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Accountability \* Integrity \* Reliability

United States General Accounting Office  
Washington, DC 20548

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September 30, 2002

The Honorable Dave Weldon, M.D.  
Chairman, Subcommittee on Civil Service,  
Census, and Agency Organization  
Committee on Government Reform  
House of Representatives

The Honorable Dan Miller  
Vice-Chairman, Subcommittee on Civil Service,  
Census, and Agency Organization  
Committee on Government Reform  
House of Representatives

Subject: The American Community Survey: Accuracy and Timeliness Issues

In response to your March 11, 2002, request, we have reviewed several major issues associated with the proposed full implementation of the American Community Survey (ACS) by the Bureau of the Census for 2003. If the ACS is approved, this mandatory mail survey would cost from \$120 to \$150 million a year, and would require responses from a sample of about 3 million households (250,000 each month) to some 60 to 70 questions. The ACS would provide annual data for areas with a population of 65,000 or more and multiyear averages for smaller geographic areas. In addition, the ACS would replace the decennial census long form for 2010 and subsequent decennial censuses.

Based on your request and subsequent discussions with your staffs, we agreed to report on the following questions:

- How would the quality of the annual ACS data and multiyear averages, which would be available beginning with annual data for 2003, compare with that of the 2010 Decennial Census long-form data, and would these ACS data adequately replace long-form data in meeting the needs of federal agencies?
- Are the questions to be asked in the ACS beginning with 2003 justified by statutory requirements of federal agencies, and is the planned use of ACS data to select samples for additional surveys consistent with the confidentiality provisions of Title 13 of the United States Code?
- Are ACS questions duplicative of or similar to those in other federal surveys, and can the burden on the respondents be reduced?
- If the ACS was conducted as a voluntary survey, how would the costs be affected?
- How did the Bureau encourage participation in the ACS test program through (1) training for follow-up interviewers of nonrespondents and (2) outreach and promotion efforts?

We conducted our audit work at Bureau headquarters in Suitland, Maryland, and Washington, D.C., from March through August 2002, in accordance with generally accepted government auditing standards.

## **Results in Brief**

On the basis of sampling errors and related measures of reliability, the Census Bureau has decided that ACS data will be published annually for geographic areas with a population of over 65,000; as 3-year averages for geographic areas with a population of 20,000 to 65,000; and as 5-year averages for geographic areas with a population of less than 20,000. According to the Bureau, the annual ACS data and 3-year averages would be significantly less accurate than data for 2010 from the decennial census long form; 5-year averages, which would be available at the detailed long-form level of geographic detail, would be about as accurate as the long-form data. If the Bureau's 2003 budget is approved, annual ACS data for 2003 would be available beginning in 2004; the first 5-year average data, for 2003-07, would be available beginning in 2008. ACS data would be significantly more timely than the once-every-10-year data from the long form. Accuracy and timeliness are both important components of survey quality. Because there is no one formula to determine the relative importance of the components, it is not possible to determine an overall measure of survey quality to compare the ACS and long-form data.

Federal agencies that extensively use the 2000 Decennial Census long-form data for program implementation would use ACS data in the future if the long form was eliminated. To make the transition from the 2000 Decennial Census long-form data to ACS data, which would begin with the release of the annual ACS data for 2003, these agencies would need key information from the Bureau's evaluation of differences between the data collected from the 2000 long form and that collected in the ACS tests. However, this evaluation will not provide the agencies with the following key information: data from the 2000-02 ACS special supplements and the 2003 ACS with the same treatment of group quarters and seasonal residences as the 2000 Census; techniques to improve consistency between the data items from the 2000 long form and the 2003 and subsequent ACS estimates; measures of stability of annual ACS data and ACS multiyear averages; a framework for reconciling annual and multiyear data for the same geographic level of detail; and procedures for revising previously published ACS data to incorporate decennial census population counts.

The questions to be asked in the 2003 ACS reflect justifications—specific statutes, regulations, and court cases—provided to the Bureau by federal agencies. To identify these justifications, the Bureau worked with the agencies using a process similar to that used to prepare the justifications for the questions on the 2000 Decennial Census long form. To support the request for approval of the ACS by the Office of Management and Budget (OMB), the Bureau submitted a list of justifications it selected from those provided by the agencies. These justifications were selected from among those classified by the agencies as either mandatory—decennial census data specified by statute—or required—decennial census data used historically to support a statute or for court-imposed requirements. Because agencies have not yet formally

approved the complete list provided to the Bureau, we limited our review of the justifications and their classifications to the list selected by the Bureau. The justifications classified as mandatory met the Census Bureau's criteria. However, justifications classified as required could not be verified because the agencies were not asked to provide sufficient information about either their historical use of decennial census data or planned use of the ACS.

The Bureau's plan to use responses to ACS questions to develop samples for additional surveys is not prohibited by the disclosure provisions in 13 U.S.C. § 9, as long as the Bureau conducts the surveys. Information from the Census 2000 Supplementary Survey has already been used to develop the sample for the National Epidemiological Survey on Alcohol and Related Conditions, sponsored by the National Institutes of Health. The OMB, in approving the ACS questionnaire, instructed the Bureau not to use the ACS universe for additional surveys without agreement by OMB.

Some ACS questions duplicated or are similar to questions on two existing federal surveys. In the request for OMB approval for the 2003 ACS questionnaire, the Bureau said that there was some duplication, but that there was no other single federal survey that collected all the ACS data. OMB concurred with this position, and it appears to be a valid interpretation. However, there is no indication that the agencies sponsoring the existing surveys with questions that duplicate or are similar to ACS questions have considered eliminating questions on their surveys. Identical questions could be eliminated from the existing surveys because the ACS data would be more accurate, available at greater geographic detail, and more timely. Similar questions could be eliminated if the greater ACS accuracy, detail, and timeliness offset the advantage of asking additional and more relevant questions on these surveys.

The Bureau determined, and GAO has agreed in a recently issued legal opinion, that it has the statutory authority to conduct the ACS as a mandatory survey, like the decennial census long form the ACS would replace. Based on this authority and on federal agency studies that a mandatory mail survey would most likely result in a higher response rate than a voluntary one, the Bureau plans to conduct the ACS as a mandatory survey. If the ACS was conducted as a voluntary survey, the Bureau would need to make up for the lower mail response with more interviews to maintain the proposed level of accuracy of the ACS. Because obtaining responses by interview is more costly than obtaining responses by mail, conducting the ACS as a voluntary survey would be more expensive. The Bureau has prepared a rough estimate of the added cost under the assumption that the mail response rate to a voluntary ACS would be 6 percentage points less than the rate for a mandatory ACS. Using this assumption, the Bureau estimates that a voluntary ACS would cost as much as \$20 to \$35 million a year more.

The Bureau used a number of strategies to encourage participation in the ACS test program, which started in 1996. Two of the key strategies were (1) the training of interviewers, whose job it was to collect data from households that did not return the mail questionnaires, and (2) outreach and promotion efforts. According to the

Bureau, the tests have consistently achieved high overall response rates and Bureau officials have been pleased with the results. Telephone and in-person interviewers were provided scripted replies, designed to overcome the objections of nonrespondents, that highlighted themes such as the importance of ACS data to the community and the legal requirement to participate in the ACS. For the 1996 test, the refusal rates for telephone interviews were about 14 percent and for in-person interviews about 4 percent. Moreover, for the tests conducted from 1996 to 2002, the Bureau reported that it had received about 250 letters expressing concern about the ACS. In a review of 82 of these letters, just 4 complained about the conduct of an interviewer; in the other letters, the major concern appeared to be privacy. For the outreach and promotion strategy, when the ACS test began in 1996, the Bureau relied on press releases and free media coverage for publicity. Since 1997, outreach and promotion efforts have increased to include local workshops and town hall meetings, as well as contacts with representatives of print and broadcast media, professional journals, and umbrella organizations.

We are recommending that the Bureau provide federal agencies with key additional information to better ensure the success of the transition from the use of the 2000 Decennial Census long-form data to the use of ACS data. We are also recommending that the Bureau and users of data from existing surveys determine whether duplicative or similar questions on these surveys can be eliminated because the same or similar data from the ACS will be more accurate and timely.

## **Background**

A decennial census usually consists of two major mandatory mail surveys. To provide the basic population counts, which are required for congressional apportionment and redistricting, a short form is mailed to all housing units.<sup>1</sup> A long form is mailed to a sample of housing units to provide detailed information for many federal programs, including such topics as population and housing characteristics, incomes, education, transportation, and disabilities at the Census tract level.<sup>2</sup>

The President's budget for fiscal year 2003 included a request for about \$120 million to fully fund the ACS, beginning with 2003, and to eliminate the long form. According to the Bureau, the ACS, which would be an annual survey of a sample of 3 million housing units, was developed primarily to (1) provide long-form data items, at detailed geographic levels, that would be more timely than the long form and more accurate than annual data from existing surveys such as the Current Population and American Housing Surveys and (2) improve the accuracy of the decennial census population counts.<sup>3</sup> Bureau officials noted that the size of the ACS sample was

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<sup>1</sup> Article I of the United States Constitution requires an enumeration of the population, every 10 years, for purposes of apportionment. See U.S. Constitution art. I, sec. 2, cl. 3. To implement this constitutional requirement, Congress enacted 13 U.S.C. § 141, which requires a decennial census of population.

<sup>2</sup> For the 2000 Decennial Census, the long form was mailed to 19 million housing units, or 1 out of every 6 units. The Census tract is the smallest level of geographic entity for which long-form data are available. Census tracts are statistical entities within a county and are defined by local data users. Generally, tracts have a population between 2,500 and 8,000 people.

<sup>3</sup> For a discussion of the Census Bureau's cost estimates for the 2010 Decennial Census, see U.S. Bureau of the Census, "Potential Life Cycle Savings for the 2010 Census" (Washington, D.C.: June 2001).

determined in part by the Bureau's projected funding level for a conventional decennial census in 2010.

If approved, beginning with the 2010 Census, the ACS would replace the long form, which, as GAO reported in 1998, "...is a cost-effective method of providing baseline and trend data for use by federal agencies and various other census stakeholders, compared to the alternative of multiple data collections by other federal agencies for their own purposes."<sup>4</sup> Thus, because the ACS would replace the decennial census long form, it would be important for the ACS to continue to serve federal agencies in the same role as the long form.

Because of its sample size, the proposed ACS would eliminate the availability of complete long-form detail—data items and geographic levels—for any single year. The Bureau has determined that based on the size of the ACS sample, it would be able to publish reliable annual ACS data only for states and for cities, counties, and metropolitan areas with a population of more than 65,000.<sup>5</sup> Compared with the size of the sample used for the 2000 long form, which most likely would also be the size used for 2010, the standard error for annual ACS data would be about three times larger.<sup>6</sup> For smaller areas, the Bureau determined that it would publish data only using 3-year or 5-year averages, depending on the population size. The 3-year averages would be published for areas with a population of between 20,000 and 65,000; 5-year averages would be published for all geographic levels down to the tract level. For these 5-year averages, the data would have standard errors about 1.33 times as large as comparable long-form standard errors, but the Bureau expects that this error will be offset by lower item nonresponse because of the use of experienced interviewers for follow-up.<sup>7</sup>

If the funding request is approved, annual ACS data, for 2003, would be released beginning in 2004; data for areas with a population between 20,000 and 65,000 would first be released in 2006 as 3-year averages; and data for areas with a population of less than 20,000 would first be released in 2008 as 5-year averages.

Federal agencies using population counts to update fund allocations or for other program purposes will not be affected by the ACS. Population counts for 2000 and 2010 will come from the decennial census short form, and annual population estimates will continue to come from the Bureau's intercensal population estimates program.<sup>8</sup> Some of these agencies have already used these data to update fund allocations for programs requiring population counts.

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<sup>4</sup> See U.S. General Accounting Office, *Decennial Census: Overview of Historical Census Issues*, [GAO/GGD 98-103](#) (Washington, D.C.: May 1998).

<sup>5</sup> Population-size criteria reflect population in 2000.

<sup>6</sup> The Bureau reported that standard errors of these annual data would correspond to a 12 percent coefficient of variation for a 10 percent estimate, which implies a 90 percent confidence interval of  $10.0 \pm 2.0$ . For more details, see Charles Alexander, "American Community Survey Data for Economic Analysis," paper presented to the Census Advisory Committee of the American Economic Association (Suitland, Md.: October 2001).

<sup>7</sup> Alexander.

<sup>8</sup> This program, also known as the Intercensal Demographics Estimates and the Population Estimates Programs, is mandated by 13 U.S.C. § 181. In this program, administrative record data on births, deaths, immigration, and emigration are used to produce annual population estimates—by state, age, sex, race, and Hispanic origin—that are then used to implement federal programs. For a description of this program, see "Population Estimates: Concepts" at the Census Bureau's Web site <[www.census.gov](http://www.census.gov)>.

Federal agencies dependent on detailed long-form data will incorporate the 2000 Decennial Census long-form data into their programs before they start to use ACS data. These agencies will use the 2000 long-form data either to replace the corresponding data from the 1990 Decennial Census or, for some programs, to replace other source data for more recent years. Some agencies have updated data from the 1990 Decennial Census using annual data from household surveys. For example, the Current Population Survey (CPS) and American Housing Survey (AHS) ask many of the same questions as does the long form, but because of the sample size of these surveys, they provide only national-level and some state-level data. The CPS data on national and state levels of poverty and unemployment are also used extensively for federal programs. For poverty and unemployment data for smaller areas, the CPS data are supplemented by estimates from model-based programs of the Census Bureau and the Bureau of Labor Statistics (BLS).<sup>9</sup> In addition, data on income and employment at the state and county level are prepared as part of the U.S. regional economic accounts program of the Bureau of Economic Analysis.<sup>10</sup> Data from these accounts are used to allocate over \$125 billion in federal funds annually.<sup>11</sup>

Regardless of how these agencies updated the 1990 Census data, if the ACS proposal is approved, federal agencies would be required either to start using 2000 Decennial Census data to using (1) annual ACS data beginning with 2004, (2) 3-year averages beginning with 2006, or (3) 5-year ACS averages beginning with 2008.<sup>12</sup> Thus, federal agencies using long-form data would begin making decisions about the extent to which they would use the new ACS data in 2004.

To test the quality of the ACS data and to assist ACS data users, the Bureau conducted special national supplementary surveys that provided data for the ACS questions for geographic areas with a population of 250,000 or more. Using the annual data from the 2000 supplementary survey and 1999-2001 averages for the test sites, the Bureau has started an ACS development program that would evaluate and analyze differences between ACS data and the corresponding data from the 2000 Decennial Census long form.<sup>13</sup> Two of these reports have been released and the remaining

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Some decennial census data users have recommended that the ACS estimates should be used to improve the intercensal estimates. For example, see Linda Gage, Department of Finance, California, statement prepared for the Subcommittee on the Census, House Committee on Government Reform, 107<sup>th</sup> Cong. 1<sup>st</sup> sess., 2001, 107-9. Census Bureau plans for such improvements are discussed in Charles Alexander and Signe Wetrogan, "Integrating the American Community Survey and the Intercensal Demographic Estimates Program" (paper presented at a meeting of the American Statistical Association, Indianapolis, Ind.: August 14, 2000).

<sup>9</sup> For the Census Bureau's income and poverty estimates program, see "Small Area Income and Poverty Estimates" at the Bureau's Web site <[www.census.gov](http://www.census.gov)>; for the BLS labor force estimates program, see "Local Area Unemployment Statistics" at the BLS Web site <[www.bls.gov](http://www.bls.gov)>. (Although the Census Bureau conducts the CPS, it is largely funded by BLS, the agency responsible for preparing the official estimates of unemployment and related labor force characteristics.)

<sup>10</sup> For a description of the program, see "Regional Economic Accounts" at the Bureau of Economic Analysis Web site <[www.bea.gov](http://www.bea.gov)>.

<sup>11</sup> See U.S. Office of Management and Budget, *Budget of the United States Government: Appendix* (Washington, D.C.: 2002) 215.

<sup>12</sup> The results of a special national survey conducted for 2000, officially titled the "Census 2000 Supplementary Survey" and called the "C2SS" by the Bureau, have been published. However, the Bureau has recommended that these data should not be used when the 2000 long-form data become available. The supplementary survey for 2000, as well as similar ones for 2001 and 2002, was conducted by the Bureau using the ACS questionnaire and survey methodology to provide testing of the ACS. For purposes of this GAO report, "ACS" refers to both the ACS surveys conducted at test sites throughout the country and to these supplementary annual surveys. For additional information, see "What Are Supplementary Surveys" and "What is the American Community Survey" at the Census Bureau's Web site.

<sup>13</sup> The ACS development program refers to testing, research, and development activities the Bureau plans to conduct until the ACS is implemented in 2003.

reports are scheduled to be completed in 2003. In the second of these reports, the Bureau evaluated the quality of the ACS data using measures of four types of errors identified by OMB's guidelines for survey error: accuracy, timeliness, relevance, and accessibility.<sup>14</sup> However, this report only provides limited information on the quality of the two surveys and does not provide an overall measure of quality of either the long form or the ACS. The Bureau also has announced that it plans to use the data from the supplementary surveys for 2001 and 2002 to evaluate the stability of the annual estimates, but there is no schedule for the scope or completion dates for this evaluation.

The Bureau proposes to conduct the ACS as a mandatory mail survey because it would cost less than conducting the ACS as a voluntary survey, based on studies by federal agencies that showed response rates to mandatory mail surveys are higher. The Bureau also wanted the ACS to be mandatory because the Census long form was mandatory and both the long form and the ACS collect data that have a use mandated by statute. In response to a congressional request, GAO issued a legal opinion on April 4, 2002, that concluded that the Bureau has the authority to conduct the ACS as a mandatory survey.<sup>15</sup>

The process for determining the questions to be asked in the 2003 ACS started with the questions asked on the 2000 long form. To determine the 2000 questions, federal agencies, as they had for recent decennial censuses, provided the Bureau with a list of statutory programs that support specific questions; using criteria developed by the Bureau, these agencies classified each program into one of three categories—mandatory, required, or programmatic. A program was to be classified as mandatory if the supporting statute explicitly calls for the use of decennial census data. A program was to be classified as required either if the supporting statute required the use of data and the decennial census was the historical source of that data or if the data were needed for requirements imposed by the U.S. federal courts. A program was classified as programmatic if it did not meet the mandatory or required criteria, but was needed for such purposes as program planning, implementation, evaluation, or for the operation of another statistical program. The Bureau included as questions on the 2000 long form those justified by either a mandatory or required program and, in addition, included a few questions that the Census Bureau needed for survey-operation purposes. The Bureau submitted the questions to Congress for review 2 years before the forms were to be mailed, in accordance with 13 U.S.C. § 141(f); Congress did not disapprove them. The Bureau then submitted the questions to OMB, in accordance with provisions of the Paperwork Reduction Act. OMB reviewed and cleared the questions.

A similar process was used for the 2003 ACS questions with two exceptions: (1) a final list from the federal agencies is not yet available and (2) the questions were not submitted to Congress until July 11, 2002. For the 2003 ACS, the Bureau sent

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<sup>14</sup> See U.S. Bureau of the Census, *Meeting 21<sup>st</sup> Century Demographic Data Needs—Implementing the American Community Survey: May 2002, Report 2: Demonstrating Survey Quality* (Washington, D.C.: May 2002). For a discussion of the guidelines, see U.S. Office of Management and Budget, *Statistical Policy Working Paper 31, Measuring and Reporting Sources of Errors in Surveys* (Washington D.C.: July 2001).

<sup>15</sup> See Legal Opinion B-289852 (April 4, 2002) at GAO's Web site <[www.gao.gov](http://www.gao.gov)>.

federal agencies the questions on the 2000 long form and asked them to do the following: Provide a list of programs to support specific questions; classify each program using criteria developed by the Bureau into one of the three categories used for 2000—mandatory, required, or programmatic; and describe the frequency and level of geographic detail needed for each program.<sup>16</sup> Although no additional written information or guidance was given to agencies to help them classify the programs into the correct category for the ACS, Census officials spoke with agency officials about this matter and reported that the categories were discussed at meetings of the OMB-sponsored and -directed Interagency Committee on the American Community Survey. In addition, agencies were not asked to provide any information on how they were planning to use 2000 long-form data or on planning to transition from the use of long-form data to the use of ACS data.

Although the process of compiling the lists of programs for the 2003 ACS started in early 2001, the agencies were not able to complete a final list in time for the Bureau to submit the ACS questionnaire for OMB approval. Therefore, in late 2001, the Bureau decided that for OMB approval, it would select a short list of programs with mandatory or required justifications already identified by the agencies. The Bureau selected programs so that each of the proposed 2003 ACS questions was supported by at least two statutes. In April 2002, as required by provisions of the Paperwork Reduction Act, the Bureau submitted the 2003 ACS to OMB for approval and justified the questions with the programs on the short list.<sup>17</sup> In order to ensure that the latest lists provided by the agencies were complete, on June 13, the Department of Commerce formally requested that each agency review their lists. These approved lists were not available at the time of this review. On June 28, 2002, OMB cleared the ACS questionnaire with the condition that the Bureau must submit to OMB, in advance, any plans to use the ACS to select samples for other surveys.<sup>18</sup> This advance submittal would continue until OMB agreed on an approach for the Bureau to evaluate such plans.

The Bureau has been conducting tests of the ACS at the county level, starting with four test sites in 1996 and increasing to 31 sites by 1999. Based on these tests, the Bureau has determined that it has successfully demonstrated the feasibility of conducting the ACS.<sup>19</sup>

### **Annual ACS Data Less Accurate but More Timely than Long Form; Federal Agencies Need Additional Information for Transition to ACS**

Our framework for evaluating quality of the data from the two surveys was based on four OMB guidelines for measuring survey errors—accuracy, timeliness, relevance,

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<sup>16</sup> The definitions of the categories used for the 2003 ACS were essentially the same as those used for the 2000 long form, except that the definitions were modified to add the ACS when the 2000 Decennial Census was referenced in the criteria.

<sup>17</sup> The Paperwork Reduction Act (44 U.S.C. § 3507) also required that a notice of the request be published in the *Federal Register*; it appeared on May 1, 2002 (67 *Federal Register* 21629-30).

<sup>18</sup> See Office of Management and Budget, Notice of Action 0607-0810 (June 28, 2002).

<sup>19</sup> U.S. Bureau of the Census, *Meeting 21<sup>st</sup> Century Demographic Data Needs—Implementing the American Community Survey: July 2001, Report 1: Demonstrating Operational Feasibility* (Washington, D.C.: July 2001).



and accessibility.<sup>20</sup> Because of the larger long-form sample, data for 2010 from a decennial census long form would be significantly more accurate than the data for 2010 from the proposed ACS. Based on the size of the 2000 long-form sample, the 2010 census long form would be mailed to about 20 million housing units; in contrast, the 2003 and later years' ACS questionnaires would be mailed to 3 million units a year. On the one hand, ACS data for 2010 not only would be less accurate than the 2010 long-form data, but would also be limited to areas with a population of more than 65,000. On the other hand, ACS data would be timelier. Data for areas with a population of more than 65,000 would be available annually, and the 5-year averages would be available for the same geographic levels as the long form. Because similar questions are used on both surveys, data from the long form and the ACS would have the same level of relevance. Based on past Bureau practices, there would be no significant differences in accessibility to the data.

We did not attempt to combine our evaluations of the four guidelines into an overall measure of quality for each survey. First, complete information was not available to evaluate all of the components of each of these guidelines. Second, as noted in the OMB guidelines, even with complete information, it is difficult to combine the results of the evaluations of these components into an overall measure of quality.

Currently, the Census Bureau's plans to evaluate ACS data provide only a limited amount of the information needed by federal agencies to transition from their use of the 2000 long form to the ACS. For example, the plans do not provide for (1) 2003 data conceptually consistent with the 2000 long-form data, (2) information to adjust 2003 and 2004 data to account for statistical differences with the 2000 long form, (3) information to integrate annual data and multiyear averages, and (4) the Bureau's proposals to incorporate, first, the population counts from the 2010 Decennial Census into the 2010 ACS and, second, the resulting revisions to the intercensal population estimates into previously published ACS data.<sup>21</sup>

### Evaluation of ACS and Long-Form Data Quality Currently Incomplete

We evaluated the data quality of the two surveys, using the four OMB guidelines for measuring survey quality. According to the information available to us, we found that the accuracy of ACS, based on sample size, would be less than that of the decennial census long form. Sufficient information on nonsampling errors is not yet available to compare the two surveys for this measure of accuracy. Nonresponse errors, based on the incomplete information, were somewhat smaller for the ACS. Measurement errors, based on more complete information, appeared to be larger in the ACS. However, the timeliness of the ACS data would be superior.

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<sup>20</sup> To evaluate the quality of the ACS program, we have primarily used guidelines for measuring survey errors in U.S. Office of Management and Budget, *Statistical Policy Working Paper 31, Measuring and Reporting Sources of Errors in Surveys* (Washington D.C.: July 2001). These guidelines are similar to guidelines published by Statistics Canada, the International Monetary Fund, and in OMB's newly issued "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies."

<sup>21</sup> For a discussion of the impact on federal programs resulting from the replacement of the 2000 intercensal population estimates with the 2000 Census population counts, see U.S. General Accounting Office, *Formula Grants: 2000 Census Will Redistribute Federal Funding among States*, [GAO-02-1062](#) (Washington, D.C.: forthcoming).

## *Accuracy*

Our findings on accuracy were based on information from the Bureau on both sampling and nonsampling errors, which includes nonresponse, measurement, and coverage errors. According to the Bureau, the ACS sampling error will be larger than the error for the long form, but the impact of this larger sampling error may be reduced through the use of more experienced interviewers than those used for the decennial census. However, we found no indication that the experience of the interviewer would make a significant impact, especially if the ACS mail response rate was high and the number of follow-up interviews low.

As reported in the OMB guidelines for survey errors, nonsampling error is frequently the source of the most significant errors in surveys. But we were not able to determine whether that was the case for either the long form or the ACS. Nevertheless, for both surveys, we found indications based on incomplete data of two types of nonsampling error, nonresponse and measurement error. The impact of nonresponse error appears to have been greater for the long form; the impact of measurement error appears to be greater for the ACS.

Item nonresponse occurs when a respondent does not complete an item on the survey form or provides an unusable response.<sup>22</sup> For both the Census 2000 Supplementary Survey and the 2000 Decennial Census long form, information on item nonresponse was based on published information on imputations for selected states and on national-level data on imputations for a small group of items provided to GAO by the Bureau. For the 12 states for which the Bureau has released item nonresponse data, imputation rates were typically about the same for all the states. For individual items, imputation rates were slightly higher for the long form. Of the 35 items for which we had imputations at the national level for both surveys, we found that for total income, the imputation exceeded 20 percent of the total value for both. For items such as period of active-duty military service, time of departure for work, weeks worked, the year housing was built, and the value of owner-occupied housing units, we found that the value imputed was between 10 and 20 percent for both surveys. For the rest of the items for which we had data for both surveys, the imputations accounted for slightly more of the long-form total than of the corresponding items on the supplementary survey.

We found indications of measurement error, one of the major sources of nonsampling error, based on our examination of long-form and ACS data. Measurement error is usually calculated as the difference between the survey value and the true value. As is usually the case, true values are not available. For this review, we assumed that because of the much larger sample size in the 2000 long form, the value from the 2000 long form is closer to the true value than that in the Census 2000 Supplementary Survey value.<sup>23</sup> To examine the differences between long-form and ACS data, we

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<sup>22</sup> The second major type of nonresponse error, unit nonresponse, which is the complete failure to obtain data from a respondent, was very small for both the 2000 long form and the supplementary survey.

<sup>23</sup> Because the sample size of the supplementary surveys is about one-fourth that of the proposed 2003 ACS, these differences may overstate the differences between the 2003 ACS data and comparable long-form data.

compared published national-level and state-level data for a set of items selected from among the major topics on the form.<sup>24</sup>

These comparisons showed large national differences for key items that did not appear to be accounted for by coverage differences between the two surveys.<sup>25</sup> For example, at the national level, the largest differences were for these items: (1) for the number of housing units lacking complete plumbing facilities, with the long-form estimate 27 percent higher than the estimate from the supplementary survey, and (2) for the number of unpaid family workers, with the long-form estimate 59 percent lower. Other items with national-level differences of at least 10 percent included self-employed workers, housing units lacking complete kitchen facilities, and housing units with no telephone service. We also found a great degree of variation in the state differences between the long form and the supplementary survey. For the following items, a significant proportion of the states had long-form estimates that were both 10 percent or more higher than and 10 percent or more lower than the supplementary survey estimates: workers commuting by public transportation; households with income of \$200,000 or more; housing units lacking complete plumbing facilities; number of renter-occupied units with gross monthly rent of \$1,000 to \$1,499; and some of the measures of the number of individuals and related children below the poverty threshold.

To gauge the accuracy of the 2000 ACS data, we also looked at differences between the 2000 ACS and the Census Bureau's CPS. We reviewed these data using a dimension of quality that is part accuracy as well as part relevance and part timeliness. Based on sampling errors, we found that the 2003 ACS would be more accurate. However, based on technical reports, we found that both the Census Bureau and the BLS view the existing surveys as providing more accurate and more relevant information.<sup>26</sup> For example, neither the Bureau nor BLS uses long-form data in the statistical measures of income, poverty, and labor at the national and state levels.<sup>27</sup> The reason given by these agencies for not using the long-form data for these items is that (1) the CPS has more detailed questions that more closely relate to the underlying concepts and (2) the surveys are conducted by experienced interviewers. OMB, in Statistical Policy Directive No. 14, has designated the CPS as the official source of statistical measures of poverty. The Department of Health and Human Services (HHS) has designated the CPS as the source of poverty measures for its programs.<sup>28</sup>

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<sup>24</sup> Although the Bureau did compare 2000 Census and 2000 ACS results in one of their evaluation reports, the comparisons were limited to short-form items. See U.S. Census Bureau, *Meeting 21<sup>st</sup> Century Demographic Data Needs—Implementing the American Community Survey: May 2002, Report 2: Demonstrating Survey Quality* (Washington, D.C.: May 2002).

<sup>25</sup> These differences, discussed later in the report, are the exclusion of people living in group quarters and the different treatment of people with seasonal residences.

<sup>26</sup> For information on income and poverty data, see "Guidance on Survey Differences in Income and Poverty Estimates" (March 19, 2002) at the Census Bureau's Web site. For information on labor force data, see Charles Alexander, Sharon Brown, and Hugh Knox, "American Community Survey Data for Economic Analysis" (paper presented at a meeting of the Federal Economics Statistics Advisory Committee, Washington, D.C., December 14, 2001).

<sup>27</sup> The Census Bureau and BLS, however, use detailed geographic information from the long form in constructing model-based estimates of income, poverty, and unemployment for small geographic areas.

<sup>28</sup> See "Annual Update of the HHS Poverty Guidelines," *67 Federal Register*, 6931-33 (February 14, 2002).

To follow up this information about poverty and unemployment rates, we compared the total unemployment rate and two poverty rates—for individuals and for related children under 18—in the long form, the Census 2000 Supplementary Survey, and the CPS.<sup>29</sup> We found that at the national and state levels, there were small differences for the unemployment rate and for the poverty rate for all individuals. In contrast, comparisons of these rates for the CPS with these two surveys showed larger differences. The national unemployment rate, according to the CPS, was 4.0 percent, compared with 5.8 percent for the long form and 5.4 percent for the supplementary survey. The national rate for individuals in poverty for the CPS was 11.3 percent, compared with 12.4 percent for the long form and 12.5 percent for the supplementary survey. The pattern for the national poverty rate for related children under 18 for the CPS was different because there was a larger difference between the ACS and long-form rates. The CPS rate was 15.6 percent, as compared with 16.1 percent for the long form and 17.0 percent for the supplementary survey. Small differences were also shown in comparisons of the long-form and supplementary survey distribution of state differences for the unemployment rate and for the poverty rates for related children under 18 and for individuals. Comparing the distribution of the state differences between the CPS and either of the other two surveys only showed significant differences for the poverty rate for related children under 18. Compared with the long form, the CPS rate for 12 states is 2.5 or more percentage points lower and for 10 states is 2.5 or more percentage points higher. Compared with the supplementary survey, the CPS rate for 16 states is 2.5 or more percentage points lower and for 5 states, 2.5 or more percentage points higher.

We asked Census Bureau and BLS officials about future plans for the use of the ACS. According to Census Bureau officials, they had been doing research into the use of ACS data to improve their model-based estimates, but did not have any definitive plans.<sup>30</sup> According to BLS officials, they had recently let a research contract to help them determine whether ACS data could be used to improve their small-area estimates. Because of the widespread use of CPS poverty and unemployment data in federal programs, assistance by these two statistical agencies would help the program agencies in deciding whether to replace the CPS data with ACS data.

We anticipate that the Bureau's evaluation studies, to be completed in 2003, will provide explanations for the measurement errors. For example, we expect that the evaluations will separate out measurement errors by quantifying the impact of excluding from the supplementary surveys people living in group quarters and of treating differently people with seasonal residences. In our review of differences between the long-form and supplementary survey data, it did not appear that these errors would explain the large differences noted above. Nevertheless, this exclusion will contribute significantly to differences in certain states and for certain data items.

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<sup>29</sup> Comparisons with the AHS were not possible because it is a biennial survey and no data at the national level were available for 2000.

<sup>30</sup> For a discussion of potential ACS use in these models, see National Academy of Sciences, *Small Area Income and Poverty Estimates: A Workshop* (Washington, D.C., 2000) 123.

### *Timeliness*

The timeliness of the ACS data for all geographic levels would be a major improvement over the long form, especially for annually published data for geographic areas with a population of 65,000 or more. However, use of these annual data for geographic areas with populations at the lower end of this range may be limited. The Bureau has reported that the accuracy of the annual data for these areas would be roughly comparable with the accuracy of the state estimates from the CPS. We found that in describing the accuracy of the CPS income and poverty data, the Bureau has reported that annual state data should not be used, but that 2-year averages should be used to calculate changes at the individual state level and 3-year averages should be used for calculating relative rankings for states.<sup>31</sup> Because the ACS has a larger sample than the CPS, these limitations should not apply to annual ACS data for states and other large areas, but they may apply to the annual ACS data for smaller areas. Thus, federal agencies planning to use annual data for these areas will need information on when to use multiyear averages instead of the annual data.

### *Relevance*

Because of the similarity of the long-form and ACS questions, their levels of relevance—the extent to which a survey provides conceptually meaningful and useful measures—are similar. However, for federal program use, two important measures from both surveys—poverty and unemployment rates—the ACS and long-form data are not as relevant as the measures from existing surveys according to the agencies that conduct them. Our findings on these measures were discussed under “accuracy.”

### Information to Meet Federal Agencies’ Transition Needs Missing

Federal agencies would need assistance from the Bureau in the transition process, as recognized in the 2001 National Academy of Sciences report choosing the formula allocations, which concluded:

The American Community Survey (ACS), which is intended to replace the decennial census long form, would be a major new data source that could be used in estimating inputs if the survey were implemented as planned. With data from census 2000 becoming available in stages and the ACS pending, an immediate and high priority should be given to developing recommendations on how to make a smooth transition to these and other data sources and how to evaluate the impact on allocations of introducing new data sources.<sup>32</sup>

The Census Bureau has recognized its responsibility to provide such assistance through various outreach efforts and its ACS development program.<sup>33</sup> The Bureau has stated: “Users need to understand the differences in order to properly use the C2SS and ACS data in their own applications and to be able to distinguish real changes over

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<sup>31</sup> See U.S. Census Bureau, *Money Income in the United States: 2000* (Washington, D.C.: September 2001).

<sup>32</sup> National Academy of Sciences, *Choosing the Right Formula: Initial Report* (Washington D.C.: 2001).

<sup>33</sup> This type of assistance is required by OMB’s data quality guidelines and is recommended in National Academy of Sciences, *Principles and Practices for a Federal Statistical Agency* (Washington, D.C.: 2001).

time from changes in estimates because of differences in methods.”<sup>34</sup> The current plans for the testing program call for an analysis of differences between the 2000 Census long-form data and the data from the Census 2000 Supplementary Survey, to be completed in 2003.<sup>35</sup>

From the perspective of the federal agencies, however, we found the content of the ACS development program is missing material, described below. This material would address differences between the two surveys related to sampling, measurement, and nonresponse errors, discussed earlier in this section. The analysis of these differences will provide information critical to the agency’s transition to the ACS because these differences are likely to significantly change the allocation of funds and program eligibility, and agencies will need to fully understand the sources of such changes.

In an earlier report on the comparability of the 2000 Census long-form data and the Census 2000 Supplementary Survey, the Bureau noted the following about its evaluation program: “The purpose of those evaluations is to help the user understand how the estimates will differ, but not to adjust the C2SS in any way to mirror the long form.”<sup>36</sup> Thus, the Bureau has excluded from the current testing program a plan to adjust the data from supplementary surveys for 2000-2002 and the 2003 ACS to account for coverage differences—for group quarters and seasonal residences—between the ACS and the 2000 Decennial Census long-form data at the national and state levels.<sup>37</sup> In the supplementary surveys and the 2003 ACS, people living in group quarters were excluded; in the 2000 Decennial Census, people living in group quarters accounted for about 2.8 percent of the population.<sup>38</sup> In addition, the Bureau decided to change the treatment of people who had seasonal residences because the treatment in the decennial census reflected where people lived on only 1 day of the year, even though they might spend most of the time living somewhere else. This difference does not affect the national-level data. The adjusted series for 2000 would help explain some of the large differences between the 2000 ACS and long-form data; the adjusted series for 2003 would allow the agencies to consider using the adjusted 2003 ACS data to update the 2000 estimates instead of waiting until 2004, when ACS would begin to cover people living in group quarters. Thus, it would only be necessary to adjust ACS data beginning with 2004 for the difference in the treatment of seasonal residences.

We also found that the ACS development program does not include plans to provide information on two elements of accuracy of the annual ACS estimates—their use as

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<sup>34</sup> See “Preliminary Assessment of the Comparability of Census 2000 Long Form Estimates with Census 2000 Supplementary Survey Estimates,” 6, at the Census Bureau’s Web site.

<sup>35</sup> The program was included in the Census Bureau’s “American Community Survey Alert, June 2002,” which appears at the Bureau’s Web site.

<sup>36</sup> “Preliminary Assessment of the Comparability of Census 2000 Long Form Estimates with Census 2000 Supplementary Survey Estimates,” 6.

<sup>37</sup> For more information, see “Preliminary Assessment of the Comparability of Census 2000 Long Form Estimates with Census 2000 Supplementary Survey Estimates,” 3.

<sup>38</sup> People living in group quarters—e.g., nursing homes, correctional institutions, college dormitories, and military quarters—were excluded from the supplementary survey data for all years in an effort to reduce reporting burden on the operators of these facilities in 2000. They were also excluded from the 2001-02 supplementary surveys and the proposed 2003 ACS; they will be covered in the ACS, beginning with 2004.

measures of yearly changes for state and county data and relative rankings between states and counties. This information would assist federal agencies in deciding (1) how frequently they should update their fund allocations or eligibility criteria and (2) whether they should use averages or the annual data. As previously noted, the accuracy of the ACS annual data would be roughly comparable with state data from the CPS and the Bureau has recommended using 3-year averages when calculating relative rankings of state CPS income and poverty data.

In addition, we found that the ACS development program did not cover information about different ways to integrate the annual data for states and large counties and the 3- and 5-year averages for smaller counties. For example, in 2008, the Bureau would publish annual data for 2007 for states and counties with a population of more than 65,000; 3-year averages for 2005-07 for counties with populations of 20,000 or more; and 5-year averages for 2003-07 for all counties. Federal agencies that need state data can choose to use either the annual data, multiyear averages of the annual data, or 3-year or 5-year ACS averages. Federal agencies that also need county data will face several options: They can choose to use the most recent annual data for large counties and adjust the averages of the smaller counties to agree with annual data. Alternatively, they can choose to use various combinations of multiyear averages. We also found that some agencies use existing household survey data instead of decennial census data. These agencies would now have the option of when or whether to switch to the ACS. We found that the Bureau's ACS development program did not include a report analyzing differences for corresponding data items in annual changes and in annual levels between the ACS and the existing surveys.

Finally, we looked ahead to 2011, when the Bureau would need to incorporate (1) the 2010 Decennial Census population counts into the 2010 annual ACS data and (2) the revised 2003-09 population estimates into the previous multiyear averages. We found no plans on benchmarking ACS data to the 2010 Decennial Census, although these plans could affect agencies' decisions on use of the ACS.

### **Federal Agencies Justify ACS Questions, but Uncertainty Remains on Extent of ACS Data Use**

Federal agencies provided the Bureau with a list of justifications to support ACS questions and classified each program into one of three categories—mandatory, required, or programmatic. This list was not complete when the Bureau submitted the request to OMB for approval of the ACS questionnaire. Consequently, from among those programs classified by the agencies as mandatory—decennial census data specified by statute—or required—decennial census data historically used to support a statute or court-imposed requirements—the Bureau selected a short list of justifications for submission to OMB. The Bureau provided OMB both the short list and the latest draft of the complete list, and OMB cleared the ACS questionnaire based on this information. Without a complete list approved by the agencies and information on how the agencies planned to use 2000 Decennial Census and ACS

data, we reviewed only the justifications on the Census-approved short list sent to OMB.<sup>39</sup>

The 20 questions justified by mandatory programs reflect the provisions of seven statutes: One statute justifies 13 questions for providing information to the Equal Employment Opportunities Commission (EEOC) to enforce the Federal Affirmative Action Plan. Another statute justifies 6 questions for providing information to the Department of Justice (DOJ) to enforce the Voting Rights Act. A Department of Commerce (DOC) statute justifies 1 question for providing information for legislative redistricting. The other statutes relate to programs of the Department of Agriculture (USDA), DOC, and HHS. Based on our review of the statutes underlying these programs, we found that the statutes require the use of decennial census data.

As previously noted, we were unable to verify most of the 48 required classifications because the agencies were not asked to report on how they planned to use the newly available 2000 Decennial Census data. Information on how these data were actually used was not available when the agencies submitted their justification list because the 2000 Census long-form data were not yet available. In addition, we were not able to review agency plans for the ACS because the Bureau did not ask agencies to report their planned use of ACS data in their programs. Information about when these data would be introduced, whether annual data or multiyear averages would be used, and whether 2000 Decennial Census and ACS data would be integrated are likely to have also been useful to guide the Bureau in the ACS development program. We were told by Bureau officials that this information was not requested because the Bureau followed the justification process used for the 2000 Decennial Census long form. We were also told that the three questions included for survey-operation purposes were necessary.

In addition to providing federal agencies with direct use of ACS data for program needs, the Bureau has announced that it would conduct special surveys for them, based on ACS responses. In the past, the Bureau has used this practice for responses to other surveys, such as the decennial censuses. We agree with the Bureau that this practice is not prohibited by the disclosure provisions in 13 U.S.C. § 9(a)(1), which provide that Census data may not be used “for any purpose other than the statistical purposes for which it is supplied.” We agree with the Bureau’s opinion that “statistical purposes” includes the use of information collected in one Bureau survey to conduct another Title 13 statistical survey. The Bureau itself would conduct all additional surveys; responses would not be provided to any other federal agency. In the cover letters mailed with the ACS questionnaires, the Bureau had notified respondents in the ACS testing programs of this plan. We were unable to determine whether respondents understood the possible impact of the plan; we also did not find any mention of this notification in the information provided to the staff conducting the ACS testing.

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<sup>39</sup> For the 2000 Decennial Census long form, the lists provided to the Bureau by the federal agencies were not formally approved by the agencies. On June 13, 2002, the General Counsel of the Department of Commerce sent a letter to the General Counsels of the agencies that submitted information for the lists, requesting formal approval. A final list, based on the responses to the request, which were due July 13, 2002, was not available at the time this report was prepared.



OMB, in approving the ACS questionnaire for 2003, has required the Bureau to meet certain conditions before using the ACS sample to select samples for other surveys. OMB stated, “The Census Bureau is not permitted to use the ACS for follow-up studies until an approach has been agreed to with OMB.”<sup>40</sup>

### **Duplicate or Similar Questions in ACS and Other Federal Surveys**

Duplicate or similar questions in federal surveys may cause an unnecessary burden on respondents. The Paperwork Reduction Act requires agencies to minimize the reporting burden for respondents and the cost to the government by prohibiting unnecessary duplication of questions in information collection. In its statement submitted to OMB for approval of the ACS questionnaire under this act, the Bureau reported: “The content of the American Community Survey reflects topics that the Census Bureau is mandated or required to collect. A number of questions in the American Community Survey appear in other demographic surveys, but the comprehensive set of questions does not duplicate any other single information collection.”<sup>41</sup> It should also be noted that although many ACS questions are similar to or the same as questions on other federal surveys, these other surveys do not provide data for small geographic areas that the Bureau plans to provide from the ACS.

The Bureau’s statement on duplication does not address the possible elimination of questions, on other surveys, that would become duplicative because the data would be collected on the ACS. But we identified other existing federal surveys that ask some of the same questions or similar ones to those on the ACS. It appears, however, that continuation of the inclusion of these questions on these surveys is justified because the questions are primarily about population characteristics—such as age, sex, race, and, sometimes, income. For example, these questions are needed to provide context for the major focus of each of the following surveys: the Survey of Consumer Expenditures (Department of Labor), the National Health and Nutrition Examination and National Health Interview Surveys (HHS), the Survey of Crime Victimization (DOJ), and the Survey on Nutrition (USDA). The questions on these surveys focus on consumer spending, smoking or eating habits, or crime, topics that would not be covered by the ACS.

Other than the questions on population characteristics that are on many surveys, questions on three voluntary household interview surveys appear to have the most overlap with ACS questions. The surveys are the Bureau’s annual supplement to the CPS, the Bureau’s Survey of Income and Program Participation (SIPP), and the AHS, which the Bureau conducts for HUD. All three of these surveys have questions that overlap with ACS questions on the labor force, incomes, and other topics, such as country of birth. For the AHS, there also is a substantial overlap for questions on housing characteristics.

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<sup>40</sup> OMB, Notice of Action 0607-0810 (June 28, 2002).

<sup>41</sup> See Census Bureau, supporting statement, para. A4, provided to OMB by the Bureau as part of the “Paperwork Reduction Act Submission for the 2003 ACS.”

It should be noted that in some cases, overlap does not mean that the identical questions were asked. In addition, even when virtually identical questions were asked, one survey might include additional questions to obtain the most relevant response. For example, to determine whether a person is unemployed, the CPS asked more questions than does the ACS; to determine whether a property is used as a business or medical office, the AHS asked about the number of rooms used for business, number of rooms used for both business and personal use, and if there is a medical or dental office on the property. In the ACS, the respondent is only asked, “Is there a business (such as a store or barber shop) or a medical office on this property?”

According to the Census Bureau, income and labor force data should continue to be collected in the CPS and SIPP because of the unique characteristics of the data from these surveys.<sup>42</sup> The CPS income data have been determined by OMB (Statistical Policy Directive No. 14) to be the official statistical source to calculate the poverty threshold and related estimates for the nation and for the states. SIPP collects more detailed information on incomes and on characteristics related to poverty; it is designed as a longitudinal survey, which allows users to study household behavior over time. In addition, CPS and SIPP periodically include supplements covering special topics. The CPS has covered topics such as workers who hold multiple jobs, intermittent workers, and health insurance. The SIPP has covered topics such as wealth, day care, and disability. The ACS estimates of income and poverty would be more accurate than the CPS or SIPP because they would have a smaller sampling error, but the use of trained interviewers for the CPS and SIPP reduce nonresponse error sufficiently to offset lower ACS sample error. Although trained interviewers may reduce nonresponse error, there is also empirical research that shows that both CPS and SIPP income data differ significantly from independent benchmark estimates.<sup>43</sup> Now that 2000 long-form income data are available, updating this research would enable the agencies to reexamine the relative accuracy of the various estimates.

The AHS is a biennial household interview survey, sponsored by HUD and conducted by the Bureau. The survey costs about \$17 million a year and has many questions on income and housing characteristics that are more detailed, but similar to ACS questions. The ACS is based on a much larger sample and provides far more geographic detail annually than the AHS. Our review of ACS and AHS questions showed a substantial overlap for questions on place of birth and citizenship, education, labor force characteristics, transportation to work, income, and housing characteristics. Of the 66 questions on the 2003 ACS, 25 are in the section on housing characteristics; all but one of these questions are the same as or similar to questions on the AHS. In addition, when we reviewed the most recent list of program justifications for the ACS, provided by HUD to the Bureau, we noted an overlap between HUD’s current use of the AHS and the decennial census and its planned use

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<sup>42</sup> For information on SIPP, including comparisons with other surveys, see *SIPP Users’ Guide* at the Census Bureau’s Web site.

<sup>43</sup> See Marc I. Roemer, “Assessing the Quality of the March Current Population Survey and the Survey of Income and Program Participation Income Estimates, 1990-1996” (June 16, 2000) at the Census Bureau’s Web site.

of the ACS. According to information provided to OMB to support approval of the AHS, HUD reported:

The major program uses of the AHS are to develop and evaluate the Fair Market Rents (FMR's) for the Section 8, Existing Housing Program, the Housing Voucher Program, and the Annual Adjustment Factors (AAFs) used to grant rent increases for units under contract for both Section 8, New Construction and Existing Programs: New Construction Housing and Existing Housing.

The preliminary list of ACS uses by HUD, provided to the Bureau, also showed several of these same programs.

### **Conducting the ACS as a Voluntary Survey Would Most Likely Result in Higher Costs**

The Bureau's decision to conduct the ACS as a mandatory survey is supported by studies of two surveys—one of households and one of businesses—that showed that response rates to mandatory mail surveys are higher than those to voluntary mail surveys. The study on the household survey, conducted by the Bureau as an experiment, using the 1990 Decennial Census short form, showed the response to the mandatory survey was about 9 percentage points higher than the response to the voluntary survey.<sup>44</sup> The study on the business survey, also conducted by the Bureau, showed the response to the mandatory survey was more than 20 percentage points higher.<sup>45</sup> We reviewed a study of another Bureau mail survey and a BLS study of mail surveys of businesses and found the same pattern of reporting. We also analyzed unpublished BLS data on the response rates to a monthly business survey, where the reporting in some states was mandatory. These data showed a higher response rate with mandatory surveys, but the gap was smaller—12 percentage points for March to May of 2001 and 6 percentage points for the same months in 2002. However, we also found that interpreting differences in response rates between surveys is difficult, as noted in the literature on response rates.<sup>46</sup> Some of the factors that can distort the comparisons include differences in survey methods, survey length, population surveyed, quality of nonresponse follow-up interviewers, and extent and nature of follow-up methods.

We also found that response rates to private surveys tend to be lower than for federal government surveys. Among the privately conducted national household interview surveys, two are sponsored by HHS. For the Health and Retirement Survey, conducted by the Institute for Social Research of the University of Michigan, the response rate is about 82 percent.<sup>47</sup> For the Medical Expenditures Panel Survey Household Component, conducted by Westat, Inc., and the National Opinion

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<sup>44</sup> See D. A. Dillman and others, "Effects of Benefits Appeals, Mandatory Appeals, and Variations in Statement of Confidentiality on Completion Rates for Census Questionnaires," *Public Opinion Quarterly*, 60, (1996) 376-89.

<sup>45</sup> D. R. Tulp Jr. and others, "Nonresponse Under Mandatory vs. Voluntary Reporting in the 1989 Survey of Pollution Abatement Costs and Expenditures (PACE)" (U. S. Census Bureau, Suitland, Md., photocopy).

<sup>46</sup> See U. S. Office of Management and Budget, *Statistical Policy Working Paper 31, Measuring and Reporting Sources of Errors in Surveys* (Washington, D.C.: July 2001) and B. K. Atrostic and others, "Nonresponse in U.S. Government Household Surveys: Consistent Measures, Recent Trends, and New Insights," *Journal of Official Statistics*, 17:2 (2001): 209-26.

<sup>47</sup> For a description of this survey, see "Health and Retirement Study" at the Web site of the Institute for Social Research at <[www.isr.umich.edu](http://www.isr.umich.edu)>.

Research Center of the University of Chicago, the response rate for the 1996 survey was 83 percent.<sup>48</sup> For telephone surveys, an industrywide survey of private marketing and opinion research firms reported the highest average response rate among different types of telephone surveys, 52.5 percent for customer satisfaction surveys.<sup>49</sup> In contrast, the combined response for the four ACS test sites in 1996 was 98.2 percent and for the Census 2000 Supplementary Survey, 95.4 percent.

Information provided by the Bureau indicated that costs of a voluntary ACS would be greater because of the larger number of follow-up interviews that would be needed due to the lower response rate. However, it is not clear whether with sufficient funding, the Bureau would be able to achieve the same overall response rate for a voluntary mail or interview survey as for a comparable mandatory mail survey. Such a conclusion cannot be determined from the existing evidence because there has been no testing of response rates for a voluntary mail survey of households of the size and scope of the ACS. For the ACS, such a study would be needed not only to determine the overall response rate, but also the extent of item nonresponse.

As to costs, we asked the Bureau to estimate the additional costs of conducting the ACS as a voluntary survey, assuming a lower mail response rate and comparable quality results. The Bureau provided an estimate of an additional \$20 to \$35 million per year, assuming that the mail response rate was 6 percent lower.

### **Interviewer Training, as Well as Outreach and Promotion Efforts, Encouraged Participation in the ACS Test Program**

As with all its surveys, one of the Bureau's principal objectives in conducting the ACS test program was to achieve a high response rate so as to collect complete and accurate data. The training the Bureau provided to interviewers who collected data from nonrespondents, in concert with other strategies—such as a respondent-friendly questionnaire, multiple mailings, as well as outreach and promotion—encouraged participation, that is, a high response rate, in the ACS test program.<sup>50</sup>

#### Follow-up Interviewers Trained to Encourage Participation in the ACS

The Bureau has consistently achieved high overall response rates in the ACS tests. For example, the Bureau reported that the first ACS test in 1996 had a mail response rate of 60.9 percent at the four test sites (Rockland County, N.Y.; Brevard County, Fla.; Fulton County, Pa.; and Multnomah County and the city of Portland, Ore.). But the final response rate—once the Bureau completed its follow-up efforts with people

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<sup>48</sup> For a description of this survey, see "Estimation Procedures in the 1996 Medical Expenditures Panel Survey Household Component" at the Web site of the Agency for Health Care Policy and Research <[www.meps.ahrp.gov](http://www.meps.ahrp.gov)>.

<sup>49</sup> Jane M. Shepard and Steve Everett, "Cooperation Tracking Survey: April 2002 Update" at the Council for Marketing and Opinion Research Web site <[www.cmor.org](http://www.cmor.org)>.

<sup>50</sup> This discussion does not cover interview, outreach, and promotion efforts associated with the 2000-02 Census Supplementary Survey program, conducted with the ACS questionnaire and survey methodology and used to test the quality of these data

who did not respond to the initial mail survey—was 98.2 percent.<sup>51</sup> The Bureau’s ACS program staff was pleased with the results.

As the ACS test program expanded to 31 sites between 1997 and 1999, the Bureau continued to achieve similar mail and final response rates. The Bureau’s staff of follow-up interviewers helped achieve these high rates because they were trained in a variety of techniques to encourage participation by households that did not respond to an initial mail survey.

During the first month of the 3-month ACS data collection cycle, the Bureau made a concerted effort to obtain responses by mail because this is the least costly method of obtaining survey data. To encourage participation, the Bureau used a respondent-friendly questionnaire and a four-part mailing strategy: over the course of the month, the Bureau sent each household (1) a pre-notification letter that described the ACS and informed recipients they would soon receive the questionnaire; (2) an initial ACS questionnaire and information about the survey; (3) a postcard reminding recipients to complete the questionnaire and thanking them if they had already done so; and (4) about 3 weeks after the initial ACS questionnaire, a replacement questionnaire that was mailed to housing units that had not yet returned their questionnaires. The Bureau reported that in 1996, the replacement questionnaire added about 10 percentage points to the initial response rate at each test site.

During the second month, Bureau staff attempted to collect data via the telephone, using a procedure called Computer-Assisted Telephone Interviewing, from households that did not mail back their questionnaires. A month later, in a final procedure called Computer-Assisted Personal Interviewing, Bureau field representatives were to visit a one-in-three sample of the remaining nonrespondents. Overall, the telephone interviewers and field representatives appeared to be effective in their tasks. In 1996, refusal rates were about 14 percent for the telephone interviews and 4 percent for the in-person interviews.

Because the telephone interviewers and field representatives play an important data collection role and represent the Bureau to the general public, proper training is critical. The Bureau provided both telephone interviewers and field representatives with similar training, consisting of lectures, scripted mock interviews, and discussions. Our review of the materials used for the follow-up indicates that most of the training was devoted to correct use of the computers and other mechanics of conducting the interview. Dealing with reluctant respondents appeared to make up a small portion of the training.

According to the training manual, telephone interviewers, after verifying the household, were to begin the survey by telling respondents: “I am required by law to

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<sup>51</sup> The 60.9 percent response rate roughly reflects the percentage of mail surveys returned before the start of follow-up interviewing. After the processing was completed, 78.5 percent of the responses were based on mailed report forms, 11.5 percent on telephone interviews, and 10.5 percent on personal interviews. Information on item nonresponse rates is not available. For additional information, see Susan Love and Greg Diffendal, “The American Community Survey Monthly Response Rates, by Mode” (paper presented at the American Community Survey Symposium, Bureau of the Census, Washington, D.C.: March 1998).

tell you that this survey is authorized by Title 13, section 182, of the United States Code.... This survey is mandatory and your cooperation is very important. All the information you provide is completely confidential.”<sup>52</sup>

If respondents were reluctant to participate in the telephone interview, the interviewers had available scripted answers to common questions about the survey. These answers were aimed at addressing respondent concerns and keeping them engaged. One or more of the following themes typically ran through the suggested replies: federal law requires participation; data from the ACS benefits the respondent’s community and the nation; federal law protects the privacy of responses; and responding now can help save taxpayers’ money. For example, if a respondent said, “I think this is a waste of taxes!” the interviewer was instructed to explain: “There are many reasons why it’s definitely NOT a waste of tax dollars. Businesses, government agencies, and the general public rely on up-to-date statistics, like the information we are collecting in this survey, to make informed decisions. Calling people by phone to collect this information is the least expensive way to do it, if we can’t get a response by mail.” The suggested replies appeared to be courteous, informative, firm, and nonthreatening.

In addition, although the ACS was a mandatory survey, the training materials cautioned interviewers: “It is rarely necessary to mention this law because most people understand the importance of Census Bureau survey data and are willing to cooperate. The Bureau places a high value on the public’s cooperation and we are counting on you to maintain this cherished relationship.”

Households that refused to participate in the telephone interview and households for which the Bureau was unable to obtain a valid telephone number were added to the universe of cases eligible for personal interviews by the field representatives. Because personal visits are the most expensive data collection method, the Bureau used a one-in-three sample of the remaining nonresponding households. Such households are sometimes the most difficult cases for the Bureau to resolve because a number of them have already refused two mailed questionnaires and the telephone follow-up.

The field representatives were trained in a variety of interviewing skills, such as using probe questions to (1) obtain responses from respondents who might not answer some of the questionnaire and (2) eliminate bias from interview responses. In addition, to help improve response rates, field representatives were told how to make a good impression on respondents, demonstrate a strong knowledge of the survey, introduce themselves with confidence and a smile, dress appropriately, and be prepared to allay respondents’ concerns. Further, the classroom training included a video in which several experienced field representatives provided tips on dealing with difficult refusals and people who were hard to track down.

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<sup>52</sup>The Privacy Act of 1974, 5 U.S.C. § 552a, requires all federal agencies that collect information to advise respondents under what authority the information is being collected, how the information will be used, whether participation is required, and the consequences of not responding.

This training was followed with, among other topics, a discussion of how field representatives could convert a potential refusal into a completed interview. The training manual reminded field representatives that the ACS is mandatory, and respondents who are living at addresses selected for the survey are legally required to complete the questionnaire. The manual also noted that (1) the introductory letter and the materials mailed subsequently to the household indicate that the ACS is mandatory and (2) the field representatives should have a copy of the letter available to give to any reluctant respondents.

The training manual acknowledges that even though respondents have been notified that participation is mandatory, some people may still be reluctant to participate. The manual then instructs interviewers about the importance of (1) making a proper introduction and good first impression and (2) listening to and addressing any objections to participation, such as the length of the survey or the personal nature of the questions. Interviewers were provided with standard responses to frequently asked questions that were similar to those responses provided to the telephone interviewers.

If, after following these procedures, the respondent still refuses to participate, interviewers were trained to “remain calm and professional, and leave the site.” Interviewers were to report the refusal to their supervisors who, in turn, were to attempt to contact the address either by mail or telephone.

When the Bureau conducted personal interviews in 1996, the field representatives were new to the endeavor. This initially resulted in mistakes, such as interviewing neighbors and other nonhousehold members. However, the Bureau retrained the interviewers and found that the number of such mistakes declined. Moreover, the follow-up efforts elicited little in the way of public complaint to the Bureau. Indeed, although the Bureau invited the public to comment on the conduct of the ACS, none were received from three of the test sites, according to the Bureau.

The exception was the Brevard County test site where, according to our review of Bureau documents and interviews with Bureau officials, about 30 people, in 1996, wrote letters to Congress with concerns or complaints about the ACS. The letters generally focused on the personal nature of the questions or the legal requirement to participate in the survey, not about the interviewers themselves. However, there was one reported incident in which a field representative did not follow Bureau procedures and was overly aggressive in collecting information from respondents. The Bureau reportedly reprimanded that individual.

The Bureau reports that between 1996 and 2002, it received about 250 letters expressing concerns about the ACS. Our review of 82 letters, or about one-half of those available to GAO, suggests that privacy was a frequent concern; just 4 of the letters we reviewed mentioned that a Bureau interviewer was rude or intimidating.

In 1996, the ACS nonresponse follow-up operation collected data from about 13,800 households, with few problems. This record suggests that the training the

Bureau provided its telephone interviewers and field representatives was aligned with the objective of securing a high response rate. For subsequent tests of the ACS, the Bureau relied more heavily on a staff of permanent interviewers. The Bureau believed that the training and experience of such interviewers resulted in higher response rates and better quality data. The Bureau's future plans call for a similar approach.

### Outreach and Promotion Efforts Have Gradually Expanded

According to Bureau officials, when it launched the ACS test in 1996, the Bureau had no outreach staff onboard. Instead, the Bureau used a press release and free media to publicize the survey to respondents. Following the initial test, the Bureau developed outreach and promotion efforts that appeared to be geared, in large part, toward government officials and data users. An employee responsible for outreach first joined the ACS program in late 1996 and worked with local people in the Multnomah County, Oregon, test site on how the data could best be used. The Bureau conducted additional workshops at test sites in 1997, following the release of the 1996 data. Those invited to attend included congressional staff, local elected officials, planners, and other local government agencies.

As the ACS program expanded to 31 test sites, the Bureau increased the number and type of outreach activities to include more data workshops; town hall meetings; contacts with representatives of national and local print and broadcast media; professional journals; and umbrella organizations, such as the National League of Cities. For example, in late June 2002, the Bureau held the third in a series of ACS meetings in Seattle, Washington. According to the Bureau, among the 80 attendees were representatives of congressional offices, public and private organizations, academia, and the media. An outreach staff of six employees continues to work with many of the organizations that are represented in the Bureau's racial, ethnic, and decennial census advisory committee.

If the Bureau's plans for full implementation of the ACS are approved, it expects to continue working with organizations that it partnered with for the 2000 Decennial Census. As we noted in our earlier report,<sup>53</sup> the Bureau relied on these partnerships to help improve participation in the census and mobilize support for key census operations. The Bureau recognized that local people and organizations know (1) what the characteristics of their communities are better than the Bureau and (2) how to best communicate with their communities.

By comparison, the promotion and outreach efforts for the decennial census were far more ambitious, but that is to be expected, given the national scope and universal coverage of the census. It included an advertising campaign, developed by a private sector advertising agency, and a nationwide effort to enlist support in taking the census through partnering with corporations, community groups, and other

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<sup>53</sup> U.S. General Accounting Office, *2000 Census: Review of Partnership Program Highlights Best Practices for Future Operations*, [GAO-01-579](#) (Washington, D.C.: August 2001).



organizations. In all, for the 2000 Decennial Census, the Bureau spent about \$374 million on marketing, communication, and partnerships, or about \$3.19 per household. According to the Bureau, the mail return rate was about 74 percent.

## **Conclusions**

If the ACS is approved, federal agencies will be able to start using annual ACS data as early as 2004. Primarily because the annual ACS data will be less accurate than the 2000 decennial census long-form data, these agencies will need to be provided with key information about ACS data to ensure that the transition from the use of long-form data to ACS data is more likely to be successful. In addition, the availability of ACS data will create opportunities to eliminate questions on existing surveys and reduce the reporting burden of these surveys.

## **Recommendations for Executive Action**

In order to facilitate the transition by federal agencies from the use of 2000 Decennial Census data to the ACS, we recommend that the Secretary of Commerce direct the Director, Bureau of the Census, revise and expand the quality-testing and evaluation component of the ACS development program. In particular, the following actions should be taken:

- Establish a process to make sure that the ACS development program produces key information needed by federal agencies that will have to use ACS data when the long form is eliminated.
- Develop estimates, for states and large local government areas, of social, economic, and housing characteristics from the 2000-02 ACS special surveys and the 2003 and 2004 ACS to provide agencies with ACS estimates that are conceptually consistent with the 2000 Census.
- Expand the planned evaluation of differences between data from the Census 2000 Supplementary Survey and the 2000 Decennial Census long form, so as to identify techniques for agencies to use to improve consistency between the 2000 Census data and the 2003 and subsequent ACS data.
- Analyze and report on differences between year-to-year changes for 2001 and 2002, using the data—from ACS special supplements and the CPS at the national and state levels—for key economic and housing characteristics, such as the unemployment and poverty rates, to determine the stability of the annual ACS data.
- Extend the scope of the ACS development program to include plans to benchmark ACS estimates, beginning with 2005, to the 2010 Census population counts and the revised 2005-09 population estimates to ensure comparability between the ACS and 2010 Census data.

To more completely address the possibility of reducing the reporting burden in existing surveys, we recommend that the Secretary of Commerce direct the Director, Bureau of the Census, to review for possible elimination, proposed ACS questions now asked on two surveys conducted by the Bureau—the annual demographic supplement of the Current Population Survey and the American Housing Survey.

Questions that are not identical should be eliminated if, in the absence of other reasons, the accuracy, timeliness, and geographic detail of the ACS data outweigh the greater relevance of the data from the existing survey.

## Scope and Methodology

We used a combination of approaches and methods to examine the Census Bureau's implementation of the ACS. These included statistical analyses; meetings with key Bureau headquarters officials; and reviews of relevant documentation, including congressional testimony and *Federal Register* comments on the ACS. Information on all aspects of the ACS, the decennial census, the supplementary surveys, and other Bureau surveys is available at the Bureau's Web site <[www.census.gov](http://www.census.gov)>.

To obtain data on the ACS and the 2000 census and to examine how the quality of the ACS data, beginning with 2003, would compare with that of the 2010 Decennial Census long-form data, we spoke to Bureau officials about the technical aspects of the ACS. We reviewed materials prepared by the Bureau on the quality, coverage, and underlying definitions of the ACS and the relationship of the ACS to other Bureau programs. We also conducted an analysis of differences, for a representative set of data items at both the national and state levels, between Census 2000 Supplementary Survey and 2000 long-form data

To assess the extent to which ACS data would meet the needs of federal agencies, we spoke to officials at BLS and the Census Bureau concerning the use of ACS data in their programs. We reviewed previous GAO reports on formula allocation and eligibility determination.<sup>54</sup> We also reviewed directives and guidelines prepared by OMB on the measurement of poverty, and spoke to OMB staff on the potential impact of the ACS on those guidelines. In addition, we reviewed recent studies, prepared by the National Academy of Sciences, on federal fund allocation, small-area data modeling, and statistical agency practices.

To determine whether the questions to be asked in the ACS are justified by statutory requirements, we reviewed the statutes for mandatory programs that agencies used to support the questions. To determine whether the planned use of ACS data to select samples for additional surveys is consistent with the confidentiality provisions of Title 13, we reviewed the pertinent statutory provisions. We reviewed the cover letter for the ACS that notified respondents of this use.

To determine if ACS questions are duplicative or similar to those in other federal surveys and if the burden on the respondents could be reduced, we reviewed the questions on other federal agency household surveys for duplication with the ACS questions. For the CPS and AHS, we reviewed a line-by-line comparison prepared for GAO by the Bureau.

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<sup>54</sup> See U.S. General Accounting Office, *Formula Grants: Effects of Adjusted Population Counts on Federal Funding to States*, [GAO/HEHS-99-69](#); *Means-Tested Programs: Determining Financial Eligibility is Cumbersome and Can be Simplified*, "[GAO-02-58](#)," and *Title I Funding: Poor Children Benefit Though Funding Per Poor Child Differs*, [GAO-02-242](#) (Washington D.C.: February 1999, November 2001, and January 2002).

To explore whether the costs of conducting the ACS would be affected if it was conducted as a voluntary survey, we reviewed published studies of differences in response rates for the same surveys when conducted on a mandatory versus a voluntary basis.<sup>55</sup> We also obtained similar unpublished data from BLS for state-conducted surveys for which some states had made responses mandatory.<sup>56</sup>

To determine how the Bureau encouraged participation in the ACS test program through training for follow-up interviewers of nonrespondents, as well as outreach and promotion efforts, we interviewed Bureau officials and reviewed documentation, including training manuals, videos, and letters of complaint about the ACS test program.

We requested comments on a draft of this report from the Secretary of Commerce. On September 25, 2002, the Secretary forwarded the Bureau's written comments on the draft (see enclosure).

### **Agency Comments and Our Evaluation**

In written comments on a draft of this report, the Secretary of Commerce provided the Bureau of the Census's comments. Those comments are included in the enclosure. Overall, the Bureau agreed with the thrust of our recommendations. However, it expressed a number of concerns about some of the detailed findings. The principal concerns raised by the Bureau and our response are presented below. The Bureau also provided technical comments that have been incorporated where appropriate.

First, the Bureau expressed concerns about our approach to comparing the quality of data from the proposed ACS and the 2000 Decennial Census long form, stating that (1) we did not adequately take into account the tradeoffs between accuracy and timeliness and (2) we did not take into account certain information on response rates. We followed OMB guidelines on measuring survey quality in our analysis, and included in our analysis information on the impact of nonsampling error, using measurement error and item imputation rates for the detailed questions. We made standard assumptions about the impact of sampling error on the two sets of data. In addition, we recognized the limitations of these measures, including those noted by the Bureau in its comments, and summarized our findings with the following cautionary statement: "Because there is no one formula to determine the relative importance of the components, it is not possible to determine an overall measure of survey quality to compare the ACS and long-form data."

Second, the Bureau expressed concern about our focus on single-year ACS data and our analysis of measurement errors in the ACS. Any analysis of measurement errors in the ACS necessarily must focus on single-year data since those are the only ACS data that exist. Moreover, our methodology for determining relative measurement

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<sup>55</sup> In addition to the studies used by the Census Bureau, see John Gawalt, "Research and Development in Industry: 1990, NSF 94-304" (Washington, D.C.: 1994).

<sup>56</sup> See Bureau of Labor Statistics, "A Brief Study of Findings from the CES Enrollment Research" (unpublished: November 1996).

error is fully consistent with two previously stated Bureau positions. In the statement to OMB justifying the need for the 2000 Census Supplementary Survey, the Bureau reported that the primary need for the 2000 ACS data "...is to determine how well ACS data compare with long-form data from Census 2000." In addition, the Bureau provided users with the following statement on their own Web site: "The Census 2000 Supplementary Survey [ACS] data provided an early look at the detailed characteristics of the U.S. population for 2000. However, as the official census sample data become available, they should be used instead of the Census 2000 Supplementary Survey to describe the population in 2000 and to look at changes from 1990 to 2000." This statement clearly implies that the Bureau agrees that the ACS data are less accurate.

Third, the Bureau stated that we should have addressed the use of income and poverty data, in the official OMB measures, based on the Current Population Survey (CPS) and not based on the corresponding long-form data. This statement is incorrect. We addressed this issue in our discussion, comparing the differences between the CPS, census long-form, and ACS data. In the report, we compared two poverty measures and found that at the national level, the long-form data were closer to the CPS data than the ACS data.

Finally, the Bureau disagreed with our description of the list of federal agency justifications, provided to OMB in April 2002, as incomplete, stating that it was "complete" when it was submitted. This statement is inconsistent with (1) the fact that the list provided to OMB was annotated as a "draft" and (2) our later discussions with Bureau officials in which they confirmed that all agencies have not yet submitted a final list of justifications for ACS questions.

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As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to other interested congressional committees, the Secretary of Commerce, the Director of the Bureau of the Census, the Secretary of Housing and Urban Development, and the Administrator of the Office of Information and Regulatory Affairs of the Office of Management and Budget. Copies will be made available to others on request. In addition, the report will be available at no charge at the GAO Web site at <http://www.gao.gov>. Tanya Cruz, Robert Goldenkoff, Andrea Levine, Christopher Miller, Patrick Mullen, and Theodore Saks made major contributions to this report. If you have questions about this report, you may contact me on (202) 512-9750.



Robert P. Parker  
Chief Statistician

Enclosure



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

SEP 25 2002

Mr. Robert Parker  
Chief Statistician  
U.S. General Accounting Office  
Washington, DC 20548

Dear Mr. Parker:

The U.S. Department of Commerce appreciates the opportunity to comment on the General Accounting Office's draft document entitled *The American Community Survey: Accuracy and Timeliness Issues*. The Department of Commerce's comments on this report are enclosed.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald L. Evans". The signature is fluid and cursive.

Donald L. Evans

Enclosure

U.S. Department of Commerce  
U.S. Census Bureau  
Comments on the General Accounting Office Draft Report,  
*The American Community Survey: Accuracy and Timeliness Issues*

The U.S. Census Bureau appreciates the opportunity to comment on the draft General Accounting Office (GAO) Report, *The American Community Survey: Accuracy and Timeliness Issues*.

*Finding One: Annual ACS Data Less Accurate but More Timely than Long Form; Federal Agencies Need Additional Information for Transition to ACS*

The Census Bureau concurs that the ACS data are more timely than the long form, but disagrees with the suggestion that the ACS data are less accurate. GAO's conclusion about accuracy is incomplete, because it focuses narrowly on sample size and minimizes other aspects of accuracy, most importantly timeliness. Over any given decade, the long form data products will age, providing less and less accurate representations of current circumstances. The ACS, in contrast, will provide an ongoing profile of the Nation's people and economy.

GAO focused on single-year ACS data and its sampling error when it concluded that the annual ACS data are less accurate than the census long form data. This focus ignores both five-year average ACS estimates and nonsampling error. The Census Bureau designed ACS so that five years of aggregated data would replace the long form. It is true that the decennial census long form's 20 million housing unit sample size will result in less sampling error than the ACS one-year 3 million and five-year 15 million housing unit sample sizes. A more precise finding would be that the *annual* ACS estimates will contain substantially more sampling error than the long form estimates, but that the five-year ACS estimates will contain only slightly more sampling error.

GAO chooses to focus almost entirely on sampling error when examining the comparative accuracy and quality of the ACS and long form estimates. The OMB guidelines on data quality, however, make clear that the quality of a survey should be judged from an analysis of user needs and the totality of quality characteristics, not a narrow examination of sampling error.<sup>1</sup> GAO correctly notes that data quality should be assessed by examining accuracy, timeliness, relevance, and accessibility. GAO's focus on sampling error is in some degree understandable, as sampling error is much more easily measured than nonsampling error or the other three elements of quality. However, the choice is misleading as Census Bureau research supports the conclusion that sampling error will be greater in the ACS than in the long form but suggests that nonsampling error will be less.

While GAO correctly notes that the ACS will produce one-, three-, and five-year estimates, it chose to compare only the one-year estimates to the census long form sample estimates. As

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<sup>1</sup>OMB, "Statistical Policy Working Paper 31: *Measuring and Reporting Sources of Error in Surveys*," July 2001.

noted above, Census Bureau designed the ACS so that five years of aggregated data from the ACS would replace the long form sample estimates. Pending funding, the five-year ACS estimates will be available each year starting in 2008 and can be substituted for the single-year, point-in-time long form estimates without an overall loss in data quality. Assuming demographics continue to change over the decade, for any given area, the five-year estimates released in 2008 will be more accurate than the decennial long form estimates. This is because they will more closely reflect the area's current conditions than the long form estimates from the 2000 decennial census.

The ACS estimates' slightly larger sampling error should be compensated for by their expected lower nonsampling error. First, GAO minimizes available data demonstrating consistently higher item response rates in the ACS than in the 2000 decennial long form. Second, although high unit response is another key indicator and critical component of survey quality, GAO chooses not to acknowledge the high unit response rates for the ACS. Third, the draft report ignores available data that the ACS provided very good coverage for historically undercounted populations, another critical indicator of survey accuracy and quality.

GAO's narrow focus on sampling error led to another key misunderstanding regarding measurement error. The report's conclusion that greater measurement error exists in the ACS than the long form sample is not substantiated. This conclusion incorrectly assumes that, because the decennial census long form sample is larger, the long form estimates contain less measurement error. The draft report uses differences in the ACS and long form estimates to conclude that the ACS has more measurement error and is therefore less accurate. However, the assumption that the long form estimates are the benchmark does not acknowledge error associated with the long form or the many factors that could have led to the observed differences. Long form estimates of certain indicators, such as income, may not be the "gold standard" implied by its use as a benchmark in the GAO report. For example, the official measurements of income and poverty defined by the Office of Management and Budget (OMB) are from the Current Population Survey (CPS) annual demographic supplement.

*Finding Three: Federal Agencies Justify ACS Questions, but Uncertainty Remains on Extent of ACS Data Use*

The Census Bureau concurs with GAO's finding that federal agencies have justified the ACS questions and believes that the ACS data will be used by federal agencies. The Census Bureau, through the auspices of OMB, sought input from federal agencies regarding the legally required/authorized uses of the ACS data by these agencies. The focus was on the agencies' intended use, because their actual use cannot be determined definitively until after the survey is taken and the data are available. The list of justifications was complete at the time the Census Bureau submitted it to OMB.

*Finding Four: Duplicate or Similar Questions in ACS and Other Federal Surveys*

The Census Bureau acknowledges that certain questions on the ACS are similar to those on other surveys. However, important reasons necessitate some overlap. Large national surveys such as the CPS, the Survey of Income and Program Participation (SIPP), and the AHS collect complex and specific information, focusing in depth on key topics, thus requiring large national samples. The ACS, in contrast, is the only survey that would provide information at the smallest geographic levels on a wide variety of topics. The government needs *both* the complex concepts measured on the national surveys *and* the indicators measured on the ACS.

*Finding Five: Conducting the ACS as a Voluntary Survey Would Most Likely Result in Higher Costs*

The Census Bureau concurs with GAO that field testing is required to calibrate an estimate of how much more it would cost to take the ACS as a voluntary survey and is developing plans to conduct such a test as early as 2003. The Census Bureau also concurs that converting the survey to a voluntary one would result in lower mail response rates, meaning more cases would have to be resolved by more expensive personal visits.

Census Bureau analysis supports a preliminary estimate that the ACS would cost between \$20 million and \$35 million more per year if it were taken as a voluntary survey. Any estimate of increased cost, however, is extremely assumption dependent. The Census Bureau's lower-range estimate is based on 1993 work evaluating short-form response; the upper bound is also based on this research, but it takes into account the general decline in response rates noted in survey research over the past decade. Both the upper and lower bound assumptions assume that the Census Bureau will act to maintain acceptable survey quality (that is, hold the standard errors of the survey estimates constant). Without field testing, however, the appropriate response assumptions cannot be determined.

Finally, other than the effect on response rates, other aspects of data quality are not addressed in the Census Bureau's preliminary cost estimates. Any field testing of the ACS as a voluntary survey should also evaluate how a switch to voluntary reporting would affect the quality of the ACS data.

*Recommendations*

GAO's first recommendation is that the Census Bureau revise and expand its quality testing and evaluation program to facilitate the transition of federal agencies to using the ACS data in 2004 and beyond. Subject to appropriate funding levels, the Census Bureau concurs with this recommendation and intends to develop a formal transition plan this year. The Census Bureau cannot determine at this time whether this transition plan will accept each and every one of GAO's sub-recommendations for additional research, but the plan will comprehensively address the needs of the federal user community. The transition plan will analyze and prioritize a number of transition issues, not just those specified by GAO.



GAO's second recommendation is that the Census Bureau review the Annual Demographic Supplement (ADS) to the CPS and the AHS to determine if any questions can be eliminated from either of these two surveys due to their duplication of the ACS questions. The Census Bureau is always looking for opportunities to streamline, clarify, and reduce respondent burden, and will bring this recommendation to the attention of the Office of Statistical Policy at the Office of Management and Budget and the sponsoring agencies. It may be that full ACS implementation will allow elimination of some duplication. GAO should note that substantial testing will be required before changes can be made in surveys that provide key national social indicators, and that survey methodology has shown that even minor changes in surveys can have major unintended consequences.