  
REGARDING THE 2000 CENSUS  
BEFORE THE SUBCOMMITTEE ON NATIONAL SECURITY,  
INTERNATIONAL AFFAIRS, AND CRIMINAL JUSTICE

OCTOBER 25, 1995

Thank you, Mr. Chairman. I am pleased that this Subcommittee is undertaking this important area of inquiry. All of us have a vested interest in assuring that the census is the most accurate possible. All of us should also want to make sure that everyone is counted in the census.

There are three key issue as we approach the 2000 census: making sure that everyone is counted; maintaining the public confidence in the numbers; and cost. These are not ranked in priority, because no one of these concerns can be allowed to dominate the other two. A census that saves millions of dollars at the expense of public confidence or accuracy is no bargain. Neither can we afford the attitude that has prevailed in the past -- spend whatever it takes to count everyone. My concern is that we strike an appropriate balance so that each of these concerns is given equal attention.

We will hear from both the Commerce Inspector General and from Mr. Stevens at GAO about sampling those who do not mail back their census form. This is a good example of what I am talking about. The IG criticizes the Census Bureau's decision on sampling because other options could save more money. But his criticism does not take into account the impact those other options would have on public confidence. The Census Bureau chose a level that both saved money and, based on focus group research, did not decrease public confidence in the data.

There is a delicate balance here between maintaining public confidence and cost. If public confidence in the census is lost, we will be in a situation where much of what we do is questioned. Billions of dollars are distributed to state and local governments based on those numbers. My home state, Florida, has constantly suffered because of these formulas for distributing Federal aid. Decisions are made about representation based on those numbers. If the public distrusts the numbers, it will also distrust all we do with them.

At the same time, the cost of the census has been spiraling out of control, and the quality of the information has been declining. All three problems -- public confidence, cost, and a complete count -- must be given equal weight in the decision process.

How much information and what to collect is also a major issue surrounding the 2000 census. I am afraid the long form -- the detailed questions asked of a sample of the population -- is about to become a trophy on the wall of House Republicans like they are trying to do with the Department of Commerce.

As the legislation to abolish the Department of Commerce went through the Committee process, we saw that no one really wanted to abolish what the Department of Commerce does. They only want to abolish the Department. The Republican majority in each Committee -- Commerce, International Relations, Science, Government Reform, Transportation, Ways and Means, and Natural Resources -- spoke up for the functions under their jurisdiction. Most created a new agency to house those functions.

These Committees are the ones charged with understanding the details and importance of the functions. These are the members who understand the programs, what they are designed to do, and who they help. These member understood the importance of the functions at the Department of Commerce, and said they should be preserved. Abolishing the Department is just trophy hunting.

The same situation applies to the long form. It is under attack from the Appropriations Committee. It's easy to abolish something you do not understand. But when everything is said and done, it will be clear that abolishing the long form does not make sense.

The Census Bureau has done a very good job of documenting the questions on the long form. Each one is a response to one or more requests by Congress for information. Replacing those data with a smaller survey, which means less useful data for small communities, will costs at least twice as much. It makes no sense to abolish the long form only to force future Congresses to spend more money to get the information they need.

I congratulate the Chairman for holding this hearing. As we saw in 1990, there are a lot of stakeholders in this game. It is our responsibility to see that the relevant issues are raised, and that the appropriate balance is achieved between coverage, cost, and confidence.

I would like to welcome Dr. Martha Richie, Director of the Census Bureau. We are fortunate to have a woman of her caliber running the Census Bureau in these difficult times.

Mr. ZELIFF. We are pleased today to have the chairman of the full committee, Mr. Clinger. Welcome.

Mr. CLINGER. Thank you, Mr. Chairman, for convening this important oversight hearing of the Census Bureau and its progress in preparations for the 2000 decennial census. Though, obviously, the actual census-taking is still another 4 years away, that really is not very much time when you consider that research activities, testing, and planning for the decennial census begins some 10 to 12 years out, as I understand it. So we are really on a fairly short leash at this point.

While the decennial census is just one in a multitude of data collection activities the Census Bureau performs, it is certainly one of the most important functions, if not the most important function, from a Federal Government perspective.

Chairman Zeliff has called this hearing to focus specifically on the design and planning for the 2000—the millennium—census. Some of the things I am interested in learning include the Bureau's plans for changes in the 2000 census that will improve upon the problems that we encountered in the 1990 census, and the Bureau's status in obtaining consensus among major stakeholders—as Ms. Thurman said, there are many stakeholders in this operation—for these planned changes in the design of the 2000 census.

The census represents a new jurisdiction for this committee and also for most, if not all, members who presently serve on the panel. So, as Chairman Zeliff said, we are all here to be educated and to learn what the problems are and what the prospects are. I know I have a lot to learn about these issues.

Again, Mr. Chairman, I thank you for initiating congressional oversight in this very important area.

Mr. ZELIFF. Thank you, Mr. Clinger.

Before proceeding further, I would like to remind members that we will be proceeding under the 5-minute rule and that all opening statements may be submitted for the record by those who haven't had a chance to do that. Without objection, so ordered.

With that, I would like to welcome our witnesses and ask our first panel, Mr. DeGeorge and Mr. Stevens, to stand.

But before I do, Mr. Stevens, it looks like you have someone with you, if you would like to introduce him.

Mr. STEVENS. Yes. Yes, I do. This is Michael Brostek, who is in charge of our Government statistics issues, and he can respond quite knowledgeably to some of these questions.

Mr. ZELIFF. If you would like to stand and raise your right hands.

[Witnesses sworn.]

Mr. ZELIFF. Please be seated. OK. Mr. DeGeorge.

**STATEMENTS OF FRANCIS D. DEGEORGE, INSPECTOR GENERAL, U.S. DEPARTMENT OF COMMERCE; L. NYE STEVENS, DIRECTOR, FEDERAL MANAGEMENT AND WORKFORCE ISSUES, GENERAL GOVERNMENT DIVISION, U.S. GENERAL ACCOUNTING OFFICE, ACCOMPANIED BY MICHAEL BROSTEK, ASSISTANT DIRECTOR**

Mr. DEGEORGE. Mr. Chairman, my testimony will run a little more than 5 minutes, but I would like to deliver it in its entirety, if I may.

I am pleased to be here today to discuss our recent evaluation of the Census Bureau's readiness for the 2000 decennial census. The purpose of our evaluation was to determine the Bureau's progress in its decennial preparation and to identify obstacles to achieving four key goals: increasing accuracy, restraining cost, meeting national data needs, and gaining public acceptance.

Decennial census data are gathered through the largest peacetime mobilization of people and property undertaken by the U.S. Government. Contacting over a quarter of a billion people is a monumental undertaking. As you are well aware, the census is the basis for apportionment and the distribution of billions of dollars of Federal and State funds each year, as well as for other Federal, State, local, and private sector activities and decisions.

Because the success of the 2000 decennial depends on a sound census design, this committee is to be commended for holding these oversight hearings. The Census Bureau has adopted a number of innovations to address the problems of past censuses: declining accuracy and rising costs. One innovation which we fully support is the use of statistical sampling for nonresponse follow-up.

However, the Bureau's current design may not result in the most accurate and cost-effective census. In fact, it retains some of the same shortcomings that plagued the 1990 design. We believe that a better design exists, to which the Bureau should give serious consideration. I would like to discuss in more detail the problems the Bureau is trying to solve, as well as our concerns with the design it has selected and with its organization for planning and implementing the decennial census.

Although the 1990 census was similar to its predecessors, it came under intense scrutiny and severe criticism. It was long, expensive, and labor-intensive, a situation exacerbated by the lower than expected level of public response. Accuracy decreased while costs increased. The 1990 census missed more people than the 1980 census. In addition, more minorities were missed, proportionally, as compared to whites than in the previous 50 years, since such measurements were first made. And the 1990 census cost of \$2.6 billion reflected the continuing steep increase that began after the 1960 census.

The Congress responded to the 1990 census shortcomings and concerns about ever-increasing costs, projected as high as \$4.8 billion for 2000, by establishing an expert panel at the National Academy of Sciences to provide advice on reforms for the next census. In 1994, the panel concluded that, to contain costs and increase accuracy, the Bureau should use statistical sampling as an integral part of the 2000 design.

Mr. Chairman, I would like to note for the record that I have fully supported and have been recommending sampling for some time. In fact, I am here today to discuss with you my belief that the Bureau needs to increase the amount of sampling over that currently planned. I will discuss the point later.

The Bureau has selected a design for the 2000 census that includes some sampling but does not go far enough in addressing the problems of the last census. Our concern is shared by members of the academy's expert panel. The cornerstone of the Bureau's design is to count 90 percent of all residents and then sample 10 percent of the remainder. We believe that design is unsubstantiated, and is vulnerable to cost growth beyond its estimated \$3.9-billion price tag because it contains questionable features or not-yet-decided features, and may be statistically inferior to, say, a 70 percent truncated design.

I will briefly explain each of these concerns. First, our evaluation revealed that the Bureau does not possess analysis and research to back up the selected design. In fact, it developed the design at the management level, with little or no input from census staff, including agency statisticians.

Second, the design contains several features of unproven cost-effectiveness and feasibility. These include the aggressive use of administrative records to count a portion of the initial 90 percent and heavy reliance on labor-intensive procedures that require recruitment of up to 4 million people to ultimately field a peak work force of 550,000 people. Such uncertainty has led us to conclude that the Bureau's \$3.9-billion estimate may indeed be low.

Third, using a 1 percent sample of the entire population to represent the last 10 percent may introduce statistical uncertainty, thus producing lower quality information. At 90 percent, the people who have not yet, at that point, responded are the hardest to count, so a disproportionate number of them will be represented by the sample, possibly leading to missing information and thus introducing statistical bias.

Because of these concerns about cost and statistical validity, as I have previously stated, the Bureau needs to consider a simpler yet possibly more promising approach.

In response to the academy's final report, the Bureau developed a version of the reengineered design that reflected the academy's guiding principle, that significant savings can be achieved through substantial statistical sampling. Subsequently, the Bureau abandoned this design, even though we understand it to be simpler, operationally less risky, and less vulnerable to cost growth because it contains fewer questionable components.

We also understand that this alternative design was abandoned because of the increased reliance on statistical sampling and the Bureau's belief that it could not sell this approach that is basically 90 percent sampling down to 70 percent.

Let me describe this alternative and then elaborate on its key points. The cornerstone of the alternative design is a strategy to begin sampling for nonresponse follow-up immediately after the mail-back phase. Based on various estimates, that is when between 55 and 60 percent of the questionnaires are received. By initiating sampling right after the forms are mailed back, the Bureau will not

need to pursue as many new and untested programs as it currently plans, such as extensive use of administrative records to reach the 90 percent count. Furthermore, this design is less risky than the Bureau's current plan because it mirrors the 1995 census test design, recently completed.

Finally, by using a simpler design with substantiated, tested strategies, the Bureau is less vulnerable to uncontrolled cost growth. This alternative approach is estimated to cost about \$3 billion. I am not concluding that the Bureau's 2000 census budget should be \$3 billion. However, that estimate and that logic, in my mind, contains fewer unknowns than the \$3.9-billion estimate, although it is still subject to substantial change as the Bureau analyzes test results and redefines its plans.

In addition, statistical advantages may exist as a result of using this design. By sampling immediately after everyone has had an opportunity to mail back the census form, the sample will better represent all of the population. The sample size will also be larger. It can be set by area, a method known as "differential sampling." Those counties with high response rates need smaller samples, and those with lower response rates require larger samples.

For example, in a county where the mail-back rate is 70 percent, the remaining 30 percent can be counted by a sample of perhaps 1 in 3. Everyone in the sample counts as three, which is better than counting as 10, as in the present Bureau's design. The bottom line is that the Bureau needs to give strong consideration to using this design alternative because it could save significant sums of money and be actually more reliable than the present design.

Our evaluation has shown that the Bureau lacked rigor and systematic analysis in producing its selected design. Instead of dedicating specific full-time resources to the decennial, decennial planning and implementation are highly matrixed, with functions distributed across numerous divisions. This results in a fragmented organizational and decisionmaking structure that is not conducive, in my opinion, to completing, substantiating, and implementing a design.

Also, the Bureau uses an informal, collegial approach to decennial management. What I mean is, various Bureau Directors do an interface and active discussion amongst themselves rather than a strong program management direction from the top. Because of expected fiscal constraints, the Bureau is planning to decentralize its decennial activities further, by using resources Bureau-wide rather than dedicating specific resources to the decennial.

Given the magnitude and the importance of the decennial, we believe that a dedicated project management staff should be established—I might add, as soon as possible, if not immediately. In our view, progress on the decennial design effort will be severely handicapped until such a staff is put in place. I will add, also, to the statement, in my judgment, that we can well afford it.

Along with making the design and organizational changes we have discussed, the Bureau must allow itself the time necessary to inform the Congress, other stakeholders, and the public of the merits of its approach. Of course, it will take time for people to get used to the idea of sampling. You're going to have that problem ei-

ther way, no matter what the degree of sampling. That is why the Bureau must act now and not later.

There are some other areas in which the Bureau must make decisions in the near future, including settling on the content of the questionnaire and its design; determining and requesting needed legislative changes; and determining decennial staffing, physical space and material, and supporting automated systems.

By "content," we mean the important process of selecting the topics to be included in the census. Each decade this process proves difficult because of the conflicting interests among those who want more questions asked, more data, and those who want to reduce the burden on the public, and those who want a question worded one way versus those who want it worded another way.

This decade the problem is exacerbated because the Bureau plans to adopt a new technology to process the information on the forms, a technology which I agree with and I think is preferable. The length and design of the form interact intimately with this technology. The entire process is moving in fits and starts rather than forward because of indecision about form design and content. We believe that the Bureau has the information it needs to make a decision on basic form design and should contact everyone involved and should do so now.

Once the Bureau settles on the details of its sampling and form design, it may need to request legislative changes. Potential changes include changing census day, allowing for exemptions to laws governing access to administrative records such as those maintained by Internal Revenue Service or Social Security Administration, or exempting its temporary workers from standard employment and unemployment compensation rules.

I have sent a letter to the chairmen of the Appropriation's and Authorization Committees suggesting that it is time to think about whether we want to pay unemployment compensation to this heavy number of temporary employees. In this regard, we have recently written to the Congress recommending that legislation be enacted denying unemployment compensation to temporary census workers.

Numerous operational decisions must also be addressed. These include the telecommunications and computer needs of regional and district offices, headquarters systems to manage the flow of information, and detailed plans for recruiting millions of people.

The solicitation process for systems acquisition is time-consuming. Even with Mr. Clinger's suggested reforms it will take a long time. The Bureau's own plans call for having an acquisition plan early in 1996. Once again, we are concerned the plan will be lacking in sufficient detail or will be behind schedule if the Bureau does not make important design decisions now.

Finally, one decision in particular causes me concern. I have testified to this committee as recently as last year on the subject, which is the decision to count on the Department of Commerce's administrative management system for use in the decennial. The Bureau is facing a major dilemma in that it needs a new accounting system to ensure it can record properly billions of dollars of expenditures for the 2000 decennial. However, I have frequently reported and testified on the weak condition of financial management at the Bureau, as well as the rest of the department.

Even though progress has been made, much work needs to be done. I am concerned the Bureau will not be ready to move to the new accounting system in time to support the decennial, and I would strongly suggest we have a backup to the present accounting system, in case the department's system is not ready. I strongly urge that alternative fallback planning for the accounting system be initiated immediately.

The design the Bureau has selected for the decennial makes extensive use of counting and has limited sampling. Unless this changes, the 2000 decennial census effort will be nearly as large and as expensive as the 1990 census. The Bureau needs to change its design to include more sampling. I do not mean to suggest that the Bureau does not accept the need for sampling. We're talking about how much and how effective and where and how sampling will be used. The Census Bureau needs to begin an aggressive campaign to convince the Congress, other stakeholders, and the public of the merits of this approach.

Also, it needs to come to closure on the content and design of the census form, sooner rather than later, regardless of the players. Finally, the Bureau needs to develop a more effective organization for planning and implementing the 2000 decennial census. The committee's support for these necessary changes will go a long way to achieving an accurate and cost-effective decennial census.

Thank you, Mr. Chairman.

[The prepared statement of Mr. DeGeorge follows:]



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Office of Inspector General**  
Washington, D.C. 20230

**Statement**

**Frank DeGeorge, Inspector General**  
**U. S. Department of Commerce**

**before the**  
**Subcommittee on National Security,**  
**International Affairs and Criminal Justice**  
**Committee on Government Reform and Oversight**  
**House of Representatives**

**October 25, 1995**

Mr. Chairman and Members of the Committee:

I am pleased to be here today to discuss our recent evaluation of the Census Bureau's readiness for the 2000 decennial census. The purpose of our evaluation was to determine the bureau's progress in its decennial preparation and to identify obstacles to achieving four key goals: increasing accuracy, restraining cost, meeting national data needs, and gaining public acceptance.

The decennial census data are gathered through the largest peacetime mobilization of people and property undertaken by the U.S. government. Contacting over a quarter of a billion people is a monumental undertaking. As you are well aware, the census is the basis for apportionment and the distribution of billions of dollars of federal and state funds each year, as well as for other federal, state, local, and private activities and decisions. Because the success of the 2000 decennial depends on a sound census design, this Committee is to be commended for holding these oversight hearings at such a key time in the decennial planning process.

The Census Bureau has adopted a number of innovations to address the problems of past censuses--declining accuracy and rising costs. One innovation, which we fully support, is the use of statistical sampling for nonresponse follow-up. However, the bureau's current design may not result in the most accurate and cost-effective census. In fact, it retains some of the same shortcomings that plagued the 1990 design. We believe that a better design exists, to which the

bureau should give serious consideration. Now I would like to discuss in more detail the problems the bureau is trying to solve, as well as our concerns with the design it has selected and with its organization for planning and implementing the decennial census.

#### **1990 census shortcomings**

Although the 1990 census was similar to its predecessors, it came under intense scrutiny and severe criticism. It was long, expensive, and labor intensive, a situation exacerbated by the lower-than-expected level of public response. Accuracy decreased while costs increased. The 1990 census missed more people than the 1980 census. In addition, more minorities were missed proportionally as compared to whites than in the previous 50 years (since measurements were first made). And the 1990 census cost of \$2.6 billion reflected the continuing steep increase that began after the 1960 census.

The Congress responded to the 1990 census shortcomings and concerns about ever-increasing costs--projected as high as \$4.8 billion for 2000--by establishing an expert panel at the National Academy of Sciences to provide advice on reforms for the next census. In 1994, the panel concluded that to contain costs and increase accuracy, the bureau should use statistical sampling as an integral part of the 2000 design. Mr. Chairman, I would like to note for the record that I have fully supported and have been recommending sampling for some time. In fact, I am here today to discuss with you my belief that the bureau needs to increase the amount of sampling over that currently planned. I will discuss this point later in the statement.

#### **Bureau's selected design does not address 1990 problems**

The bureau has selected a design for the 2000 census that includes some sampling but does not go far enough in addressing the key problems of the last census. Our concern is shared by members of the Academy's expert panel. The cornerstone of the bureau's design is to count 90 percent of all residents and then sample 10 percent of the remainder. We believe this design is:

- ▶ unsubstantiated and untested,
- ▶ vulnerable to cost growth beyond its estimated \$3.9 billion price tag because it contains questionable features, and
- ▶ statistically inferior.

I will briefly explain each of these concerns. First, our evaluation revealed that the bureau does not possess analysis and research to back up the design. In fact, it developed the design at the management level with little or no input from Census staff, including agency statisticians. Second, the design contains several features of unproven cost-effectiveness and feasibility. These include the aggressive use of administrative records to count a portion of the initial 90 percent and heavy reliance on labor-intensive procedures that require recruitment of up to 4 million people to ultimately field a peak workforce of 550,000. Such uncertainty has led us to conclude that the bureau's \$3.9 billion estimate may be low. Third, using a 1-percent sample of the entire population to represent the last 10 percent may introduce statistical uncertainty, producing lower quality information. At 90 percent, the people who have not yet responded are the hardest to count, so a disproportionate number of them will be represented in the sample, possibly leading to missing information and thus introducing statistical bias. Because of these concerns about cost and statistical validity, as I have previously stated, the bureau needs to consider a simpler, yet possibly more promising approach.

#### **A promising alternative may exist**

In response to the Academy's final report, the bureau developed a version of the reengineered design that reflected the Academy's guiding principles—significant savings through substantial statistical sampling. Subsequently, the bureau abandoned this design even though we understand it to be:

- ▶ simpler,
- ▶ operationally less risky,

- ▶ less vulnerable to cost growth because it contains fewer questionable components, and
- ▶ statistically superior.

We also understand that this alternative design was abandoned because of its increased reliance on statistical sampling and the bureau's belief that it could not sell this approach to the interested parties. Let me describe this alternative, then elaborate on its key points. The cornerstone of this alternative design is the strategy to begin sampling for nonresponse follow-up immediately after the mail-back phase. By initiating sampling right after the forms are mailed back, the bureau will not need to pursue as many new and untested programs as it currently plans (such as extensive use of administrative records) to reach the 90-percent count. Furthermore, this design is less risky than the bureau's current plan because it mirrors the 1995 Census Test design, recently completed. Finally, by using a simpler design with substantiated, tested strategies, the bureau is less vulnerable to uncontrolled cost growth. This alternative approach is estimated to cost about \$3 billion. I am not concluding that the bureau's 2000 census budget should be \$3 billion. However, that estimate contains fewer unknowns than the \$3.9 billion estimate, although it is still subject to change as the bureau analyzes test results and refines its plans.

In addition, statistical advantages may exist as a result of using this design. By sampling immediately after everyone has had an opportunity to mail back the census form, the sample will better represent all segments of the population. The sample size will also be larger. It can be set by area (a method known as "differential sampling")--those counties with high response rates need smaller samples and those with lower response rates require larger samples. For example, in a county where the mail-back rate is 70 percent, the remaining 30 percent can be counted by a sample of perhaps one in three. Everyone in the sample counts as three--which is much better than counting as 10 (as in the bureau's design). The bottom line is that the bureau needs to give strong consideration to using this design because it could save significant sums of money and be more reliable than the design it has selected.

**Bureau organizational shortcomings have weakened planning process**

Our evaluation has shown that the bureau lacked rigor and systematic analysis in producing its selected design. Instead of dedicating specific full-time resources to the decennial, decennial planning and implementation are highly matrixed, with functions distributed across numerous divisions. This results in a fragmented organizational and decision-making structure that is not conducive to completing, substantiating, and implementing a design. Also, the bureau uses an informal, collegial approach to decennial management. At this point, we believe a formal project management approach is needed. Because of expected fiscal constraints, the bureau is planning to decentralize its decennial activities further by using resources bureau-wide, rather than dedicating specific resources to the decennial. Given the magnitude and importance of the decennial, we believe that a dedicated project management staff should be established. In our view, progress on the decennial design effort will be severely handicapped until such a staff is put in place.

**Other challenges the bureau must address**

Along with making the design and organizational changes we have discussed, the bureau must allow itself the time necessary to inform the Congress, other stakeholders, and the public of the merits of its approach. Of course it will take some time for people to get used to the idea of sampling—that is why the bureau must act now, not later. There are some other areas in which the bureau must make decisions in the near future.

These decisions include (1) settling on the content and questionnaire design, (2) determining and requesting needed legislative changes, and (3) determining decennial staffing, physical space and material, and supporting automated systems. By content, we mean the important process of selecting the topics to be included in the census. Every decade this process proves difficult because of the conflicting interests among those who want more questions added and those who want to reduce the burden on the public, and those who want a question worded one way versus those who want it worded another way. This decade the problem is exacerbated because the

bureau plans to adopt a new technology to process the information on the forms—and the length and design of the form interact intimately with the technology. That entire process is moving in fits and starts, rather than forward, because of indecision about form design and content. We believe that the bureau has the information it needs to make a decision on basic form design now and should do so.

Once the bureau settles on the details of its sampling and form design, it may need to request legislative changes. Potential changes include changing Census Day, allowing for exemptions to laws governing access to administrative records, or exempting its temporary workers from standard employment and unemployment compensation rules. In this regard, we have recently written to the Congress recommending that legislation be enacted denying unemployment compensation to temporary census workers.

Also, numerous operational decisions must be addressed. These include the telecommunications and computer needs of regional and district offices, headquarters systems to manage the flow of information, and detailed plans for recruiting millions of people. The solicitation process for systems acquisition is time-consuming. The bureau's own plans call for having an acquisition plan early in 1996. Once again, we are concerned that this plan will be lacking in sufficient detail or will be delivered behind schedule if the bureau does not make important design decisions now.

Finally, one decision in particular causes me concern. That is the decision to count on the Department's Commerce Administrative Management System for use in the decennial. The bureau is facing a major dilemma in that it needs this new accounting system to ensure it can properly record billions of dollars of expenditures for the 2000 decennial. However, I have frequently reported and testified on the weak condition of financial management at the bureau. Even though progress has been made, much work needs to be done. I am concerned that the bureau will simply not be ready to move to the new accounting system in time to support the decennial and will need a fallback. I strongly urge that alternative fallback planning for the accounting system be implemented immediately.

**Conclusions**

The design the bureau has selected for the decennial makes extensive use of counting and has limited sampling. Unless this changes, the 2000 decennial census effort will be nearly as large and expensive as 1990. The bureau needs to change its design to include more sampling and begin an aggressive campaign to convince the Congress, other stakeholders, and the public of the merits of this approach. Also, it needs to come to closure on the content and design of the census form. Finally, the bureau needs to develop a more effective organization for planning and implementing the 2000 decennial census. This Committee's support for these necessary changes would go a long way toward achieving an accurate and cost-effective decennial census.

Mr. Chairman, thank you for the opportunity to share my thoughts today on this important subject. I would be pleased to answer any questions that you may have.

Office of Inspector General  
U.S. Department of Commerce

Responses to Questions from  
October 25, 1995 Congressional Hearing,  
"Oversight of the Census Bureau: Preparations for the 2000 Census"

1. What accounted for the increase in the cost of the 1990 Census compared with the 1980 Census? Why, if costs were increased so dramatically, did the level of accuracy fall?

The National Academy of Science's major study of the 1990 decennial census addressed this issue in some depth. NAS found that costs, which rose dramatically from 1970 to 1990, increased for four reasons:

- a. increased workload (more housing units and people to count),
- b. inflation (especially in the paper industry),
- c. decreases in the public's voluntary response (which also increased the workload), and
- d. largely futile attempts (in the form of new programs and more thorough follow up efforts) to count everyone.

NAS characterized expenditures in the fourth and largest category as "unexplained" in that it could not determine benefits derived from these expenditures. Cost estimates provided by the Census Bureau indicated that, given traditional census-taking methods, costs will continue to rise well above the rate of inflation. NAS also concluded that traditional counting methods have largely exhausted their potential for counting the population. For reasons of both cost and accuracy, therefore, NAS recommended that the bureau abandon traditional counting techniques.

Instead, NAS recommended that the bureau begin with a strategy of significant sampling, then proceed to rethink every subsequent operation to determine whether it is still needed, or whether it should be altered. It is our belief (as well as the belief of NAS panel members) that the bureau has not done the detailed rethinking of how much sampling is best, along with which census procedures are warranted under such a sampling scenario. Our response to question 2, below, elaborates on this concern.

*OIG Responses to Follow-Up Questions from October 25, 1995 Hearing on Preparations for the 2000 Census*

2. Please outline first your understanding of the bureau's current plan for a "one-count" census and then give us your analysis of that plan. Please include an analysis of the methodology and cost of truncation at 90% as well as 70%.

"The Reengineered 2000 Census," the bureau planning document issued in draft earlier this year, contains the following major features:

- a. Mail a census form to (almost) every household, and request a return by mail of the completed form.
- b. Seek information on those households that do not respond through a variety of techniques, such as administrative records, "Be Counted" forms in public places, targeted methods for hard-to-count areas, and door-to-door visits.
- \*c. Cease, or "truncate" those efforts once 90% of households have been counted in a given county. Estimate information for the remaining households by sampling the nonrespondents.
- d. Conduct an "Integrated Coverage Measurement" survey independent of the earlier activities in order to assess accuracy (including undercounts). Estimate from that information the true count for each area. Incorporate those results into the final "one number" count. Two ICM methods are under consideration.

\*The bureau's plan states that it is also considering sampling all nonrespondents regardless of response rate (known as differential sampling).

The design contains a number of features that have been recommended by advisors for many years. However, the design lacks sufficient detail to allow us to render a complete judgement about whether it contains the right mix of those items and whether they can be carried out cost-effectively. Our overarching concerns are two-fold. First, in what manner will the bureau reach its selected truncation level? Second, has it selected the right truncation level?

First, the bureau plans an array of programs and operations required to reach a truncation level of 90 percent, as mentioned above. We are most concerned about the feasibility and cost of the bureau's plan to use administrative records to count ten percent of the population. The objective of the administrative records program in the 2000 census is unclear. At the beginning of 1995, the program was

*OIG Responses to Follow-Up Questions from October 25, 1995 Hearing on Preparations for the 2000 Census*

described as experimental; the bureau now considers it to be a major component of the design. However, the bureau was not able to provide us with any data to support this change in objective.

If the purpose were to test administrative records with an eye towards fuller use in 2010, we would expect a much less ambitious use in 2000 (e.g., experimental or research oriented). If the purpose were to take part of the 2000 census using administrative records, we would expect the bureau to maximize their use since the records contemplated are national in scope and contain large segments of the population. In our judgment, a testing approach is the more logical, given that the bureau currently lacks data to support the quality, availability and cost of the administrative records program.

Second, as expressed in our testimony, we question the rationale leading to the bureau's apparent commitment to a 90 percent truncation level, which the bureau estimated would cost \$3.9 billion. The bureau had little analysis to support this decision. It appears that lower truncation levels would be less complicated, less costly, and statistically comparable. Various drafts of the reengineered design discussed both truncation at 70 percent and differential sampling, each estimated at about \$3.0 billion. The number of programs planned to reach every truncation level is similar, leading us to conclude, like the NAS panel, that the bureau has not seriously rethought the need for programs that contribute to the count.

3. What must the bureau do with regard to its management structure to put things on track for a successful 2000 census?

Our report, enclosed, describes at some length our concerns about the bureau's management, as well as recommendations for strengthening it. We found numerous instances of fragmentation in the planning phase that, if not addressed, may lead to serious operational inefficiencies or failures. Our primary recommendation is that the bureau needs a more focused, centralized approach to census planning and implementation. Specifically, it is essential that the bureau put into place an integrating staff to ensure that design components complement one another.

*OIG Responses to Follow-Up Questions from October 25, 1995 Hearing on Preparations for the 2000 Census*

4. What is your understanding of the goals of the 1995 Test? Did the bureau achieve those goals?

The bureau's goal was to test one configuration of its 15 or so proposed initiatives (e.g., Be Counted forms) to determine whether they contributed to the decennial goals of containing cost and reducing the differential undercount, along with stakeholder and policy considerations. For each of the proposed initiatives, the bureau prepared a test plan describing specific objectives. Prior to the Test, we reviewed each plan. The plans for each individual initiative asked substantive operational, cost and methodological questions.

The overall goal of conducting a test census within schedule and budget was met. However, to meet the budget the bureau reduced from four to three the number of test sites. In addition, it canceled many evaluations in two of the three test sites. Most evaluations will not be available until the end of the year. Preliminary evaluations available to date indicate that the analysis of some of the proposed initiatives was hampered by these cancellations.

5. What is your analysis of the bureau's plans to use Integrated Coverage Measurement (ICM) in the 2000 census? In your understanding, what key decisions need to be made in the short term and why?

The Census Bureau is considering two methods for ICM. The first, dual systems estimation (DSE), is similar to the methods used (but not incorporated into the official count) in 1990. The second method, known as Census Plus (C+), was tested for the first time in the 1995 Test. Evaluations of the methods tested in 1995 are not yet completed. However, many bureau statisticians expect that the DSE will perform better than C+. The primary disadvantage of DSE is that it takes a long time to complete and may jeopardize the bureau's ability to meet legal deadlines.

The bureau's research agenda for FY 1996 includes additional work to further refine the selected methodology. The primary decision to be made is which method to employ, or whether a suitable hybrid method is developed. The bureau expects to make that decision within a few months. This decision must be made in a manner that weighs the trade-offs in truncation and sampling strategy in order to ensure that there is adequate time to complete the census. A secondary decision that the bureau must make in the short term is determining operational definitions for what constitutes equity. The definition would dictate sample size, selection, distribution, and cost.

*OIG Responses to Follow-Up Questions from October 25, 1995 Hearing on Preparations for the 2000 Census*

6. What is the status of computer and other technological advances that will differentiate the 2000 Census from the 1990 Census? What are the estimated cost savings with regard to these advances? What about decreased staffing needs as the technology is brought on-line?

The Census Bureau's plans envision a 2000 census much more dependent on automation than previous censuses. The bureau will implement some new technologies and also increase its use of several existing automated processes. Overall, the bureau projects that total FTEs during 2000 will be 59,836 (field and headquarters). This amount is 40 percent less than the 100,860 estimated to repeat the 1990 census. While the reduction in FTEs cannot be completely attributed to the bureau's automation effort, significant savings can be realized if the projects are successfully completed and implemented.

The key technologies under development/enhancement are:

- a. Decennial Executive Information System/Management Information System

By allowing some flexibility in local implementation of 2000 census methods, the bureau will need much more sophisticated information management tools than in previous censuses. The bureau plans to develop an executive information system that draws information from a Management Information System, and other systems listed below. At present, the status of these systems ranges from conceptual to prototype.

- b. Commerce Administrative Management Systems (CAMS)

The Bureau is scheduled to implement the core components of CAMS in time to manage the accounting and other administrative management functions of the census. The poor state of the bureau's financial management is well-established. CAMS is an essential part of the bureau's strategy to improve those processes to ensure accountability in its decennial expenditures. The bureau plans to begin implementing CAMS in FY 1996. We believe this date is highly optimistic.

- c. DCS 2000 -- Data Capture System

The bureau plans to develop DCS 2000, featuring electronic imaging and optical character recognition. In 1990, the bureau used FOSDIC, a data capture system that required photographing census questionnaires, processing film, and translating written responses into a computer-readable

*OIG Responses to Follow-Up Questions from October 25, 1995 Hearing on Preparations for the 2000 Census*

form via data keying. The system, modified for use during the past four censuses is labor intensive and cumbersome, requiring excessive personnel, maintenance, and overhead. During the 1995 Test, a prototype data capture system was tested. However, processing and cost benefit analysis results are not scheduled for release until early December. We are currently reviewing the bureau's Request for Comment (from industry) and system requirements defined to date.

d. Laptop Computers

As part of the 1995 Test, the bureau's ICM interviewers used laptop computers as a integral part of the reconciliation of data from interviews. Evaluations are forthcoming. In addition, the bureau is considering the use of global positioning systems to allow field staff to update the TIGER mapping system and Master Address File. A prototype software application developed by a contractor is undergoing testing at the bureau.

e. Administrative Records System

The bureau is contemplating a large-scale use of administrative records to count a portion of the population. At present the system through which these records would be standardized, consolidated, updated, and used is conceptual. Information from the 1995 Test will be considered in determining how extensively the bureau will use administrative records.

f. Automated Matching

The bureau needs a sophisticated matching and unduplication capability for ICM and administrative records use. Similar efforts were labor-intensive and error prone in 1990. The bureau has scaled back its original goal of a multi-use "real time" automated matching system. Current ICM plans call for a fully automated matching system that allows interviewers to match questionnaire results on site. This capability, combined with DCS 2000, will decrease clerical workloads and decennial FTE requirements.

*OIG Responses to Follow-Up Questions from October 25, 1995 Hearing on Preparations for the 2000 Census*

7. Is there any basis for concluding that census completion by either the U.S. Post Office or by putting the entire 2000 census out to private bid would result in significant cost savings for the American taxpayer?

The bureau has explored an increased role for the USPS during the past few years, at the urging of Congress. Legislation enacted last year required the USPS to share its address information with the bureau and should greatly enhance the bureau's Master Address File. In addition, the bureau is planning to rely on the USPS for some information about vacant housing units. A larger role has been substantially ruled out for two primary reasons. First, the high wages of USPS employees, compared to temporary census workers, are cost prohibitive. Second, the USPS does not see a major role in the census as a part of its mission and has been reluctant to assume a greater role.

Privatizing the entire census has been suggested at least since 1990 by some of the bureau's critics. However, serious analyses of industry capacity have not been undertaken. Although they have not conducted an analysis, bureau officials believe that such a capacity does not exist given the unique, infrequent, and monumental nature of a decennial census. The bureau has been exploring increased use of contractors for aspects of census infrastructure. This includes the possibility of a greater role for the private sector in data processing and questionnaire design.

8. What is the status of the bureau and University of Maryland plans for a new computer facility to be located in Bowie, Maryland? Have you any concerns or issues that have been brought to your attention with regard to this proposal?

A new federal computer building is being constructed for the Census Bureau's use at the University of Maryland Science and Technology Center in Bowie. Construction of the building began in September 1995 and is scheduled for completion in March 1997. The University plans to construct a classroom and conference facility on land adjacent to the computer building. Collocation of the two facilities is designed to facilitate work on the part of the bureau and the University in high performance computing. A Memorandum of Understanding on the shared use of the parking facilities has been signed by the bureau, the University, and GSA.

The work to be performed at the new computer facility includes both the "production" and "back-up" operations currently performed at the bureau's Suitland and Charlotte facilities. The bureau has not yet determined the extent to which decennial census functions will be performed in Bowie. According to

Federal Information Processing Standard 87, collocation of production and back-up processing operations is one of three acceptable contingency strategies for back-up processing. However, the selection of an appropriate back-up processing strategy should be based on the results of a risk analysis, which the Census Bureau has only just begun. While collocation may prove to be the most appropriate strategy, the bureau should not have made that determination a priori.

In addition, the bureau plans to acquire and share the use of high performance computing resources to be installed in the new facility with the University. An agreement on the shared use of these resources currently is under negotiation. According to bureau and University officials, the agreement is expected to be signed in early January 1996. According to bureau officials, no special equipment, including high performance computing resources, is being obtained for the new facility, at least initially. The draft agreement states that the bureau is conducting research on high performance computer applications and may subsequently acquire supporting hardware, subject to funding.

We have previously questioned the bureau's need for this type of hardware and made recommendations to the Department and the bureau that the bureau not acquire the hardware until it has conducted rigorous planning and analysis to determine what resources are needed and justified. We also expressed concerns about the proposed sharing arrangements. Of particular concern is the need for adequate safeguards to protect the confidentiality of census respondents as mandated by Title 13 U.S.C. However, there is very little documentation on the bureau's short and long-term plans for the new facility. A copy of our 1993 report on this topic is enclosed.

[Note.—Due to high printing costs, the following information can be found in subcommittee files: (1) Report entitled, "Inadequate Design and Decision-Making Process Could Place 2000 Decennial Census Risk,"; (2) Report entitled, "Unemployment Compensation and the 2000 Decennial Census," and related material; and, (3) Report entitled, "Census Bureau Major System Initiative Needs Greater Management Attention."]

Mr. ZELIFF. Thank you.

Mr. Stevens.

Mr. STEVENS. Yes, sir. Mr. Chairman, I will summarize what is a fairly lengthy prepared statement. I will do it very quickly, and then Mr. Brostek and I can respond to whatever questions you have.

After our comprehensive review of the conduct of the 1990 census, we concluded that the established design had exhausted its potential for counting the population cost-effectively and at an acceptable level of accuracy. Despite spending a record amount of money, on an absolute as well as a per capita basis, the net undercount rose, and it masked an even larger gross error. The census actually missed almost 10 million people, a disproportionate number of them racial minorities.

We recommended that the Bureau make fundamental changes to the census design and test such measures as shortening the questionnaire, building and maintaining an address list with extensive help from the Postal Service—the Postal Service would also help identify vacant units, which are a major cost item—and using multiple mail contacts to raise the mail response rate, which remains the most effective component of the census.

We also recommended that Congress maintain a regular schedule of probing oversight hearings on the Bureau's planning of the 2000 census, for it is a very conservative organization that has a great deal invested in the traditional census design. This hearing, I believe, Mr. Chairman, is evidence of the therapeutic effect of congressional oversight, because it has imparted a sense of urgency to the decisionmaking process and congressional review of it, and it is a very timely reality check for the Bureau.

The Bureau recently released its design for the census. It is a document called the "Reengineered 2000 Census," and we are basically encouraged by its contents. The new design should both save money and improve quality. We are particularly encouraged by the decision to adopt sampling among the nonresponse population as a basic foundation of the count. We have long advocated this step.

But the release of the design document does not mean that Congress can rest assured that all is well for the next census. On the contrary, the Bureau's decisions should be carefully reviewed by this subcommittee and by Congress, because the implications for public policy and for Federal spending are quite profound. Unless Congress weighs in now, the Bureau's decisions which are contained in this document are likely to be the final design.

One example of an issue which Congress, we believe, should pay particular attention to is the truncation level or the minimum response threshold where sampling is contemplated to begin. The option chosen by the Bureau is to begin sampling when a 90 percent response has been achieved through the mail-back, through some

use of administrative records, and through follow-up visits. This will peg the cost of the 2000 census at about \$3.9 billion.

However, we believe that Congress should look very carefully at at least two other options, one of which would save another \$700 million, and that would be to use a truncation level of 70 percent. We believe there would be no appreciable or measurable difference in census quality at that level, and it is something Congress may very well wish to consider. A second option might save even more, and this would be, as Mr. DeGeorge suggests, to begin sampling immediately after the mail response is in.

The Bureau's decision to use the 90 percent level is based on their assessment of public confidence in the concept of sampling, and there is some basis for this in their focus group results. But Congress also has considerable claim to expertise and influence on matters of public acceptability. And the availability of an option costing \$700 million less should not be dismissed without careful weighing of the pros and cons. Another reason for congressional attention is that there is an argument to be made that congressional endorsement through legislation would be necessary for that extensive and intentional use of sampling.

We also think that Congress needs to engage itself in the issue of questionnaire content. A decision needs to be made quickly, for it drives other decisions, such as the purchase of imaging equipment.

In conclusion, I would mention that the design decisions themselves do not guarantee a successful census. Managing a radically different census process presents a formidable challenge to the Bureau, and many of the basic design elements have not yet been thoroughly tested. Without very tight management over the next few years, there is a risk not only of failing to achieve the savings that are promised but also the actual risk of a failed census. The uncertainty of the Bureau's organizational status and its funding status only compounds these management challenges.

We will be glad to respond to any questions you or the other members may have, Mr. Chairman.

[The prepared statement of Mr. Stevens follows:]

DECENNIAL CENSUS: FUNDAMENTAL DESIGN  
DECISIONS MERIT CONGRESSIONAL ATTENTION

SUMMARY STATEMENT OF  
L. NYE STEVENS  
DIRECTOR, FEDERAL MANAGEMENT AND WORKFORCE ISSUES

On the basis of its review of the 1990 Decennial Census, GAO determined that fundamental census design changes were needed because the established approach had exhausted its potential for counting the population cost-effectively. The 1990 Census population count was less accurate than the 1980 count. The reported net undercount of 1.8 percent (4.7 million persons) obscured a larger gross error. GAO estimated that 9.7 million persons, or 3.9 percent of the population, were not counted at all in 1990, but this was partially offset in the net count by millions of persons who were improperly included. The less accurate 1990 results cost a record-high \$25 per household and a total of \$2.6 billion. If done the same as the one in 1990, the 2000 Census could cost an estimated \$4.8 billion.

The Bureau of the Census has decided to make fundamental changes to the traditional census design. These decisions have cost savings consequences approaching or exceeding \$1 billion. These decisions will also determine the scope and quality of data that are used for key public and private decisions, ranging from determining representation in Congress and other legislatures and allocating billions of dollars in federal assistance among the states to locating new businesses and targeting commercial solicitations.

GAO recommended, and the Bureau has formally adopted, fundamental census design changes. For instance, shortening census questionnaires can promote higher and more accurate public responses and lower costs. Developing an accurate address list reduces unnecessary mailings and expensive follow-up visits to locations that do not actually exist or to residences that are unoccupied. Sampling households that fail to respond to questionnaires produces substantial cost savings and should improve final data quality. While these and similar changes could save \$1 billion from the cost estimate of the 2000 Census with the same design, successful implementation of changes on this scale in a conservative organization will require aggressive management.

Although the Bureau has made key design decisions, the range of options is broad and the implications, both for public policy and federal spending, are considerable. The window of opportunity for Congress to provide guidance on those decisions and on their funding is closing. The further the Bureau proceeds with its decisions, the less Congress will be able to affect the census without significant risk of wasted expenditures and unacceptable results. For example, the Bureau now plans to begin sampling after a 90-percent response has been achieved. One alternative, a 70-percent cutoff, would save an additional \$700 million but might jeopardize public confidence. Congress may wish to weigh in on such key decisions.

Mr. Chairman and Members of the Subcommittee:

I am pleased to be here today to assist in your oversight of the Census Bureau's preparations for the 2000 Decennial Census. You asked us to focus our comments on the Bureau's fundamental design of the 2000 Decennial Census and the way it builds on the experiences of previous censuses. You also asked for any additional concerns we have regarding the 2000 Decennial Census. Our testimony today is based on our past and ongoing work to monitor and evaluate the Bureau's research and planning process and the Bureau's 1995 Census Test.

The Bureau recently released its design decisions for the 2000 Decennial Census in a document entitled The Reengineered 2000 Census. We are encouraged by several of the Bureau's decisions such as the questionnaire redesign; address list development, with support from the Postal Service; and multiple mail contacts, which we supported in past testimonies and reports. We are also encouraged that the Bureau has decided to sample those households failing to respond to census questionnaires rather than conducting a 100-percent follow-up as it has in the past. The Bureau estimated that a reengineered census will cost about \$3.9 billion, which is about \$900 million less than would be spent if it performed the census without design changes. However, achieving the \$900 million savings will require aggressive management attention on the part of the Bureau to ensure that the fundamental changes are well executed.

The Bureau has made its decisions on the key design parameters and now Congress needs to weigh in on those decisions and provide the funding it believes is appropriate, especially considering that such elements as the content of the census questionnaires and the use of alternative sampling techniques could significantly affect both the results and the final cost of the 2000 Census. While the Bureau's reengineering document contains planned changes similar to those we have advocated, we are concerned that the opportunity for a well-planned census will be lost if Congress and the Bureau cannot agree to the fundamental design and budget for the 2000 Census in a timely manner. Although a bright line does not exist delineating when congressional input may be too late, the later an agreement is reached, the greater the risk that hundreds of millions of dollars may be inefficiently spent and that successful redirection of the 2000 Census will be impossible.

#### BACKGROUND

After comprehensively studying the 1990 Decennial Census, we concluded that the established approach that was used for taking the census appeared to have exhausted its potential for counting the population cost-effectively.<sup>1</sup> Therefore, we recommended that fundamental changes be made to reduce future census costs

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

and improve the quality of the data collected. The 1990 Census marked the first census in which the Bureau failed to improve on the accuracy of the predecessor census since the Bureau began estimating the accuracy of census coverage in 1940. Furthermore, data quality and coverage declined as the absolute and per-household census costs climbed to record highs.

Data quality problems in the 1990 Census showed up in several key areas. The net undercount--the difference between the estimated population and the census count--was estimated by the Bureau to be 1.8 percent of the population, or approximately 4.7 million persons. This undercount was higher than the estimated 1.2 percent net undercount for the 1980 Census. The 1990 net undercount obscures the true magnitude of the error in the census because, while millions of persons were missed by the census, this undercount was in part offset in the net count by millions of other persons who were improperly counted. Examining the amount of gross error, therefore, provides a more complete picture of the quality of the census. In a 1991 report, we estimated that the 1990 Census contained a minimum of 14.1 million gross errors. These errors included 9.7 million persons missed during the count, or 3.9 percent of the population.<sup>2</sup>

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<sup>2</sup>See 1990 Census: Reported Net Undercount Obscured Magnitude of Error (GAO/GGD-91-113, Aug. 22, 1991).

Further, the estimated 4.4 percentage point difference in the 1990 net undercount rate between blacks (5.7 percent) and non-blacks (1.3 percent), referred to as the differential undercount, was the highest difference since the Bureau began such measurement in 1940.

Despite the Bureau's goal of containing the cost of the 1990 Decennial Census, the census continued an upward spiral of higher costs. The census in 1970 cost \$221 million; in 1980, \$1.1 billion; and in 1990, \$2.6 billion. Adjusting for inflation and workload growth, the cost of the 1980 Census doubled that of the prior one, and the cost of the 1990 Census was 25 percent higher than the one in 1980. In constant 1990 dollars, the \$25 spent to count each household for the 1990 Census was \$5 more per household than was spent in 1980. In 1990, the Bureau estimated that if the census taking approach did not change, the 2000 Decennial Census could cost about \$4.8 billion in current dollars.

A critical factor affecting the cost of a census is following up on nonresponses to the census questionnaires. A declining response rate to the census questionnaires has increased the Bureau's costly nonresponse workload. In the 1980 Census, the mail response rate was 75 percent, 3 percentage points lower than it was in the 1970 Census, and in the 1990 Census the response rate dropped to 63 percent, 12 percentage points lower than it

was in 1980. If the downward trend in public cooperation continues, the mail response rate could be as low as 55 to 59 percent in 2000 and generate a potential nonresponse workload of nearly 50 million cases that could require about \$1.25 billion in follow-up costs.

IMPROVED QUESTIONNAIRE DESIGN  
COULD PROMOTE A BETTER RESPONSE RATE

The Bureau has made progress in its efforts to simplify and streamline both the short and long census questionnaires to promote a better mail response rate. While these changes should reduce costly follow-up of nonresponding households, the Bureau needs to obtain congressional buy-in to the content of the questionnaire.

Having households mail back census questionnaires is less costly and more accurate than relying on enumerators--temporary Census Bureau employees--to obtain information through personal interviews at every household in the nation. In the past three censuses, the Bureau has relied on returned questionnaires to collect data on most of the households in the nation.

Since 1976, we have suggested that the Bureau test a streamlined questionnaire to determine whether it could improve the census mail response rate and thereby improve census accuracy and

reduce costly follow-up efforts.<sup>3</sup> As we stated in our 1992 report, revising the form or content of the questionnaire used in the 1990 Census could have promoted a better mail response rate by reducing the time and effort needed for respondents to understand and complete the census form.<sup>4</sup> The Bureau noted that there is evidence from private sector surveys that questionnaires taking less than 5 minutes to fill in have significantly higher response rates.

We are encouraged by the progress the Bureau has made since 1990 in exploring ways to make it easier for people to respond to the census. In 1992, the Bureau conducted the Simplified Questionnaire Test of mail return rates for a redesigned short questionnaire with only five personal questions--name, age, gender, race, and ethnicity. The test results showed that the new shorter questionnaires were more apt to be returned by mail than were the longer questionnaires used in the 1990 Census.

The 1995 Census Test used a short questionnaire with six questions. It also used long questionnaires for a small percentage of the population. These questionnaires ranged in

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<sup>3</sup>See Programs to Reduce the Decennial Census Undercount (GAO/GGD-76-72, May 5, 1976); Decennial Census: Issues Related to Questionnaire Development (GAO/GGD-86-74BR, May 5, 1986); Decennial Census: Local Government Uses of Housing Data (GAO/GGD-87-56BR, Apr. 8, 1987); and Census Reform Needs Attention Now (GAO/T-GGD-91-13, Mar. 12, 1991).

<sup>4</sup>See GAO/GGD-92-94.

length from 16 to 53 questions, with even the longest version including 11 fewer questions than did the 1990 long questionnaire. The 1995 test generally showed that the shorter the questionnaire, the more likely the household is to respond.

The Bureau is currently redesigning the questionnaires with contractor assistance to make them more user-friendly. These designs are being shown to key Members of Congress and will ultimately be tested in 1996. The Secretary of Commerce is required to report to Congress on the proposed contents of the 2000 Decennial Census in April 1997.

Obtaining Consensus  
on Content

Although the Bureau has made progress in shortening both the short and long questionnaires, it has not obtained consensus among key stakeholders on the content of the questionnaires and their length or whether to use a long questionnaire at all. Questions have been raised by the Chairman of the House Appropriations Subcommittee, which is responsible for the Bureau's budget, as to why it should be appropriating funds for the Bureau to gather data for the private sector and other government agencies at no cost to them. Other fundamental questions have been asked as to why the government needs to collect data on such things as the number of bathrooms in the

house, the way the person got to work last week, or the kind of work the person is doing.

In response to concerns about the content of the questionnaires, the Bureau has worked with other federal agencies to assess their data needs and has pared the census questionnaires down to some extent. However, if the long questionnaire is dropped entirely from the 2000 Decennial Census and some or all of the data are still required by the government, alternatives must be assessed for collecting those data. One alternative is to collect the data through smaller samples taken throughout the decade. This concept is known as continuous measurement.

Preliminary estimates from 1993 by the Bureau suggest that the cost of continuous measurement in the early years would be about \$100 million per year.<sup>5</sup> Final estimates on the cost of continuous measurement will not be available until the Bureau has evaluated a 1996 test.

The longer it takes for the Bureau to reach agreements with stakeholders, most notably Congress, the greater the potential for an adverse impact on the cost of the 2000 Census and its success in meeting federal data requirements.

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<sup>5</sup>Decennial Census: Test Design Proposals Are Promising, But Fundamental Reform Is Still at Risk (GAO/T-GGD-94-12, Oct. 7, 1993).

Machine Reading CensusQuestionnaires

The cost advantage of using questionnaires can be enhanced if they can be machine processed. The Bureau is planning to use optical scanners to read the data from returned questionnaires into its computer systems. However, as we testified in October 1993, in its research into using such scanners the Bureau has experienced many setbacks because of problems in selecting a contractual agreement and in a lack of funding.<sup>6</sup>

Officials in the Bureau's Decennial Management Division told us that the Bureau plans to test the optical scanning of three separate short questionnaires and one long questionnaire in 1996. They also said that work on a final optical scanning process would be expedited if the Bureau would decide on final census questionnaires as quickly as possible. The Bureau's Technical Services Division, responsible for the actual design of the scanning system, needs as much advance time as possible to procure and test the data imaging equipment needed for questionnaire processing for the 2000 Census.

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<sup>6</sup>GAO/T-GGD-94-12.

MULTIPLE MAIL CONTACTS SHOWS  
POTENTIAL TO IMPROVE RESPONSE RATE

In past testimonies and reports, we urged the Bureau to reduce dependence on costly follow-up by enumerators by testing the use of multiple mail contacts. During the 1995 Census Test, the Bureau tested multiple mail contacts consisting of four household contacts: a pre-notice letter, an initial questionnaire, a thank you/reminder card, and a replacement questionnaire. The test marked the first time the Bureau has tested and evaluated the operational feasibility of using multiple mail contacts during a decennial census-like environment.

While the test results have not been finalized, Bureau officials told us that using multiple mail contacts showed a potential for increasing the mail response rate by at least 7 percent, thereby reducing costly follow-up. An official told us that the estimate was based on the number of households responding to the replacement questionnaire. He also said that the other parts of the mail contact strategy increased the response rate. However, he said the Bureau had been unable to determine by how much when we spoke with him in October 1995.

For the 2000 Decennial Census, the Bureau expects to have multiple mail contacts with up to 120 million households, and with as many as 48 million households receiving replacement

questionnaires, the cost could be significant. Bureau officials estimated the cost of multiple mail contacts to be about \$50 million. We believe that this amount is a worthwhile investment considering that it may prevent the Bureau from having to follow up with enumerators on 8.4 million households and could save the Bureau about \$175 million. This savings is based on the Bureau's estimate that 1 percentage point nonresponse in the 2000 Census would cost about \$25 million for follow-up activities.

THE BUREAU IS ACTIVELY PURSUING OPPORTUNITIES  
TO INCREASE USE OF THE POSTAL SERVICE

The Bureau and the Postal Service have made progress in their cooperative efforts to improve the coverage and reduce the cost of the 2000 Decennial Census. The Bureau is working with the Postal Service to maintain and update its address list. The Bureau is also exploring the potential for using the Postal Service to identify vacant and nonexistent housing units early in the census process, which could improve data quality and reduce costly nonresponse follow-up.

An accurate and complete address list that identifies the mailing address and physical location of each housing unit is the cornerstone of a successful census. Virtually all fundamental design changes planned for the 2000 Census, particularly the use

of sampling and integrated coverage measurement,<sup>7</sup> depend on a complete and accurate list of residential addresses. Therefore, a master address file integrated with a geographic database is a crucial basic requirement for the 2000 Census.

We have long advocated that the Bureau maintain an address list throughout the decade rather than prepare a new one for each census. In the 1990 Decennial Census, the Bureau, for the first time, developed an automated system that allowed it to incorporate changes from its various address list development procedures and retain the list. For the 2000 Census, the Bureau is building on that 1990 address list primarily through data provided by the Postal Service's automated Delivery Sequence File to create a permanent and continuously maintained address list. The use of Postal Service address information provides the Bureau with an updated, nationwide source of mailing address information with which to update its own address list.

The 1995 Census Test was the first opportunity to use this address file. Initial results of matching the files of the Bureau and the Postal Service for the four 1995 test sites were promising. The Bureau showed a high match rate (over 92 percent) between the two files and added addresses to its list. Unlike

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<sup>7</sup>We provide details on integrated coverage measurement, a statistical estimation method, later in this testimony.

other design features included in the 1995 Test, the address list development method was not to be formally evaluated.

Continuing changes in the nation's housing stock will always make developing a complete and accurate address list a major challenge for the Bureau. However, building on the investment it made for the 1990 Census and placing far greater reliance on the Postal Service appear to offer the Bureau the opportunity for significant improvements and savings.

A more inclusive and accurate address list should produce savings, but these savings could be enhanced with reliable information on whether someone actually lives at the address. Thus, another cost-saving initiative using the Postal Service is to determine the occupancy status of housing units. In the 1990 Decennial Census, the Bureau sent temporary census employees, enumerators, to visit 34.3 million housing units from which a questionnaire was not returned by mail. However, many of those visits were not necessary because the housing unit either was vacant or did not actually exist. Of the approximately 100 million questionnaires delivered in that census, 8.6 million were delivered to units subsequently found to be vacant and 4.8 million were addressed to nonexistent units, according to Bureau records. These 13.4 million addresses represented about 39 percent of the 34.3 million housing units that required visits from enumerators because a questionnaire was not mailed back. We

estimated that total field costs to follow up on questionnaires not mailed back because the housing unit was vacant or nonexistent were about \$317 million in the 1990 Decennial Census.

The Bureau used the Postal Service during the 1990 Census to help identify the occupancy status of some of the last, most difficult follow-up cases. A Bureau study found that although additional testing was needed, this use appeared to be a very inexpensive and practical way to help complete these final cases. In our 1992 report, we encouraged the Bureau to use the Postal Service to identify vacant and nonexistent units before any census questionnaires were mailed because we believed such an approach could yield substantial savings.<sup>8</sup> However, we noted that testing the use of the Postal Service in this capacity would be necessary because the Bureau had no data from the 1990 Census on how accurately the Postal Service identified units as nonexistent.

In the 1995 Census Test, the Bureau planned to test the use of Postal Service letter carriers to identify vacant and nonexistent units when it mailed census materials. The Bureau's plan was to use undeliverable First-Class mail that the Postal Service returned to the Bureau to identify vacant and nonexistent units. According to Bureau officials, due to budget cuts follow-up on vacant units was dropped and the Bureau accepted the Postal

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<sup>8</sup>See GAO/GGD-92-94.

Service's identification of vacant units. For questionnaires returned for other reasons, including nonexistent addresses, the Bureau attempted to gather data verifying the accuracy of the Postal Service's classifications. The accuracy of these classifications will not be known until the Bureau releases its evaluation of the test census. The evaluation is scheduled to be released in November 1995.

COST SAVINGS FROM SAMPLING FOR  
NONRESPONSE FOLLOW-UP

Following up of households that do not respond to the census is one of the most expensive components of the census. In our 1992 report, we recommended that the Bureau consider using statistical sampling to develop census information on nonrespondents in an effort to achieve significant cost-savings.<sup>9</sup> Census Bureau estimates suggest that without decreasing accuracy, sampling could have saved up to \$457 million spent on nonresponse follow-up in the 1990 Decennial Census by sampling 30 percent of these nonresponding households, rather than performing a 100-percent follow-up of all nonrespondents.

As we testified in September 1994, sampling nonrespondents could actually improve the accuracy of census data on nonrespondents

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<sup>9</sup>See GAO/GGD-92-94.

while saving money.<sup>10</sup> The number of errors found in census data increases in proportion to the time it takes to complete the census. The nature of sampling itself, however, increases the statistical uncertainty of the data on nonrespondents at lower geographic levels. The magnitude of statistical uncertainty is dependent on the size of the sample, the method used to draw the sample, and the size of the universe being sampled.

We also testified in September 1994 that the Bureau must be prepared to provide policymakers with data on the trade-off between the accuracy and potential cost-savings of sampling for nonresponse.<sup>11</sup> The Bureau's document, The Reengineered 2000 Census, begins to provide this information by listing several cost options. It chose an option of cutting off follow-up of nonrespondents after a 90-percent response rate has been reached, then sampling 1 in 10 of the remaining nonrespondents. (The Bureau has generally referred to this process as truncation.) The Bureau plans to attain the 90-percent response rate through a combination of mail questionnaire responses, data obtained by Bureau employees from administrative records, and questionnaires completed by enumerators on the basis of household interviews.

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<sup>10</sup>Decennial Census: 1995 Test Census Presents Opportunities to Evaluate New Census-Taking Methods (GAO/T-GGD-94-136, Sept. 27, 1994).

<sup>11</sup>See GAO/T-GGD-94-136.

The Bureau believes that the 2000 Census will cost \$3.8 billion under the 90-percent truncation option assuming other reengineering efforts will produce a mail response rate of 66.9 percent. The following table provides various options for cutting off the follow-up of nonrespondents and provides data on census costs if the Bureau achieves a 66.9 or a 56.9 percent mail response rate, which is more consistent with the recent trend of declining mail response.

Table 1: Cost Options for Follow-Up on Nonrespondents

Dollars in billions

Assumed mail response rate	Cost of 100% follow-up*	Cost for reduced follow-up			
		95%	90%	80%	70%
66.9%	\$4.3	\$4.2	\$3.9	\$3.4	\$3.2
56.9%	4.7	4.5	4.3	4.0	3.4

\*Traditional Census Bureau design.

Source: Census Bureau data.

According to the Bureau, the option of sampling after a 90-percent response rate is achieved would produce a \$400 million savings over a 100-percent follow-up with the same mail response rate. As the table shows, other options exist that would produce greater or fewer savings. For example, the Bureau could save an additional \$700 million if it performs a 70-percent truncation.

In selecting an option, the quality of the resulting data must be considered. The Reengineered 2000 Census document is silent about the quality of data in the various options it presents. However, Bureau officials told us that the quality of the data for the various options would be comparable, even at the lowest geographic levels used for congressional redistricting. They said both sampling (at either the 70- or 90-percent truncation) and 100-percent follow-up would have some associated errors and the errors take different forms but basically offset each other. Bureau officials noted, however, that the amount of error at the geographic level used for redistricting was not determined for the traditional census design of 100 percent follow-up used in 1990. Therefore, a statistical comparison of the accuracy of a census using sampling for nonrespondents and a traditional census cannot be made. Bureau officials did say that sampling at either a 70- or 90-percent truncation could yield final results that are similar in reliability.

Bureau officials told us that the Bureau's decision to use the 90-percent cutoff was based on focus group input from the public. Focus group participants were more comfortable with relying on actual data rather than sample data. On the basis of the focus group results, Bureau officials said they believe that too great a reliance on sampling could undermine the public's willingness to respond to the census.

Nevertheless, Bureau officials said that the Bureau is continuing to study two other alternatives including (1) a 70-percent truncation and (2) differential sampling for nonresponse right after completion of initial mail response. According to Bureau estimates, both alternatives could save more than the 90-percent truncation.

The Bureau's strategy of relying on administrative records to gather the information on a portion of households that do not respond by mail creates many questions that have yet to be answered by the Bureau. The reengineering document notes that the Bureau must undertake extensive research and testing before it implements this initiative. The Bureau's reengineering document also includes an estimate that the Bureau will complete information for 5 percent of nonresponding households through the use of administrative records.

#### OBTAINING ONE-NUMBER CENSUS

#### PRESENTS CHALLENGES

Bureau data show that each recent decennial census has produced an undercounting of the population, which has been most pronounced for minority populations. In an attempt to measure and then reduce the differential coverage error observed in previous censuses, the Census Bureau is evaluating the use of integrated coverage measurement (ICM) in the 1995 Census Test.

ICM is a statistical estimation method that is designed to improve the accuracy of the census count by reconciling the results of the original census counts with data obtained from a sample of households. Under ICM, a sample of 1 in 10 households would be visited by an enumerator to check the accuracy of the initial census data.

According to Bureau officials, ICM would enable the Bureau to present a one-number census that would be published by December 31, 2000. This date is the deadline for delivering the population count for apportioning congressional representation among the states.

The Bureau has used coverage measurement surveys in past censuses to help it determine whether original counts should be adjusted, especially to deal with differential undercounts of minority populations. The coverage measurement survey used in the 1990 Census was called the Post Enumeration Survey (PES). PES results, however, were not available until after the December 31, 1990, deadline for apportionment counts. The Bureau developed ICM not only to improve the census counts but to reduce the time required by the 1990 Census method for checking the accuracy of the original counts and producing adjusted numbers.

If the Bureau were to use a coverage measurement survey, whether PES or ICM, to adjust for undercounting, it must be reliable.

The Secretary of Commerce considered using PES results to adjust the 1990 Census to correct the undercount. However, on the basis of data available at that time, the Secretary decided against the adjustment. Matters related to the adjustment of the 1990 Census count are to be heard before the Supreme Court this year.

To successfully use ICM, the Bureau must overcome several challenges, some of which include: (1) determining which of two estimation methodologies can produce sufficiently accurate estimates of the undercount within the time available to produce a one-number census, (2) obtaining a legislative change for Census Day to allow for more time to complete tabulations, (3) tracing occupants of households that move during the census operation, (4) working with the required computer technology, and (5) avoiding statistical bias in the interview process.

The Bureau is evaluating whether the estimation methodology used in the 1990 PES or a newly developed methodology is best to use in producing a one-number census. PES employed a population estimation methodology, known as a dual-system estimation, that may not lend itself to completion in the required time. The newly devised methodology, which the Bureau calls CensusPlus, may be more rapid, but the Bureau must determine whether CensusPlus can produce sufficiently accurate undercount estimates down to the block level.

Even if the new CensusPlus estimation methodology is to be used, Bureau officials said that Census Day may need to be moved up. Although the Bureau is waiting for the final 1995 Census Test results before deciding, it may need to request that Congress move up Census Day by at least 4 weeks in order to complete ICM and produce a one-number census count by December 2000. This move, however, would require an amendment to Title 13 of the United States Code, which currently sets April 1 as Census Day.

Obtaining information about the occupants of a household if they have moved between Census Day and the day of the coverage measurement sample interview may be difficult for enumerators. The Bureau estimates that about 7 percent of the households in ICM sample areas will move during that time.

In order to do the coverage measurement survey more rapidly, the Bureau plans to use computer notebooks in the field. However, we observed that during the 1995 Census Test, enumerators had difficulty using the computer notebooks while conducting interviews at household doorsteps. In addition, during the 1995 Census Test, the Bureau had difficulty loading nonresponse data in the computer notebooks in time for use by enumerators in the field. Enumerators, therefore, were unable to match interview data with original census questionnaire data, and matching had to occur after the interview was completed, which slowed the measurement process. With ICM, the enumerators would be

responsible for making matches between an address listing, their on-the-spot interview information, and the Census roster showing the people that were counted in a household when the original count was provided on the questionnaire. Bureau officials have said that making this match may conceivably introduce interviewer bias into the ICM process. The 1995 Census Test was to evaluate whether this bias does occur. Test census results are to be available in December 1995.

THE CENSUS BUREAU IS OPERATING  
IN AN UNCERTAIN ENVIRONMENT

Overarching the problems associated with improving specific design components of the 2000 Census is the uncertainty regarding the Bureau's budget and organizational location. This uncertainty complicates the task of resolving the fundamental design issues for the coming census.

Budget

The type of census that will be conducted in 2000 depends ultimately upon the resources that will be available. To conduct a decennial census in 2000 similar to those done in previous decades requires the Bureau's budget to begin a steep climb in fiscal year 1995 that would culminate in peak expenditures in 2000. Increased budget amounts are to be used for such things as

finalizing research on key issues related to the census design, procuring equipment and other supporting materials, and hiring enumerators. Traditionally, Bureau budget increases have begun in mid-decade partly because of the long lead times required to obtain and mobilize the vast resources required to execute a decennial census.

However, the Bureau's budget environment is currently tenuous. Congressional proposals have been made that would significantly curtail the census budget. For example, one proposal would have limited the Bureau's fiscal year 1996 budget to 75 percent of its fiscal year 1994 expenditures, or about \$178 million, and would hold its budget to that level indefinitely.<sup>12</sup> Such budget levels would require significantly greater changes to the census than have been considered to date by the Bureau. The Census Director has been reported as saying that the proposed \$178 million per year ceiling on spending for the 2000 Census would mean that a traditional enumeration of the population could not be done. The Director said that the Bureau would instead have to estimate the population on the basis of administrative records alone.

It is important that the Bureau develop an understanding of its likely future budget levels with appropriate congressional

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<sup>12</sup>Commerce Dismantlement: Observations on Proposed Implementation Mechanism (GAO/T-GGD-95-233, Sept. 6, 1995).

committees. If the Bureau continues to plan for a census that would cost about \$3.9 billion dollars but that level of funding does not materialize, the Bureau will have spent hundreds of millions of dollars on research and planning that will be largely irrelevant to the actual census that will be performed. Furthermore, if the funding level remains unresolved and the Bureau proceeds to plan for a \$3.9 billion census, it may be unable to revise its plans rapidly enough to execute a reliable census in the year 2000 under a significantly lower budget. For example, in 1992 testimony we expressed our belief that a census based entirely or even substantially on administrative records is not feasible by 2000.<sup>13</sup>

#### Relocating the Census Bureau

Over the past year, bills have been introduced that would abolish the Department of Commerce. These bills offer several alternatives for relocating the Bureau. One bill currently being discussed, for instance, would move the Bureau into the Office of Management and Budget (OMB) for a short period of time before incorporating it into a consolidated federal statistical service or moving it into the Department of Labor's Bureau of Labor Statistics if a consolidated service were not established. Although these bills address issues more encompassing than the

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<sup>13</sup>Census Reform: Major Expansion in Use of Administrative Records for 2000 Is Doubtful (GAC/T-GGD-92-54, June 26, 1992).

Census Bureau, they contribute to the current uncertainty that challenges the Bureau's leadership.

We have not analyzed these bills in depth. However, on the basis of our work over the years at both the Census Bureau and OMB, we believe that certain issues merit consideration. Because OMB has not had direct responsibility for carrying out government programs, its officials may not have the same experience base from which to offer managerial guidance to the Census Bureau as would officials in other agencies. In addition, although the Bureau has considerable autonomy within the Department of Commerce, Commerce historically has had a role in areas such as Bureau procurement, dealing with legal issues including suits filed disputing census results, financial reporting, and congressional relations. In fiscal year 1995, Census reimbursed Commerce \$8.5 million for general administration services. Again, given its normal role, OMB may not have resources to provide such services.

We have reported and testified in the past<sup>14</sup> that management attention is needed to ensure that the Bureau stays on track to fundamentally redesign the 2000 Census and realize potential cost savings. For example, in 1994 we said that continuing top-level leadership, particularly at the Census Bureau, the Department of

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<sup>14</sup>See GAO/GGD-92-94 and Decennial Census: Promising Proposals, Some Progress, but Challenges Remain (GAO/T-GGD-94-80, Jan. 26, 1994).

Commerce, and OMB is critical to generate needed consensus on the direction of change and the implications of census reform for federal and other data needs.<sup>15</sup> Thus, it would be important that steps be taken to mitigate the unavoidable disruptions to managerial attention that would accompany a relocation of the Bureau.

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This concludes my prepared statement. I would be pleased to answer any questions.

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<sup>15</sup>GAO/T-GGD-94-80.

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GAO RESPONSES TO ADDITIONAL QUESTIONS  
ON THE 2000 DECENNIAL CENSUS

**Question 1:** What accounted for the increase in the cost of the 1990 Census compared with the 1980 Census? Why, if costs were increased so dramatically, did the level of accuracy fall?

**Response:** The 1980 Census cost \$1.1 billion while the 1990 Census cost \$2.6 billion. A significant portion of the increase in costs was due to inflation. The non-inflationary portion of the cost increase was primarily attributable to workload growth and following up on an increased number of households not responding to census questionnaires.

Increased workload stemmed from growth in the number of households. In 1990 the Bureau attempted to obtain census information from about 100 million households. This represented about a 12 million increase from the number of households in 1980. However, the workload increase did not account for all of the noninflationary growth in the census cost. In constant 1990 dollars, the \$25 spent to count each household for the 1990 Census was \$5 more per household than was spent in 1980.

A major factor contributing to this cost increase was the decline in the public's willingness to respond to the census. In the 1980 Census, the mail response rate was 75 percent and in the 1990 Census, the response rate dropped 12 percentage points to 63 percent. The Census Bureau estimated that following up on this additional 12 percent of households which did not respond to the questionnaires in 1990 cost more than \$120 million.

The quality of the census decreased from a net undercount of 1.2 percent of the population in 1980 to a net undercount of 1.8 percent of the population in 1990. We believe that examining the gross error provides a more complete picture of the quality of the census. We estimated that the 1990 census contained a minimum of 14.1 million gross errors. These errors included 9.7 million persons, or 3.9 percent of the population, missed during the count.

The decrease in the quality of the census is attributed, in a large part, to extended data collection efforts. Bureau studies and evaluations provide evidence that revisiting the same housing unit over time can yield very different results. Units change from vacant to uninhabitable to occupied and vice versa; enumerators may contact different respondents who provide inconsistent information, or the respondent may not recall who was or was not living there on Census Day. In 1990, one important consequence of the difficulty the Bureau experienced in trying to complete the last portion of nonresponse cases was that Bureau enumerators had to use closeout procedures in which census information was obtained from

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someone other than a person living in the household. We reported<sup>1</sup> that these procedures may have contributed to the decline in census data quality because the Bureau accepted less complete responses and information for these nonrespondents.

In light of decreased public response to census questionnaires and the poor results from the Bureau's costly multiple attempts to survey each nonresponding household, we concluded that the established approach that was used for taking the census appeared to have exhausted its potential for counting the population cost-effectively. Therefore, we recommended that fundamental changes be made to reduce future census costs and improve the quality of the data collected. The Bureau is moving toward a revised census approach which merits continued congressional attention as discussed in the Subcommittee's October 25, 1995, hearing.

**Question 2: Please outline first your understanding of the Bureau's current plan for a "one-count" census and then give us your analysis of that plan. Please include an analysis of the methodology and cost of truncation at 90% as well as 70%.**

Response: The Bureau plans to produce one set of official census results by December 31, 2000. Achieving a one number census is integral to the Bureau's goal of improving the total count, reducing the differential in the count, and containing cost. In order to produce a one number census, in less than a 12 month period, the Bureau plans to collect the census data and determine whether adjustment to the resulting counts are needed. To do this, the Bureau needs to expedite basic data collection and develop a rapid, but accurate, means of measuring inaccuracies that may exist in the original counts.

With regard to original data collection, the Bureau is planning to use statistical sampling to follow up on nonrespondents--which we have long recommended to achieve significant cost savings. The point at which efforts to develop information for every household will be halted, or "truncated," and statistical sampling begun is a key decision. The Bureau's current plan is to cut off follow-up efforts after a 90-percent response rate has been reached, then sampling 1 in 10 of the remaining nonrespondents. It believes it can save about \$400 million following this methodology. The Bureau could save an additional \$700 million if it uses sampling after a 70-percent response rate. As we pointed out in our testimony on October 25, 1995, in selecting an option, the quality of the resulting data must be considered. Bureau officials told us that sampling at either a 70- or 90 percent truncation could yield final results that are similar in reliability. They also told us that they are continuing to study various sampling alternatives.

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

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With regard to possibly adjusting the population counts garnered through original data collection, the Bureau will attempt to measure and then reduce the differential coverage error observed in previous censuses through the use of integrated coverage measurement (ICM). ICM is a statistical estimation method that is designed to improve the accuracy of the census count by reconciling the results of the original census counts with data obtained from a sample of households. The concept for using ICM to produce a "one number census" seems sound. However, the Bureau has not yet completed its evaluation of the use of ICM in the 1995 Census Test.

**Question 3: What is your understanding of the goals of the 1995 Test? By objective measures, did the Bureau achieve those goals?**

Response: During the past year, we used our limited resources to monitor the Bureau's overall effort to revise how the census will be done rather than evaluate each aspect of the 1995 Census Test. For this reason, and because the Bureau's evaluations of the 1995 Census Test are not complete, we do not have adequate evidence to assess the success of the test. Nevertheless, some observations can be made. The overall goals of the 1995 Census Test were to evaluate new methods to reduce costs, improve coverage and make it easy for the public to respond. To a large extent these goals were achieved. The Bureau tested several methods for reducing costs such as using multiple mail contacts to encourage response to the questionnaires. Preliminary results from the multiple mailings show a 7 percent increase in the response rate. Still remaining to be answered are questions such as the ability of the Bureau to quickly identify nonresponding households on a nationwide basis and the cost effectiveness of following a multiple mail contact procedure.

One concern we have about the 1995 Census Test is that it did not include evaluations of critical design elements necessary for making decisions about the 2000 Decennial Census. Instead, it was more oriented toward evaluating the operational capability of the Bureau to perform certain functions. One limitation was the failure to test alternative sampling designs for nonresponses to the census questionnaires. The only part of the 1995 Census Test having to do with sampling revolved around whether better results were achieved by performing block samples where every nonrespondent in a sample of blocks was contacted or a unit sample where all nonresponding addresses had an equal chance for follow up. Therefore, the test did not help determine the implications of a 70-percent or a 90-percent truncation.

**Question 4: What is your analysis of the Bureau's plans to use Integrated Coverage Measurement in the 2000 Census? In your understanding, what key decisions need to be made in the short term and why?**

Response: As we testified in October 1995, the Bureau believes that ICM would enable it to present a one-number census by December 31, 2000, and that it should improve the accuracy of the census and reduce the differential undercount of minority populations. Until now, we

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have not been asked to, nor have we analyzed the specifics of the Bureau's plan. However it appears that the Bureau is faced with several challenges relating to ICM which include: (1) whether ICM can produce sufficiently accurate estimates of the undercount within the time available to produce a one-number census, (2) obtaining a legislative change for Census Day to allow for more time to complete tabulations, (3) tracing occupants of households that move during the census operations, (4) working with the required computer technology, and (5) avoiding statistical bias in the interview process.

One decision critical to ICM relates to the acceptance of an "adjusted" census. For the 1990 census, the Bureau used a coverage measurement survey known as Post Enumeration Survey (PES) to help it determine the accuracy of the census. Under PES enumerators visited about 175,000 households to determine if the original counts were accurate, especially the counts of minority populations. Subsequently, based on the results of PES, the Secretary of Commerce considered adjusting the 1990 Census to correct the undercount. However, the Secretary decided against such an adjustment.

In the 2000 Decennial Census, ICM will be considerably more costly than PES because the Bureau plans to have enumerators visit more than 750,000 households. A critical issue is whether Congress and other stakeholders are willing to accept an "adjusted" census. If not, the added expenditure is questionable.

**Question 5: Is there any basis for concluding that census completion by either the U.S. Post Office or by putting the entire 2000 census out to private bid would result in significant cost savings for the American taxpayer?**

**Response:** We are not aware of any studies that would support having the Postal Service or a private firm conduct the census. Nevertheless, any consideration of such an action should include a discussion of the design of the census (which dictates the cost) and the probability for successful execution of it. Furthermore, if the public reacts adversely to having either the Postal Service or a private firm conduct the census, an unknown and possibly unbearable risk to the accuracy of the data could result.

It should be noted that while the primary responsibility for conducting the census lies with the Bureau, the Postal Service and private firms are playing ever-increasing roles in conducting the census. Constructive cooperation between the Postal Service and the Bureau has led to several opportunities for improving the efficiency and reducing the cost of the census. Two examples are the increased use of the Postal Service in developing an address list, and in identifying vacant and nonexistent units. Private firms are being used to develop census questionnaires that are user friendly. The Bureau also plans to have private firms develop ways to try to increase mail response rates.

Mr. ZELIFF. Thank you very much.

I guess my biggest concern in reading through your testimony and hearing your verbal comments today, the problems that we had in 1990, it seems to me that—if we don't make some major changes, we're going to end up doing the same thing we did in 1990. We're going to have costs go up and accuracy go down. So what I'm hearing you say is, you're concerned about our inability to address these concerns now rather than later, so that we are in a position to do the kind of job that's going to be required of us.

Mr. DeGeorge, when do you think we need to have these decisions ready so that we hit the PERT chart similar to this—just for the record you know, to be ready by the year 2000? When do we have to make these major decisions in terms of the design, No. 1, and No. 2, the sampling?

Mr. DEGEORGE. Well, I think that nothing is risk-free. I would guarantee that it's going to be a sales job, no matter what your sampling level, until you have agreement, I believe, of everyone, including the GAO and myself, and I think the Census Bureau, that sampling is the way to go.

The real question is, at what level, and how do you start the sampling, and how do you retain the confidence of the public? And I would argue that the sooner you make those decisions, even as early as next year's budget, the better off we're all going to be, and the longer we will have to sell it to the public and the stakeholders. The quicker we put in a management structure, which is not going to be expensive—I think we will save money—that makes it strongly addressed toward adapting a very strong managed process to better it.

It's sort of like running a six-horse parlay here. You're changing the design. You're changing the sampling rate. You're trying to decide to what extent—how you handle the data and process data, with more sophistication, including scanners. You're looking at an organizational culture that really doesn't, at the moment, want to change. And you have to bring a lot of structure to it to affect the way it's managed. I think the sooner you start those issues, the better. And I mean like now.

The other issue that I would strongly suggest the committee give consideration to, and it is a strong philosophical change, and my own personal preference, is unemployment compensation. This program, if you deal with hiring and actually bring on board more than half a million people, it could be hundreds of millions of dollars—hundreds of millions of dollars—in my judgment.

Now, that means making some tough calls. It means telling people, "If you come on board, you recognize, in effect, that this is a temporary job and that you will not qualify for unemployment compensation." Now that, I would think, would make life more difficult in the sense of who you get. But I'd like to understand in my own mind how increasing the sampling and hiring more people is going to make it any easier. These are management calls. There are trade-offs that have to be made.

Mr. ZELIFF. Why do you suppose—I guess what you're saying is, there's resistance to change, as to why people are holding onto the 90 percent level rather than 70?

Mr. DEGEORGE. I think it's an honest concern as to what is the most acceptable level of sampling on the part of a group of folks who really feel that they have been put upon in the past, mostly inner cities where there had been a decided minority undercount.

Increasing the level of sampling means, in effect, you're going to stop trying to find everybody at some point in time. You're going to base the final numbers, as much as possible, on who you've counted to date, and make sure there's a strong educational process whereby inner city mayors and others who are concerned about it, including the people who use the data, can feel that the economics and the statistical analysis that does this is as reliable and, indeed, is more reliable than not finding everybody.

Mr. ZELIFF. What is your understanding of statistically reliable?

Mr. DEGEORGE. More reliable.

Mr. ZELIFF. More reliable at 70 percent than 80 or 90?

Mr. DEGEORGE. Yes, sir.

Mr. ZELIFF. How reliable?

Mr. DEGEORGE. I don't know that I know the percentage of proposed error rate, sir. You'd have to ask the economists and the statisticians.

Mr. ZELIFF. How about 60 percent; more reliable at 60 than 70?

Mr. DEGEORGE. Well, I guess, zero or 1 percent would be too damn far to go. I don't know where the line is drawn, sir. My guess is that you have to have the confidence on a congressional districting level, and you get into trade-offs there. However I'm not the person to answer that.

Mr. ZELIFF. OK. I think my time has run out for now.

Mrs. THURMAN.

Mrs. THURMAN. Thank you.

Mr. Stevens, did you want to answer?

Mr. STEVENS. Well, I would just point out that 60 percent is a reasonable aspiration for the mail-back rate. And I don't think anybody advocates sampling as a substitute for people mailing back their own questionnaires. So 70 percent is very ambitious for the mail-back rate but would require very little follow-up, as well. Ninety percent would require a great deal of follow-up, some use of administrative records, and would be a much more expensive operation.

Mrs. THURMAN. I would like to first take just a second to introduce Mr. Sawyer, who probably many of you know has spent much, much time on this issue. And while he is not on the committee, I have found him to be one of those experts that it's kind of nice to have sitting next to you who can help you through this, because it is a very complicated issue.

Mr. DeGeorge, one of the questions that I really would like to ask, in your opening statement, you say that you had worked with this panel and put together this particular plan, but you said that you had not really spoken with the Census Bureau or really had done much work with them. I'm interested to know why, and then how do we get to the end results?

Because it seems to me that if it's a plan that you believe would give a better result or most cost-effective, wouldn't it be to our benefit to have had an opportunity to sit down and kind of go through

this? Because it's very difficult for me to accept it on just this part and not have the other part there. So I'm just curious.

Mr. DEGEORGE. Well, I may have been misunderstood, Ms. Thurman. What I've tried to say is that we have a draft report which will be translated into a final report, which will discuss all this in detail, in the next couple weeks. We have had substantial discussions with the Bureau of the Census, literally dozens of people, not me, personally, my staff has. And if I created the impression that we have not discussed these or there has not been an honest debate with census at the Under Secretary level, as their superiors, on down, that's inaccurate.

Mrs. THURMAN. Well, then, what has been the outcome of those discussions? Why, if there seems—I think Mr. Zeliff raised the issue of no change or not wanting to change—can you give us just an idea of what discussions you have had?

Mr. DEGEORGE. I think there has been more agreement than perhaps has been interpreted. The decision to go to sampling, per se, has basically been openly accepted on the part of the Bureau. The decision to go to 90 percent rather than 70 percent—and we all appreciate the cost differential—has been one area of disagreement, because census honestly believes that they have to attain that level. And I would suggest you talk to Ms. Riche about that. I think they really believe that that's the lowest level that they can sell to the stakeholders.

Now, there is no question that—and it's not an academic conclusion—that going to 70 percent sampling is both less expensive and more accurate. Now, what you have to do is make the trade-off there between cost and accuracy on one side and political acceptability on the other side. I think that's the equation.

Mrs. THURMAN. Mr. Stevens, would you like to add anything?

Mr. STEVENS. Yes. I think part of the Bureau's concern is not so much for this census as for the one in 2010 when, after there has been a good deal of discussion of how much sampling took place, and of how much the final count did depend on sampling, there is a good possibility that the public, in much larger numbers than today—and it's already substantial will conclude that their individual participation is not necessary, that sampling is the way the census will be taken anyway, and that it will further diminish the actual mail-back rate.

And that is a legitimate concern. I think it needs to be carefully countered in public discourse on this issue, and Congress can contribute to that, as well.

Mrs. THURMAN. In the nonresponse procedures, has the evaluation of those particular procedures been completed?

Mr. DEGEORGE. The evaluation of nonresponse procedures, well, we have looked at them, and our staff has discussed it with census. I do not know that we've reached any final conclusion on them. I mean, they're a function of, in effect, the design level and the sampling level more than anything else, and whether you want to do it, and stop and start sampling on individual levels of returns, congressional district by congressional district.

Some areas are going to return 50 percent, and some are going to return 85 percent. So it's a question of, do you basically hold to

90 percent across the board, or do you sample individually each congressional district?

Mrs. THURMAN. There is an issue—and I'm just kind of curious—in the reconciliation bill, there is some talk that the Bureau's functions would be transferred to OMB, where they would stay a year, and then they would move to the Labor Department, where BEA and BLS would already be, within 6 months. Is that going to cause any confusion out there, or is that going to happen, or what is going on with this? Can you respond to this?

I'm a little concerned that we're going into this step today, and yet we may see these kind of split up a little bit.

Mr. STEVENS. There is a section of our statement that deals with that, Ms. Thurman, and I think it does certainly magnify the management challenge for the Bureau. It's doubt. It's not perhaps absolutely devastating, but it's certainly something that I think the Bureau would wish it didn't have to deal with at the same time it was gearing up for the next census.

Mr. DEGEORGE. It is extraordinarily burdensome, in my judgment, to the planning process given where it stands now. I mean, I don't disagree that you wouldn't create the Department of Commerce the way you have it today, but I don't think it's helpful to take census out and put it in an undefined position, and several departments have been nominated as the potential recipient of the Census Bureau at this point in time.

If I might add a small political gesture of my own. One of the serious debates I've had with Mr. Clinger's staff and others is the creation of individual agencies with what is called "designated entity" rather than "establishment" Inspectors General. I have a problem with individual agencies being separate, by themselves, without an independent, if I may use that term, independent Inspector General, not unlike GAO is independent, to deal with the issues.

A lot of the versions we're putting together today or that are being suggested, including PTO and others, are starting from the premise that we can have an in-house, career-service type of Inspector General. I don't think that aids the IG's ability to be incisive and objective looking at agencies. So this is just a small plug for an independent IG, wherever and however you place individual agencies, be it 1 or 10, as you redo Commerce.

Mrs. THURMAN. Mr. Chairman, I'm going to have to leave here for a few minutes to go to the Rules because of the Medicaid formula, which certainly has a lot to do with the census, as well, and growth in the great State of Florida. I hate to do this, and I hope that I get the opportunity to make it back here before we finish this, and, if not, I would leave an invitation open to any of those who are testifying today to come by so we can have this discussion, if not here today. And I would really like for that to happen.

Thank you.

Mr. ZELIFF. Mr. Clinger.

Mr. CLINGER. Thank you, Mr. Chairman.

First of all, thank you both for your testimony. It is very helpful to us.

I think you, Mr. DeGeorge, and also, I think, Mr. Stevens, both indicated that there is a matter of some urgency here; in other

words, that there is a need to expedite preparation for what lies ahead. What is your sense, each of you, as to how far, if we are behind the curve, if we are really already in some trouble in this area, how serious that might be? In other words, give us an assessment, in your view, of whether we have time now to do those things which you feel need to be done to ensure an accurate census.

Mr. STEVENS. Mr. Clinger, I would say that if you and the rest of Congress are comfortable with the basic design that is laid out by the Census Bureau, with the decisions that they have made, I would say that we're not that far behind. That particular methodology and design can be carried out with the kind of tight management that I talked about.

However, if it is likely that decisions will be made that the census should cost less than the \$3.9 billion that that design entails, or that a different truncation rate, for example, would be put forth, that the questionnaire will change substantially, all of which are matters that Congress, I think, is certainly entitled to weigh in on, if it does weigh in on those much later in the process, there is serious doubt that there will be time to carry out contrary decisions.

Mr. CLINGER. Let me just say this, you're really putting the monkey on our back. In other words, if we're contemplating making any significant changes, then we'd better get about it. Is that a fair statement?

Mr. STEVENS. Yes, sir.

Mr. BROSTEK. If I could add to that a little bit. It's also, in part, to avoid potential waste. If, for instance, the Bureau continues with the development of a long form questionnaire to gather that information, and the Congress decides that perhaps we ought not to have a long form for this census, that we ought to go with a different approach for gathering that data, the Census Bureau will have spent a fair amount of money trying to develop a form that won't be used, money that could have been used more productively in developing the alternative approach.

The same thing would go with the sampling issue. The Bureau is investing a significant amount of money developing a methodology to do sampling for nonrespondents. And if that's not going to be an acceptable approach, then they have to fall back, spend money in the traditional fashion, probably, to do the census, and the money that was spent is largely for nought.

Mr. CLINGER. Mr. DeGeorge.

Mr. DEGEORGE. I agree with what has been said, Mr. Clinger. All the decisions impact on the percentage of people you count and the sampling you're going to implement. The present plan is, I think, to open up some 500 district offices. I don't think it would be anywhere near that number if you decided to increase the level of sampling. I think that the data acquisition instruments, the forms that you process, everything impacts on the design.

So if you want to change the design and go, say, from a 90 percent sampling to a 70 percent sampling in 1998, you will probably have wasted 80 percent of the cost differential. If it's a billion dollar difference, my guess is that—if you tried to sample at 70 percent in 1990, in the year 2000 you will have thrown away hundreds of—wasted hundreds of millions of dollars.

Everything pushes you in the direction of trying to bring that process to fruition sooner rather than later. And I have checked as to all the process players. I know OMB plays a role in deciding what goes in the form, and Congress has its own opinions. My suggestions on unemployment compensation, I would argue for acting sooner rather than later.

Mr. CLINGER. Thank you. I just have one additional question to you, Mr. DeGeorge, and that is if you could, for the record, give us the status of the Bureau and University of Maryland plans for a new computer facility to be located in Bowie, MD. Have you any concerns or any issues that have been brought to your attention with regard to this proposal?

Mr. DEGEORGE. The computer center and the arrangements with the University of Maryland are moving forward. I don't want to say it's not a decision that you should confirm. I would simply say that I haven't seen the arrangements that have been made as to the use of the building and computing resources, the protection of data, and when the facility will actually be on line. For some time now, the computer facility at Suitland has needed upgrading. So, to some extent, you're going to have to make changes. Whether it should be in Suitland or not, as a revised computer center, is the issue.

I think the temptation is not to move to the final part of the question: Is this a downpayment on a move from Suitland to Prince George's County? I think that is a more interesting question. Should you finalize—do you want the Bureau to have a bifurcated operation in Suitland and Bowie? Do you want to migrate over to Bowie as time goes by? That's clearly what the State of Maryland thinks may happen.

So there are two questions, the short-term question of when it's going to happen, and how much it's going to cost? I think the plans are still to have the facility there for the 2000 census.

Mr. CLINGER. That's what I was going to ask you. It is contemplated this would be in operation for the 2000 census?

Mr. DEGEORGE. The way it's been explained to me in the past is, and I don't think the schedule has changed, we would move whatever computer capabilities it has and complete the building in time for the 2000 census. At one point in time, the Bureau was contemplating a very sizable new computer capability, per se. You know, the good old Government rule: new building, more people, new computers, however, I don't think it's reached that point.

I think, at this point in time, the plans are to move the present computing capability, to Bowie, in time to deal with the 2000 census; yes, sir. But I will give you a more detailed statement for the record, Mr. Clinger.

Mr. CLINGER. Thank you very much.

Thank you, Mr. Chairman.

Mr. ZELIFF. Thank you, Mr. Clinger.

Mr. DeGeorge, if you could just describe—we presently get the mail back, and then we take a process that goes after the undercount. How long does that process take, in terms of getting the undercount?

Mr. DEGEORGE. Oh, I'd really suggest you hold that question for the census staff. I know, if you're talking about getting the mail

back and arriving at the final statistics, we're talking many months.

Mr. ZELIFF. Well, I'm just trying to set up a rationale for doing the sampling versus the process we use now.

Mr. DEGEORGE. Well, obviously, you don't have to continue to go back and knock on doors and try to count people. You basically have a listing which is what you perceive are the number of people from your address list who haven't responded, and the way I think it works—I'm not the expert in this area—is that basically you would get the returns. And at a point, either stop immediately upon the mail-back or they now project after the second and third mailings, and then basically stop and not send out people to knock on doors four, five, and six times.

Mr. ZELIFF. But the sooner you can do it, in line with the mail-back, the better?

Mr. DEGEORGE. The sooner you decide that you're not going to have the follow-up on what's called the last resort and go try to talk to people, the better, yes.

Mr. ZELIFF. OK. And I guess you had referred to your concern for the accuracy and the need for back-up accounting.

Mr. DEGEORGE. Yes.

Mr. ZELIFF. I assume you and Mr. Clinger were talking about the same thing, but what are the critical decision points on going with the present accounting that is now anticipated or doing a back-up?

Mr. DEGEORGE. The department is designing what is called the Commerce Administrative Management System, which has at its base a core accounting system, and that's being tested at NIST, the National Institute of Science and Technology, in Maryland. There's a pilot system there, scheduled to be migrated to agencies like NOAA and census a year from now.

There are three things the Census Bureau must do in order to get that migrated over. They have to make a substantial amount of corrections to their present accounting data, and their cost accounting systems. They also have to get a lot of experienced accounting systems analysts and others to help them be ready for the transfer of the accounting system that's presently being designed.

If the system to be migrated is delayed in the department, and it may well be with a lot of other things that are going on now, then the present system is inadequate. So I've argued to do three things: One, plan to make the transition; hopefully, it will happen. Two, go to instead of a fourth generation accounting system, perhaps be prepared with a third generation accounting system that you can migrate to in case this one is not ready. And three, prepare and correct all the accounting deficiencies that you have in-house in preparation for this migration.

What Mr. Clinger was talking about was an operational computer capacity, sir, it really wasn't the accounting capacity.

Mr. ZELIFF. Let me ask this for both of you to comment on: In terms of using other agencies, whether the Post Office, IRS, you know, what potential do we have and how much progress have we made toward using the potential of existing agencies that could be helpful to either cleaning up the list or advancing that process from 60 or 65 percent to a much higher rate? I just leave that as an open question to both of you.

Mr. STEVENS. The Postal Service connection has certainly progressed the farthest, and I think it helped that both the Postal Service and the Census Bureau were within the same committee jurisdiction when the law was passed 2 or 3 years ago to foster more collaboration. It's been useful particularly in two ways: one, in building an address list and maintaining it, because formerly the Bureau had started from scratch every 10 years building a brand new address list. The Postal Service has one that it's using on a continuous basis, and the Bureau has been able to take advantage of that.

The second major promising avenue is using the Postal Service to develop a more efficient means of determining which housing units are vacant or actually do not exist, even though they appear to be housing units. That's been a very expensive part of the operation, and that the Bureau is testing using the Postal Service as a more efficient means of determining occupancy status than their own.

Mr. ZELIFF. Seems logical, doesn't it?

Mr. STEVENS. It certainly does. It certainly does. And I think we have certainly encouraged that in the past, and even more would be better.

I would caution, however, that relationships with the IRS are much more sensitive, and I would think you should give careful consideration to the perception on the part of the public that there was some link between collection of census data and collection of taxes.

Mr. ZELIFF. OK. But is there any reason why we're not doing more with the Postal Service? It looks like that's an area that is very ripe.

Mr. STEVENS. There was a reason in the last census, and that was that there were some data-sharing restrictions. I think those were removed. They were intended to be removed by a law that was passed in 1993, I believe. And I don't believe that there are currently legislative impediments. Perhaps you could ask Dr. Riche whether she perceives any. We don't from our point of view.

Mr. DEGEORGE. I think it's working fine with the Post Office, Mr. Chairman. I think that the issues associated with the use of administrative data have yet to be defined to my satisfaction, including IRS and possibly Social Security and other large data sources, which, in fact, are very sensitive subjects in this Congress, as you know.

Mr. ZELIFF. Thank you.

I would like to now recognize the vice chair of this subcommittee, Mr. Ehrlich from Maryland.

Mr. EHRLICH. Thank you, Mr. Chairman. I apologize for coming late, and I also apologize if this question has been asked. But I suspect that every question you're going to answer today, and in the future, pertains to improving the accuracy of the census. I know the chairman's questions pertained to that, with respect to other agency involvement.

I have a multilayered question I'd like to throw out to both of you. With respect to the element of accuracy, what management structural changes—I include in that decisionmaking models as well as the way the public relations campaign was conducted last

time—what changes need to occur with respect to both of those elements to improve the accuracy of the census?

Mr. DEGEORGE. I think that the Bureau has to move as rapidly as possible to have a strong program management process which overlays its present matrix management system. I really think that we need a decisive redirection as to the way decisions are made, as one makes the trade-offs between cost, accuracy, quality, et cetera.

And I do not dispute the agency's integrity and the honesty or the attention to these processes that the agency thinks it now gives. My problem is that too many decisions, in my judgment, are made at the lowest level in the organizational structure. Martha, I know, does not agree with me, but I feel strongly that, there are too many problems, too many decisions, too many players to, in effect, let this decision be more diluted than it has to be.

I think that there are too many people involved, too many critics, and the agency is just going to have to turn its attention to getting decisions that can stand, in a timely manner. And the only way I know to do that is to build a stronger program management process for the 2000 census than I think it now has.

Mr. STEVENS. I will handle the second part of your question, Mr. Ehrlich, and that's with regard to public outreach and the public awareness campaign.

Mr. EHRLICH. If I could just interject. As an average citizen at the time, I was impressed, but I see the numbers here, and obviously I know there are reasons the numbers have decreased over the years. But if you can, in your answer, focus in on what you saw as positive about the public relations campaign, as negative, and what changes you would suggest.

Mr. STEVENS. Well, in 1990, there was major use of the Advertising Council in sort of a pro bono participation by the public relations community in the census campaign. I think the low mail response rate, 12 percentage points below what they expected, was really a shock. I don't think anybody had anticipated that. So there must have been something that didn't work out right in there.

Among the changes that are being contemplated, and I think they are wise ones, is a multiple mailing strategy; in other words, a series of four actual mailings to participants, including a replacement questionnaire that will result in a much more intensive number of contacts with each household.

Second, the Bureau has engaged, I think professionally, on a contract basis, a public relations firm which is tying its outreach efforts, much more explicitly than was done in the past, to the content of the questionnaire. And I'm not exactly sure of the details of that. Mr. Brostek knows a little more about that. But I think that will also be a positive development.

Mr. EHRLICH. I just thought of this and let me throw it out to you. Do you attribute any part of the decrease to this populace-antigovernment tide in the country that we're spending so much time talking about here in Washington these days?

Mr. STEVENS. Well, we explored that in some length in a great number of hearings. Mr. Sawyer chaired those during the 1990 census. It was a cause of major concern. I don't think anybody ever had the definitive answer. There were lots of reasons thrown out;

that was one of them. I think the perception on the part of the public was that with all the data bases that people have these days, "They should know all this stuff about me anyway; why do I need to fill it out?"

I think there was some variation along the lines of civic participation and responsibility, in general, and voting rates were going down. I think responding to the census is something of a civic duty.

Mr. ZELIFF. If the gentleman would yield.

Mr. EHRLICH. Yes.

Mr. ZELIFF. Don't we know for a fact that if we put down some kind of reference on the form that it is a civic duty and actually is required by law that we will have a better response rate?

Mr. STEVENS. That was tested in the current test, and I believe it did have a positive result.

Mr. ZELIFF. And somewhere I read we're not planning to utilize that in this coming census; am I correct on that?

Mr. STEVENS. I believe the test results on that were favorable. So you might ask Dr. Riche what she's going to do with those test results. I would assume that, with favorable results, you would take advantage of it.

Mr. EHRLICH. I see my time is up, but just one observation to follow up on the chairman's comment. If that can also become an integral part of the public relations campaign, it seems to me you're going to have some positive results. Thank you very much.

Mr. ZELIFF. Thank you, Mr. Ehrlich.

I just would like to—as we wrap up this panel, what I'm hearing is that, as we look to the 1995 census point, midpoint here, in terms of planning and the design, I've heard both of you question whether we're on the right track. Is that a correct statement?

Mr. STEVENS. I really think that's a judgment for Congress to make. I would say that there is some money on the table still.

Mr. ZELIFF. But I'm asking you, as someone who is testifying before this committee, are you questioning whether we're on the right track?

Mr. STEVENS. If it were up to me, Mr. Chairman, I would use the 70 percent truncation rate, and I think a good deal of money can be saved without a cost to accuracy. And as Mr. Ehrlich points out, there would be a major challenge from a public relations point of view, but I think that's the way to handle it.

Mr. ZELIFF. Mr. DeGeorge.

Mr. DEGEORGE. Our report that we will issue in final form in the next couple of weeks will say exactly that, Mr. Chairman.

Mr. ZELIFF. Right. And so really what I see us doing here is, maybe it's time that we bring the census itself into the year 2000, at the point that the year 2000 starts, and do it right, recognizing the problems we've had, certainly, in 1990. And we certainly need to get moving quickly. I don't want to take away from this hearing any misinformation. I just wanted to see if I understood you right, both of you, on the record.

Mr. STEVENS. Yes, sir, you did.

Mr. ZELIFF. Thank you both very much. I appreciate your participation, your involvement. I think it's been very interesting and very helpful for us as we debate this.

Mr. DEGEORGE. Thank you.

Mr. STEVENS. Thank you.

Mr. ZELIFF. The Chair would like to now introduce our second panel and welcome the Director of the Bureau of Census at the U.S. Department of Commerce, Martha Farnsworth Riche.

A lot of these questions—and we appreciate your being here for the first panel, as well. It's been very interesting, and we look forward to hearing from you.

Ms. RICHE. Thank you very much, Mr. Chairman.

Mr. ZELIFF. If you would, stand and raise your right hand.

Ms. RICHE. And Mr. Marx, as well, who will be joining me.

[Witnesses sworn.]

Mr. ZELIFF. Please proceed.

**STATEMENT OF MARTHA FARNSWORTH RICHE, DIRECTOR,  
BUREAU OF THE CENSUS, U.S. DEPARTMENT OF COMMERCE,  
ACCOMPANIED BY ROBERT MARX, ASSOCIATE DIRECTOR  
FOR DECENNIAL CENSUS**

Ms. RICHE. Thank you very much, Mr. Chairman, for the opportunity to testify on our plans today. I have with me Mr. Robert Marx, the Associate Director for Decennial Census. We call him "Mr. Census." He will be conducting the census.

I would like to submit my written testimony for the record, and it includes answers to the specific topics that you outlined in your letter of invitation. We have also provided background documents to your staff, and we will be happy to do so at any time.

Let me just go over the highlights. First, why do we take a census? Well, the census continues to serve as the vehicle for reapportioning the Congress, as it has since 1790, and it also provides the data used in drawing congressional, State, and local legislative districts. Second, the census is the basis upon which more than \$100 billion in Federal funds is disbursed to the States each year.

Locally, the census is used to plan and evaluate a wide array of public programs. It's the only nationally consistent, locally detailed data base we have. So the census will become even more important as more responsibility goes to State and local governments. And local governments are the biggest single user of the census outside the Federal Government.

Because the census is so important, we have to make it easy for everyone to participate. Because both the administration and the Congress are committed to making Government work more effectively and cost less, we have to find a way to cut census costs. So I'm happy to report to you today that we are designing a census that will be simpler to answer, cheaper to conduct, and more accurate.

Now, we believe we can meet all three of these goals if we meet four basic objectives. The first objective is that we must make every effort to count every resident in the United States, using simple, easy-to-read forms. Second, we must implement an open process that diverse groups and interests can understand and support. Third, we must eliminate the differential in the count of racial and ethnic groups. And fourth, we must produce a one-number census that is right the first time.

Now, with those objectives in mind, we designed and have now completed field work for the 1995 census test. We are still evaluat-

ing that work, but it has led us to focus on four strategies to meet our objectives. Strategy one is to build partnerships at every stage of the process. Strategy two is to keep it simple. Strategy three is to use technology intelligently. And strategy four is to increase our use of statistical methods.

Now, because each of these strategies is important in understanding the plan, I would like to say a little bit about each one of them. The first one is partnerships at every stage. The Census Bureau cannot do everything alone. In the past, I think the Bureau has tried to do everything alone. Now we believe that we must reach out early and consistently to find partners.

State, local, and tribal governments and community groups are probably our most important partners. They know their local conditions and circumstances better than we ever can. They can help us correct our maps and our address lists. They can tell us where to put census forms so that people who don't get one in the mail can pick one up and do it conveniently. And they can alert us to other local problems that might be specific to one place rather than another.

Thanks to legislation passed by the Congress in 1994, local officials were able to review and update the address list for the 1995 test. That's the first time that's happened, and it's an important contribution. Now, in the past, the Census Bureau has spent too much time and money developing address lists from scratch. We used to buy one from a direct marketing company, then go out and update it ourselves. This time that same legislation is allowing us to partner with the Postal Service, and you heard about that in the previous testimony.

We are also going to partner with the private sector. We can't be world class in every activity required to conduct the census, and we have two important activities that we plan to outsource to the private sector. The first one is using data processing companies to acquire and assemble the equipment that will convert census forms into computer files.

In the past, we've had to do our computer work ourselves. We have innovated a number of the most important bases of today's computer industry, from the punch card in 1890 to the geographic information systems, with the computerized street map we developed for 1990. Now we have private companies out there, and we don't have to do it ourselves.

By the way, some of our people were down in Atlanta meeting with the IBM people, who are doing all of the data, hardware and software, collection, processing, and so on, for the Olympics. That operation is very analogous to the census because it involves something equivalent to setting up a Fortune 500 company for very intense use and then taking it down again. And there are many other companies that have that capability now.

Our other major objective for private outsourcing was mentioned by Mr. Ehrlich a moment ago, and that is using private companies for designing and implementing the advertising and promotion.

Now, our second strategy is keeping it simple. The simpler and easier the census is, the more accurate and the less expensive it will be. As the previous witnesses mentioned, private marketers are already working with us to implement a new, user-friendly de-

sign, and they are also working to make sure that at the same time it is user-friendly, it will be less costly for the Postal Service to handle and for us to process.

In 2000, our first priority is to deliver a form to each address. But this time, if people don't find their form in the mail, the form will find them. We will put census forms at post offices, stores in malls, in civic or community centers, schools, whatever local places our partners suggest. The 1995 test confirmed this strategy of making it easier for people to include themselves in the census.

The third strategy is using technology intelligently. You are well aware of the dramatic advances in computing that allow the census to be simpler, cheaper, and more accurate. Just for an example, in 1990, the forms were transferred to microfilm and then those entries that were written were entered by hand into the computer. Well, in 2000, we will take a digital picture of completed forms, and they will be read directly into the computer. That is going to cut out several expensive and cumbersome steps, and that will take out a place where error could have been introduced.

Sophisticated matching software will allow us to spot duplications. That's what's going to allow us to have these extra forms all around the place. For example, if a husband returns a form that was received at home in the mail while his wife fills one out that she picked up at the post office, we will be able to identify the duplication.

Finally, we will not be buying a lot of new computer hardware for the next census. We plan to contract out for much of the equipment we need and use equipment we already have, so we won't put a lot of equipment in mothballs when the census is over.

The fourth strategy, increase our use of statistical methods, has been covered in great length by the two previous witnesses. Certainly, I just want to mention now that sampling and statistical estimation are already an integral part of every Census Bureau process. For most of census history, up till 1940, we asked every person for all the data the Government was trying to collect in the census. Since 1940, we've only asked a sample of Americans for those data that are program-related, as opposed to reapportionment-related.

Incorporating widely accepted scientific statistical methods more fully will produce better numbers at less cost. And that's because respondents that we need to visit cost 6 times more to enumerate than those who answer by mail. Using field staff to go after the final missing respondents can cost 18 times as much, and we still don't find everybody, as my predecessor made very clear when the 1990 census was over.

Thus, after making every effort to secure a voluntary response, we will draw a sample of nonresponding households and use that as a basis for completing the count. Now, we used sampling to follow up households that didn't return their forms in the 1995 test, and it allowed us to complete this operation within our 6-week schedule for the first time ever, as well as to reduce our costs.

In fact, what may be the most important thing we've learned from the 1995 test is that sampling may not be just an attractive cost-saving option; it may be the only option we now have for completing the census. And that's because, historically, we have recruited those large numbers of census takers amongst people who

weren't in the labor force, who weren't seeking permanent work. Many of them had previous work experience and skills, so we only had to train them for the technical part of the task at hand.

Today, the pool of workers qualified, experienced, and able to work on a decennial census has decreased dramatically. Let me just give you, as an example, the census that we normally do in the mid-decade for Maricopa County, AZ. They hired us to do the census for them, and we have still not been able to get the work force that we would need to do the census this time. We're still trying to recruit.

Well, finally, in addition to using sampling to reduce the follow-up work, we will check all our work with another intense sample survey. That's a quality control survey. And based on the 1995 test, we will complete this quality control procedure in time to provide one set of numbers to the President by December 31, 2000.

We are working right now to understand fully the properties of these procedures and to look for any problems that might occur. They have won virtually unanimous endorsement from the statistical community, including two National Academy of Sciences panels, and I'm happy that my colleagues from the General Accounting Office as well as our Inspector General endorse this step.

Let me close by briefly mentioning the budget. No U.S. Government agency has a more cyclical budgetary pattern than the Census Bureau, and that is because, although we do an ongoing large amount of work for the Federal Government, on a day-to-day basis we do censuses, not just the decennial but our economic censuses at intervals of 5 years.

Now, fiscal 1996 is a key year for preparing for the 2000 census. The \$60-million in funding requested by the President will enable us to design and test the simple forms the public can answer and develop the contracts to acquire the advance technologies to process them. It will let us test new and cheaper methods for enumerating our increasingly diverse population and to begin establishing the partnerships with State, local, and tribal governments that will contribute to the completeness of the count.

Fiscal 1996 represents the first step onto an up-ramp of preparations and investments destined to garner as much as \$900 million in savings as opposed to repeating what we did in 1990. A significant reduction below the President's request would have detrimental effects on preparations for the 2000 census.

Those savings would occur in the year 2000, if we make the investment now. So any reduction in appropriations now will translate into greater costs then, as well as less accuracy in the final product. The \$42-million funding level approved by the House will not permit making many of the improvements mentioned above or the necessary investments needed to prevent higher costs later on.

Let me close by saying that the 2000 census will be the first millennial census this country has taken. I don't think it's going to be the last, but it's the only one we're going to see. And I know you share my desire that we get it right. To make the 2000 census a success, a census that is simpler, cheaper, and more accurate, we need to have an open process that explains to the American people

what we are doing, and this hearing today is an important step in that process.

We are very excited about our plans to do things differently in 2000, and we will be happy to answer any questions you might have.

[The prepared statement of Ms. Riche follows:]

**DR. MARTHA FARNSWORTH RICHE**  
**Director**  
**Bureau of the Census**  
**U.S. Department of Commerce**

**A SIMPLER, CHEAPER, AND MORE ACCURATE CENSUS**

Thank you, Mr. Chairman, for the opportunity to testify before this Subcommittee today on plans for the 2000 Census. I am accompanied by Mr. Robert Marx, Associate Director for Decennial Census.

**REPRESENTATION, DOLLARS, AND GOOD PLANNING**

First, I want to emphasize that the census is vitally important to our Nation. The census was created at the birth of our political system when the Framers of the Constitution wrote into Article 1 Section 2 that political representation in the House of Representatives would be apportioned based on a population census. The census has been taken every ten years since 1790, when Secretary of State Thomas Jefferson supervised the first census. The next decennial census will be the 22nd that this Nation has conducted.

Just as it has from the beginning, the census continues to serve as the vehicle for **reapportioning the Congress** and it also provides the data used in **drawing congressional, state, and local legislative districts**. A second major purpose of the census is to provide the basis upon which more than **\$100 billion in annual Federal government aid** is dispersed to the States. The census will be even more important as more responsibility is passed along to the states. And states, in turn, use census data to distribute funds to local jurisdictions.

The census goes to the heart of understanding who we are and where we are going. Locally, official information from the census is used by our public school systems, for community health planning, for state and local highway construction, and to determine senior citizen needs. More and more, census data are also being used to help states and localities benchmark and measure progress in meeting legislatively mandated targets.

Because the decennial census is so important to our society, we must make it easy for everyone to participate. Because both the Administration and the Congress are committed to making government work more effectively for less, we must find ways to cut census costs. I am happy to report to you today that we are designing a census that will be **simpler to answer, cheaper, and more accurate**.

### 1990 CENSUS EXPERIENCE

Taking the decennial census in 1990 was hard and expensive work. More than 300,000 temporary census employees worked for many months to complete the task. Relative to other censuses here and abroad, the 1990 census was extremely accurate; we counted more than 98 percent of the population.

But, there were challenges and opportunities for improvement. The Census Bureau spent hundreds of millions of dollars tracking down hard-to-reach persons. In many cases, temporary census takers made up to six contacts with a housing unit to complete the enumeration. And they made those contacts with over 30 million housing units for which questionnaires had not been returned in the mail.

Even with all these efforts, the census was not complete. We estimate that we missed nearly 5 million people in the 1990 census. They were disproportionately from minority racial and ethnic groups and disproportionately concentrated in a small number of geographic areas. And costs climbed to more than \$2.5 billion dollars.

### OBJECTIVES FOR THE 2000 CENSUS

Given our experience from the 1990 census, we learned that our overarching goals for the 2000 census had to be a census that is **simpler, cheaper, and more accurate**. We believe we can achieve those goals if we meet **four basic objectives**:

**First**, we must make every effort to count every resident of the United States using **simple, easy-to-read forms**.

**Second**, we must implement an **open process** that diverse groups and interests can understand and support.

**Third**, we must eliminate the **differential in the count** of racial and ethnic groups.

**Fourth**, we must produce a "one number census" that is **right the first time** and allows the decennial results to be determined by statisticians at the Census Bureau, not by lawyers and judges.

### STRATEGIES FOR SUCCESS

With these objectives in mind, we designed and have now completed field work in three sites for the 1995 Census Test: Oakland, California; Paterson, New Jersey; and six parishes in northwest Louisiana. The 1995 test led us to focus on four strategies for the 2000 census to meet our objectives and to make the census simpler, cheaper, and more accurate.

- o **Strategy One is to build partnerships at every stage of the process.**
- o **Strategy Two is to keep it simple.**
- o **Strategy Three is to use technology intelligently.**
- o **Strategy Four is to increase our use of statistical methods.**

Because each of these strategies is so important to understanding our plans for the next census, let me tell you more about them.

**Strategy One: Build Partnerships at Every Stage of the Process**

The Census Bureau cannot do everything alone: we need to reach out early and consistently to find partners to help us get the job done. This means partnerships with state, local, and tribal governments, and community groups; partnerships with the U.S. Postal Service; and partnerships with the private sector.

**State, local, and tribal governments and community groups** know their local conditions and circumstances better than the Census Bureau ever will. They can help us correct our maps and address lists, tell us where to put census forms so that people who do not get one in the mail can pick one up, and alert us to other local problems. Legislation passed by Congress in 1994 now permits the Census Bureau to work with designated representatives to review specific addresses. In the 1995 test, for the first time, the Census Bureau showed lists of specific addresses to local officials for review and updating. In the past, we had only given them the count of addresses in each census block for review. Our experience for the 1995 test was very positive: local officials made an important contribution to improving the address list.

This past August, we published in the Federal Register proposed standards for a cooperative program that encourages state, tribal, and local government agencies to participate in building the master address list by submitting local lists to us. We will evaluate and process these lists with an eye toward including additional addresses. We are preparing a follow-up mailing to all functioning governmental entities, as well as regional planning agencies, to formally invite participation.

We will match all addresses we receive to our geographic base so we can assign the addresses to the proper geographic area and to see which information in our geographic base needs updating. Since December 1994, we have enlisted the participation of 2,800 tribal, state, regional, and local agencies to help us identify the correct location for addresses that we could not match to our geographic base.

The Census Bureau in the past has spent too much time and money developing address lists from scratch when the **Postal Service** already has assembled information. This time, we will

use the Postal Service information and avoid the cost of duplication. We can do this thanks to legislation passed in the 103rd Congress directing the Postal Service to share its address information with the Census Bureau.

For the 1995 test, we used the Postal Service addresses as the base for compiling our address list. We now are developing a system for processing files on a monthly basis from the Postal Service and incorporating the addresses into our base file.

We will also work with the **private sector**. The Census Bureau cannot be "world class" in every activity required to conduct the decennial census. We need to outsource aspects of the process to private sector partners. Two specific examples are to:

- o Use data processing companies to acquire and assemble the computers and other equipment needed to operate the facilities where census forms are converted into computer files. These companies have more experience than Census Bureau staff in current technology.
- o Use private companies to manage our advertising and promotion to promote the census more visibly and effectively.

#### **Strategy Two: Keep It Simple**

The simpler and easier the census is, the more accurate and less expensive it will be. More powerful computers now allow us to use **forms that are easier for people to read and fill out**. Private marketers are already working with us to implement new, "user-friendly" designs. We asked them to build upon previous research to design a complete mailing package that would change respondents' perceptions of the census using new graphic designs and themes. The package design and theme will be incorporated into an integrated marketing plan for the 2000 census. We also asked that they design a form that will be less costly for the Postal Service to handle and for us to process. Among other things, the form they designed for us will assure respondents that their answers are confidential and explain how data they provide help their communities.

So far, the contractor has produced two well-designed short form mailing packages that we will test in March 1996. This test will show us whether our efforts to use improved designs pay off with increased response, particularly in the difficult-to-enumerate areas that had a low response in 1990. We are also asking the contractor to develop a new, simple, and attractive long form mailing package; we expect to see a prototype early next year.

Over the last three years, we tested various strategies to increase mail response rates and found that what we call a "full mail implementation" approach can dramatically increase responses. We successfully implemented this approach in the 1995 test. The approach involves mailing a letter in advance of the census form telling each household that "the census is coming"; then delivering the census form; a few days later we mail a reminder notice

thanking those who responded and asking everyone else to "fill it out and mail it back now"; and, if a household still has not responded, mailing a second or "replacement" form. We believe that this "full mail implementation" strategy, in combination with better designed forms, will give us the best chance to improve response rates, which is the least expensive way to take the census.

In 2000, our first priority is to deliver a form to each address. But, if people do not find their form in the mail, the **form will find them**. We will put census forms at post offices, stores and malls, in civic or community centers, in schools, and other public places. And, we will have a well-publicized toll-free number that people can call if that is more convenient for them. The 1995 test confirmed that we should continue our efforts to make it easier for people to include themselves in the census, including making forms available at a variety of convenient locations and providing the opportunity for people to provide their answers by telephone.

### **Strategy Three: Use Technology Intelligently**

Dramatic advances in computing allow the census to be simpler, cheaper, and more accurate. In 1990, forms were transferred to microfilm and then entered, both by machine and by hand, into computer files. In 2000, we will take a **digital picture of completed forms** and use "optical mark recognition" and computers that read handwriting to assist converting from completed forms to computer files. This cuts out several expensive and cumbersome steps in the process.

Sophisticated **matching software** will allow us to spot duplications. For example, if a husband returns a form received in the mail at home while a wife fills out one she picked up at a post office, we can now identify the duplication. Spotting these duplicate forms will be improved and refined in the next several years. This ability to unduplicate forms will allow us to let more forms find people--by placing them at neighborhood locations--rather than making people find the form.

In the 1995 test, we learned that we can introduce technology, such as computer assistance for personal and telephone interviewing, to save costs and improve the efficiency of field interviewing and telephone contacts.

The Census Bureau will not be buying a lot of new computer hardware for the next census. We plan to contract out much of the equipment we need and to rely on existing personal computers and workstations. This will avoid having to put a lot of equipment in mothballs after the census is over.

### **Strategy Four: Increase Our Use Of Statistical Methods**

Sampling and statistical estimation are already an integral part of every Census Bureau process. For most of its history, we asked every American for the data the government

wanted--data that helped the government plan and manage programs in addition to data for reapportionment. Since 1940, we have only asked a sample of Americans those program-related questions. **Incorporating widely accepted scientific, statistical methods** into the decennial census will produce a better estimate at less cost.

Respondents we need to visit cost six times more to enumerate than those who answer by mail. Using field staff to find the final missing respondents cost 18 times as much.

Thus, after attempting to secure a voluntary response, we will draw a sample of nonresponding households and use it as a basis for completing the count.

The introduction of sampling into our followup of nonresponding households in the 1995 test allowed us to complete this operation on schedule for the first time as well as to reduce costs.

In fact, we learned from the 1995 test that sampling may not be just an attractive, cost-saving option--it may be the only option we now have for completing the census. Historically, the Census Bureau recruited large numbers of censustakers by employing people who did not necessarily need permanent work. Many decennial census workers brought previous work experience and office skills with them, so census training focused primarily on the technical task of completing a census. Today the pool of workers qualified, experienced, and available to work on a decennial census has decreased dramatically.

Some of the factors that have contributed to this are: a) the number of two-worker households and women in the workforce has increased, b) higher costs of living have increased people's need for permanent, not temporary, jobs, c) census salary levels are not attractive enough--even with our best efforts to increase them, and d) knocking on doors in all types of neighborhoods is difficult work.

So our choices are either to hire and train unskilled workers, find new ways to compete for an increasingly scarce supply of experienced workers, or reduce the number of workers needed through sampling. We believe that the last approach is the one that will lead to a cheaper and more accurate census.

In addition to using sampling to reduce followup work, we also will check all our work with another intense sample survey.

A major goal of the 1995 test was to eliminate the differential in the count among various components of the population by using sampling and estimation--a method called Integrated Coverage Measurement (ICM)--and to provide a complete enumeration of these sites by December 31 of this year, which is what we will have to do in 2000. By law, we are required to provide the President with state population totals for apportionment purposes by December 31 of the census year.

Our enumerators used personal computers to complete the field interviewing for the ICM, rather than the pencil and paper method in 1990, which meant that they were able to complete field work by the end of September. This is about a two-month improvement compared to a similar program in the 1990 census. Based on our ability to complete field work in a timely manner in the 1995 test, we believe that we can complete this quality control procedure in time to provide "one set of numbers" to the President by December 31 in 2000.

The objectives of the ICM evaluation for the 1995 test, in addition to seeing whether we can complete this quality control process on time, are to assess the effectiveness of two alternative methods for eliminating the differential in the count and improving accuracy. We will conduct a systematic analysis of the people added by the ICM process to examine whether the ICM statistical estimates contributed to a reduction in, or elimination of, the differential in the count. Fifteen separate evaluation projects are in progress.

We are working to understand fully the properties of these sampling procedures and to anticipate any problems. These procedures will lead to a "one-number census" and eliminate the need for subsequent "adjustment" of the decennial count. **The procedures have won virtually unanimous endorsement from the statistical community**, including two National Academy of Sciences panels.

#### BUDGET CYCLE FOR THE CENSUS

No U.S. government agency has a more cyclical pattern in its budgetary requirements than the Census Bureau. The Census Bureau's periodic data collection programs, such as the decennial census, preclude a straight-line approach to budget planning. This is because the censuses do their major data collection and processing activities at intervals of several years. This is unlike the typical Federal program that repeats the same task every year.

Fiscal Year 1996 is a key year for preparations for the 2000 census. While we have already completed much important planning, which I described earlier, there is much more to be done. The \$60 million funding level requested by the President will enable the Census Bureau to design and test simple census forms the public can answer and develop contracts to acquire the advanced technologies needed for processing them; to test new and cheaper methods for enumerating our increasingly diverse population; and to begin establishing the partnerships with state, local, and tribal governments that will contribute to the completeness of the count.

Fiscal Year 1996 also represents the first venture onto an up-ramp of preparations and investments destined to garner as much as \$900 million in savings, relative to repeating the 1990 census process. A significant reduction below the President's request would have detrimental effects upon preparations for the 2000 census. And, any reduction in the appropriations will translate into greater costs later in the cycle, as well as into less accuracy in the final product.

The \$42 million funding level approved by the House will not permit making many of the improvements mentioned above or the necessary investments needed to prevent higher costs later in the 2000 census cycle.

#### CLOSING

Over the last 200 years, the census has told America's story of a Nation that pushed westward, built great industries and great cities, created a great middle class and growing suburbs. **The 2000 census will be the first millennial census this country has taken.** I don't think it will be the last, but it is the only millennial census you and I will see. And I know you share my desire that we get it right, and share my interest in learning what it will tell us about this great country.

To make the 2000 census a success--to allow this Nation to have a census that is simpler, cheaper, and more accurate--we need to have **an open process that explains to the American people what we are doing.** This hearing today is an important step in that process. And I am glad to be here to describe the 2000 census plans for you.

Mr. Chairman, I believe I have answered the specific topics you outlined in your letter of invitation. We have also provided background documents on these topics to your staff. Now, we will be happy to answer any questions you may have.

November 30, 1995

Responses to the Subcommittee's Follow-up Questions  
On the October 25, 1995 Hearing on Plans for Census 2000

**QUESTION 1:**

**What accounted for the increase in the cost of the 1990 Census compared with the 1980 Census? Why, if costs were increased so dramatically, did the level of accuracy fall?**

**ANSWER:**

Many factors in addition to inflation contributed to the cost increases. First, the population grew and the number of housing units increased during the decade. Second, the 1990 census workload included a dramatic increase in the number of hard-to-enumerate households, "nonconventional" households, one-person households, households in poverty, and rental units. Third, mail response rates decreased significantly in line with all data collection efforts, private as well as public. This required many more followup visits.

Beyond cost increases attributed to changes in the workload, one of the largest single cost increases for the 1990 census was the cost of automating many activities associated with more than 450 temporary district offices. Automation greatly increased accountability and provided far greater accuracy for all census operations than previous censuses could provide with clerically intensive processes.

Another major cost increase from the 1980 census was the vastly improved system for production of maps and related materials from the Census Bureau's automated geographic support system. This automation resulted in far better and more "task appropriate" maps than was possible in the 1980 census.

The measurements of the population missed in decennial censuses showed a steady decrease from the 1940 census through the 1980 census, and appeared to increase for the 1990 census. However, the 1990 census may be the first census to show the true magnitude of the population missed because of the vastly improved coverage measurement processes used. (Those new coverage measurement processes were, themselves, another source of increased costs.)

**QUESTION 2:**

**Please differentiate Decennial data mandated by our Constitution and that mandated by legislation. Does the Decennial Census attempt to collect all of this data? What is your analysis of separating these two requirements into two different undertakings?**

**ANSWER:**

Article 1, Section 2 of the Constitution of the United States provides for a census every 10 years to apportion the seats in the U.S. House of Representatives among the several States according to their population. (This section also required that the results be used to determine each State's share of the Federal tax burden, but that provision was changed in 1913 when the Congress imposed the individual income tax as an alternative to a State-paid tax system.) The need for most of the data collected in the decennial census arises from provisions of the U.S. Code. For example, P.L. 94-171 contains a number of provisions that require the Census Bureau to produce data necessary for the States to conduct legislative redistricting. In addition, the Voting Rights Act (42 USC 19733aa-1a(b)(2)(A)) requires the collection of information on race, Hispanic origin, age, citizenship, educational attainment, and language. We have attached, for your information, a copy of a report submitted to our House Appropriations Subcommittee that documents legislative requirements for decennial census data.

We have collected all these data at the same time because doing so is by far the most cost-efficient approach. Undertaking two very large, but separate, data collection efforts--especially setting up a second set of temporary field collection offices and hiring a second set of temporary staff (or extending the time during which the temporary offices remain open and the temporary staff remain on the payroll) would dramatically increase costs and would adversely affect the level of public cooperation gained during the intense promotion campaign that is being designed to create a "census environment" for the initial data collection effort.

An ongoing measurement of the population over time, rather than during the "once a decade" census is another alternative, but requires more testing and development to determine whether the results would meet the intent of the Congress as documented by previous laws. This issue is discussed in greater detail as part of the responses to questions 3 and 10.

**QUESTION 3:**

**What is the difference between the "long form" and the "short form"? How many questions are on each form and how many households receive each form? Will the number of questions or content of the forms change for the 2000 Decennial Census? Would dropping the long form in favor of the use of administrative records or large scale and continuing sample surveys improve census mail response rates and reduce costs?**

**ANSWER:**

The "short form" contains questions asked at all households and about all individuals. The answers to these questions are needed to provide legally required information down to the smallest geographic unit - the census block. The "long (sample) form" contains, in addition to all "short form" questions, 45 more social, economic, demographic, and housing questions. In the 1990 census, about one in six (out of a total of 102 million housing units) were to receive a sample form; the remaining housing units received the short form. This sample size is designed to provide reliable estimates of these additional items for all governmental units and other geographic areas with relatively small populations, such as census tracts (average population - 4,000) and block groups (average population - 1,000).

In the 1990 census, the short form contained 12 questions (six population and six housing); the sample form had 45 additional questions (26 population and 19 housing); making a total of 57 questions. The 1995 Census Test used a redesigned and friendlier short form that contained only six questions (five population and one housing) and three versions of the sample form, the most

comprehensive of which contained the six short form questions plus 47 additional questions (25 population and 22 housing). The 1995 Census Test repeated the 1990 census pattern of using the sample form at one household in six.

Based on the attached analysis of data needs and legislative requirements, the Census Bureau has reduced the number of questions on the "short form," relative to 1990, by shifting six of them to the sample form. Staff is continuing its analysis to determine the need for other questions on the sample form. The Census Bureau will be conducting tests in 1996 to determine the best wording and instructions for many potential questions and to determine the effect of the significant changes made to simplify the questionnaires. All these testing and evaluation activities will help the Census Bureau prepare the reports to the Congress required by current law: A report listing all topics proposed for Census 2000 no later than April 1, 1997; and a report showing the exact wording of all questions proposed for Census 2000 no later than April 1, 1998.

Dropping the sample form would result in limited cost savings (in the \$200-\$300 million range) and would improve overall mail response rates only slightly. (For example, the 1990 census short form mail return rate was 74.9 percent and the sample form mail return rate was 70.4 percent but, because the sample form only went to one address in six, the overall mail return rate was 74.1 percent).

The question that has not yet been answered by any test is whether alternative data collection methodologies can provide comparable information for all geographic entities and meet all legislated requirements and other data needs. The proposed use of administrative records holds great potential, but there are significant issues (such as whether any contain the needed data items, whether the Census Bureau can gain access to them, whether the Census Bureau can develop a sufficient automated matching capability, as well as issues of comparability of concepts, geographic detail, and privacy) that need to be addressed. Regardless of the progress made during the next two or three years neither the Census Bureau nor other experts, such as those working on the panels of the National Academy of Sciences, believe anything approaching full substitution will be possible in 2000.

Use of a continuing sample survey, referred to as the American Community Survey (ACS) or continuous measurement, also has great potential as an alternative source of sample form data. Again, both the Census Bureau and other experts believe this proposed approach needs much more testing and development before anyone can say with confidence that the ACS can replace sample form data collection in a decennial census. (See also the response to question 10 below).

**Question 4:**

**The Bureau plans to adjust the Constitutionally-mandated numbers for the first time in the year 2000 to achieve a "one count" census. What methodology does the Bureau plan to use to make this adjustment? How much will it cost? How was the decision for a 90% truncation level reached?**

**ANSWER:**

The Census Bureau is conducting tests to determine the best statistical techniques for developing an Integrated Coverage Measurement (ICM) program and conducting a "one number" census in 2000. This will not be an "adjusted" census number; instead, it will be a number derived from the combination of three processes: First, the most complete count possible at all households that respond to the census; second, an estimate of the number of people and their characteristics based on personal visits by temporary staff to a sample of nonresponding housing units; and third, the results of the scientifically designed ICM survey that will incorporate corrections when this quality control process shows that the first two processes missed or overcounted people. The field work and processing costs of the ICM program for Census 2000 are estimated at approximately \$240 million. The response to question 8 provides additional information about this step in the process for Census 2000.

Three major factors--cost, data quality, and public acceptance--contributed to the Census Bureau's initial proposal to use a 90 percent truncation level for the second step in the process for Census 2000; the personal visits to a sample of nonresponding housing units. (This is a different sample than the one used for the ICM program.) Although the Census Bureau has evaluated alternative sampling plans for this operation that cost less and

provide comparable levels of accuracy, it placed a relatively heavy emphasis on public acceptance in relation to the other factors in proposing the 90 percent level in its initial plan. As noted during the testimony, the Census Bureau is anxious to work with the Subcommittee to explore the alternatives available and arrive at a consensus about which combination of these three factors will be most acceptable to the American people.

**QUESTION 5:**

**If the Bureau uses statistical estimation to complete the census enumeration, which traditional coverage improvement operations will be scaled back?**

**ANSWER:**

The Census Bureau's initial plan for Census 2000 will eliminate many of the operations included in the 1990 census and provide more decision making authority about techniques that are useful in specific local circumstances to the managers in each regional and district office. For example, in partnership with the U.S. Postal Service (USPS), we will eliminate most of the costly activities before the 1990 census related to verification by census field staff of housing units the USPS added to the census address list and housing units the USPS reported to be vacant. We are examining our ability to check our address list on a targeted basis, compared to the comprehensive approach used in the past. We also will do only one review of the census address list with local officials, rather than two reviews of address counts as in 1990. In addition, we will reduce our community-based outreach and promotion program, relying primarily on a paid national advertising campaign.

**QUESTION 6:**

**Describe the 1995 Test. What were its goals? What were the significant items to be tested? How much did it cost? Has the 1995 Test provided much of the information needed to select a final design for the 2000 Census? Has the Test helped the Bureau determine the appropriate combination of enumeration and statistical estimation for the 2000 Census?**

**ANSWER:**

The 1995 Census Test was the culmination of the 2000 Census Research and Development Program that began in 1991. The fundamental changes that were tested, following several years of Census Bureau research and widespread consultation with stakeholders, included improved enumeration methodologies, new statistical methods, and advances in automated technologies; the chart and associated descriptive materials attached provide a comprehensive description of the goals. The total cost for the 1995 Census Test will be about \$33 million.

The majority of the 1995 Census Test evaluations were scheduled for completion by the end of the year, but some were delayed by the recent furlough. We have preliminary results from some of the evaluations, including those involving the review of the 1995 address list with local officials, the use of respondent friendly questionnaires, and having the U.S. Postal Service identify vacant housing units. We are awaiting important findings from other evaluations, including which coverage measurement methodology provided the best results, which nonresponse followup sample design worked best, and the potential benefits that could have been derived if we had used administrative records. These evaluations will provide important information for refining the initial plan for Census 2000.

**QUESTION 7:**

**Describe the concept and planned method for the 2000 Census of using administrative records from other agencies to identify people otherwise missed?**

**ANSWER:**

The Census Bureau plans to build a data base that includes each housing unit address at the time of Census 2000 and the names of the people who were living at each address based on the responses received. This information is needed, regardless of any decision to use administrative records, to determine whether people have already been counted because of replacement questionnaires, extra forms, telephone interviews, and so forth.

Once the data base of responses is built, the Census Bureau plans to match the administrative records it is able to acquire from other agencies to the data base. The intent is to "fill in" the people whom the census should have found at an address from which no response was received, add some people not reported on responses that did come back, fill in responses to questions people did not answer, and so forth, and to do so at a cost far lower than making personal visits using temporary field staff.

**QUESTION 8:**

**Describe the Bureau's plans to use Integrated Coverage Measurement (ICM) in the 2000 Census. Was it used in the 1995 Test? If not, will it be tested before 2000? In your understanding, what key decisions need to be made in the short term and why?**

**ANSWER:**

The Integrated Coverage Measurement program is one of three complementary activities that the Census Bureau intends to use to conduct Census 2000, along with the initial count and the estimate based on followup visits at a sample of nonresponding addresses. This new methodology was tested in the 1995 Census Test, including operational improvements such as using computer assisted interviewing, which sped up the process of capturing coverage measurement interview data. We are conducting extensive statistical and operational evaluations; those results will be available after the first of the year. We also are planning continued study of these evolving methodologies in a 1996 ICM Test.

We are refining the ICM computerized questionnaire according to results from the 1995 Census Test to further improve the interviewing procedure and subsequent processing activities. We are working with several groups of expert statisticians, including those on a panel at the National Academy of Sciences, to make statistical decisions about required sample design features and the best estimation method. We need to make these key operational and statistical decisions to move our testing and evaluation program from one focused on selecting among alternatives to one focused on refining the chosen methods.

**QUESTION 9:**

Describe the problems the Bureau has had in hiring temporary workers in the past. What are the Census Bureau's plans for hiring temporary workers for the 2000 Census? How many temporary workers will the Bureau hire? How much will this cost? Describe the issue and the Bureau's position with regard to unemployment compensation for the temporary workers.

**ANSWER:**

The major management challenges in taking a census are recruiting, training, and retaining adequate and qualified staff to complete the many enumeration tasks within the time allotted. The field staff also must be distributed geographically across the areas where households do not return census forms.

Staff turnover has been the major problem in completing data collection in the past. It adversely affects recruiting and staffing at several points, and is a constant threat to census schedules and budgets. Recent experiences show that for Census 2000, the Census Bureau may need to recruit as many as eight people to find individuals who are willing to actually take each temporary job, and that the average person hired works only 20-25 hours per week and for a period averaging only 12-15 days. We have attached a report that describes the labor force situation we anticipate.

For Census 2000, we expect to need approximately 420,000 people working for the period when we are doing followup at only the sample of nonresponding addresses and the sample addresses in the ICM program; we expect these positions to cost about \$1.8 billion, including salaries and mileage traveled to support these positions. (This estimate does not include the space, equipment, supplies, and other non-salary costs associated with each position.)

After the 1990 Census, the Office of the Inspector General at the Department of Commerce issued a report that was critical of the Census Bureau's management of unemployment compensation, presumably as a result of the large volume of claims filed by former temporary staff. For Census 2000, we are strengthening

our administrative procedures to better document performance problems of individual staff. Based on our interpretation of current law, we are planning to contribute to the unemployment and injury compensation programs for all temporary employees during Census 2000. We will, of course, change this plan if the Congress chooses to exempt the Census Bureau from the current legal requirements.

**QUESTION 10:**

**Explain the concept of continuous measurement and where the Bureau currently stands with the use of this methodology.**

Historically, the Census Bureau has used the sample form as part of the decennial census to obtain socio-economic information about the Nation's population and housing units. This process has provided the only detailed information available to the Nation for all governmental units, census tracts, and block groups. The biggest drawback to this procedure has been that the data are available only once each decade, and those data lose their usefulness as the use gets further away from the most recent decennial census.

The "continuous measurement" concept would collect similar information through a monthly survey called the American Community Survey (ACS), carried out all during the decade. The ACS will produce estimates annually, rather than only once every ten years, for all governmental units and census tracts.

Currently, we are testing the entire concept and processing system in four test sites: Rockland County, NY; Brevard County, FL; Fulton County, PA; and Portland, OR. This test will allow us to evaluate the different components of the continuous measurement system and to obtain important cost data about each of the components.

**QUESTION 11:**

**Describe the major technological advances that will differentiate the 2000 Census from the 1990 Census. What are the estimated cost savings with regard to these advances? What about decreased staffing needs in these areas both at the Bureau HQ and in the field?**

**ANSWER:**

Digital imaging (scanning) of the completed short form and sample questionnaires, along with automated systems to "read" the check marks and interpret the handwritten entries, are the major technological advances planned for Census 2000. We estimate this technology will save at least \$120 million compared to the FACT 90 system used in the 1990 census.

In addition, we will make use of advanced telecommunications to better manage the census process, newly developed desktop printing capabilities to produce census maps in the temporary district offices, CAPI technology to conduct the Integrated Coverage Measurement operation, and CATI technology to make and respond to telephone calls during the data collection process.

Staff requirements for the temporary image capture centers needed to process Census 2000 are reduced by approximately 59 percent compared to repeating the 1990 census methodologies in 2000. Headquarters staffing needs for Census 2000 will be reduced by approximately six percent. This reduction is not as dramatic as the staff reduction in the image capture centers because the demands for advanced planning, program development, increased specialized technical knowledge to properly implement the advances, and management are requirements for the success of Census 2000.

**QUESTION 12:**

**Explain the status of the Bureau's contract with the University of Maryland for a new computer system in Bowie, Maryland. Has the Bureau completed a risk/benefit analysis, and if so, what are the results? Also, what is the status of the new building that will house the computer system at this site?**

**ANSWER:**

The Memorandum of Understanding (MOU) between the University of Maryland and the Census Bureau does not obligate the Census Bureau to acquire a new computer system for the University of Maryland. The MOU states that if the Census Bureau acquires a high performance computer, it will allow the University of Maryland to use time on the computer, if available.

A risk/benefit analysis will be done by an outside contractor. The Security staff of the Census Bureau has written a Statement of Work and will oversee the contract.

December 1995 will be the fifth month of construction at the Bowie Computer Center. All building footers and five of the six computer room concrete slabs are in place. We expect construction of this facility to be completed by Fall 1997.

**QUESTION 13:**

**Is there any basis for concluding that census completion by either the U.S. Post Office or by putting the entire 2000 census out to private bid would result in significant cost savings for the American taxpayer?**

**ANSWER:**

On November 5, 1993, the U.S. Postal Service (USPS) and the Census Bureau issued a jointly prepared report describing the potential for expanding USPS involvement in census taking and an analysis of the feasibility of using letter carriers to collect decennial census data. This report cites many reasons (on which both agencies agree) why the USPS should not be involved in the collection of decennial census data. Among the reasons cited, the report states that "implementation of this suggestion would **significantly increase** the cost of the 2000 census." We are attaching a copy of this report for your information.

It is unlikely that the Census Bureau could find any private company with the staff resources to take on the most demanding operation in Census 2000: the personal visits to a sample of nonresponding households. No company has a staff of 420,000 people with no other duties to perform, and if they tried to hire this number of workers spread appropriately across the country, they would be faced with the same labor force issues as the Census Bureau faces. (See the response to question 9 for a complete discussion of that issue.) In addition, a private company will seek to make a profit if it is to take on such a venture. That need alone will increase the cost beyond what the Census Bureau would need to pay to hire a comparable number of temporary workers. The Census Bureau already is "best in class" for getting responses.

To deal with the shared desire to "privatize" whenever possible, the Census Bureau has identified key components of Census 2000 that may be candidates for private contractors or other Federal agencies to conduct. At this time, staff is investigating the various options for privatization. Until they complete these investigations, we cannot assess cost implications.

Attachments

Mr. ZELIFF. In the other panel that preceded you, there was disagreement in terms of the basic direction that you're going at the 90 percent sampling level versus 70 percent; kind of not willing to change some managerial decisions, in terms of getting ready, getting everything together in time; a need for an accounting back-up, you know, just very legitimate concerns in terms of the management of the census function.

How would you react to the—I mean, why are you stuck on the 90 percent versus the 70 percent?

Ms. RICHE. I like very much the way Mr. Stevens phrased his response to that. We are continuing to research all the trade-offs on statistical accuracy and cost. That's ongoing, and we would be happy to brief your staff at any point or to give you documents about this. I think that in the next year we certainly can be very definitive about where the trade-offs are in that process.

Mr. ZELIFF. So you really, in your own mind, haven't made that decision yet?

Ms. RICHE. I would say that—let me go to the other point that Mr. Stevens made. I believe there's more involved than a trade-off between cost and accuracy. I think there's a third factor here, and that is public acceptance, public confidence. So one of the early things that I did is to undertake some research with the public in the areas where we just conducted the test censuses—because I knew they would be aware of the census right now—and describe to them what kinds of problems we were looking at and what kinds of solutions we were looking at.

By the way, we have a videotape from some of these discussions. It's only 13 minutes, and I would be happy to share it with you, because it might give you some very good background.

What we found by undertaking this activity is—well, let me back up. Mr. DeGeorge thought we should be selling this. I spent a good part of my career in the consumer marketing industry, and if there is one thing I know it's that you can't sell somebody something they don't want. And what I found is, this is not something the public feels it needs to buy, a lot of sampling in the census.

We found once we laid the cost figures out—there was what I would call shallow support for sampling at 90 percent. And that was only after we went on to say that the sampling would take place amongst those people who hadn't responded. There was a fear, even though we explained that very carefully at the beginning, that there might be sampling in Iowa for somebody in Manhattan. And no, we would sample in Manhattan for Manhattan and Iowa for Iowa.

There is a strong level of understanding on the part of the public that we have never counted everybody; never have, never will. George Washington and Thomas Jefferson had an interesting colloquy on this issue, and it has gone on for over 200 years. The public understands it, but they expect us to make every effort to count them and go to them and give them a chance to participate.

So I think Mr. Stevens' response to you, which is that there is a policy issue here, this is what we are looking for guidance from you on.

Mr. ZELIFF. OK. And we certainly, from our point of view, will accept our responsibility on that policy issue. But I guess my ques-

tion would be, forgetting about whether you feel you can sell it or not, which is most statistically accurate, in terms of getting the information you have? We need to deal with that, and then we need to go and do what is the right thing.

Ms. RICHE. I think within the next 6 months we could give the information on the accuracy versus cost trade-off.

Mr. ZELIFF. What do you think? Do you agree with them, for example, that a 70 percent level—if we were dealing with statistics itself, would it be more accurate than, for example, what we were able to accomplish, you know, in the 1990 census, or what we will be able to accomplish if we go along the lines that you have indicated?

Ms. RICHE. I'm quite sure I could say that it's going to be more cost-effective. There's no doubt about that.

Mr. ZELIFF. But you're not sure about whether it's more accurate?

Ms. RICHE. I'm not ready to make a statement on the accuracy.

Mr. ZELIFF. OK. Let me ask you this. I go back to the Postal Service and the ability to contract out. I mean, is it possible to contract out to the Postal Service to do the whole census, almost like the private sector?

Ms. RICHE. Well, I understand that my deputy, who filled the job until I got here, had lengthy conversations with the Postal Service. The Postal Service was strongly reluctant to do this for one reason which was the fear—it is rather time-consuming, and they said this is just going to get in the way of delivering the mail.

The other concern they raised that was more of a concern to us is that they would expect us to pay the going rate for a postman, and with benefits and all that, that is substantially more than we pay.

Mr. ZELIFF. OK.

Ms. RICHE. But we have found a number of other ways to work with them.

Mr. ZELIFF. Let me just ask you this, though: Would it be an accurate alternative, better than what we've done, forgetting about the fact that they may not want to do it, or should we consider just putting a quote for the private sector and let it go out to bid? Let the Postal Service bid on it. Let other people bid on it. Does that make sense? Is it more accurate?

Ms. RICHE. I guess I'm "backing and forthing" across the cost versus accuracy issue. I've thought about this. I've thought, what if we put the whole thing up to bid, who could do it for us? And I was thinking of the firms that do the large data collection efforts in the private sector, and I've talked to some of them.

One of them is the companies that do the city directory business, like R.L. Polk; I've talked to them. The other kind of company would be the credit Bureau companies like Equifax, TRW; and I've spoken with them. And they say, "We don't have the people to go out and conduct the census. We would have to do the same kind of hiring procedures you would, and we would probably like to make profit while we're at it."

But, you know, one thing you might want to do would be to have a hearing and maybe bring in some of these people and talk about those things.

Mr. ZELIFF. What about the States? You've probably given that consideration, as well, to have the census done by the States.

Ms. RICHE. Well, people have raised the issue; basically, of doing the census locally. Every community has public employees, like policemen, firemen, and so on. Why can't we have them do it?

The same two issues come up, and then there's a third one with them. The issues of, would it get in the way of their other work? They would want us to pay them. And then the third issue that comes up there is the local person, local official, who has some other function that might unnerve the respondent. Say your fireman comes to the door. Well, he also might have something to do with inspection and, you know, the wiring in your house, or something, and would this have a chilling effect on the response rate?

And the response rates are really where we get both the cost and the accuracy. We've figured out that for every percentage point of response rate from the mail response, that's \$25 million.

Mr. ZELIFF. One last question, then I will turn it over to Mr. Ehrlich. How do you respond to both of the folks in the last panel relative to management credibility, in terms of getting plans underway that are going to be in time to accurately do the census, No. 1, and No. 2, the accounting problems?

Ms. RICHE. I actually did not hear from the General Accounting Office, as I listened to their statement, a statement that we did not have the management or we were not on track. The comments from the Inspector General's Office, as the Inspector General mentioned, he and I are in strong disagreement about the management structure.

When I came to the Census Bureau, I came as someone who had been both a critic and a supporter of the Census Bureau during the 1990 census. And I felt that the organizational structure they had in place at the time, which was the kind of structure Mr. DeGeorge is recommending, a self-contained Bureau within a Bureau, a command-and-control structure, was part of the problem, not part of the solution.

So the first day at work I set in motion a benchmarking procedure, benchmarking our organizational structure against the best statistical agencies overseas, our opposite numbers, and the best private data collection businesses in this country. All of them were much more fully in the matrix management mode that Mr. DeGeorge does not approve of, and we are moving forward in that direction.

We have a staff of 130 people who do nothing but integrate in our matrixed work across the different divisions. Our management challenge at the Census Bureau is that we do more than this job once every 10 years. We have people working every day, all 10 years, on the functions that go into the census. I believe that establishing a separate Bureau within a Bureau would be to create kind of a little Brigadoon that only wakes up every 10 years. I think we're going to get a much greater payoff from having people working who are working every day on the same issues.

And 130 people seems to me to be an ample staff to do the integration work as well as the cross-divisional teams that we have set up at management levels. At every layer of management we have a team. Even at the top executive level, I have one meeting a

month of my four executives, staff meetings, we discuss nothing but the census, so everybody knows what is going on. But we can all benefit from the work we're all doing.

As far as the accounting goes, I would be delighted to give you a statement as to what our plans are. I believe, of course, we have to be on track and have backups and have a very serious, focused accounting effort, and I believe we have that. We've been fortunate enough to secure, in the last 6 months, a world class chief financial officer from the private sector who has got this well in hand. He is here today. I won't take up your time, unless you are interested, by having him brief you on it, but we would be delighted to brief you on it.

Mr. ZELIFF. Thank you very much. I'm sure we will have additional opportunities to be able to go into that.

Mr. Ehrlich.

Mr. EHRLICH. Thank you, Mr. Chairman. I think we're going to need that opportunity. We have a vote on the floor. So let me ask you a two-pronged question. If you can answer in 5 minutes, I would appreciate it. One general question, what was learned from the 1995 test, the lessons, I guess, you derived from it.

Second, go back to this whole issue of fear among some people in our country about the census and Government. Generally, in collecting data, I suspect some of the people who hold those views are also the people that now correspond with me regularly on the Internet and all that, the irony there I will let go—but what energy have you devoted or do you intend to devote, and what are your views with respect to the information superhighway now changing how this place operates certainly, tapping into that in order to ratchet up the response rate here?

Ms. RICHE. Let me just touch on what we learned from the 1995 census test. We learned that our partnership with the Postal Service works and that our partnership with local governments works. For the first time, local governments got to look at the address list beforehand and to make their comments and to participate in it.

We also learned that the multiple mailings worked, that sending out the announcement letter, then the form, then the reminder card, and letting people know, "Hey, it's going to cost taxpayers a lot of money if you don't send this back; please help out," and then a replacement questionnaire; that worked.

Mr. EHRLICH. The shame factor works, I guess. That's good.

Ms. RICHE. Well, you know, they are listening. And our new forms will make that even more clear.

And then, finally, I think we learned that we really have a big labor force issue, and we simply cannot conduct the census the old way.

As far as the Internet and the whole communications area goes, we are heavily into that area. Let me just give you an example. We sold 40,000 printed reports last year from the Census Bureau. We are getting 60,000 hits a day on our Internet site. And we are extremely excited about the possibilities. And, by the way, I'm told that the average of a stay on our site is 3 hours, which is somewhat astonishing, but it's data nerds, I guess.

Let me just address your question to Mr. Stevens, though, with the last of my 5 minutes, because you asked, what happened dur-

ing 1990 that sent the response rate down, in relationship to the publicity, and was it this concern you are getting from your constituents.

I think that probably the biggest thing that happened in 1990, in terms of the outreach, was the change in the communications environment. We had pro bono advertising from the Advertising Council. That worked fine in 1980, but in 1980 we had three television networks, and people weren't really competing. By 1990, every broadcaster was in a heavily competitive environment, and those ads showed at 2 a.m. and 3 a.m. Didn't do a lot of good.

Some of the tests we found afterwards, testing in one hard to measure area in Los Angeles where we had done heavy advance promotion, 40 percent of the people didn't even know the census was going on. That's why we want to advertise this time.

Mr. EHRlich. Thank you. I look forward to continuing this dialog in the future.

Mr. ZELIFF. I just would like to ask you a question I had asked earlier. If we know we can increase returns by putting some kind of communication message on the form and also in our advertising message that it is a civic duty and is required by law, are you considering putting that message on, and utilizing it?

Ms. RICHE. Yes. Not only that, what we found out, again from our work with the public, and this goes back to Mr. Ehrlich's question, by and large, the public will first take a look at the census form, and the sort of people who are concerned about Government say, "Why on earth is the government asking these questions?" But then, as they sit in these groups and continue to discuss, somebody else will say, "Well, you know, they use this downtown to plan the commuting patterns or where we should put new roads." And the person says, "Oh, OK."

They don't have any problem with the data once they know why we're asking it. So we're also going to put on the form something that tells them why we're asking the question and what the benefit will be to them.

Mr. ZELIFF. Unfortunately, we have a vote. But I would like to ask Mr. Sawyer, if you have any comments or any quick questions that you would like to ask?

Mr. SAWYER. Well, Mr. Chairman, I just wanted to thank you for the opportunity to sit in and take part in this panel in this way. I have sat where you are sitting for a number of years. These are important questions. You are covering, I think, exactly the right ground. You are to be complimented for holding this hearing, and if I can join you from time to time, I would welcome the opportunity.

Mr. ZELIFF. Well, you are more than welcome. Again, as I indicated earlier, this is a learning experience for a lot of us. We're all interested in hitting the goal line at the same time, together, as a team. So there's a lot of decisions to be made.

What I would like to do is allow Members—there's a lot of things going on, obviously, this week, with reconciliation—allow Members 2 weeks, 14 days, to submit written questions, if you would be willing to accept them.

Ms. RICHE. Yes.

Mr. ZELIFF. We will do additional hearings. Again, your job is monumental, and we wish you well. Thank you.

Ms. RICHE. Thank you.

Mr. ZELIFF. The panel is adjourned.

[Whereupon, at 1:40 p.m., the subcommittee adjourned.]

