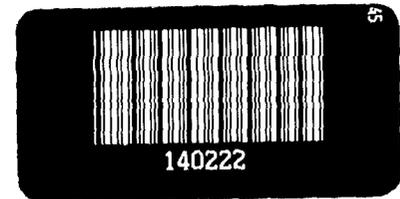


November 1989

1990 CENSUS  
Comparison of  
Coverage  
Improvement  
Programs for 1980-  
1990



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General Government Division

B-234118

November 28, 1989

The Honorable David H. Pryor  
Chairman, Subcommittee on Federal Services,  
Post Office, and Civil Service  
Committee on Governmental Affairs

The Honorable Jeff Bingaman  
Chairman, Subcommittee on Government  
Information and Regulation  
Committee on Governmental Affairs  
United States Senate

On November 22, 1988, the Chairman of the Subcommittee on Federal Services, Post Office and Civil Service, Senate Committee on Governmental Affairs, expressed concern about the escalating cost of taking the census and asked us to look for potential areas with budget savings. When the Committee's Subcommittee on Government Information and Regulation was formed at the beginning of the 101st Congress, its chairman joined in that request.

In response, this report compares descriptions, reported results, and costs for 1980 and 1990 census coverage improvement programs. These programs are primarily intended to reduce the historic population undercount by improving census coverage. The programs have generally improved the quality of the census counts with varying levels of success and costs.

This report provides updated information on the status of the coverage improvement programs. These programs are described in detail in appendix I and a summary of the costs of the programs can be found in appendixes II and III.

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## Results in Brief

The Census Bureau spent approximately \$101 million in 1980 on 14 coverage improvement programs. The Bureau estimates that it will spend about \$175 million on 13 coverage improvement programs in the 1990 Decennial Census. This amounts to about \$122 million in 1980 constant dollars after adjusting for inflation—a 21 percent real increase over 1980. While some of this increase may be attributable to an increased workload, it is also at least partly attributable to the Bureau's planned use of additional or revised procedures. These include additional Postal Service checks on the completeness of the Bureau's address list for most suburban areas and additional reviews of the completeness of housing

counts by local officials. At the same time, however, the Bureau has eliminated some programs that it found unproductive in the 1980 census.

The Bureau's coverage improvement programs range in cost from about \$500,000 to \$69 million. Those programs that will not start before the spring of 1990 are estimated to cost \$118 million and present opportunities to adjust for cost overruns or budgetary shortfalls that may occur. However, any program reductions could affect the quality of census results.

The above numbers include the Vacant/Delete program, the Bureau's most expensive coverage improvement program, which it cancelled at the end of October to accommodate a \$57 million cut to its fiscal year 1990 appropriation. The Bureau estimated this program would have cost \$69 million and could have added about 1.5 to 2 million persons to the census counts. In the 1980 census, the Bureau estimated that it added about 1.7 million persons to the census count as a result of this program. The Bureau plans to reinstate this program if funds permit.

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## Background

The 1980 census cost about \$1.1 billion. The Census Bureau currently estimates it will spend about \$2.6 billion for the 1990 census or, after adjusting for inflation, about \$1.9 billion in 1980 constant dollars. Thus, the total estimated cost of taking the 1990 Decennial Census, adjusted for inflation, has risen about 73 percent or, after adjusting for the increased number of housing units in 1990, about 40 percent per housing unit.

The 1980 coverage improvement programs were prone to operational problems, and, according to the Bureau, did not always produce expected results. The Bureau recognizes that these programs are expensive but believes it cannot ignore the undercount problem most of the programs were designed to address. For this reason, the Bureau will continue coverage improvement programs in 1990.

Although the Bureau expects to spend about 7 percent of its total budget for the 1990 Decennial Census on coverage improvement programs, their benefit cannot be reliably estimated. Current Bureau analyses of 1990 census pretest and dress rehearsal results are not based on a statistically projectable sample that would allow a nationwide projection of the cost benefit of these programs.

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## Objective, Scope and Methodology

To determine the composition and costs of coverage improvement programs for the 1990 Decennial Census, we interviewed Bureau officials and reviewed (1) the Census Bureau's evaluation and research report on 1980 Decennial Census coverage improvement activities entitled Programs to Improve Coverage in the 1980 Census, issued in January 1987; (2) Bureau research and evaluation memoranda; (3) the results of the census pretests done during 1985 through 1987 and the 1988 dress rehearsal; and (4) earlier GAO work on the 1980 and 1990 censuses.

We did our work from December 1988 to September 1989 using generally accepted government auditing standards. We discussed this report with Bureau of the Census officials and incorporated their technical changes where appropriate.

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As agreed with the Subcommittees, 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; 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 report are listed in appendix IV. If you have any questions about this report, please contact me on 275-8676.



L. Nye Stevens  
Director, Government Business  
Operations Issues

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**Abbreviations**

ACF	Address Control File
APOC	Advance Post Office Check
PEPOC	Post Enumeration Post Office Check
TOD	Time Of Delivery
WHUHE	Whole Household Usual Home Elsewhere

# Coverage Improvement Programs—1980 and 1990

Coverage improvement programs can be viewed as a system of overlapping procedures, each intended to reduce such census errors as an undercounting of persons. The U.S. Census Bureau will use two types of coverage improvement programs for the 1990 Census: (1) those done before Census Day, April 1, in the actual census year, to improve the quality of the address list and (2) those that will be mainly done during the data collection period.

## Coverage Improvement Programs Designed to Improve the Quality of the Address List

For most of the nation's households, the Bureau develops an address list. The address list, which is essential for the delivery and for the control of the receipt of census questionnaires, is initially developed in two ways: for urban areas, the Bureau purchases vendor lists; for some suburban and rural areas, the Bureau physically canvasses the areas (this is referred to as prelisting). With both methods, the Bureau uses the Postal Service to verify the accuracy and completeness of the lists. The Bureau also employs temporary census workers to physically recanvass the urban areas as a quality check.

The Bureau used three Postal Service checks done at different times to improve its address lists in 1980. They were the Advance Post Office Check, the Casing check, and the Time-of-Delivery check. In 1990 the Bureau will use only the Advance Post Office Check and the Casing check.

## Advance Post Office Checks

The Advance Post Office Check (APOC) is the first procedure used by the Bureau to improve its address lists. During the APOC, the Bureau provides addresses to the Postal Service for review. The Postal Service identifies addresses as deliverable, undeliverable, or duplicates. The Postal Service then gives the Bureau addresses for housing units and special places not on the Bureau's address list.

The APOC operation for the 1980 Decennial Census was done in the summer of 1979 and covered urban areas where the address lists had been obtained from commercial vendors. About 38 million addresses were reviewed. An APOC was planned for the prelist areas for 1980 but was not done because of operational problems.

The APOC operation for the 1990 Decennial Census was done from October 1988 through September 1989 in three phases. The Postal Service reviewed about 88 million addresses.<sup>1</sup>

## Results and Costs

For the 1980 Decennial Census, the Bureau submitted approximately 38 million addresses to the Postal Service for review. This resulted in the addition of about 2.2 million addresses to the Bureau's address file, or a 5.5 percent increase to the 1980 census address list in areas where the Bureau used commercial address lists. This program cost about \$7 million, or about \$3.50 per new address added for the 1980 Decennial Census.

The Census Bureau estimates that it spent about \$17 million on APOC for the 1990 Decennial Census. Results of the APOC operation for the 1990 Decennial Census were not available in time to be included in this report. However, APOC results were available for the 1988 Dress Rehearsal done in St. Louis and Columbia, Missouri, and in Pasco, Washington. This operation resulted in the addition of about 11,000 addresses to the Bureau's address file, or 3.1 percent of all the addresses counted in the dress rehearsal.

## Casing Post Office Check

The Casing Post Office check will be done in March 1990 shortly before the census as another check on the accuracy of the Bureau's address lists. During this operation, the Postal carriers will match census addresses provided by the Census Bureau to mailing addresses on their routes to determine missing, undeliverable, or duplicate addresses. These discrepancies will be reported to the Census Bureau.

In 1980 the Bureau used Casing and Time-of-Delivery (TOD) postal checks during the delivery of census questionnaires. These procedures were similar. During the TOD check, the Postal Service identified missing addresses and undeliverable questionnaire mailing packages not already identified during Casing. According to Bureau officials, the TOD check is not going to be done in 1990 because the Bureau was unable to distinguish the relative benefits of the TOD check from those of the Casing check.

<sup>1</sup>For about 11 million of the units in some rural areas, Census enumerators, rather than postal carriers, will deliver questionnaires. This form of questionnaire delivery is referred to as update/leave. The Bureau will not have the Postal Service do any checks on these addresses.

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**Results and Costs**

About 2 million addresses, or 3.4 percent of all the housing units counted in mail census areas during the 1980 census, were added to the Bureau's address list as a result of the Casing and Time-of-Delivery post office check. Of these, 1.8 million were enumerated as occupied. This operation cost about \$9.3 million in 1980, or about \$4.50 for each address that was added to the Bureau's address list. The Bureau expects to spend about \$17 million on its Casing check operation for the 1990 Decennial Census. Analysis of the estimated costs per expected address added to the address list for the 1990 census was not available from the Bureau at the time we completed our field work.

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**Precanvass**

The prec canvass operation takes place before Census Day in areas where the Bureau uses commercial vendor address lists. Census enumerators walk these areas using copies of the commercial list, which the Postal Service updates. The enumerators verify the accuracy of the list and add any units they find that are not on the list. The Bureau also uses this operation to correct geographic coding errors.

For the prec canvass in the 1980 census, the Bureau verified the basic street address for multi-unit buildings but did not verify apartment designations. The Bureau's prec canvass operation for the 1990 census will be different from 1980 because it will include the designation of each living quarter (apartment) for multi-unit structures.

For the 1990 prec canvass operation, enumerators will be given address registers that separately list each known housing unit, including apartment designations for multi-unit buildings. The enumerators will be instructed to verify the apartment designation for each unit listed. The Bureau believes that by improving apartment designations on the address lists, it will improve questionnaire delivery in multi-unit structures, reduce delivery mixups (cases in which questionnaires are delivered to the wrong units), and help in the Bureau's mail nonresponse follow-up operation.

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**Results and Costs**

The Bureau's prec canvass operation for the 1980 census took place in February and March 1980. The Bureau estimated that 2.36 million addresses were added to the census as a result of this operation and that it cost about \$11.8 million, or about \$5.00 for each address added to the Bureau's address list in 1980.

The Bureau estimates that it will spend about \$23 million and canvass about 56 million housing units during its prec canvass operation for the

1990 Decennial Census. The Bureau started its prec canvass operation for the 1990 census in May 1989 and completed the operation in August 1989. The final results of the 1990 prec canvass operation were not available from the Bureau at the time we completed our field work.

## APOC Reconciliation

APOC reconciliation, a field operation done by Bureau enumerators in prelist areas, is designed to collect more accurate mailing addresses for those units for which the Postal Service classified the address as undeliverable and to assign Postal Service additions to the correct geographic locations.

APOC reconciliation was not done for the 1980 census because there was no prelist APOC. APOC reconciliation for the 1990 census was completed in two phases, the first in June of 1989 and the second in September of 1989.

## Results and Costs

The Bureau estimated that APOC reconciliation covered 7.7 million housing units and cost about \$12 million for the 1990 census. At the time we completed our field work, the Bureau had not completed APOC reconciliation.

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## Coverage Improvement Programs Designed to Improve Coverage During Data Collection

### S-Night

S-Night (Street/Shelter Night) is part of the Bureau's 1990 census group quarters enumeration program. The purpose of the S-Night operation is similar to that of the Bureau's casual count operation for the 1980 census—namely, to enumerate transient individuals who will not be counted by regular census enumeration procedures.

In preparation for the 1990 S-Night operation, the Bureau sent letters in September 1989 to approximately 39,000 local government officials requesting them to identify shelters, hotels, motels, and other locations where homeless persons or families live.

The S-Night operation is scheduled for March 20 through 22, 1990, 2 weeks before Census Day. According to Bureau officials, March 20 through 22 was chosen because “many of the state and local shelters close their doors on April 1” as the cold weather ends. S-Night is a 1-night operation for most areas, with a second night possible for large urban areas with a large homeless population. Enumerators will visit shelters, missions, and previously identified street locations to count the homeless. The casual count operation was done midway through the 1980 census-taking process and consisted of sending census enumerators to bus and train stations, welfare and unemployment offices, street corners, and other places where transient persons might be.

#### Results and Costs

According to the Bureau, the impact of the casual count program on the 1980 census was minimal because the lists of places where census enumerators were sent may have been incomplete, many transient individuals may have been in other locations at the time of casual count, or there may have been very few transient persons eligible to be counted by the casual count operation. The Bureau estimates that the 1980 casual count operation added about 13,000 persons to the census count and cost about \$246,000, or approximately \$18.90 per person added to the census count.

The Bureau expects to spend \$3.8 million on its S-Night operation in 1990 to add about 372,000 persons, or approximately \$10.15 per person. Much of the impetus for the increases in the S-Night operation stems from the increased interest at all levels of government and in the private sector in data on the homeless. According to the Bureau, while the results of the S-Night operation done in selected cities in Missouri and Washington during the Bureau’s 1988 Dress Rehearsal are not projectable to the 1990 census, 815 persons were enumerated within a 12-hour period.

#### Edit of Questionnaires and Census Questionnaire Coverage Items

The Bureau’s edit of questionnaires operation for the 1990 census is designed to improve data quality and to reduce item nonresponse. The Bureau will do both content and coverage edits of the questionnaires. Content edits will reject questionnaires for missed answers, erroneous answers, or multiple answers. Coverage edits will identify questionnaires that may have omitted persons. According to the Bureau, the questionnaire coverage edit activities are essentially the same for 1990 as for 1980.

The 1980 census questionnaire coverage items operation consisted of (1) four questions (H1, H2, H3, and H4)<sup>2</sup> asked on the census questionnaire that were designed to improve coverage on the basis of an edit and (2) a subsequent followup at households for those questionnaires that failed this edit. Questions H1 and H3 asked respondents to identify people who should have been included on the questionnaire. Question H2 prompted respondents to identify people who should not have been included on the questionnaire. Question H4 asked respondents the number of units in the structure in which they resided. In 1980 the Bureau's evaluation of these coverage questions was limited to a study of the H4 question. This was because the Bureau believed that the materials needed to evaluate the results of the other questions were not complete.

According to the Bureau, the H4 coverage edit will not be done in 1990 because in the past two censuses this activity has been adversely affected by operational problems and by respondents not answering the question. We noted in 1980 that the expected benefits of the H4 question were compromised because the operation was not done as designed. In addition, the Bureau's decision not to follow up on the nonresponse may have contributed to an undercount in the areas reviewed.<sup>3</sup> The H4 coverage edit was very expensive, and only a marginal coverage improvement resulted from this operation.

In 1990 the census questionnaire will ask respondents only two coverage questions to determine who should be included on the census questionnaire. The housing question (H4) will be omitted. The Bureau will use other methods to improve housing unit coverage, such as unit-by-unit prec canvass and expanding the Advance Post Office Check to prelist areas.

## Results and Costs

According to the Bureau, the 1980 census questionnaire coverage items operation (H4 edit) was not cost effective and resulted in minimal coverage improvement. The Bureau estimates it spent \$7.5 million on this program in 1980 and, as a direct result, added approximately 93,000 housing units to the census count at an estimated cost of \$81 per unit.

The Bureau anticipates that its edit of questionnaires operation in 1990 will cover 70 million housing units and cost approximately \$38 million. The costs of this operation cannot be compared to the costs of doing the

<sup>2</sup>"H" designates household type questions.

<sup>3</sup>An Assessment of 1980 Census Results in 10 Urban Areas (GGD-81-29, Dec. 24, 1980).

H4 coverage edit. The \$7.5 million for 1980 is an estimate of the cost for the H4 edit, only one component of the coverage edit. The \$38 million for 1990 is the estimated cost of all coverage edits and all content edits.

## Local Review

The Local Review program is designed to improve the accuracy of the census by helping to pinpoint such problems as clusters of missed housing units, geographic misallocations (housing units listed in the wrong location), or incorrectly displayed political boundaries. The local review program gives local officials in approximately 39,000 governmental jurisdictions an opportunity to review preliminary 1990 census counts to identify apparent discrepancies. The Bureau provides local officials with appropriate maps and tallies of housing units for census blocks and will ask them to identify the blocks where they believe the Bureau is in error. According to the Bureau, two local reviews were originally planned for the 1980 Decennial Census (one before Census Day and one after); however, only one—a mid-census local review—was done.

In 1990, similar to 1980, the Bureau plans to do two local reviews. During the precensus local review, the Bureau will tabulate housing unit counts, by block, from its address file that is compiled and corrected in advance of Census Day. The precensus local review program provides local governments with an opportunity to review housing counts at the block level so that they can identify any discrepancies.<sup>4</sup> The postcensus local review operation will provide housing unit counts by block to local officials for review and housing units added as a result of census follow-up operations.

## Results and Costs

In 1980 the Bureau provided 39,000 local governments with materials on the local review program. About 12,400 of these local governments contacted Bureau officials about the local review program. Overall, about 6,600 local governments responded with problems on the census counts. The remaining 5,800 either expressed satisfaction with the census count or had no interest in participating in the program.

According to the Bureau, the problems identified by the 6,600 local governments that responded covered about 28,000 census areas. The problems were resolved for about 20,000 of these areas during the Census district office review. Housing units were added, transferred, or deleted

<sup>4</sup>The address lists for certain areas are not completed until after the conclusion of the precensus local review program. Therefore, governmental units in these areas can participate only in the postcensus local review program.

in the remaining 8,000 areas that were recanvassed and persons were either added to the census count or transferred to the correct geographical area, as shown in table I.1.

**Table I.1: Results of Recanvassing Areas  
in the 1980 Local Review Program**

	Added to census counts	Deleted from census counts	Transferred to correct geographical area
Housing unit counts	53,222	20,334	28,125
Person counts	75,741	0	56,328

The Bureau reported that it spent \$4.3 million on the local review program in 1980. The Bureau estimates that it will recanvass about 4.7 million housing units and spend approximately \$10 million to do the two local reviews planned for 1990.

## Telephone Questionnaire Assistance

The Bureau's telephone questionnaire assistance program for the 1990 census will be put in place at its seven processing offices and will assist callers requesting census questionnaires, clarification of questions on the census questionnaire, or help completing the questionnaire. The Bureau plans to provide telephone questionnaire assistance in March and April of 1990. There will be eight individual toll-free numbers: one for English speakers and seven for non-English speakers. Additionally, personal assistance will be available at approximately 493 district offices.

## Results and Costs

In 1980 the Bureau's assistance centers handled over 2.2 million documented telephone questions on various aspects of the census questionnaire, and spent about \$2 million on the program, or about \$0.92 per telephone call.

The Bureau estimates that it will spend approximately \$13.2 million on this program in 1990 to answer an estimated 7.4 million calls, or about \$1.78 per telephone call.

## Spanish Questionnaire

Through its Spanish questionnaire program, the Bureau provides census questionnaires in Spanish to persons who request them by (1) marking the front of the regular census questionnaire, (2) calling census assistance centers, or (3) asking a nonresponse follow-up census taker. According to the Bureau, the 1990 Spanish questionnaire program will be the same as the 1980 program.

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Results and Costs

The Bureau's analysis of the Spanish questionnaires shows that although they were not widely requested on mail return questionnaires in 1980, they were requested through the telephone assistance centers. The only cost associated with the use of Spanish questionnaires in 1980 was about \$400,000 to print about 7.8 million Spanish forms and associated materials.

The Bureau estimates that it will print about 8.3 million forms and associated materials and spend approximately \$500,000 in 1990 on the Spanish questionnaires program. According to the Bureau, the program's increased cost over 1980 is attributable to higher printing costs incurred to make the questionnaire machine-readable.

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Nonhousehold Sources  
Program

The rate of undercount differs for various segments of the population. For example, blacks are more undercounted than whites. The Nonhousehold Sources Program was a records check procedure aimed at reducing the disproportionate undercount of minorities. In 1980 lists were obtained from the U.S. Immigration and Naturalization Service and other State and local government sources. The lists provided names, basic demographic information, and an address that most likely was the person's permanent residence. These persons were then matched with the data collected on census questionnaires; nonmatches were followed up and persons determined to be missed were added to the census. According to the Bureau, the program was not cost effective. It was expensive, had operational problems, and did not add persons at the anticipated rate. The Bureau had anticipated that the proportion of persons added during the 1980 census would be about 10 percent of the lists processed; however, only 1.9 percent of the persons who were included on the nonhousehold sources lists were added to the census.

The Nonhousehold Sources Program was evaluated as part of the 1986 test census to determine whether the problems associated with the program in 1980 could be overcome through the use of automated procedures; however, no greater coverage improvement gains were achieved and operational problem areas that seriously reduced the effectiveness of the program did not appear solvable for 1990.

Results and Costs

The Bureau's analysis showed that 127,000 persons were added to the census count as a result of the Nonhousehold Sources Program. As already noted, this was substantially lower than the Bureau had anticipated. As a result, the Bureau decided not to use the Nonhousehold Sources Program in 1990. The Census Bureau reported that it spent

**Appendix I  
Coverage Improvement Programs—1980  
and 1990**

about \$9.8 million on this program in 1980, or about \$77 per person added to the census count.

**Post Enumeration Post  
Office Check**

The Post Enumeration Post Office Check (PEPOC) used in the 1980 census was designed to improve census coverage in those areas where the traditional door-to-door list enumeration procedure was used as opposed to mailing the questionnaire. After the 1980 census enumeration was completed, the Postal Service reviewed the addresses that were identified by the Bureau. From this review, housing units that the census missed were identified and followed up. Both housing units and persons were added to the census from this operation when they were found not to have been enumerated. The PEPOC operation will not be done in 1990.

According to Bureau officials, on the basis of the results of the PEPOCs done for the 1980 census and the 1988 Dress Rehearsal, the Bureau determined that it would be unable to accurately identify enough additional addresses from the Postal Service review to achieve desirable program yields. The lower-than-desirable program yield and the Bureau's cost-cutting efforts influenced the decision not to do the PEPOC in the 1990 census.

**Results and Costs**

The Bureau estimated that it added about 50,000 housing units and 130,000 persons to the census count as a result of the PEPOC, and spent \$990,000 on this program in 1980, or about \$19.70 per housing unit added.

**Prelist Recanvass**

The 1980 Prelist Recanvass program was a last-minute operation designed to compensate for the Bureau's not doing an APOC in the prelist areas. It was an additional check on the completeness of the address listings in the more rural parts of the prelist area where it was thought housing coverage may have been deficient. The recanvass was done during the late census follow-up operations. In addition to adding units that the census missed, the recanvass also identified and removed duplications. This operation was done in 1980 but will not be done in 1990 because the Bureau believes that Prelist APOC and APOC Reconciliation will provide sufficient coverage.

**Results and Costs**

The Bureau estimated that about 105,000 housing units and an additional 217,000 persons were added as a result of the Prelist Recanvass operation in 1980. The Bureau spent about \$10.3 million on this operation in 1980, or about \$98 per housing unit added. On a cost per housing

unit added basis, the Prelist Recanvass program was the most expensive 1980 coverage improvement program.

## Vacant/Delete Follow-Up/ Movers

The Vacant/Delete follow-up check is a post Census Day operation used to verify that housing units on the Bureau's address register were correctly classified during nonresponse followup as vacant or nonexistent. All units are revisited to verify their status. Occupants of units reclassified from vacant to occupied are added to the census if they were not enumerated elsewhere. Similar procedures are applied for addresses initially classified by enumerators as nonexistent.

The movers program was added to Vacant/Delete follow-up for 1990. It is an attempt by the Bureau to determine where people who are interviewed during Vacant/Delete follow-up were enumerated on Census Day. This is done to avoid duplication by verifying that the persons counted had not previously been counted somewhere else.

## Results and Costs

During the 1980 census, the Bureau revisited all housing units previously classified by enumerators as vacant or nonexistent. About 10 percent of the 5.8 million vacant units that were revisited were converted to occupied status. The Bureau estimated that it added about 1.7 million persons to the 1980 census count as a result of its Vacant/Delete follow-up operation. The Bureau reported spending about \$36.3 million for the Vacant/Delete follow-up program in 1980.

The Bureau estimated that it would revisit about 13 million housing units, and spend about \$69 million on this program in 1990. According to the Bureau, the Vacant/Delete program was expected to add about 1.5 to 2 million persons to the census count. The Bureau expected that many of these persons would be minorities who otherwise would be missed in the census.

In late October 1989, the Bureau decided to cancel the Vacant/Delete program to accommodate a \$57 million cut to its fiscal year 1990 appropriation. The Bureau plans to continue implementing activities required to prepare for and process the results of the Vacant/Delete program, as a contingency. If the mail response rate is higher than expected and the resulting savings are sufficient, the Bureau plans to reinstate this program.

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**Whole Household Usual Home Elsewhere**

The Whole Household Usual Home Elsewhere (WHUHE) operation is used to prevent double counting by correctly enumerating households temporarily away from their usual residence on Census Day. In 1980 WHUHE households were defined as housing units occupied entirely by persons who had a usual residence elsewhere. Persons found in temporary housing would be counted at their usual place of residence and the temporary housing unit would be considered a vacant unit. According to the Bureau, this operation will not be significantly different in 1990.

**Results and Costs**

The Bureau's 1980 WHUHE program reallocated at most 1 million persons and, of that number, identified about 214,000 persons who were counted in two locations. In 1980, about 642,000 households reported on the census questionnaire that their usual home was elsewhere. The cost of the WHUHE program in 1980 was \$550,000. The Bureau expects to cover about 633,000 housing units and spend about \$1.8 million on the WHUHE program in 1990.

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**The "Were You Counted?" Campaign**

The "Were You Counted?" campaign is done after regular census enumeration is completed. The Bureau uses public service advertisements in both print and electronic media to encourage persons who think they have not been counted to enumerate themselves by completing a "Were You Counted?" census questionnaire. The Bureau determines if the respondents were actually missed and adds those that were to the census count. The Bureau's 1980 and 1990 "Were You Counted?" campaigns are the same.

**Results and Costs**

The Bureau estimated that about 71,000 persons were added to the census count during the 1980 "Were You Counted?" campaign. The Bureau estimated that it spent about \$270,000 on this program in 1980, or about \$3.80 for each person added to the census count.

The Bureau expects to process 100,000 "Were You Counted?" questionnaires and to spend approximately \$3.1 million on this program in 1990.

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**Parolee/Probationer Coverage Improvement Program**

The Parolee/Probationer Coverage Improvement Program (PPCIP) is designed to help reduce the undercount by using information voluntarily provided by the states. In this program, parole and probation officers are requested to provide the names, addresses, and other demographic information on parolees and probationers as of Census Day. The parole or probation officer completing the form will be asked to certify the information as correct by signing and dating the form. The Census

Bureau will attempt to match this information to the information on the census questionnaire for the given address to determine whether the person was included in the census. If the person was not reported on the census questionnaire he or she will be added as a resident at the address without a follow-up verification by the Bureau. PPCIP was not done for the 1980 census.

**Results and Costs**

The Bureau estimates that in 1990 there will be about 2.6 million parolees and probationers nationally. The Bureau's cost estimate for PPCIP assumes that about 1.3 million, or 50 percent, of this population will be reported. The Bureau estimates that it will spend about \$4.9 million on this program in 1990, or about \$3.77 per form processed. This program was not done for the 1980 census nor during tests done by the Bureau for the 1990 census. At the time we completed our field work the Bureau was not able to provide us with an estimate of how many persons will actually be added to the census by PPCIP.

# Comparison of Costs of Major 1980 and 1990 Coverage Improvement Programs

Dollars in thousands					
Coverage improvement programs designed to improve coverage of the address list prior to data collection	Costs		1990 costs in 1980 constant dollars <sup>a</sup>	Increase/(decrease) between 1980 and 1990 costs in 1980 constant dollars	Percent increase/(decrease) in constant 1980 dollars
	Actual 1980	Estimated 1990			
Advance Post Office Checks:					
Urban areas	\$6,970	\$7,269	\$5,073	\$(1,897)	(27)
Suburban and rural areas		10,140	7,076	7,076	
Casing and Time of Delivery	9,290	16,725	11,671	2,381	26
Precanvass	11,800	23,194	16,186	4,386	37
Advance Post Office Checks Reconciliation		11,806	8,239	8,239	
<b>Subtotal</b>	<b>\$28,060</b>	<b>\$69,134</b>	<b>\$48,245</b>	<b>\$20,185</b>	<b>72</b>
Coverage improvement programs designed to improve coverage during data collection					
Casual count	\$246			\$(246)	
S-Night <sup>b</sup>		\$3,775	\$2,634	2,634	
Edit of questionnaires <sup>c</sup> and census questionnaire coverage items	7,500			(7,500)	
Whole Household Usual Home Elsewhere	550	1,790	1,249	699	127
"Were You Counted?" Campaign	270	3,100	2,163	1,893	701
Vacant/Delete follow-up/mover <sup>d</sup>	36,320	68,500	47,802	11,482	32
Nonhousehold Sources Program	9,820			(9,820)	
Prelist Recanvass	10,290			(10,290)	
Local Review:					
Precensus		3,954	2,759	2,759	
Postcensus <sup>e</sup>	4,310	6,123	4,273	(37)	(1)
Assistance centers	2,030			(2,030)	
Telephone questionnaire assistance <sup>f</sup>		13,200	9,211	9,211	
Spanish questionnaires	388	500	349	(39)	(10)
Post Enumeration Post Office Check	990			(990)	
Parolee/Probationer Coverage Improvement Program		4,900	3,419	3,419	
<b>Subtotal</b>	<b>\$72,714</b>	<b>\$105,842</b>	<b>\$73,859</b>	<b>\$1,145</b>	<b>2</b>
<b>Total</b>	<b>\$100,774</b>	<b>\$174,976</b>	<b>\$122,104</b>	<b>\$21,330</b>	<b>21</b>

<sup>a</sup>The 1980 deflator used to convert 1990 costs into 1980 constant dollars is the consumer price index for all urban consumers (CPI-U) for 1980 based on the 1982-84 CPI-U.

<sup>b</sup>S-Night is similar to casual count but not exactly identical.

<sup>c</sup>The costs of the Bureau's 1990 edit of questionnaires operation cannot be compared to the 1980 costs of doing the H4 coverage edit. The \$7.5 million for 1980 is an estimate of the cost for the H4 edit, only one component of the coverage edit. The \$38 million for 1990 is the estimated cost of all coverage edits and all content edits.

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**Appendix II  
Comparison of Costs of Major 1980 and 1990  
Coverage Improvement Programs**

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<sup>d</sup>Following the completion of our field work, the Bureau decided to cancel Vacant/Delete follow-up field work to accommodate a \$57 million cut to their fiscal year 1990 appropriation. The Bureau may decide to reinstate this program if the mail response rate is higher than budgeted. The 1980 and 1990 field follow-up procedures are basically the same; the difference is in how or where the Bureau allocates post census day movers. Thus, the 1990 field follow-up workload will be the same regardless of how the Bureau allocates people.

<sup>e</sup>In 1980, Local Review was done only once. That operation is most comparable to the 1990 Postcensus Local Review.

<sup>f</sup>This operation is similar but not exactly identical to the 1980 Assistance Centers operation and includes expanded services for non-English speakers.

# Estimated Costs of Coverage Improvement Programs That Will Not Start Before the Spring of 1990

Dollars in thousands

<b>Program</b>	<b>Estimated Cost</b>
Casing checks	\$16,725
S-Night	3,775
Whole Household Usual Home Elsewhere	1,790
"Were You Counted?" Campaign	3,100
Vacant/Delete Follow-up/Mover <sup>a</sup>	68,500
Postcensus Local Review	6,123
Telephone Questionnaire Assistance	13,200
Parolee/Probationer Coverage Improvement Program	4,900
<b>Total</b>	<b>\$118,113</b>

<sup>a</sup>Following the completion of our field work, the Bureau decided to cancel Vacant/Delete follow-up field work to accommodate a \$57 million cut to their FY1990 appropriation. The Bureau may decide to reinstate this program if the mail response rate is higher than budgeted.

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