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REENGINEERING THE CENSUS OF POPULATION AND HOUSING

The American Community Survey
The MAF/TIGER Enhancements Program
The Short Form Only 2010 Census

Submitted by United States Census Bureau*

ABSTRACT

The United States Decennial Census of Population and Housing is an essential part of the American political, economic, and social systems. Census data are critically important in achieving equitable political representation, in the distribution of over $200 billion in federal funds annually, and in a variety of other public and private sector uses.

Census 2000 was an unprecedented operational success and the most accurate census to date in terms of coverage. We saw a dramatic reduction in the overall net undercount, and a reduction in, although not the elimination of, the differential net undercount between various population groups and areas. However, given the rapid and dramatic demographic and technological changes that will continue to occur over this decade, the methods of Census 2000 cannot be repeated in 2010 without incurring unacceptable risk and cost.

The reengineered 2010 Census consists of three highly integrated activities designed to dramatically improve upon what was a very good census in 2000. We will accomplish this by taking advantage of opportunities for innovation – made possible through the expanded use of technology – in order to: 1) increase the coverage, accuracy, and quality of census data; 2) reduce operational risk; 3) increase the relevance and timeliness of census long form data; and 4) contain costs. The three highly integrated activities we have embarked upon to meet these goals

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are: 1) the American Community Survey (ACS); 2) the Master Address File/Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Enhancements Program; and 3) a multi-year program of comprehensive planning, development, and testing for a short form only 2010 Census.

We expect that the cost reductions in the last component will be sufficient to offset the costs of all three components of the reengineered census. That is, all three components can be carried out at a cost that is no greater – and probably somewhat less – than the cost of repeating the Census 2000 process.

KEY WORDS: 2010 Census; reengineered census; Census 2000.

I. THE UNITED STATES DECENNIAL CENSUS OF POPULATION AND HOUSING

1. The United States Decennial Census of Population and Housing is an essential part of the American political system, but its impact on society is even more far-reaching. The U.S. Constitution requires that a census of the Nation's population be taken every ten years to decide how many seats in the House of Representatives will be allocated to each state, but the information provided includes more than just state-by-state population totals. State and local governments use census data to draw legislative (including Congressional) districts of approximately equal population to comply with the constitutional "one-person-one-vote" mandate and the statutory requirements of the Voting Rights Act.

2. The federal government distributes approximately $200 billion annually in grants according to population-based formulae that rely on census data. Federal, state, local and tribal officials study the patterns of detailed census data as an aid in deciding the location of new hospitals, highways, bridges, and schools. Businesses, large and small, have come to depend on the U.S. Census Bureau's population, income, education, and housing data to make informed decisions about locating new offices, shops, and factories, and in identifying markets for new products and services. Census data also serve as definitive benchmarks for many of the household surveys conducted by federal agencies.

3. In short, census data are critically important in achieving equitable political representation and a fair allocation of resources, as well as in a myriad of other public and private sector uses.

II. WHAT IT TAKES TO CONDUCT THE CENSUS

4. It is difficult to overstate the magnitude of conducting the census. During Census 2000, the Census Bureau implemented a massive operation that included:

- -- Hiring 860,000 people for data collection and data capture;
- -- Answering about 5.8 million telephone calls;
- -- Printing over 20 million paper maps;
- -- Printing 398 million questionnaires (including English and 5 other languages);
- -- Providing Questionnaire Assistance Guides in 49 languages;
- -- Opening 27,000 local Questionnaire Assistance Centers and 520 temporary field offices;
- -- Capturing data from 1.5 billion pieces of paper from March through August 2000; and,
- -- Tabulating data for 9 million census blocks, and 39,000 governmental units.

5. In the United States, though, it's not only the magnitude of the operation that makes conducting the census difficult. We must account for a population that is growing increasingly complex. Moreover, collecting data on race and ethnicity that accurately reflect our diverse population raises particular challenges. The Office of Management and Budget (OMB), within the Executive Office of the President, defines the categories used to classify data on race and ethnicity for the federal statistical system; but on the decennial census questionnaire, the Census Bureau must determine the most appropriate way to ask the questions pertaining to these categories in such a way as to ensure the collection of accurate and complete data. We know that even subtle changes in the way or in the order we ask the race and ethnicity questions can affect the quality of the data we receive.

6. We also must take into account the many informal and complex housing arrangements that now exist in our mobile society, as well as the growing population that live in group quarters such as nursing homes, group homes, and prisons, all of which require special enumeration procedures. And we have to take into account those persons who do not have a usual residence. Given all of these challenges, it is remarkable that we are able to conduct a census at all.

III. CENSUS 2000 – AN OVERALL ASSESSMENT

7. Census 2000 was an unprecedented operational success and was the most accurate census to date in terms of net coverage. It was completed on time and under budget with key operations functioning as planned. Analyses of Census 2000 operations indicate that they were efficient and effective, producing high quality data. Operational design improvements produced measurably better results over previous censuses. Although there were some local problems and minor operational shortcomings, Census 2000 operations were implemented in a controlled manner and within design expectations.

8. Moreover, the advertising campaign and the partnership program helped to produce a mail return rate of 74 percent, surpassing planners' expectations considerably and halting a steady downward trend in public cooperation that had occurred since the Census Bureau first initiated a national mailout/mailback approach in 1970. A high mail return rate is crucial to the success of the census – operationally, budgetarily, and also in terms of data quality; data from mailback questionnaires tend to be more complete and of higher quality than the data from forms completed by enumerators.

9. Given the successes of Census 2000, the Census Bureau is extremely encouraged about the prospects for the next census. However, despite these successes, Census 2000 was very costly and carried out with a high degree of operational risk. Given the rapid and dramatic demographic and technological changes that will continue to occur over this decade, it would be unwise to assume that the process of Census 2000 could be repeated in 2010 without incurring unacceptable risk and cost. Specifically, as we began our planning for the 2010 Census in the late 1990s, we were concerned that our basic approach to census-taking may not allow us to continue to make progress in many important areas; our assessments of Census 2000 have confirmed that concern. While Census 2000 was the most successful census ever, it is clear that issues remain that cannot be resolved by repeating the current approach, even with the application of a greater amount of resources:

- While coverage improved dramatically, additional progress needs to be made in reducing the levels of omissions and erroneous enumerations.

- With regard to data on race and ethnicity, the percentage of respondents indicating "some other race" – rather than reporting one (or more) of the five specific race categories as required by most federal statistical programs – continued to increase.

- While field operations were largely implemented in a controlled manner and within design expectations, they were very expensive and the volume of paper required was overwhelming.

- While our maps were clearly better than in previous censuses, field workers still had great difficulty navigating in their assigned areas and correctly identifying the addresses to enumerate.

- Out of a Nonresponse Followup (NRFU) workload of approximately 42 million households, enumerators visited nearly four million households that had already mailed in their questionnaires. This activity was costly and did not improve the census.

- Our automated systems worked, but they were developed at high risk and without an established enterprise architecture.

- Long form data were released earlier than ever before, but over the course of the decade since their last release, data users were still required to work with results that were, on average, seven years old.

10. In order to address these issues, we realized that we needed to determine a new direction for the 2010 Census; that is, the census would have to be "reengineered." The 2010 re-engineering vision began with the identification of four major goals:

- Increase the coverage, accuracy, and quality of census data;

- Reduce operational risk;

- Increase the relevance and timeliness of census long form data; and,

- Contain costs.

IV. THE 2010 CENSUS REENGINEERING PLAN

11. Our plan for a reengineered 2010 Census consists of three highly integrated activities designed to dramatically improve upon what was a very good census in 2000. We will accomplish this by taking advantage of opportunities for innovation – made possible through the expanded use of technology – that will enable us to meet our above-stated goals for the 2010 Census.

12. The three integrated components are:

1) Collect and tabulate long form data every year throughout the decade through a large household survey called the American Community Survey (ACS);

2) Enhance and improve our existing Master Address File (MAF) and Topologically Integrated Geographic Encoding and Referencing system by bringing them into

alignment with true global positioning system (GPS) coordinates and converting our TIGER data base system to a commercial off-the-shelf (COTS) data base environment; and

3) A program of early and comprehensive planning, development and testing designed to completely restructure the management and conduct of a short form only census in 2010. This component will provide the savings needed to support the re-engineering initiative.

V. THE AMERICAN COMMUNITY SURVEY

13. Adopting the ACS as the planned replacement for the census long form will allow the short form only census to focus more directly on meeting our constitutional and statutory mandates for the collection and issuance of the apportionment and redistricting data. This will transfer to the ACS the responsibility to provide estimates of detailed demographic and housing data throughout the decade. These timely and, therefore, more relevant data will greatly enhance the value of this information that federal, state, and local policymakers as well as businesses, currently obtain from the once-in-a-decade long form.

14. Just like the census long form, the ACS will provide data on the following subjects: families, children, and the elderly; income and poverty; educational attainment and school enrollment; work and unemployment; disability; immigration and language ability; housing; and many more. It will provide annual estimates for all states, as well as for areas and population groups of approximately 65,000 people or more, starting in 2006. For smaller areas, it will take three to five years to accumulate sufficient samples to produce appropriate estimates. For example, for areas of approximately 20,000 to 65,000 people, three-year moving averages will be produced starting in 2008. These multi-year estimates will be updated annually thereafter. For rural areas and city neighborhoods (census tracts and block groups) and other areas of less than 20,000 people, we will produce five-year moving averages, starting in 2010. These estimates will also be updated annually. Eventually, with sufficient multi-year estimates, we will be able to measure changes over time for small areas and population groups.

15. At full production levels, the ACS will sample about 3 million addresses each year. It also will sample 2.5 percent of the population living in Group Quarters, and about 36,000 addresses in Puerto Rico will be included in the sample every year. Once fully implemented, the Census Bureau will select a sample of addresses representing each county in the United States. No address will receive the ACS questionnaire more than once in any 5-year period. To improve the reliability of the estimates for small governmental units such as American Indian Reservations, small counties, and towns, a larger proportion of addresses will be sampled. Sample selection occurs twice per year and is implemented on an on-going basis. The sampled addresses are selected from the Master Address File, and filtered for mailable addresses. Unmailable addresses, usually those without complete address information, are not included in the mailing, but rather are sent directly to the personal interviewing operation, where they sampled at a rate of 2-in-3. Over 95% of the sample universe is eligible for mailout. Annual sampling rates range from about 1.7 percent to about 10 percent. Over a five-year period, the sampling rates will range from about 8.5 percent to about 50 percent. Additionally, the sample is cumulated over *time* to produce the lowest levels of geographic detail similar to the long form sample in the census. As mentioned above, five years of data are required for areas with a population of less than 20,000 (this includes block groups and census tracts).

16. Three-year estimates are produced for areas with populations of 20,000 or greater. Single-year estimates are produced for areas of 65,000 or greater.

17. The Census Bureau collects ACS data in continuous, 3-month cycles using a combination of mailout/mailback, Computer Assisted Telephone Interviewing (CATI), and Computer Assisted Personal Interviewing (CAPI) data collection modes. Optimal use of these three modes of data collection results in cost-efficient, high-quality statistics.

18. In the first phase of the ACS, mailout/mailback, the Census Bureau sends out a pre-notice letter, the initial mailing package (which includes the ACS questionnaire, an instruction booklet, and other materials), and a reminder card. A replacement mailing package with a second questionnaire is mailed about three weeks after the first mailing to those who did not respond. This strategy of four mailings is designed to maximize response, and the inclusion of a replacement mailing to those who do not initia lly respond constitutes a significant operational improvement over Census 2000. Currently English and Spanish language questionnaires and the cover of the questionnaire contains a statement providing information about in-language telephone assistance. Future plans call for development of a Spanish language package. The mail response rate is averaging about 50%.

19. About six weeks after the first questionnaire is mailed, interviewers begin the CATI operation. During this phase, interviewers contact housing units from which a mail response has not been received, and for which telephone numbers have been obtained. Once CATI interviewers verify that they have reached the correct address, they try to complete the interview. The CATI operation runs for about 25 days. The CAPI operation runs approximately four weeks, during which Census Bureau field representatives visit addresses that cannot receive a mailed questionnaire, as well as those we could not reach or for which a phone number cannot be obtained. Field representatives visit CAPI addresses and verify their existence (or declare them nonexistent), determine their occupancy status, and conduct interviews.

20. Both the CATI and CAPI operations utilize sophisticated computer software with well developed quality assurance procedures that include built-in checks and edits that limit the introduction of errors. Formal quality control reinterveiws are also included in the operations. Moreover, in both operations the control files are updated to remove addresses for which a later mail return has been received. This minimizes respondent burden and duplication of effort. Like the mailing of the replacement questionnaire, this too is a significant innovation that was not possible during Census 2000.

21. Additional improvements for the ACS are unfolding at the writing of this paper. These include: the implementation of a partnership program to educate the public about the importance of ACS data and to improve response; a language program to provide additional assistance to those for whom English is a second language; the improvement of quality assurance procedures already in place; and the expansion of the ACS evaluation program. The ACS is now producing 2003 data profiles for areas with population greater than 65,000, and full implementation is planned for February 2005.

VI. THE MAF/TIGER ENHANCEMENTS PROGRAM (MTEP)

22. A complete and accurate address system is absolutely essential to the success of the decennial census. In order to attempt to count and correctly locate every individual in the U.S. population, the Census Bureau has created and maintains a Master Address File (MAF) to identify all living quarters, and uses the TIGER data base to spatially locate these living quarters.

The MAF includes addresses or location descriptions (for non-city style addresses, that is, units where there is no house number and street name) and census geographic information for each housing unit and group quarters. Each of these listings is linked to the TIGER data base. TIGER is essentially a "digital map" of the entire United States, showing the following: street center-lines and their names, lakes and streams and their names; railroad tracks; geographic entity boundaries, names, and codes; select living quarters locations, locations of airports, schools, etc.; and ZIP Codes and address ranges (for streets with city-style addresses).

23. The location information in TIGER is of variable accuracy. That is, there are large, non-uniform differences in location accuracy that exist within relatively small areas, and there are no detailed quality measures that document the extent of street and address errors. Additionally, the existing MAF/TIGER system was internally developed and cannot be easily upgraded unless it is migrated to an open system that uses industry standard GIS software products.

24. Consequently, to address these specific concerns and to make other improvements to our MAF/TIGER system, we have embarked on an Enhancements Program that consists of the following five objectives:

- Improve address/street location accuracy and implement automated change detection;
- Implement a modern processing environment;
- Expand and encourage geographic partnership options (with state, local, and tribal governments);
- Launch the Community Address Updating System – to improve our address lists in rural areas where the U.S. Postal Service's Delivery Sequence File updates are not particularly useful because of the preponderance of non-city style addresses in these areas; and
- Implement periodic evaluation activities/expand quality metrics – for example, we are working on the development of a MAF/TIGER Error Model that would allow us to systematically analyze errors in the system.

25. An updated MAF and an accompanying improved TIGER data base with GPS positional accuracy will allow the Census Bureau to maintain, with greater accuracy, the inventory and locations of all living quarters. In addition, we will greatly expand our ability to improve the accuracy of our census GIS systems that process these data. These MAF/TIGER enhancements are key to allowing the Census Bureau to adopt the technology necessary to fully utilize GPS-equipped hand held computers (HHCs) to update data on housing units and interview persons for the short form only census in 2010, thereby enabling us to take advantage of technological efficiencies to meet the census's constitutional mandate at a greatly reduced cost. The use of HHCs and their potential impact in terms of cost savings, improved data quality, and improved coverage are discussed in a subsequent section on key research areas of our early planning, development, and testing for the 2010 Census.

VII. A SHORT-FORM ONLY CENSUS IN 2010

26. By conducting the American Community Survey and implementing enhancements to the Master Address File and TIGER, the Census Bureau can plan a better and less expensive 2010 Census. By removing the need for a long form (which requires us to collect information on many

more questions from a sample of households), and by improving the efficiency of our enumerators (through improving the address list and geographic information system), we will be able to focus on coverage improvement in the census and explore the use of hand held computers for enumeration in the field. An improved TIGER database will also ensure better geographic accuracy for the final census results.

27. In June 2003, we estimated that the reengineered 2010 Census would cost $11.3 billion, or about $88 per housing unit. This includes all costs for the entire decade related to the ACS, the MTEP, and the 2010 Census itself. In comparable 2010 dollars, Census 2000 cost approximately $7.6 billion, or about $65 per housing unit. While an increase to $11.3 billion for the reengineered census is substantial, most of the increase is due to the estimated rates of population growth and inflation. Further, we estimated last June that without the reengineering effort, it would cost $12.2 billion to repeat the census approach we used for 2000. Thus, over the course of this decade, we believe we can obtain all the benefits of the ACS, MTEP, and a short form 2010 Census and save nearly $1 billion.

28. Making these improvements to the census will not happen automatically. Procedures must be fully tested under census-like conditions and refined well in advance of Census Day. The early years of this work involve extensive planning, development, testing, revising, and retesting of literally thousands of procedures needed to complete a successful census. We are planning to restructure many of these procedures to reduce costs and improve accuracy while keeping operational risk to a minimum.

29. The Census Bureau is conducting research and testing of several approaches to help improve the collection and quality of data. Some of these activities include:

- Testing the use of hand held computers for field data collection. These devices are quite small—about the size of a PDA;
- Evaluating ways to better collect information on race and ethnicity;
- Reviewing current practices and rules for where people are counted to help improve the accuracy of the data;
- Researching ways to increase self-response;
- Researching ways to identify areas of the country with a high concentration of non-English speaking households, and researching ways to make forms and promotional materials available in languages other than English;
- Testing ways to improve the removal of duplicate housing units from our address list before we start enumeration; and,
- Testing ways to remove duplicate persons who were enumerated in more than one housing unit or group quarters in the census.

30. The Census Bureau is currently testing the use of hand held computers for field data collection, which is central to our reengineering effort. In addition to reducing the enormous amount of paper through electronic data collection and the infrastructure costs associated with that paper collection, we also expect that the use of hand held computers will reduce interviewer

mileage and travel time, reduce the workload for the nonresponse followup operation, and result in improved data quality. Having global positioning system equipment on the hand held devices will enable enumerators to navigate to and within their assignment areas more easily, and to locate with less difficulty specific housing units in those areas. We also expect that the hand held computers will enable enumerators to obtain daily assignment updates. In Census 2000, it is estimated that enumerators visited 770,000 households that had already mailed back their questionnaires, because they did not have updated information on non-responding households. The reduction in paper use, staff and space needed to manage that paper, and elimination of unnecessary field visits are three of the largest contributors to the estimated cost savings of our reengineered census for 2010.

31. The Census Bureau has a goal of reducing the number of race and Hispanic-origin responses that are missing or that do not fall into one or more of the five major race categories defined by United States Office of Management and Budget. A second goal is to improve reporting of detailed Hispanic-origin categories in the Hispanic-origin question.

32. The Census Bureau is also reviewing residence rules, that is, where people are counted based on their living situation on Census Day, as a way of improving census coverage and increasing accuracy.

33. The laws governing the decennial census require us to count people at their "usual residence." For each census we have had to interpret the concept of “usual residence”. Since 1950, we have defined “usual residence” to mean “the place where a person lives and sleeps most of the time.” For most people this determination is easy to make, but there are various situations where the decision is more difficult. Thus, we develop residence rules to help respondents and enumerators determine where people should be included in the census.

34. We know that the way we explain those rules to respondents and enumerators affects how and where we actually count people. Thus, the Census Bureau is testing the wording of the residence instructions on the questionnaire in order to improve the understanding and implementation of the residence rules. For example, the current wording of the questionnaire tells respondents to include: foster children, roomers, or housemates, people staying here on April 1, 2000 who have no other permanent place to stay, and people living here most of the time while working, even if they have another place to live. Respondents are asked not to include college students who live away from home to attend school nor Armed Forces personnel who live somewhere else.

35. The Census Bureau also is studying the concepts and principles that underlie these residence rules. These include such concepts as “usual residence,” and “usual home elsewhere.” As we evaluate potential changes to the formal residence rules, we will need to keep in mind that any changes could have profound practical, conceptual, operational, political, and data consequences for the decennial census and the Census Bureau. Each rule will be examined to see if its existence makes sense in the context of current law and to see if it is clearly worded or could be simplified.

36. The Census Bureau is continuing to search for ways to increase self-response and therefore minimizing the amount of households that need to be followed up in person in order to get a response. This includes testing the feasibility of more actively encouraging people to respond on the Internet. It also includes testing friendlier census forms that hopefully will result in more self-responses. We will also be testing improvements to the telephone questionnaire

assistance system to minimize the amount of time it takes to get through to have questions answered or to request a paper form.

37. The Census Bureau is researching ways to identify areas of the country with a high concentration of non-English speaking households, and testing different ways to make forms and promotional materials available in languages other than English. This is an important step towards increasing self-response. We will be testing the use of a bilingual form (English and Spanish) that can be mailed out in areas with a high concentration of households that speak Spanish.

38. The Census Bureau is researching better ways to remove duplicate housing units before we begin the enumeration. This includes testing the use of probabilistic matching to identify duplicates. It also includes a coordinated effort between the development of our address list for housing units with the development of our address list for group quarters such as nursing homes and group homes. In Census 2000, we developed these lists independently from each other. Because these lists were created independently, we created situations where we had the same address on both lists and didn't realize it. In the future, we plan to include all group quarters on the address list that is verified by canvassing each census block. Because some group quarters are not easy to identify, canvassers will label obvious housing units as housing units and everything else will be labeled as "other living quarters." A separate operation with a staff better trained to identify group quarters will be conducted to determine which of the addresses coded as "other living quarters" are really group quarters and which are actually housing units.

39. Even if we were able to identify all duplicate housing units before enumeration, we know from Census 2000 that we will have many persons counted more than once in the Census. This is caused by various living situations. For example, college students were often counted at both the college they were attending and at their parents' home. Persons with more than one home were sometimes counted at both homes. Sometimes, children of divorced or separated parents were counted by both parents as living with them. Although we hope to minimize these situations by having clear instructions on the census form, we know that some persons will still be counted twice. Because of this, we are developing an operation to search for duplicate persons across all census forms. By using names and birthdates, we believe we can identify many potentially duplicated persons. In some cases, we will need to contact a household to determine if a person was counted more than once. In other cases, we might be able to resolve the duplication without having to contact the household.

40. The previous list is just a sample of the research efforts we are currently undertaking to improve the 2010 Census.

VIII. REVIEW OF COMPLETED AND PLANNED TESTS FOR THE 2010 CENSUS

41. Planning for the next census is ongoing throughout the decade. In 2003, the Census Bureau conducted a National Census Test, which was focused on improving the race and Hispanic Origin questions and testing ways to increase response.

42. In 2004, we have been conducting our first site test. In an area of New York City and in three rural counties in the State of Georgia, we have been testing both the mailout portion of the census, along with field data collection for nonrespondents. This is our first large-scale test using hand held computers. In this test, we also are testing our identification of duplicate housing units and persons.

43. In 2005, we will be conducting a second National Census Test. In this test, we will be continuing our efforts at improving the race and Hispanic Origin questions. We also will be focusing on ways to improve our presentation of residence rules instructions, and for identifying households that might have complicated living situations that might require a followup interview to make sure the correct people were counted.

44. In 2006, we will conduct a second site test. This test will take place in the City of Austin, Texas, and on the Cheyenne River Indian Reservation in South Dakota. This test has many proposed objectives, including expanding the use of hand held computers to our address listing and mapping operations, testing the use of a bilingual census form in areas with a high concentration of Spanish speakers, testing components of our coverage measurement program, and testing the enumeration of persons residing in group quarters such as prisons and group homes.

45. The final testing stage will be the dress rehearsal census in 2008. We will select several sites in the United States and attempt to conduct a census the way we intend to conduct it in 2010. Actual implementation of the 2010 Census will begin in 2009 when we conduct address listing and mapping operations.

IX. ENUMERATING UNITED STATES CITIZENS LIVING OVERSEAS

46. For the past two censuses, we have collected administrative counts of federally affiliated United States citizens living overseas. An enumeration of *all* United States citizens living overseas faces operational obstacles that include the lack of resources similar to the MAF/TIGER system and the lack of a field infrastructure to conduct nonresponse followup. There also are serious questions concerning how to apply the data to the purposes for which we conduct the decennial census (apportionment, redistricting and the distribution of federal funds). Nonetheless, in 2004 we tested the feasibility of enumerating all United States citizens living outside of the country. We designed operations to enumerate this population in three countries, France, Kuwait and Mexico. Our objectives included determining whether United States citizens would participate and return the forms via Internet or mail, as well as obtaining information on the viability of our operations. While formal evaluations of our operations will not be complete until next April, we can say that:

- From France, we received approximately 3100 questionnaires;
- From Kuwait, we received approximately 300 questionnaires; and,
- From Mexico, we received approximately 2000 questionnaires, 35 of which were in Spanish.

47. It is difficult to know exactly how many United States Citizens currently live in these countries, however estimates from various sources range from 1,245 – 7,710 for Kuwait, 32,252 – 101,750 for France, and 63,591 – 1,036,300 for Mexico. Thus, by any standard the response to our test was disappointingly low.

48. Preliminary results from the 2004 Overseas Enumeration Test suggest that the data could not meet the same standards of measurable quality as the data the Census Bureau collects within the United States. This would call into question possible uses of the data for apportionment, redistricting and the distribution of federal funds. Congress has not appropriated funds for further

tests at this time. Accordingly, we plan to again use operations similar to those implemented in 1990 and 2000 to enumerate overseas Americans affiliated with the federal government.

X. CONCLUSION

49. By initiating the American Community Survey and the Master Address File/TIGER Enhancements Program, we have been able to concentrate our research efforts for the 2010 Census so that in the end, we will be able to provide more timely and relevant data, improve coverage of the population, reduce operational risk, and contain costs.

50. By replacing the census long-form with an ongoing survey, the American Community Survey helps us meet our goal of providing more timely relevant data. The Master Address File/TIGER Enhancements Program will help meet our goal of containing costs because enumerators will spend less time finding their assignments. By simplifying the enumerator's job, these enhancements will also help improve coverage and reduce risk in the 2010 Census. Because of these efforts, we have been able to focus 2010 research on coverage improvement in order to meet that important goal. The overall up front planning that we have been able to accomplish in this decade will also go a long way toward reducing operational risk. Finally, increased use of automation—such as hand held computers—and other design changes will allow us to save over $1 billion compared to repeating the Census 2000 approach. As successful as Census 2000 was, we remain determined to provide an even more successful census in 2010.

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