

United States General Accounting Office

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**GAO**

Briefing Report to the Chairman and  
Ranking Minority Member, Subcommittee  
on Census and Population, Committee on  
Post Office and Civil Service, House of  
Representatives

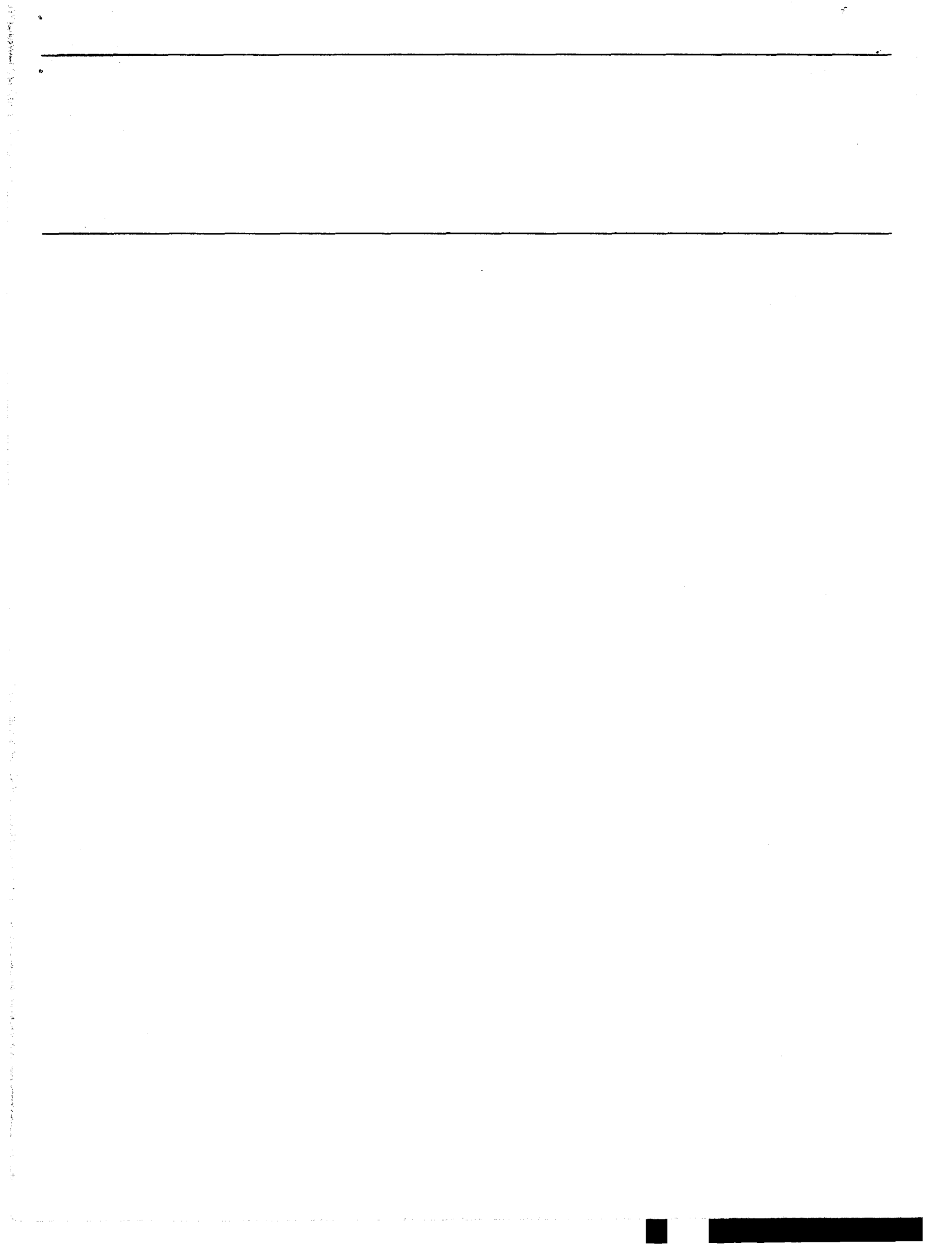
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July 1989

# 1990 CENSUS

## Overview of Key Issues





**General Government Division**

B-222824

July 3, 1989

The Honorable Thomas C. Sawyer  
Chairman, Subcommittee on Census  
and Population  
Committee on Post Office and Civil Service

The Honorable Thomas J. Ridge  
Ranking Minority Member  
Subcommittee on Census  
and Population  
Committee on Post Office and Civil Service  
House of Representatives

In September 1988, the Subcommittee requested that we prepare a succinct overview of the decennial census to help explain census operations and highlight key issues for Members of Congress, their staffs, and others interested in the upcoming census. Later that month, we testified<sup>1</sup> on the status of the 1990 census, focusing on issues related to census planning activities, staffing, and cost containment. In March 1989, we briefed the Subcommittee and staff on these and other important census issues and again testified<sup>2</sup> that census management will be challenged to control costs, recruit and retain quality employees, and improve census automation. Finally, in May 1989, we testified on issues related to the Census Bureau's problems in attracting and retaining a sufficient number of temporary staff to complete the 1990 census.<sup>3</sup>

This briefing report expands on the information contained in those testimonies and presented at that briefing. The first section highlights important issues that hinge on the outcome of the census. The second part outlines the mechanics of how the census is taken. The final section summarizes the major issues facing census management: controlling the rising cost of the census, estimated by the Department of Commerce at \$2.6 billion, and hiring and retaining a sufficient number of temporary employees to complete the census in a timely and accurate manner. Each of these issues is summarized below.

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<sup>1</sup>Status of the 1990 Decennial Census (GAO/T-GGD-88-53, September 27, 1988).

<sup>2</sup>Status of Plans for the 1990 Decennial Census: An Update (GAO/T-GGD-89-15, March 23, 1989).

<sup>3</sup>Expanding the Decennial Census Applicant Pool (GAO/T-GGD-89-22, May 23, 1989).

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## Major Uses of Census Data

Although there are many uses of census data, four predominate. First, as provided in the Constitution, the population count determines the number of seats each state is apportioned in the House of Representatives. As the U.S. population has grown over time, an increasing percentage has moved to the South and West. Consequently, the distribution of House seats has followed. Between 1950 and 1980, states in the Northeast and Midwest lost 36 seats to Western and Southern states. This trend is expected to continue.

Second, states use census data to determine the boundaries of congressional and state legislative districts. To support state redistricting programs, the Bureau of the Census (Bureau) provides data for the smallest geographic areas applicable—blocks, election precincts, or other small areas. Third, census data are critical to the management of federal grant-in-aid programs. In fiscal year 1988, those programs distributed more than \$115 billion to state and local governments. Fourth, business and researchers also make extensive use of census data.

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## How Is a Census Taken?

To obtain information about the Nation's housing and population, the Bureau first accounts for all living quarters. It then counts people by asking occupants to fill out and return census questionnaires delivered to the household either by the Postal Service or by a census worker.

The Bureau hopes to complete as much of the census as possible by mail, but it also uses a number of programs to enhance the completeness of the count. For example, census workers follow up with all households that do not mail back questionnaires. To improve the count of groups that historically have proven to be difficult to count, the Bureau adopts other specific procedures. As it did in 1980, for example, the Bureau will again make available Spanish census questionnaires.

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## What Are the Major Issues Involved in Taking the Census?

Since the 1980 census, the Bureau has made a number of improvements. Among others, it adopted new procedures to ensure a more accurate and complete count and automated some operations that were done manually in 1980. One project in particular, involving the computerized production of maps and data files that locate street addresses and political boundaries, should help the Bureau eliminate many of the problems it experienced in previous censuses.

Despite these improvements, the Bureau still faces a number of challenges to completing the 1990 census. As we have earlier testified,

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Bureau management will be challenged to produce a count of high quality under short time constraints while both (1) controlling rising costs and (2) hiring and retaining an enormous workforce of temporary employees.

The costs of conducting the census continue to rise dramatically. In 1980, the Bureau spent \$1.1 billion on the census. It estimates that the cost of the 1990 census will be approximately \$2.6 billion (\$1.9 billion in constant 1980 dollars). We believe, however, that the Bureau cannot complete the census for that sum; rather, as currently planned, the census will cost closer to \$3 billion.

The Bureau's experience in 1980 and in pre-1990 census activities suggests that recruiting, hiring, and retaining people will again represent a major operational challenge. Between April and June 1990, the Bureau expects to employ about 315,000 temporary employees. To fill these positions, it will need to screen about 1.6 million applicants.

The most fundamental staffing challenge confronting the Bureau is ensuring that its pay rates are competitive. Bureau staff report that its ability to attract and compete for needed temporary employees is adversely affected by low unemployment rates in some areas and the Bureau's relatively low pay, which does not reflect market wage rates and geographic differences in the cost of living. The Bureau is considering a plan to reflect geographic differences in its pay scale.

In producing this report, we analyzed previously issued GAO reports and drew upon our oversight of 1990 census activities, including on-going discussions with Bureau officials and reviews of their data and evaluations. We provided a draft copy of this report to Bureau officials, and incorporated their suggestions where appropriate.

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As arranged with the Subcommittee, we plan to send copies of this report to the Subcommittee on Government Information and Regulation, Senate Committee on Governmental Affairs. In addition, we will distribute copies to other appropriate congressional committees; the Secretary of Commerce; the Office of the Director of the Bureau of the Census; and the Director, Office of Management and Budget. Copies also will be made available to other interested parties upon request.

The major contributors to this briefing report are listed in appendix III.  
If you have any questions, please call me on 275-8387.

A handwritten signature in black ink, appearing to read "Gene L. Dodaro". The signature is written in a cursive, flowing style.

Gene L. Dodaro  
Director  
General Management Issues



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**Abbreviations**

CRS	Congressional Research Service
IRS	Internal Revenue Service
TIGER	Topologically Integrated Geographic Encoding and Referencing

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# Overview of Major Issues

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## Introduction

During peak operations in 1990, at a cost exceeding \$1 million per hour, over 300,000 temporary employees working out of nearly 500 offices will attempt to count all people residing in the United States. The 1990 decennial census, America's 21st, will produce a statistical "snapshot" of the Nation's population and housing. Few federal domestic activities will have as great an impact. Political power and the distribution of billions of dollars of federal funds are at stake.

Given the importance of an accurate and complete count, GAO has maintained on-going evaluations of the activities of the U.S. Bureau of the Census (Bureau). This report provides a synopsis of critical issues related to the census.

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## Major Uses of Census Data

Census data is critically important to meeting vital national data needs over the next 10 years. Among other purposes, the 1990 census will provide the basis for reapportioning the House of Representatives, redrawing state legislative district lines, and allocating federal grant-in-aid funds to state and local governments. In addition, census data are used for scores of other business and research purposes. Each of these is briefly discussed below.

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## Reapportionment of the House of Representatives

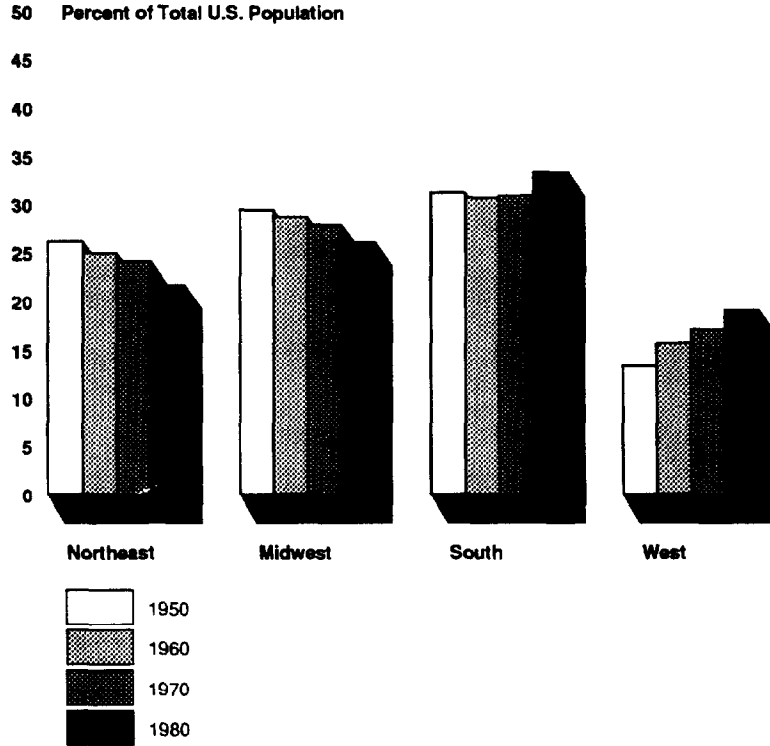
The population count determines the number of seats each state is apportioned in the House of Representatives. Congress has reapportioned the House of Representatives after every census, with one exception.<sup>1</sup> The first census apportionment in 1791 resulted in 105 House seats. This number increased after each succeeding census until the present number (435) was established following the 1910 census.

The U.S. population has grown significantly and redistributed itself over time. Between 1950 and 1980, the total U.S. population increased by 75 million, or about 50 percent. About two-thirds of the total increase occurred in the South and West, which grew by over 50 million. Consequently, the percent of the population living in the Northeast and Midwest has declined steadily, while the percent living in the West has grown, as shown in figure I.1. By 1980, for the first time, a majority of the country's population lived in the South and West.

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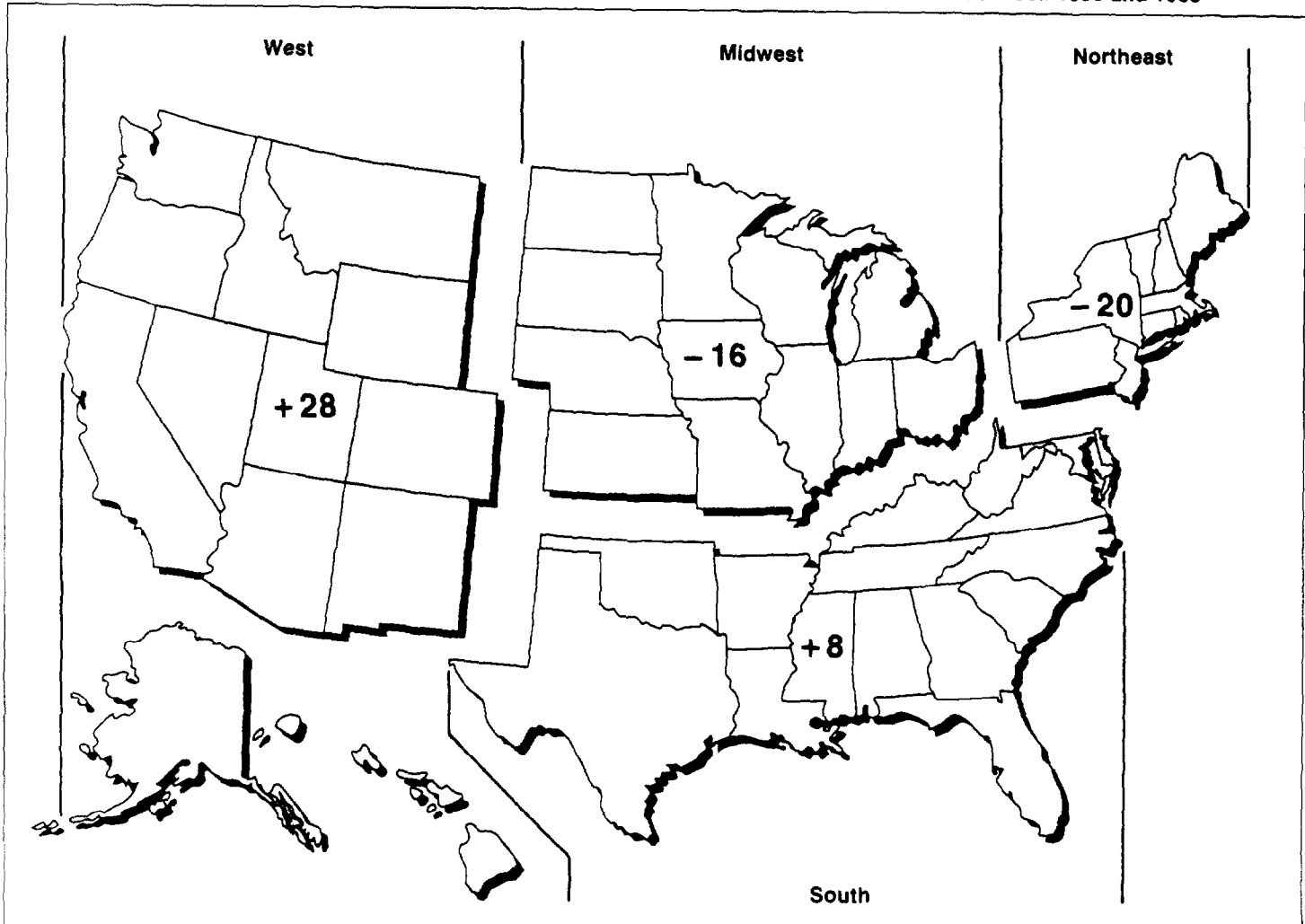
<sup>1</sup>According to the Bureau, Congress failed to enact a reapportionment law after the 1920 census, which showed for the first time that a majority of Americans lived in urban areas. Rural legislators had sufficient strength to prevent Congress from passing any reapportionment legislation during the decade. The 1910 apportionment remained in effect until the 1930 census, at which time the 1929 census statute made reapportionment automatic unless Congress acted otherwise.

**Figure I.1: U.S. Population Distribution Shifting to the South and West**



Seats in the House of Representatives followed those changes in population. Between 1950 and 1980, Western states gained 28 seats (including 2 when Alaska and Hawaii became states), and Southern states gained 8 seats. The Northeast and Midwest lost seats. Figure I.2 illustrates how seats in the House shifted between 1950 and 1980.

Figure I.2: Seats in the House of Representatives Have Shifted to Southern and Western States Between 1950 and 1980



These trends are expected to continue following the 1990 census. On the basis of projections made in 1988, the Bureau anticipates that the total U.S. resident population will approach 250 million. The South and West will experience the greatest growth, increasing by over 20 million between 1980 and 1990, nearly 10 times the increase expected in the Northeast and Midwest. Using Bureau projections, the Congressional Research Service (CRS) estimated that 18 House seats will shift among

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the states. Northeast and Midwestern states will lose 17 seats to Southern and Western states, and 1 additional seat will be transferred between Western states.<sup>2</sup>

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## Redistricting

States use census data to determine the boundaries of congressional and state legislative districts. Detailed population data are critical for the modern redistricting process to meet the standards set by the courts. In a series of decisions made during the 1960s, the Supreme Court ruled that congressional districts must be substantially equal in population. In the case of Wesberry v. Sanders, 376 U.S. 1, it stated that “as nearly as practicable, one man’s vote in a congressional election is to be worth as much as another’s.” Other “one man, one vote” decisions mandated that districts be compact, contiguous, and relatively equal in population. To support state redistricting programs, the Bureau provides data for the smallest geographic areas applicable—blocks, election precincts, or other enumeration areas.

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## Allocation of Federal Dollars to States and Localities

In fiscal year 1988, federal grant-in-aid programs distributed more than \$115 billion to state and local governments. Census data are critical to the management of these programs. For example, to help administer the federal Community Development Block Grant program, cities and counties use census housing data. The Medicaid Assistance Program uses per capita income data from the census to allocate 50 percent of its revenues.

Because a number of grant-in-aid programs include population as an element in their allocation formulas, state and local governments often focus on the relationship between the population count and federal grants. For several reasons, however, changes in population may not produce the proportional changes in grant awards that many people expect. One of the most important reasons is that most of the allocation formulas federal agencies use rely on more than population counts or estimates for resource distribution. Applying such other allocation factors as per capita income or the state share of public road mileage tends to mitigate the impact of population changes.

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<sup>2</sup>Congressional Research Service, House Apportionment Following the 1990 Census: Preliminary Projections, 88-567 GOV, August 31, 1988.

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Also, because certain programs include minimum and maximum dollar amounts a state or other jurisdiction may receive, changes in their population counts may not significantly affect the flow of funds.

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## Other Uses of Census Data

Governments are not the only users of census data; many businesses make extensive use of census data as well. These include site selection, forecasting demand, allocating advertising, and sales force management. Census data also provide historic research information, permitting analyses to be made over time. When carried out using time-series data, many uses of census data, such as local planning, market research, and scholarly analysis, gain added significance. Information on wages paid to women and minorities for particular occupations, for example, becomes more meaningful when their changes are analyzed over time.

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## How Is a Census Taken?

The goal of the census is to obtain information about the Nation's housing and population. The Bureau first accounts for all living quarters. It then counts people by asking occupants to fill out and return census questionnaires delivered to the household either by the Postal Service or by a census worker or "enumerator." (A glossary of common census terms can be found on pages 29 and 30.)

There are two primary types of questionnaires. The short form, which most households will receive, covers basic housing and population topics asked of all persons and housing units. These include the age, sex, race, marital status, and Spanish/Hispanic origin of each resident, along with questions covering the building's description (e.g., "A one-family house detached from any other house"), rooms in the house or apartment, and value of the property or monthly rent. Appendix II contains a list of the questions asked on the short form.

About one household in six will receive the long form. That form contains these same basic subjects, along with additional population and housing items. It asks, for example, about each resident's citizenship, education, military service, and income. The additional housing questions include items related to the unit's plumbing, kitchen facilities, utilities, age, and mortgage.

The Bureau hopes to complete as much of the census as possible by mail. But for this methodology to be successful, the Bureau needs accurate and complete mailing address lists. Such lists are critical to the quality of the census not only because they help ensure that questionnaires are

delivered, but also because they serve as a control for identifying and locating households that do not respond.

The Bureau generally relies on two methods for developing its initial address lists. For urban areas, the Bureau purchases commercial mailing lists. In some rural and suburban areas, however, the Bureau cannot use commercial lists because mailing addresses frequently do not identify a housing unit's geographic location. In those areas, census enumerators travel all streets and roads, listing the mailing address of each housing unit. To provide for possible follow-up work and to accurately tabulate population counts at local levels, enumerators also mark each unit's location on a census map.

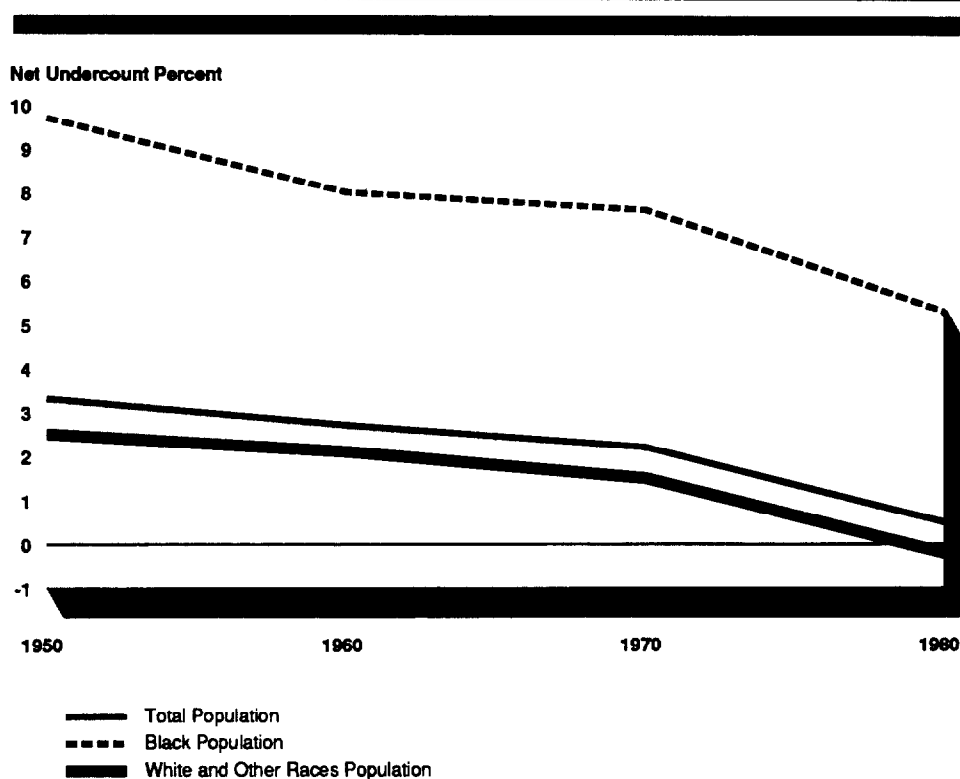
Still, millions of residents probably will not be counted. Bureau officials acknowledge that some people, such as the homeless and those living in extremely rural areas, will be missed inadvertently, while others—fugitives and undocumented aliens, for example—will purposely avoid being counted. To minimize such problems, the Bureau has developed a number of operations to improve the accuracy of its count.

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## Enhancing the Quality of the Count

Over time, the Bureau gradually has improved the accuracy with which it counts everyone. Figure I.3 illustrates the improvement in its coverage of the population. Between 1950 and 1980, the net undercount (a measure of the Bureau's population coverage) decreased from 3.3 to 0.5 percent of the total population. Nevertheless, the Bureau still misses a disproportionate percent of certain subpopulations. Relative to the white population, it misses counting a high proportion of blacks. The Bureau does not have reliable statistics for other groups, although available evidence suggests that the undercount of the Spanish-American population may be higher than for whites. Black males in particular are the most poorly counted. According to the Bureau's demographic analysis, in 1980 it missed over 15 percent of black males between the ages of 35 and 54.

Figure I.3: Census Coverage Improving, but Blacks Disproportionately Undercounted



A negative percent indicates a net overcount.  
Source: Census Bureau.

The Bureau has gradually decreased these undercounts through different “coverage improvement programs.” In the 1980 census, the Bureau used 14 coverage improvement programs, such as a local government review of preliminary housing counts, that increased the population count by about 2.6 million persons. In 1990, the Bureau also plans to use a number of special procedures to help ensure that the population counts are accurate for each political and geographic area.

Local Review

The Bureau asks local governments to assist it in assembling an accurate and complete count. Their participation in the local review program improves census accuracy by identifying and correcting instances where the Bureau did not locate housing units, listed them in the wrong map location, or incorrectly displayed political boundaries. Bringing errors or



problems to the Bureau's attention while the census is in progress facilitates corrections and changes in subsequent population and housing counts.

The Bureau divides the local review program into two phases. In precensus local review, the Bureau provides counts of housing units at the block level to local officials. Local officials then identify and document instances where they believe major discrepancies exist between their own estimates and the Bureau's counts. On the basis of its review of this information, the Bureau updates its address file before the Postal Service delivers questionnaires. Postcensus operations differ mainly in the Bureau's sending to local officials preliminary population counts.

In 1980, due to operational delays, the Bureau did not conduct the precensus phase. Of the 39,000 local governments to which the Bureau later provided material on the local review program, about 6,600 responded with problems in the census count. As time and money permitted, Bureau enumerators recanvassed areas in question. Table I.1 shows the results of this activity.

**Table I.1: Changes to the Population and Housing Units Counts Attributable to Local Review in 1980**

	Added to census counts	Deleted from census counts	Transferred to correct geography
Housing Unit Counts	53,222	20,334	28,125
Person Counts	75,741	•	56,328

Source: Census Bureau.

### Covering Groups That Are Difficult to Count

Except for foreign diplomatic personnel living in embassies and foreign tourists, the Bureau attempts to count all persons residing in the United States. For a number of reasons, however, counting some groups is particularly challenging for the Bureau.

In some parts of the country, the Bureau cannot develop lists of mailing addresses suitable for Postal Service delivery. To improve its coverage of these areas, the Bureau adopts other counting procedures. For example:

- For 11 million households in rural areas—primarily Appalachia, the Ozarks, and the South—and for about 200,000 households in some large, multi-unit buildings in low-income urban areas, enumerators will leave questionnaires for each household to complete and return.

- In the most rural and sparsely settled areas, enumerators will visit each of about 6.5 million households to collect census questionnaire information.

The Bureau also will use different procedures for improving collection in various "special places." These include the enumeration of colleges and military installations, American Indians (on and off reservations), and the enumeration of Alaska, where geography poses special problems.

Undocumented aliens present special enumeration problems for two reasons. First, they are a clandestine population that generally fears attracting any attention from the government, despite the Bureau's pledge of confidentiality. Second, they may lack sufficient English language skills to understand the census and its goals. Since the 1930s, Congress has occasionally considered the issue of whether or not illegal aliens should be included in the population count used to apportion the House of Representatives. However, both Congress and the federal courts have consistently supported the position that all persons should be counted, regardless of their immigration status.

Before the 1980 census, some Hispanic leaders said that most Hispanics would be reluctant to contact local census officials for Spanish forms. Following that census, the Bureau concluded that, in fact, Spanish questionnaires were not widely requested on mail return questionnaires, but it noted that more were requested through telephone assistance centers. For 1990, the Bureau has decided to make Spanish census questionnaires available again, along with a special toll-free telephone assistance number.

Finally, because the Bureau's basic data collection methodology revolves around housing units, counting the homeless population is difficult. In 1990, the Bureau will undertake special operations to provide national and local-level data on components of the homeless population. Beginning on March 20 and ending at 6:30 a.m. on March 21, 1990, teams of census enumerators will seek out people in shelters, on the streets, and in abandoned buildings. Because of the possibility of physical danger to enumerators working at night and the desire of some individuals to avoid the census, the Bureau expects the "street component" count to be conservative.

Because there is no generally agreed-upon definition of "homelessness," the Bureau also will identify, as part of the regular census operations,

other individuals who are sometimes considered part of the homeless population. These include people living in campsites, shelters for abused women, and those living with friends or relatives.

Follow-Up Operations

To obtain completed questionnaires from each household, Bureau enumerators follow up with all households that do not mail back questionnaires. In 1980, the Bureau found that about 25 percent of all housing units (17 percent of all households) failed to return their questionnaires. In 1990, it expects that percent to increase to about 30 percent of all housing units (22 percent of all households). Enumerators will visit each nonresponding housing unit and complete the applicable questionnaire items.

Chronology of Major Census Activities

The Bureau began planning several years in advance for the 1990 census, but the bulk of the work will take place between 1988 and 1990. Table I.2 highlights the major events involved in the 1990 census.<sup>3</sup>

Table I.2: Major Events of the 1990 Census

1988	May:	Operations begin for developing mailing lists for census questionnaires.
1989	January:	First district offices open.
	November:	Local government officials begin review of precensus housing unit counts.
1990	January:	Bureau reviews areas identified as potential problems by local officials and makes needed corrections.
	March 23:	Questionnaires delivered to households.
	April 1:	Census Day. Due date for people to mail back completed questionnaires.
	April 26:	Bureau begins to follow up with households that did not return questionnaires.
	December 31:	Bureau transmits to the President total population counts by state for new apportionment of the House of Representatives.
1991	April 1	Bureau provides states with data for use in designating new congressional and state legislative districts.

<sup>3</sup>CRS documents 87-205 GOV, Steps in Conducting the 1990 Census and 88-42 GOV, Census Questions and OMB's Review of the Census Bureau Proposal: A Summary and Brief Analysis provide additional information on the steps involved.

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## What Are the Major Issues Involved in Taking the Census?

We have been monitoring Bureau activities leading up to the 1990 decennial census, and we have reported or testified on its 1990 planning activities, including test censuses, address list development, and dress rehearsal.<sup>4</sup> Throughout, we have recognized the improvements made while also noting where additional work is needed. This section summarizes both.

Since the 1980 census, the Bureau has made a number of operational improvements. It initiated census planning 1 year earlier than it did in 1980, developed and installed a new management information system to allow all decennial offices to track costs and activities, expanded its outreach and publicity efforts, and adopted new procedures to ensure a more accurate and complete address list. For example, the Bureau expanded its Community Awareness Program and advertising programs targeted at black, Hispanic, and other groups that are anticipated to be difficult to count. It also plans to reconcile differences between the census address list and the mailing addresses recognized by the Postal Service in suburban and rural areas.

Other major improvements relate to automating census operations that were done manually in 1980. For example, the Bureau has tested, developed, and implemented a network of about 550 mini-computers for checking in questionnaires, keying data, and generating maps. These capabilities will help convert the data to a computer-readable format earlier in the census process, allowing more time for review and correction. The Bureau also has created an automated housing unit address file to control mailout and determine whether or not a specific address has returned its questionnaire. In addition, beginning with the 1990 census, the Bureau will process data concurrently with data collection. Concurrent processing should allow the Bureau to detect and correct errors on the questionnaires while the field offices are open. It should also accelerate the delivery of data to users.

Another major automation improvement involves the production of maps and data files that locate street addresses and political boundaries. Census data are meaningless unless they can be collected, identified, and tabulated for specific locations. Previously, the Bureau prepared its maps and other geographic information in several massive clerical operations. Because each was independent, some information was inconsistent. In 1980, errors and inconsistencies in census maps and other

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<sup>4</sup>See page 31 for a list of related GAO products.

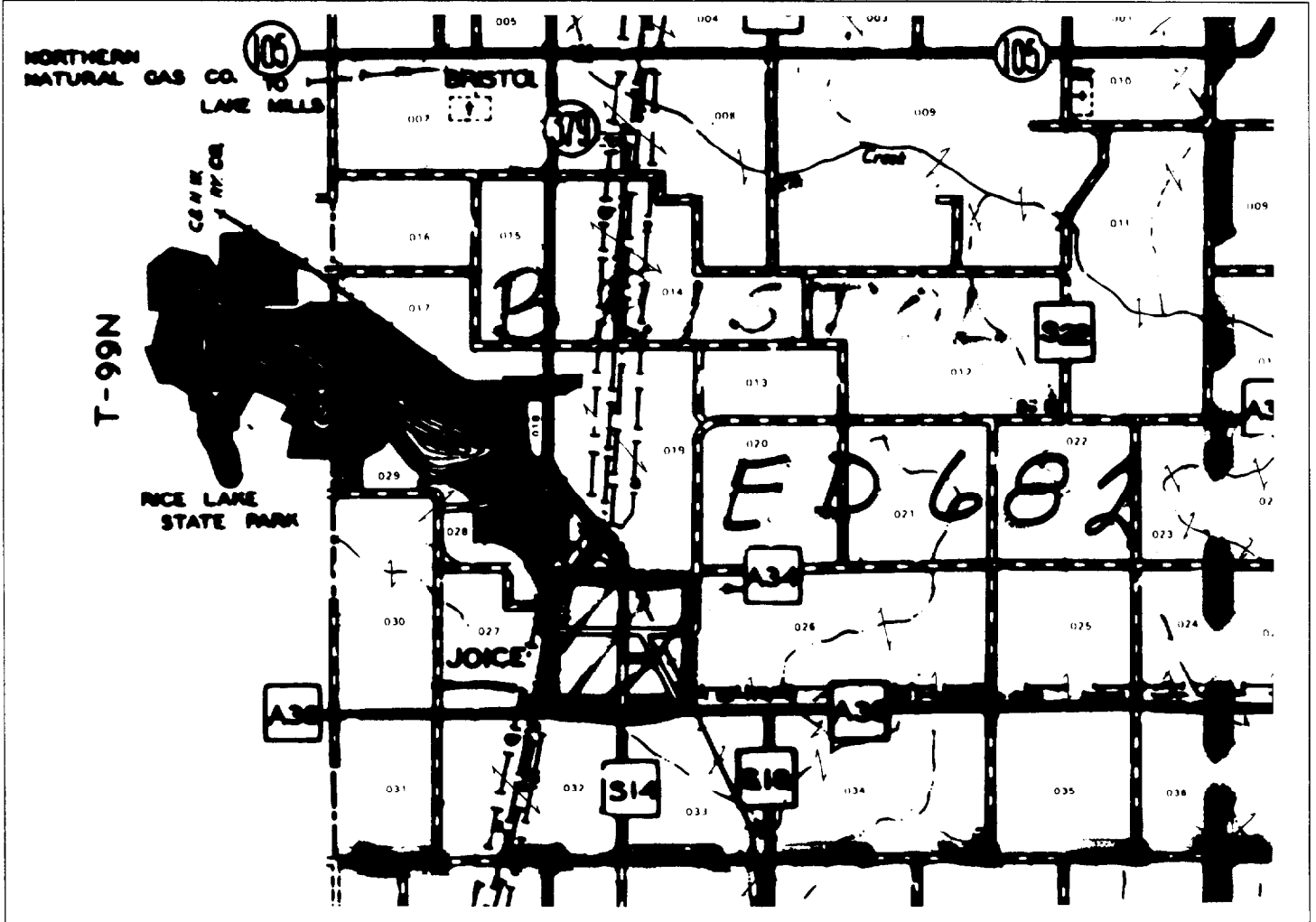
geographic support caused delays in the collection, tabulation, and publication of data. These problems also increased census costs.

For the 1990 census, in conjunction with the U.S. Geological Survey, the Bureau developed a new automated geographic support system. The Topologically Integrated Geographic Encoding and Referencing (TIGER) System will combine maps, addresses, and other census geographical information into one automated data base. The Bureau emphasizes that this system's integration of geographic components will solve the problems of inconsistency. In addition, TIGER should produce maps of consistently high quality, which was not always possible in the past. Figure I.4 is an example of a map used for 1980 field operations. Figure I.5 shows the same area reproduced by the TIGER system.

Despite these improvements, the Bureau still faces a number of key challenges to completing the 1990 census. Drawing upon our earlier work and our experience in monitoring the 1980 census, we have identified a number of significant issues facing Bureau management. In general, these issues involve the Bureau's ability to produce a count of high quality under short time constraints while both controlling rising costs and hiring and retaining an enormous workforce of temporary employees.

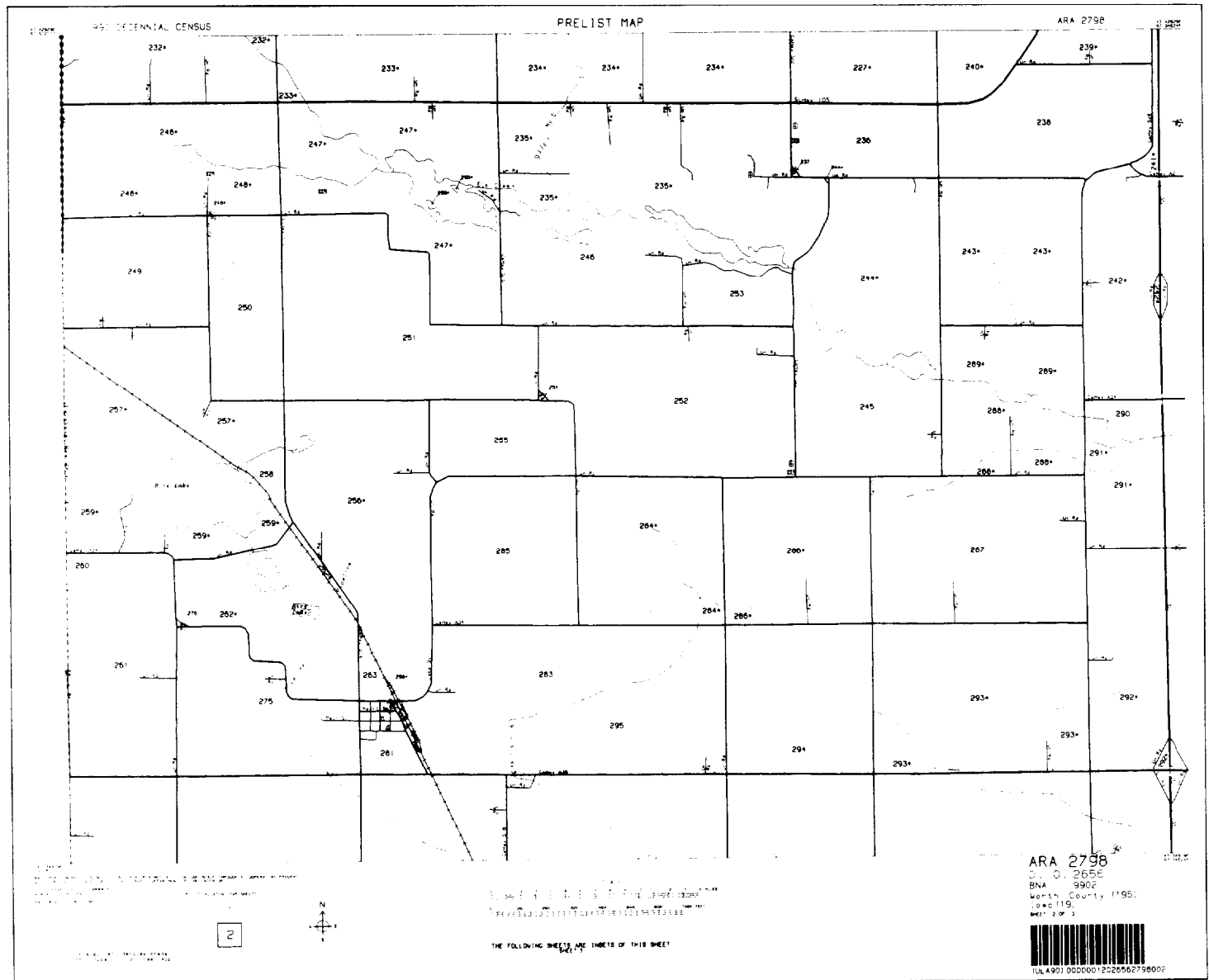
Appendix I  
Overview of Major Issues

Figure I.4: Example of 1980 Field Operations Map



**Appendix I  
Overview of Major Issues**

**Figure I.5: Example of 1990 TIGER Map**

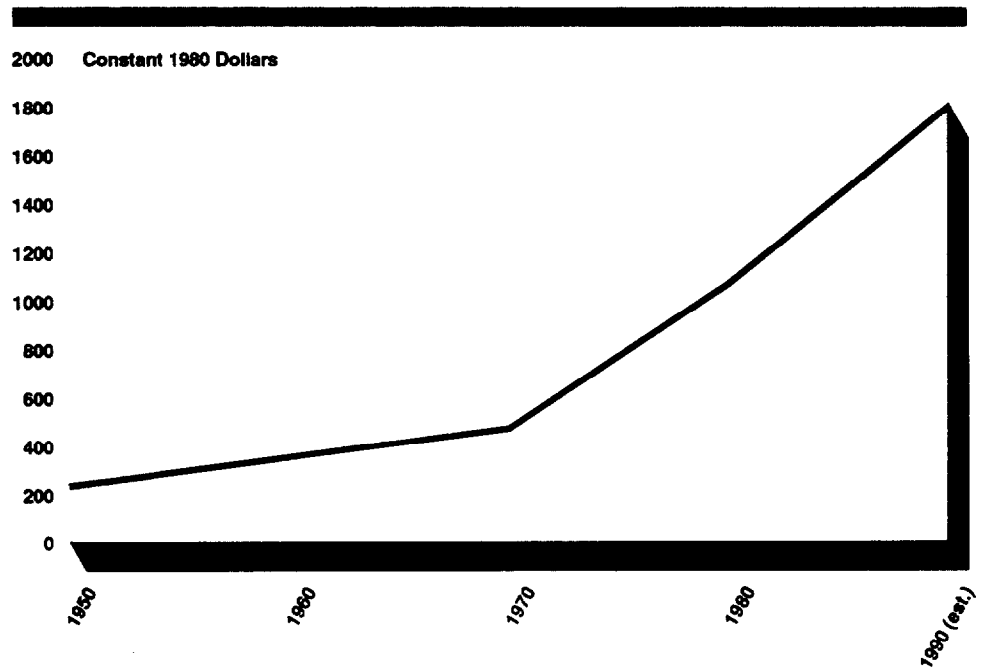


**Controlling Rising Costs  
While Ensuring a Count of  
High Quality**

The costs of conducting the census have risen dramatically over time. Figure I.6 illustrates the rise in total census costs since 1950 in constant 1980 dollars. For the 1980 census, the government spent approximately \$1.1 billion—more than the three previous censuses combined. For 1990, however, the Bureau estimates that the cost will run closer to \$2.6 billion, or \$1.9 billion in constant 1980 dollars. We believe that the

Bureau cannot complete the census for that sum. As planned, we estimate that the census will cost closer to \$3 billion.

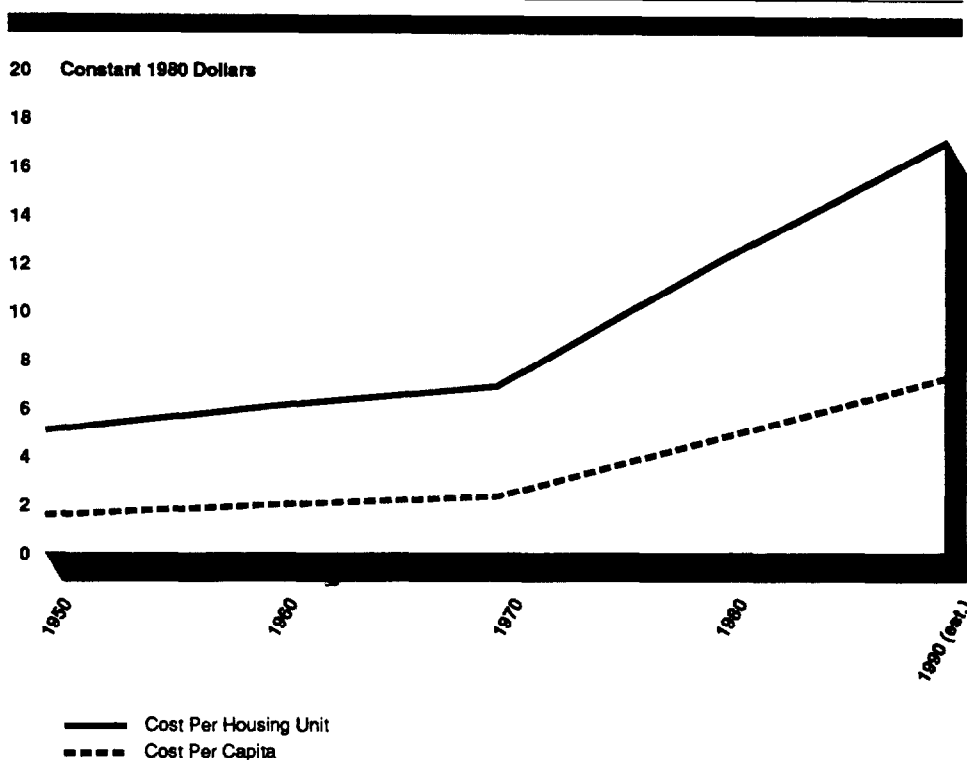
Figure I.6: Census Costs Have Soared Since 1950 (Dollars in Millions)



Bureau officials had hoped to limit the 1990 cost to 1980 levels after adjusting for inflation and workload. As figure I.7 shows, they are not expected to do so. It illustrates (in constant 1980 dollars) how Bureau expenses for counting both housing units and individuals have increased. To count each housing unit, the Bureau spent \$5.04 in 1950 and \$12.10 in 1980. In 1990, the cost to count each housing unit will increase again to an estimated \$16.96. The costs to count each individual have risen similarly. Per capita costs more than tripled between 1950 and 1980 to \$4.72 and are estimated to rise in 1990 to \$7.20. If 1990 census costs rise to \$3 billion as we expect (or about \$2.1 billion in constant 1980 dollars), the cost to count each housing unit will rise toward approximately \$19.50, and the cost per capita will increase toward \$8.30.



**Figure 1.7: Census Costs Have Increased Dramatically Since 1970** (Dollars in Millions)



Although comparing the costs of the 1980 and 1990 censuses is difficult because of differences in design, the Bureau attributes the rise in costs to an increase in workload and to program enhancements for improving the quality and timeliness of census operations. Most of those improvements, as discussed earlier, were in the areas of automation advances and other operational changes. Not including the costs to develop and implement TIGER (an estimated \$345 million, much of which the Bureau does not attribute to decennial census operations), new automation efforts will add an estimated \$325 million to census costs. The other operational changes, such as the expanded outreach programs, have increased census costs by an estimated \$140 million.

The Bureau also is facing other financial pressures that may increase costs. Decreases in the mail response rate for census questionnaires, for example, may drive up costs significantly. Because Bureau employees follow up with all nonresponding housing units, that census operation is the largest and most costly data collection activity. The Bureau estimates that each percentage point decrease in the response rate adds \$10 million to total census costs. Because it anticipates a lower mail response

rate in 1990 compared to 1980, the Bureau already has budgeted \$50 million more in 1990 follow-up work than it did before. Moreover, preliminary information gained from the 1988 "dress rehearsal" census in St. Louis indicates that the Bureau's projected response rates may be optimistic.

The Bureau also may discover that attracting a sufficient number of temporary employees will require it to raise its 1990 pay scales. This would further drive up census costs. The next section addresses staffing and pay issues.

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### Overcoming Obstacles to Hiring and Retaining an Enormous Temporary Workforce

One of the major management challenges in taking a decennial census is acquiring and retaining a sufficient number of competent temporary employees. The Bureau's experience in 1980 and in pre-1990 census activities suggests that recruiting, hiring, and retaining people will again represent a major operational challenge.

Between October 1989 and September 1990, the Bureau expects to hire 480,000 persons. Of those, about 315,000 will actually be working during the peak of operations (April to June 1990). To fill these positions, the Bureau will need to screen about 1.6 million applicants, or about 3 or 4 applicants per position. In 1980, some offices had less than that number of qualified persons for each position, thus restricting management's discretion in who was hired. The Bureau's ability to identify and select individuals who will work most effectively will have an impact on census quality and costs.

The Bureau traditionally has had difficulty in maintaining full staffing. For the 1970 census, Bureau officials stated that personnel turnover rates ranged from 20 to 25 percent. At the height of the 1980 census operations, the Bureau had only 70 percent of the required number of enumerators. This was particularly a problem in the New York, Dallas, Philadelphia, and Denver regions and other inner-city district offices, where the turnover rate ranged from 37 to 74 percent.

The Bureau already has experienced problems in staffing for the 1990 census. Our review of recruiting reports for 10 regional census offices during address list development in 1988 found the Bureau encountering difficulties in obtaining and holding a sufficient number of enumerators in areas of 11 states. Some areas experienced turnover of more than 60 percent, or twice what was expected. These problems may foreshadow more difficulties in subsequent operations.

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Inadequate Pay Likely to Be a Problem

The most fundamental staffing challenge confronting the Bureau is ensuring that its pay rates are competitive. According to Bureau staff responsible for recruiting and staffing, its ability to attract and compete for needed temporary employees is adversely affected by low unemployment rates in some areas and the Bureau's relatively low pay. Its hourly wage scale—\$5.50 to \$6.00 per hour—does not reflect geographic differences in the cost of living and market wage rates, which may hamper recruiting efforts in some areas. (IRS has encountered similar problems in recruiting and retaining temporary employees. At some service center locations, entry-level salaries reportedly are lower than those offered by local fast food restaurants.)

Inadequate pay already has contributed to staffing problems. In preliminary operations for 1990, about 29 percent of census prelist areas reported difficulties in meeting recruiting and staffing goals. To expedite completing those operations, the Bureau increased its hourly enumerator pay rate from \$5.50 to \$8.00 in some areas.

To improve the competitiveness of its pay rates, the Bureau has initiated two major pay efforts. First, the Bureau plans to provide additional pay for its temporary field staff to increase productivity, reduce turnover, and improve census quality. Second, the Bureau is considering adopting geographic pay scales for 1990 that would pay enumerators as much as \$8.00 per hour. We have encouraged the Bureau to consider a pay system more sensitive to local market conditions.

Inadequate pay is not the only staff problem confronting the Bureau. It also faces a diminishing labor pool. To many potential employees, census work is unattractive because of its temporary nature, lack of benefits, and required access to an automobile. We believe the Bureau must explore all options to enlarge its labor pool. For example, both we and the Bureau have endorsed legislation that would allow federal military and civilian retirees to work on the 1990 census without a reduction in their retirement annuities.

# Census Questionnaire Short Form Questions

1a. List on the numbered lines below the name of each person living here on Sunday, April 1, including all persons staying here who have no other home. If EVERYONE at this address is staying here temporarily and usually live somewhere else, follow the instructions given ... below.

b. If EVERYONE is staying here temporarily and usually live somewhere else, list the name of each person on the number lines above, ... and print their usual address below.

For each person listed in Question 1a ... :

2. How is this person related to PERSON 1 (the household member (or one of the members) in whose name the home is owned, being bought, or rented, or any adult household member)?

3. Sex.

4. Race. If **Indian (Amer.)**, print the name of the enrolled or principal tribe. If **Other Asian or Pacific Islander (API)**, print one group, for example: Hmong, Fijian, Laotian, Thai, Tongan, Pakistani, Cambodian, and so on. If **Other Race**, print race.

5. Age and year of birth.

6. Marital Status.

7. Is this person of Spanish/Hispanic origin?

Now please answer Questions H1a — H7b for your household.

H1a. Did you leave anyone out of your list of persons for Question 1a on page 1 because you were not sure if the person should be listed — for example, someone temporarily away on a business trip or vacation, a newborn baby still in the hospital, or a person who stays here once in a while and has no other home?

b. Did you include anyone in your list of persons for Question 1a on page 1 even though you were not sure that the person should be listed — for example, a visitor who is staying here temporarily or a person who usually lives somewhere else?

H2. Which best describes this building? Include all apartments, flats, etc., even if vacant.

H3. How many rooms do you have in this house or apartment? Do not count bathrooms, porches, balconies, foyers, halls, or half-rooms.

H4. Is this house or apartment —

Owned by you or someone in this household with a mortgage or loan?

Owned by you or someone in this household free and clear (without a mortgage)?

Rented for cash rent?

Occupied without payment of cash rent?

If this is a ONE-FAMILY HOUSE;

H5a. Is this house on ten or more acres?

b. Is there a business (such as a store or barber shop) or a medical office on this property?

Answer only if you or someone in this household OWNS OR IS BUYING this house or apartment —

H6. What is the value of this property; that is, how much do you think this house and lot or condominium unit would sell for if it were for sale?

Answer only if you PAY RENT for this house or apartment —

H7a. What is the monthly rent?

b. Does the monthly rent include any meals?

# Major Contributors to This Report

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**General Government  
Division, Washington,  
D.C.**

Bill Hunt, Assistant Director, General Management Issues  
Steve Martin, Evaluator-in-Charge  
Jack Kaufman, Evaluator  
Sherrie Russ, Evaluator  
Chris Mihm, Evaluator  
Domingo Nieves, Evaluator  
Tammy Conquest, Evaluator

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# Glossary

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District Office	A temporary office opened locally by the Census Bureau to conduct 1990 census field operations. Approximately 493 will be established nationwide (including 9 in Puerto Rico) and will be in operation for approximately 12 to 18 months, beginning in 1989.
Enumerator	A temporary census employee whose assignments involve locating and listing households and conducting interviews with respondents, explaining the purpose of the census, asking questions as worded on the census forms, recording data on these forms, or other field operations.
Housing Unit	A housing unit is a house, apartment, mobile home or trailer, group of rooms, or single room occupied as separate quarters or, if vacant, intended for occupancy as a separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from the outside of the building or through a common hall.
Household	A household consists of all the persons who occupy a housing unit. The persons constituting a given household include the related family members and all the unrelated person, if any, such as boarders, foster children, or employees who share the housing unit.
Nonresponse Followup	The operation in which the Bureau obtains completed questionnaires from households for which a questionnaire was not received by mail.
Postcensus Local Review	The operation in which the Bureau provides local officials an opportunity to review preliminary housing unit and population counts for their political jurisdictions.
Precensus Local Review	The operation in which the Bureau provides local officials of functioning governments (including federal and state tribal governments) the opportunity to check preliminary housing unit and special place counts within their political jurisdictions.

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Prelist

The operation by which the Bureau creates a census mailing list in suburban and rural areas by identifying and listing the mailing addresses for all places where people live or could live.

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Recanvass

A physical unit by unit search to ascertain the correct number of housing units, special places, or group quarters population in a census block or block part as a follow-up to local review operations.



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# Related GAO Products

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A \$4 Billion Census in 1990? Timely Decisions On Alternatives To 1980 Procedures Can Save Millions (GGD-82-13, February 22, 1982).

The Census Bureau Needs To Plan Now For A More Automated 1990 Decennial Census (GAO/GGD-83-10, January 11, 1983).

Decennial Census: Issues Related to Questionnaire Development (GAO/GGD-86-74BR, May 5, 1986).

Decennial Census: Status of Plans to Computerize Questionnaire Data (GAO/GGD-86-76BR, May 5, 1986).

Decennial Census: Pretests Could Be Used More Effectively in Census Planning (GAO/GGD-87-24BR, January 8, 1987).

Decennial Census: Local Government Uses of Housing Data (GAO/GGD-87-56BR, April 8, 1987).

Decennial Census: A Comparison of the 1980 and 1990 Census Questionnaire Contents (GAO/GGD-87-76FS, May 11, 1987).

Decennial Census: Automation of the Geographic Support System (GAO/GGD-87-75BR, May 27, 1987).

Decennial Census: 1980 Post Census Day Improvement Programs (GAO/GGD-87-98FS, July 9, 1987).

Decennial Census: Coverage Evaluation and Adjustment Activities (GAO/GGD-87-99FS, July 9, 1987).

Status of the 1990 Decennial Census (GAO/T-GGD-88-53, September 27, 1988).

Decennial Census: Minicomputer Procurement Delays and Bid Protests: Effects on the 1990 Census (GAO/GGD-88-70, June 14, 1988).

Status of Plans for the 1990 Decennial Census: An Update (GAO/T-GGD-89-15, March 23, 1989).

Status of Plans for the 1990 Decennial Census (GAO/T-GGD-89-20, May 5, 1989).

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**Related GAO Products**

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Expanding the Decennial Census Applicant Pool (GAO/T-GGD-89-22, May 23, 1989).

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