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**REPORT TO THE SUBCOMMITTEE
ON CENSUS AND STATISTICS
COMMITTEE ON POST OFFICE
AND CIVIL SERVICE
HOUSE OF REPRESENTATIVES**

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**Appraisal Of Mid-Decade
Census Proposals** B-78395

Department of Commerce

**BY THE COMPTROLLER GENERAL
OF THE UNITED STATES**

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JAN. 31, 1972



COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D. C. 20548

B-78395

Dear Mr. Chairman:

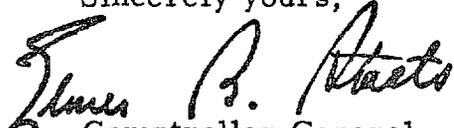
In your letter of March 26, 1971, you requested that we determine which method--a mid-decade census or a program of special surveys--would yield more fruitful results, taking into consideration the costs and the final product.

In accordance with discussions with your office, we agreed to provide you with (1) estimates of the costs--in current dollars--of four mid-decade census proposals presented during hearings held in 1961 and 1962 by the Subcommittee on Census and Government Statistics, House Committee on Post Office and Civil Service, and (2) whatever information we could develop to indicate which method--a mid-decade census or a program of special surveys--would yield more fruitful results, taking into consideration the costs and the final product.

We transmitted the cost estimates of the four mid-decade census proposals to you on July 27, 1971. This letter transmits the results of the second phase of our evaluation.

We plan to make no further distribution of this report unless copies are specifically requested, and then we shall make distribution only after your agreement has been obtained or public announcement has been made by you concerning the contents of the report. Members of my staff will be available to discuss these matters with you further if you desire.

Sincerely yours,


Comptroller General
of the United States

The Honorable Charles H. Wilson, Chairman
Subcommittee on Census and Statistics
Committee on Post Office and Civil Service
House of Representatives

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ABBREVIATIONS

GAO General Accounting Office

D I G E S T

WHY THE EVALUATION WAS MADE

At the request of the Chairman, Subcommittee on Census and Statistics, House Committee on Post Office and Civil Service, the General Accounting Office (GAO) evaluated the merits of conducting a census of the population every 5 years as contrasted to alternatives.

Background

The census conducted every 10 years primarily serves to provide population totals for determining apportionment of seats in the House of Representatives. The census also serves, however, as a source of statistical information on the social and economic conditions in the country.

For over a decade representatives of public and private sectors of society have expressed interest in obtaining more current information. A majority have suggested some form of a census every 5 years--a mid-decade census. Others support the establishment or expansion of programs using sample surveys, specially directed toward certain data, or the use of existing administrative records.

FINDINGS AND CONCLUSIONS

On the basis of its evaluation of expressed needs for census data, GAO concluded that the principal needs of Federal and State Governments could be met best by a mid-decade census covering population, income, housing, and employment and occupation information; however, this census should contain less detail than the 10-year census. (See p. 54.)

To what extent the Federal Government should meet those needs is a determination which GAO believes lies properly with the Congress. (See p. 52.)

GAO surveyed a variety of Federal program officials and State Governors regarding uses made of decennial census data. None of the four mid-decade census proposals that GAO considered at the request of the Subcommittee would meet exactly the needs expressed by these officials. GAO experienced difficulty in evaluating the merits of the proposals and alternatives because, for the most part, the needs of each user were different and because the benefits to be derived could not be quantified. (See pp. 14, 24, and 52.)

GAO's surveys of specific census needs and uses drew usable responses from 42 of the 50 States and from 96 of the 102 Federal domestic programs included in a randomly selected sample. (See pp. 14 and 25.) On the basis of the frequency of response, the tabulated results indicated that:

- The needs and uses of census data at the Federal and State levels were extensive. Program planning and program evaluation were the principal administrative uses indicated by the State and Federal officials, respectively. Both governmental levels used census data extensively pursuant to statutory requirements.
- Population statistics were of most use and importance to the Federal and State Governments. Other major data needs were those relating to income, housing, and employment and occupation.
- Most of the Federal programs surveyed which used census data required geographic detail at the county level, or above, and predominately at the State level. The States needed detail at the county level and below. (See pp. 15 and 25.)

Mid-decade census proposals

The cost of a mid-decade census could vary substantially, depending on the desired geographic and subject coverage. The four proposals considered by GAO are based on different levels of detail and on numbers of people surveyed.

Level I. Count everyone and accumulate name, address, relationship to head of household, sex, race, age, and certain information on persons of Spanish heritage. Data could be tabulated for areas as small as enumeration districts averaging 250 housing units. The Bureau of the Census estimated that this would cost \$154 million. (See p. 46.)

Level II. Duplicate the questions asked everyone in 1970--level I questions plus detailed information on housing, such as type of unit, condition, and occupancy. Data could be tabulated as in level I and also by city block for urbanized areas within the metropolitan areas. The Bureau's estimated cost is \$169 million. (See p. 47.)

Level III. Collect the same type of data as the decennial census but from only 25 percent of all households. The Bureau's estimated cost is \$170 million. (See p. 47.)

Level IV. Duplicate the decennial census. Tabulation and publication of data could be similar to that for the 1970 census. The Bureau's estimated cost is \$228 million. (See p. 47.)

Responses to GAO's surveys of data needs and uses indicated that:

- Level I would satisfy the most important of the data requirements (population characteristics) but would fall considerably short of meeting the other major data needs of Federal and State Governments.

- Level II would have the same limitation as level I, except it would provide information on basic housing characteristics. Income data needs were mentioned by the State respondents almost as frequently as housing data requirements and by the Federal program officials more frequently than housing data.
- The subject content of a mid-decade census could be substantially less than that of the 1970 census and still meet the major data needs of Federal and State Governments. Therefore levels III and IV appear to provide too much data. (See p. 54.)
- Reliability of some of the data provided by level III would be less than that of the decennial census. (See p. 54.)

The program favored most by users is a mid-decade census according to survey responses. Very few offered comments, however, as to what it should entail. (See p. 33.)

Alternatives

Sample surveys and estimating programs serve very useful and important purposes in the statistical system. Presently decennial census data are updated, for the most part, through these programs. They provide an alert to changing conditions, data for decisionmaking, a basis for allocating funds, and other purposes.

These programs produce reasonably accurate statistics for the Nation as a whole, for some of the larger States, and for large areas, but the programs do not yield reasonably reliable small area data. Also the programs are not as comprehensive as the decennial census, although they may cover one or more subjects in greater depth. An example is the Current Population Survey which focuses primarily on labor force statistics. (See p. 42)

The Bureau of the Census is currently studying ways to improve the methods of estimating total population. (See p. 40.)

MATTER FOR CONSIDERATION OF THE SUBCOMMITTEE

If the Subcommittee decides that the data needs of Federal and State Governments warrant a mid-decade census, GAO recommends that the mid-decade census cover population, income, housing, and employment information but that this census contain less detail than was included in the 1970 census.

CHAPTER 1

INTRODUCTION

The Bureau of the Census, Department of Commerce, conducts a census of the population once every 10 years. The primary reason for this decennial census--which dates back to 1790--is to provide population totals for determining apportionment of seats in the House of Representatives.

The decennial census provides not only population totals necessary for apportionment but also essential facts concerning the population and social and economic conditions in the country. For this reason the census serves as a valuable source of information for use by Federal, State, and local governments in formulating and administering programs and in the general functioning of the governments. Many businesses and groups in the private sector also look to the decennial census as a principal source of information.

For more than a decade individuals and groups representing both the public and private sectors have expressed the need for more up-to-date information than is available from the decennial census. An overwhelming majority of these individuals and groups have suggested some form of a census of the population every 5 years--a mid-decade census. Others support the establishment or expansion of statistical programs utilizing specially directed sample surveys and/or existing administrative records, such as Federal income tax filings.

A census taken every 5 years would not be unique to the Federal statistical system. In fact, the decennial census is the only major Federal census that is conducted at other than 5-year intervals. Censuses of agriculture, business, manufactures, mineral industries, transportation, and governments are taken by the Bureau of the Census at 5-year intervals.

The legislative history of proposals for a mid-decade census of the population is extensive. As far back as 1938 the Department of Commerce sponsored a bill that provided for a mid-decade census. During the period January 1961 to

June 1971, legislation providing for a mid-decade census was introduced no less than 57 times. During that same period congressional hearings were held on several occasions to consider either specific legislative proposals or the general subject of a mid-decade census.

The extensive testimony before congressional committees shows clearly that the issue is not whether more current data is needed but rather how this need is to be satisfied.

At the request of the Chairman, Subcommittee on Census and Statistics, House Committee on Post Office and Civil Service, the General Accounting Office evaluated the merits of conducting a full census of the population every 5 years. The Chairman requested that the evaluation include consideration of both the costs and the final products.

Although we found generalized expressions of the needs and uses of census data readily available at the outset of our evaluation, an inventory of specific needs and uses was nonexistent. Much of our evaluation, therefore, was directed to identifying Federal and State needs and uses.

The magnitude of this evaluation and the Subcommittee's desire to have this report at the earliest possible date did not allow us time to fully explore or develop information on all the related issues and plausible variations of a mid-decade census. For example, constructing a more complete inventory of the needs and uses of census information would have required far more time than was devoted to this effort and would have been a major task in itself. Also, unless otherwise indicated in the information gathered, we had to assume that an expression of data need meant that the data were of major or essential need and not merely data which were nice to have.

Furthermore we did not believe it within the scope of this evaluation to consider the issues of privacy or voluntary participation by the general public as they may relate to a mid-decade census of the population.

The costs of collecting intercensal statistical data could vary considerably, depending on the desired geographic and subject coverage. For purposes of this evaluation, and

as agreed to with the Subcommittee on Census and Statistics, we have considered the costs of four mid-decade census proposals presented during hearings held by the Subcommittee on Census and Government Statistics, House Committee on Post Office and Civil Service, in 1961 and 1962. Although many variations of these proposals are conceivable, we believe that the four proposals represent a sufficient range of alternatives to provide an approximation of costs which would be associated with various degrees of subject and geographic coverage.

The cost estimates were prepared by the Bureau of the Census at our request, were reviewed by us, and were transmitted with our comments to the Chairman of the Subcommittee on Census and Statistics in July 1971. The four proposals and cost estimates are discussed in chapter 6.

CHAPTER 2

GENERAL NEEDS AND USES OF DECENNIAL CENSUS DATA

The decennial census yields data on a broad range of subjects and with great geographic detail. The 1970 decennial census, for example, contained questions on 65 subject items pertaining to population, housing, education, employment and occupation, place of origin and migration, income, marriages and babies born, and military service.

Total population counts, basic characteristics of the population (such as age, sex, race, marital status) and certain basic housing data (such as total number of units, number of units with kitchen facilities, and number of rooms) are published or are available on computer tape for States, counties, standard metropolitan statistical areas,¹ urbanized areas, minor civil divisions, census county divisions, places of 1,000 inhabitants or more, postal ZIP code zones, census tracts,² enumeration districts,³ and city blocks. Other data including information on employment, income, and education are available down to the census-tract level.

¹Each standard metropolitan statistical area must contain at least one city of at least 50,000 inhabitants. Included within the defined area are the county of such a central city and adjacent counties that are found to be metropolitan in character and economically and socially integrated with the county of the central city.

²Census tracts have been established in all metropolitan areas of the country. Nation-wide there are a total of 34,600 tracts. A tract is made up of several city blocks; they average about 4,000 persons, although tracts having as few as 1,000 persons are not unusual.

³Enumeration districts are the administrative areas defined by the Bureau of the Census for purposes of taking the census. They average about 250 housing units.

What are the needs and uses of decennial census data? Unfortunately we found in our research of congressional testimony and other available publications and documents and through discussions with various individuals that the dimensions of census data needs and uses were not well established. With rare exceptions we found that references to needs and uses of census data were limited to repetitive generalizations rather than specifics.

To evaluate proposals for meeting intercensal data needs, therefore, we first had to identify specific needs and uses of census data and to ascertain what subject and geographic content would be of most use to various groups. Because of our short time frame, we limited this task to the needs and uses of the public sector.

We requested information as to the needs and uses of census data from State Governors and a sampling of Federal program officials.

In subsequent chapters we report on the results of these inquiries. In this chapter we discuss the general needs and uses of census data as described in congressional testimony and in available publications and documents.

Census data are used in carrying out a multiplicity of functions, programs, and activities. Data are used in varying degrees and both directly and indirectly by government, business, educational and charitable associations, labor unions, academicians, and professional trade organizations.

PUBLIC SECTOR NEEDS AND USES

The Federal Government uses census data in allocating and distributing funds to State and local governments; determining eligibility under various grant-in-aid and loan programs; and developing, analyzing, and administering Government policy.

Of the above uses, the allocation and distribution of funds to State and local governments are mentioned commonly. An estimated \$10 billion annually is allocated or distributed by the Federal Government to State and local governments through formulas requiring the use of census data.

Our analysis of information on formula grant-in-aid programs contained in a report by the Legislative Reference Service, Library of Congress,¹ showed that, of the 114 such programs listed in the report, 30 required the use of total population data and another 33 required the use of other population data, such as school-age population.

A recent report by the Decennial Census Review Committee² notes that there is a rapidly growing body of Federal legislation which specifies or requires the use of census data for the allocation of funds or for the administration of Federal programs. Programs authorized by this legislation are in the areas of education, health, economic development, recreation, housing, social welfare, immigration, transportation and highways, jury selection, voting rights, and labor standards.

Statutory uses of census data under these programs include, for example:

- The allocation of funds to States on the bases of data on income, education, and vocational training.
- The establishment of standards relative to low-income housing availability on the basis of housing data.
- The determination of program eligibility on the basis of unemployment data.

¹"Federal Programs of Grants-in-Aid to State and Local Governments: A Study of Their Major Characteristics," prepared by the Legislative Reference Service for the Subcommittee on Intergovernmental Relations of the Committee on Government Operations, United States Senate, September 1969.

²"The Decennial Census: Report of the Decennial Census Review Committee to the Secretary of Commerce," July 1971. The Committee was appointed by the Secretary of Commerce in 1969 to examine the issues that had been raised about the decennial census.

--The preparation of market analysis reports on short-term housing data.

State and local governments use census data for such things as setting the duties and powers of governing units and the salaries of public officials and establishing the forms of government that may be adopted by counties and cities. State agencies use census data as bench marks on which to develop intercensal population estimates and as sampling frames for various studies.

Census data uses at the local level were described by a city-planning official in a statement before the Subcommittee on Census and Statistics in May 1969. He described these uses as follows:

"Streets and transport--Journey-to-work demand, household data, intracity migration are revealed by census questions and [form] the basis for trend analysis and access planning to places of employment, shopping areas, schools, and parks.

"Public utilities--The placement and capacity of water, power, sewage, and other utilities must be accurately projected for decades ahead on the basis of census population trends and anticipated land uses in order to avoid economic waste.

"Protective services--The locating and equipage of fire and police services requires knowledge of population density, housing condition, income level, and age-family status and ethnic characteristics.

"Educational facilities--School and library requirements are projected from census data on educational attainment, migration from or to other areas, and the age-family status and ethnic characteristic.

"Parks and recreation--Expansion or creation of new park and recreation facilities is based on information similar to that required for schools and libraries plus employment and leisure time data.

"Manpower--The current worker occupational pattern by industry and by location, plus the total labor force-employment inventory constitute the essential census data for estimating future skill requirements, detecting industrial growth and migration trends, and appraisal of the available manpower for national defense needs.

"Health and welfare--Poverty and its discontents cannot approach a solution without the array of census information now provided on incomes, employment ratios, housing conditions, and age-family status and ethnic characteristics.

"Private housing and redevelopment--The state of our housing inventory, especially for the 'moderate' income group, has the potential for worsening our urban problems very shortly. To adequately pinpoint the areas of greatest need, we must have quite detailed information on housing conditions, income levels, ownership patterns, employment ratios, job locations, and, of course, age-family status-ethnic characteristics.

"Taxation and revenue--Local government revenue requirements depend upon the service demands of their own areas arising from population, incomes, educational attainment, geographic distribution, employment, migration rates, and a host of other social characteristics. All of this data comes from the census and in fact is required by statute for the allocation of State and Federal funds for highways, schools, public health and school lunch programs, manpower development, economic opportunity programs and many others."

PRIVATE SECTOR NEEDS AND USES

Census data are collected primarily to meet the needs of government. In fact, a principal criterion for the inclusion of a question in the decennial census is that it have a broad public interest. A vast number of users outside of government, however, indirectly benefit from this detailed source of information.

In a statement before the House Subcommittee on Census and Statistics in May 1971, the Executive Director of the Federal Statistics Users' Conference--an association including 191 organizations generally classified as business firms, labor unions, nonprofit research groups, State and local governments, and trade associations--discussed the uses of census data as determined from two special surveys covering a sample of the conference's membership.

The executive director reported that the major uses of decennial census data included

- market planning and forecasting,
- economic forecasting,
- population forecasting,
- market segmentation,
- small area market studies,
- buying-power estimates,
- sampling, and
- site location.

The survey results showed that all the respondents--the response rate ranged from 33 percent to 45 percent--used census data for research and analysis purposes. Of the respondents, 71 percent conduct research through the use of surveys. Of this group, 88 percent use census data for bench-mark purposes--71 percent for sampling purposes, and 76 percent for evaluation of survey results.

CHAPTER 3

STATE GOVERNMENTS' NEEDS AND USES OF CENSUS DATA

In May 1971 we sent letters to the Governor of each State outlining the purposes and nature of our evaluation and requesting information and comments on State needs and uses of decennial census data.

Essentially we wanted to ascertain the importance of the decennial census in the functioning of State governments. Our requests specifically mentioned three areas of interest:

- Provisions included within State statutes requiring or implying the use of census information.
- Types of census information that would be of most use to the State, by subject and geographic detail.
- Statistical-gathering activities financed by the State, which provide information not provided by Federal statistical programs.

We received responses from 42 of the 50 States. It was apparent from many of the responses that answers to our questions were not readily determinable from statistics already compiled by the States. Therefore the substance and content of the responses varied considerably. Also many States, in addition to furnishing information on these questions, commented on other related matters, such as the need for a mid-decade census.

Specific uses of census data for varying purposes were reported by 40 of the 42 States. The 42 States furnished information on the following subjects.

<u>Subject</u>	<u>Number of States</u>
Type of census data needed	31
Statutes requiring use of census data	22
Administrative uses of census data	29
State-financed statistical gathering activities	33
Mid-decade census	36

We compiled the data needs indicated in the States' responses according to the eight general categories of information included in the 1970 decennial census; namely, population characteristics, housing characteristics, place of origin and migration, education, marriages and babies born, military service, employment and occupation, and income. Appendix II shows the subject items included in each of these categories.

The following observations and conclusions emerged from our summary analysis of the responses.

- The needs and uses of census data at the State level are extensive. In addition to uses for administrative purposes, a substantial number of States have statutes which require the use of Federal census data.
- Population statistics--specifically age, sex, and race--are of most use and importance to the States. Other major data needs are income in general, housing--specifically value and whether owned, rented, or vacant--and employment and occupation--specifically employment status and occupation, industry, and class of worker.
- Census statistics are needed for geographic areas at the county level or below.
- Most of the respondent States feel that there is a need for more current census-type statistics, and the majority favor a mid-decade census as the means of satisfying this need. (See p. 33.)

--The subject content of a mid-decade census could be substantially less than that of the 1970 decennial census and still meet the major data needs of the State governments.

STATE USES OF CENSUS DATA

Twenty-two of the 42 States responding to our inquiry stated that they had statutes requiring the use of Federal census data; one State, Vermont, informed us that a cursory review of State statutes showed no requirements or implications for the use of Federal census information. The responses from 11 additional States indicated census information uses similar to those covered by statutes in the 22 States. The responses did not specifically state, however, that such uses were required by statute. The eight other responding States included four States which developed their own data to satisfy certain statutory requirements and four States which did not comment on the statutory requirements.

The completeness of the information on State statutes requiring the use of census information varied from State to State. Some States furnished complete information, and other States furnished either a few examples of statutory uses or none at all. Still other States furnished what could be interpreted, but not with certainty, as complete inventories of statutory requirements. The following table summarizes the completeness of statistics on statutory requirements furnished by the 22 States.

<u>Completeness of statistics on statutory requirements</u>	<u>Number of States</u>	<u>Percent of total</u>
Complete	8	36
Partial	5	23
Uncertain	8	36
Examples not furnished	1	5

The statutory uses for census data most frequently mentioned by respondents were for the distribution of funds, the apportionment of State legislatures, and the determination of the organization, rights, powers, and obligations of local governments. (See app. III.)

Only the State of New York provided information on dollar amounts allocated on the basis of census data. (See app. IV.) The State noted that \$455 million of its major revenue-sharing funds were distributed to localities in 1970 and 1971 primarily on the basis of census certified populations.

Information on State intergovernmental expenditures¹ for the 50 States, although outdated to some extent, was available from information in the report by the Bureau of the Census on the 1967 Census of Governments. We analyzed this information to obtain data on dollar allocations. In some instances the basis for the allocation was not specified. Therefore the expenditures made on the basis of census data could be greater than those identified by our analysis.

Of the total \$19.1 billion of State intergovernmental expenditures for calendar year 1967, \$11.8 billion was for education, of which only \$354 million (3 percent) was distributed, at least in part, on the basis of census-type data. However, of the non-education expenditures of \$7.3 billion, \$1.6 billion (about 22 percent) was distributed, at least in part, on the basis of census-type data.

Some indication of the extent that census data are used in meeting statutory requirements was provided by Illinois, Wisconsin, Virginia, and Wyoming.

Illinois and Wisconsin furnished computer listings of sections of State laws containing references to the words "census," "inhabitants," or "population." Virginia furnished us with a similar listing, but only of references made to the word "census." Our analysis of this information showed that, in the State statutes of Illinois and Wisconsin, 1,242 and 461 references, respectively, required or implied the use of census information. In the Virginia statutes, 87 references were made to census information. The response from Wyoming noted that the word "census" was used 51 times in 35 different sections of the Wyoming statutes.

¹ State payments to local governments including reimbursement for services and contingent loans and advances.

In most instances, the statutes were not specific or the information furnished by the four States was not clear as to whether other than Federal censuses could be used to satisfy these requirements or whether the provisions would permit the use of data collected in a Federal mid-decade census.

Illinois did note in its response, however, that 100 statutes definitely required the use of Federal census information. Also our analysis of Virginia's statutory requirements showed that the majority of the references were to "Federal census" and/or "any legal census." The word "decennial" was included in 20 Virginia references, of which four were to "the last decennial Federal census" and 16 were to Federal decennial censuses for specific years.

Of the 42 States responding to our inquiry, 29 indicated administrative uses of Federal census or similar data. The responses from 13 States did not specifically mention administrative uses. Of the 29 States, 79 percent used this information for program planning and 52 percent for the compilation of statistics, such as population estimates. The following table summarizes this information for the 29 States.

<u>Uses</u>	<u>Number of States</u>	<u>Percent of total</u>
Program planning	23	79
Compilation of statistics	15	52
Administering State programs	12	41
Comprehensive planning	9	31
Budgeting	6	21
Administering Federal programs	5	17
Program evaluation	5	17
Policy formulation	3	10
Miscellaneous (forecasting and preparing legislation, studies, or community profiles)	5	17

STATE NEEDS FOR CENSUS DATA

Of the 31 States that furnished information as to census data needs, 29 mentioned data which is now collected in the decennial census and, of the 29, 27 said that information on population characteristics was needed.

The graph on the following page shows the frequency with which census data categories were mentioned in the responses.

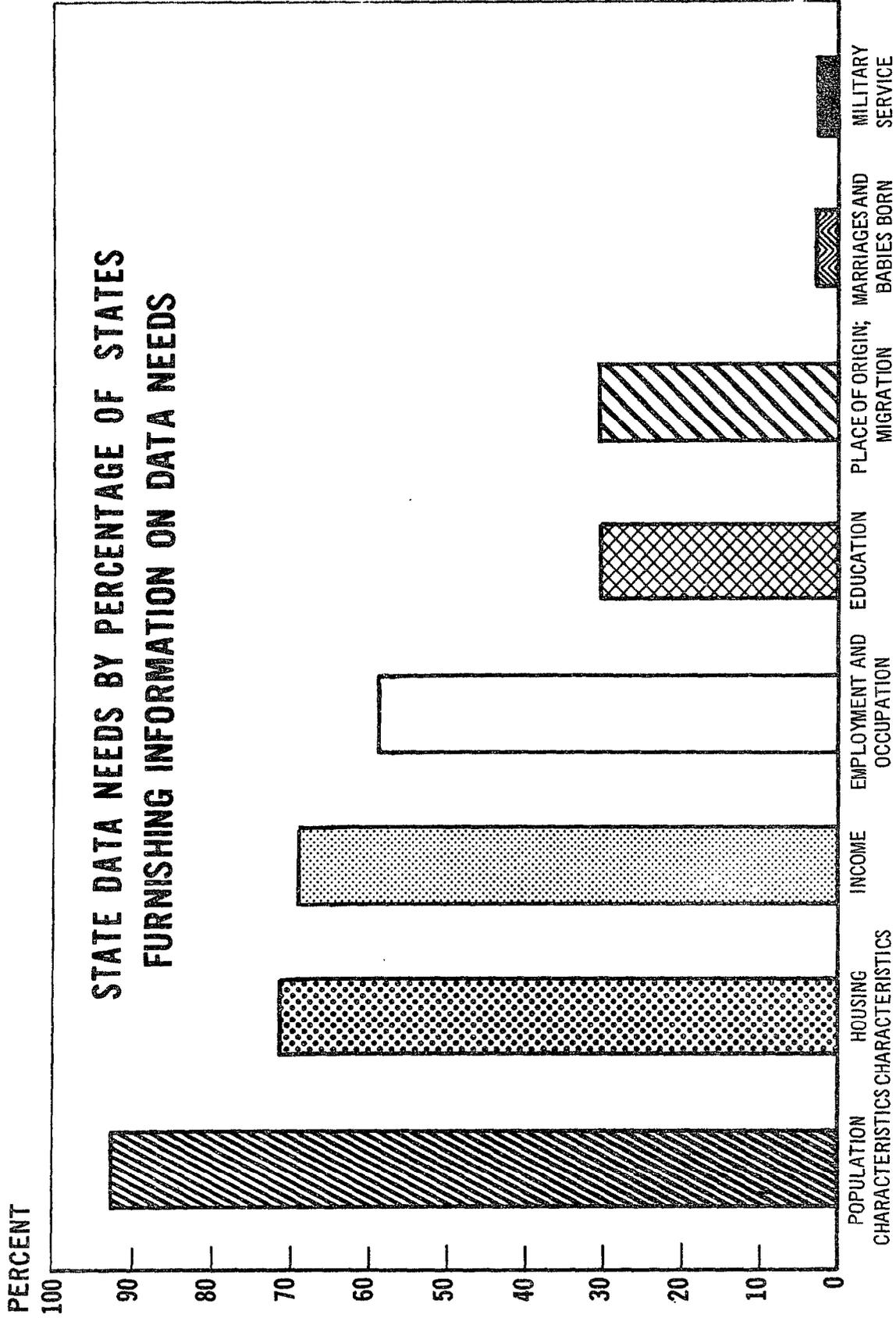
What specific subject items are most important to the States? The States did not furnish specific information for all of the data categories mentioned in their responses. For example, of 27 States indicating a need for population data, 21 specified subject detail; of 21 States indicating a need for housing characteristics, eight States specified subject detail. There were a few exceptions, as illustrated by the response from New Mexico, which identified the 58 tabulations judged to be of most use to the State from the Bureau of the Census' 1970 decennial census summary computer-tape series. (See app. V.)

On the basis of the information furnished, the States as a whole considered specific data on age, race, and sex to be most necessary. As noted earlier, only eight of the States indicated specific subject items concerning housing data. Of the housing items indicated by these States, value was mentioned by all eight and contract rent and vacancy status were mentioned by six of the eight States.

Occupation, industry and class of worker; employment status; and place of work were the most frequently mentioned employment and occupation items; years of school completed was the most frequently mentioned education item.

The census subject items indicated by the respondents are shown in appendix VI.

Commonly, references in the responses were to information needs at the town level or for small areas. Twenty States specified the geographical levels for which information was needed. Of these States, 18 wanted information for areas below the county level and six wanted information for the census tract or block level.



Our analysis of information furnished by Illinois, Virginia, and Wisconsin suggests that the geographic detail required by statutes varies among the States. Of the references in the Virginia statutes requiring or implying the use of census information for certain base populations, 27, or 84 percent, specify populations of 50,000 or smaller. Contrariwise, of the references in Wisconsin's statutes, 316, or 81 percent, specify populations within the range of 50,001 to 500,000 and, of the references in Illinois' statutes, 704, or 79 percent, specify populations within the range of 50,001 to over 1,000,000. Appendix VII provides detail on the statutory requirements for the three States.

Example of data needs
of various organizations
within the State of Alabama

The response from the State of Alabama provided considerable detail on the subject and geographic data needs of organizations within the State on the basis of its survey of State departments, universities, and regional planning commissions.

The table below illustrates the similarities in data needs among the 29 States which furnished us information on decennial census data needs and the 31 organizations which responded to the Alabama survey.

<u>Data type</u>	All States (total 29)	State of Alabama			
		Total (31)	State departments (total 17)	Univer- sities (total 3)	Regional planning commissions (total 11)
Population characteristics	27	26	12	3	11
Income	20	19	6	3	10
Housing characteristics	21	14	2	3	9
Education	9	11	3	3	5
Employment and occupation	17	10	3	2	5
Place of origin, migration	9	8	2	3	3
Military service	1	6	2	2	2
Marriages, babies born	1	5	1	2	2
Does not need census data	-	3	3	-	-

Similarities in the geographic areas for which census data are needed were also indicated for the 20 States and the 15 Alabama organizations specifying geographical areas as shown in the following table. All of the Alabama groups wanted information for the county level or below, as did the States. Of interest, however, is the fact that the State departments did not indicate a need for enumeration district, census tract, or city block data. As might be expected, however, the regional planning commissions did specify a need for enumeration district and city block data.

<u>Geographic areas</u>	<u>State of Alabama</u>				
	All States (total 20)	Total (15)	State departments (total 6)	Universities (total 1)	Regional planning commissions (total 8)
Counties	2	6	5	-	1
Places (note a)	5	4	1	1	2
Enumeration districts	-	2	-	-	2
Census tracts	2	-	-	-	-
City blocks	4	3	-	-	3
Small areas	7	-	-	-	-

^aUrban places, municipalities, towns, and incorporated cities.

STATE-FINANCED STATISTICAL-GATHERING ACTIVITIES

Of the 42 States responding to our survey, 33 States mentioned statistical-gathering activities financed within the State; one State, Idaho, said that it had no State-financed statistical-gathering activities, and eight States did not comment.

The responses indicated that the major statistical-gathering activities were population estimates or projections, mentioned by 12 States, and school censuses, mentioned by nine States. Four additional States mentioned both population estimates or projections and school censuses. With few exceptions these activities are carried out by a State agency.

Of the 16 States indicating the frequency of their activities, 10 States mentioned annual activities. Activities on a quadrennial basis were cited by two States, and activities on a biannual, biennial, and triennial basis were each mentioned by one State. One State, Minnesota, permits its local governments to complete special censuses whenever they feel that it is advantageous in terms of the distribution of State funds.

The most frequently mentioned geographic area for which the statistics are gathered was the county, mentioned by seven States. Five States mentioned school districts and two mentioned cities. Seven other geographic areas, such as Standard Metropolitan Statistical Areas, towns, or local governments, were each mentioned by a single State.

CHAPTER 4

FEDERAL GOVERNMENT NEEDS AND

USES OF CENSUS DATA

We recognized at the outset of this evaluation that it would be impossible to construct a reasonably complete inventory of the Federal needs and uses of census data in a short period of time. Our objective, therefore, was to develop as much information as possible, within the time allowed, on the needs and uses of census data for a wide range of Federal programs and activities.

Some information existed regarding the use of census data by certain Federal agencies. We felt, however, that this information was not sufficient to adequately measure the use of census data in the Federal Government.

Therefore we randomly selected a group of Federal programs for survey to determine the needs and uses of census data for these specific programs. We used as a sampling base the Catalog of Federal Domestic Assistance published by the Office of Economic Opportunity, because it contained a comprehensive listing of programs which were administered by a multitude of Federal agencies.

Our survey covered 102 programs or about 10 percent of the total programs listed in the catalog. Included in the sample were programs administered by 57 agencies--12 major departments and 45 independent agencies or commissions. Appendix VIII shows, by agency, the number of Federal domestic assistance programs included in the catalog and the number sampled.

In July 1971 we mailed questionnaires to the agencies administering the selected programs with a request that the questionnaires be completed by program officials directly responsible for their administration.

The questionnaires consisted of two parts: (1) a pro forma schedule requesting information on the data needs and uses for specific programs, including the statutory or

administrative uses made of census data, the subject and geographic detail needed, and the importance of the need (major or minor), and (2) a request for the program officials' comments on the quality and availability of the census data used in administering the program and how needed improvements, if any, should be effected.

We received responses covering 100 of the 102 programs included in our sample. Of the 100 questionnaires returned, three were blank because the agencies to which they were sent were no longer administering the programs, and one questionnaire contained information applicable to more than the program included in the sample. Of the remaining 96 questionnaires, 44 contained information indicating a need for census data and 52 indicated that census data were not required in the administration of the programs selected.

Two agencies indicated that, although census data are not needed for the specific programs covered by our survey they are needed for other agency programs. Four additional agencies felt that the use of census data reported for the specific programs covered by our survey did not adequately represent their full needs and uses of census data. For such reasons we believe that conclusions cannot be drawn from the survey as to the extent of census data needs and uses by a specific agency. We do believe, however, that the following conclusions and observations are warranted for the Federal Government as a whole.

- Census data are used extensively to satisfy both statutory and administrative requirements. Census data are used pursuant to statutory requirements, as a basis for distributing funds to other levels of government and for other purposes, and are used administratively principally for program evaluation.
- Data categories of most importance to Federal agencies parallel those of the States--namely population, income, housing, and employment and occupation.
- Most Federal programs require geographic detail at the county level, or above, and predominately at the State level.

--The subject content of a mid-decade census could be substantially less than that of the 1970 decennial census and still meet the major data needs of the Federal Government.

FEDERAL USES OF CENSUS DATA

Major uses of census data in administering Federal programs are in funds allocation, eligibility determination, program evaluation, and program planning. Of the four, program evaluation was mentioned most frequently. Of the 44 programs for which census data were used (see app. VIII), the legislation pertaining to 16 required the use of census data. Some of the 16 programs required more than one category of census data. Population data were required for 11 of the 16 programs; income data were required for five of the 16 programs. None of the 16 programs had a statutory requirement for housing data. (See app. IX.)

Program officials felt that census information was of major importance in the majority of instances for which it was used.

FEDERAL NEEDS FOR CENSUS DATA

The pattern of need indicated by the Federal responses paralleled that of the States. Data on population characteristics are most frequently required in administering Federal programs as indicated by 41 of the 44 respondents using census data.

The graph on the following page shows the frequency with which census data categories were mentioned in the responses.

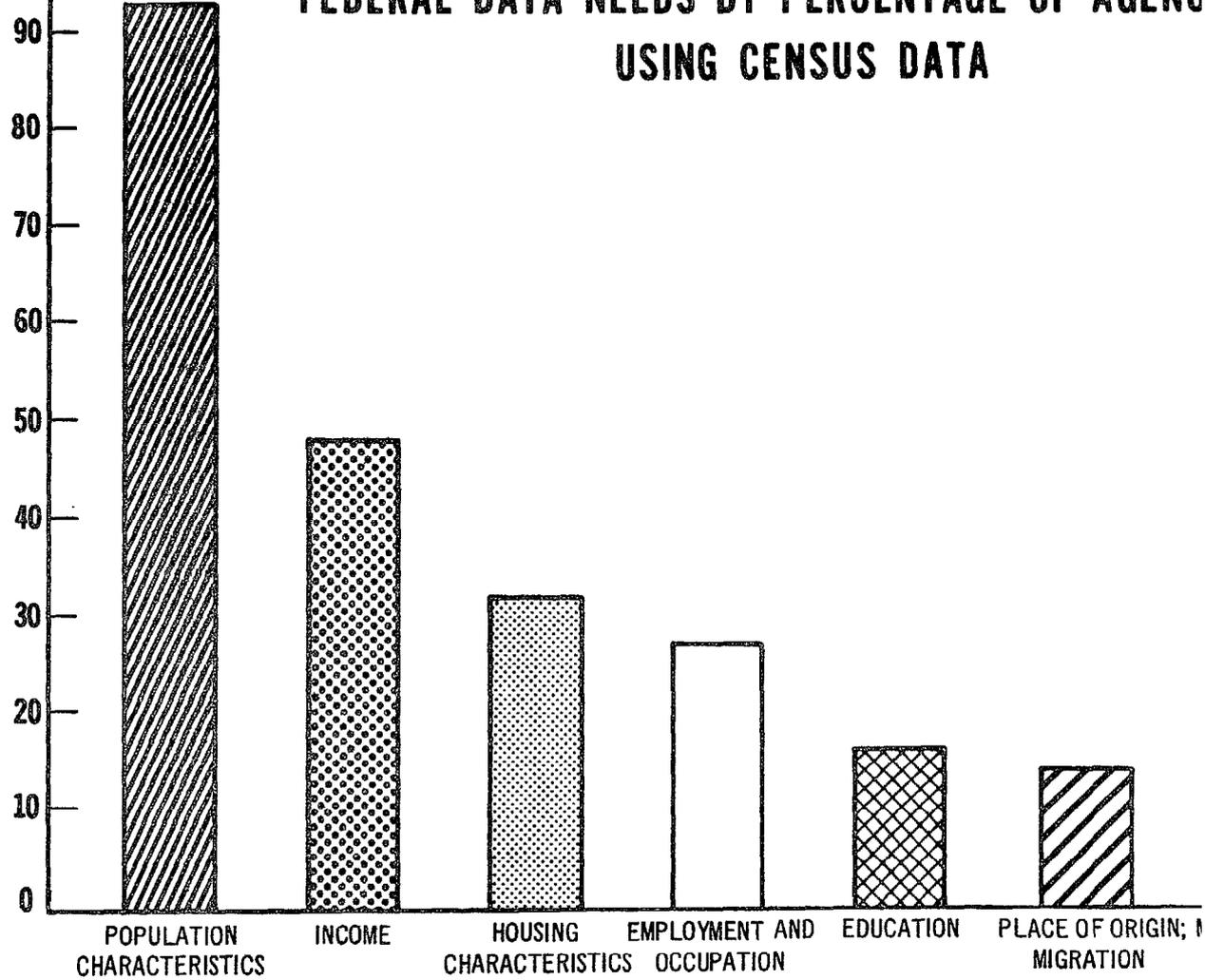
The population subject items most frequently mentioned were age and race. These items were asked of 100 percent of the population in the 1970 decennial census. Total counts of the population were also mentioned frequently.

The responses for the 14 programs that required housing data mentioned a total of 22 subject items. Value, vacancy status, contract rent, and number of units were the housing items mentioned most frequently. These items were also asked of 100 percent of the population in the 1970 decennial census.

PERCENT

100

FEDERAL DATA NEEDS BY PERCENTAGE OF AGENCIES USING CENSUS DATA



Of the 12 respondents who needed employment and occupation information, seven said that they needed data on employment status and occupation, industry, and class of worker. These employment items were asked of 20 percent of the population in the 1970 decennial census. Appendix X contains more detailed information on the subject needs.

Our analysis of the 43 responses that specified the geographic areas for which information was needed showed that most of the Federal users of census data want information at the county level, or above, as shown in the following table.

<u>Geographic areas</u>	<u>Number of programs</u>
Nation	2
State	23
Standard Metropolitan Statistical Area	9
Regional/State planning areas	2
County	13
Urban/rural areas	6
City	7
School district	2
Census tract	3
Block	4

Appendix XI presents similar information for the eight data categories.

Analysis of the geographic detail required for frequently mentioned subject items showed that a majority of the programs required data for population, income, and employment subject items at the county level or above. The need for data on housing, however, was frequently associated with areas below the county level. The following table summarizes this information.

Frequently mentioned subject items	Number of programs that required data and specified geographic area	Number of programs that specified a geographic area of county or above	
		Number	Percent
Population:			
Race	17	12	71
Age	18	12	67
Total count	16	9	56
Income	18	13	72
Housing:			
Value	9	4	44
Vacancy status	7	4	57
Number of units at this address	6	2	33
Contract rent	6	4	67
Employment and occupation:			
Employment status	6	4	67
Occupation, industry, and class of worker	7	4	57

USE OF CENSUS DATA FOR REVENUE SHARING

Within recent months considerable attention has been focused on Federal revenue-sharing proposals. We analyzed several of these proposals to ascertain what demands might be placed on census data as the bases for determining the levels of government eligible to receive funds and the amount of funds the levels are to receive.

Under the revenue-sharing programs proposed by the administration, \$16.1 billion--\$5 billion for general revenue sharing and \$11.1 billion for special revenue sharing (in the areas of law enforcement, manpower training, urban community development, rural community development, transportation, and education)--would be allocated during the first full year of the program to States, Standard Metropolitan Statistical Areas, or local units of government through a variety of allocation formulas. For the general revenue-sharing proposal and for four of the six special revenue-sharing proposals, the revenues would first be distributed to the States and, in turn, redistributed to lower levels of government. Revenue distribution under the other two proposals would be made directly to the States or to lower levels of government.

The statistical data needed for making these distributions would be similar to that now needed in the administration of programs for financial assistance to State and local governments. Needed, for example, would be information on total population, unemployment, low and rural income, housing deficiencies, children in vocational education, and handicapped children. Although all of this statistical information would not be drawn from the decennial census alone, it appears, from the provisions of the proposals, that the census would be a principal source.

For the most part, the Federal Government would need information at the State level to carry out the initial distribution of funds. In one of the six special revenue-sharing proposals, information would be needed for Standard Metropolitan Statistical Areas; in another proposal, information would be needed for local governments of 100,000 or more people. On the other hand, the States primarily would need information for much smaller areas--counties, townships, cities of 50,000 or more people, places of 2,500 or more people--to be able to redistribute revenue to such areas.

The need for small area data in general, therefore, would not diminish with revenue sharing. For purposes of funds allocation and distribution, however, it would appear that the Federal Government would not have the degree of need for small area data that now exists in administering certain programs for grants-in-aid to local governments.

CHAPTER 5

NEED FOR MORE CURRENT CENSUS DATA

As noted in the introductory chapter, numerous expressions of need for more current census data have been made over the past 10 years. The reason for concern is obvious--judging from the extensive uses made of census data, as described in the preceding chapters--there is too much at stake to risk making improper or inequitable determinations on the basis of outdated and unreliable statistical data.

The term "more current" could have many meanings to users of census data. In areas undergoing rapid social or economic change, for example, annual or even monthly updating of census information might be necessary. In more stable areas changes could be effectively measured at far greater time intervals. A general consensus appears to be, however, that census-type data are needed at least every 5 years.

The various positions which have been expressed for satisfying intercensal statistical needs are set forth in this chapter.

METHODS FOR SATISFYING DATA NEEDS

Controversy surrounding the proper program to follow to satisfy intercensal data needs has involved two methods.

--A mid-decade census of the population.

--A statistical program using specially directed sample surveys and/or administrative records.

Proponents of a mid-decade census believe that only a national census would provide local data for all areas of the country--both large and small. These data are necessary, they say, for an overall view of the locality at one point in time, and for bench-mark purposes.

The principal opponent to early mid-decade census legislation had been the Bureau of the Budget (now the Office of Management and Budget) which, until 1967, had contended that alternatives to a mid-decade census--specially directed

sample surveys--would yield more useful information and would represent a more effective use of public funds.

The Bureau of the Budget reasoned that:

- More methodology must be developed for more efficient and prompt measurement of population changes than can be achieved through complete census enumerations.
- It is wasteful to collect and process a mass of data for all areas when in only some of them is the information vitally needed.
- The most efficient procedure for achieving both local and national purposes is the development of sample surveys specially directed toward certain areas and characteristics.
- Special surveys can provide interviews in depth and detail that are not feasible in a mass census.

In 1967 the Bureau of the Budget changed its position to favor a bill introduced at that time to provide for a mid-decade census. Opposition to a mid-decade census proposal was expressed once again in June 1971 when the Director of the Bureau of the Census, speaking for the current administration, proposed, at congressional hearings on the subject of a mid-decade census, that effort be placed on using administrative records to satisfy intercensal data needs. The use of administrative records is discussed in chapter 6.

MID-DECADE CENSUS

General

Many groups and individuals support a mid-decade census. For example, of the 210 witnesses submitting testimony to the Subcommittee on Government Statistics in 1961, 92 percent supported mid-decade census legislation. The remaining 8 percent did not take a position, or they opposed the legislation or suggested that a means other than a census be used to compile the data. The 210 witnesses included 90 from various levels of government, 79 from private enterprise, and 41 from nonprofit organizations.

Similar support was expressed at hearings before the Subcommittee on Census and Statistics in 1971 when a former Director of the Bureau of the Census and representatives from three professional associations and five groups representing State, county, or municipal governments reiterated the need for mid-decade census legislation.

Positions of States

Of the 42 States responding to our survey of census needs and uses, 33 States expressed support for a mid-decade census. Of the remaining nine, six States did not comment on this issue, and three States indicated opposition to a mid-decade census. (See app. I.)

Of the 33 States which favored a mid-decade census, 10 appeared to prefer a census over a sampling of the population, two of these 10 States and four others suggested an abbreviated version of the decennial census. Three States said that, in view of the higher costs associated with complete censuses, a sampling of the population would satisfy their needs. Sixteen States did not specify a preference as to what form they thought a mid-decade census should take.

Of the three States which indicated opposition to a mid-decade census, two suggested alternative means for satisfying data needs. Delaware suggested that priorities be given to improve the quality of data collection for the decennial census and to minimize the time lag between collection and publication of the data. New Hampshire recommended that the Federal Government offer substantial financial incentive to assist the States in establishing adequate, professionally staffed statistical offices.

Only seven of the 29 States that furnished information as to their decennial census data needs appeared to be satisfied with the collection of population and/or housing information only. Of the 29 States, 21 expressed the need for either population characteristics or housing characteristics--or both--in various combinations with other data categories. Most frequently mentioned of these other categories were income and employment and occupation data. Appendix XII summarizes the various combinations.

Although it did not comment directly on the need for a mid-decade census, Alabama surveyed departments, universities, and regional planning commissions within the State to determine what type of census these groups would prefer and why. The groups were to choose from the following options.

A--A full mid-decade census--similar to the decennial census.

B--A census covering the demographic and housing questions asked the entire population in the decennial census--no socioeconomic data would be gathered.

C--A 100-percent head count for demographic data and sampling for all other data (housing and socioeconomic).

D--A 25-percent sample of the population covering all questions asked in the decennial census.

The following table summarizes the results of 29 groups that responded to this survey.

Type of census	State of Alabama							
	Total		State departments		Universities		Regional planning commissions	
	Number (29)	Percent (100)	Number (15)	Percent (100)	Number (3)	Percent (100)	Number (11)	Percent (100)
Option A	13	45	4	27	1	33	8	73
Option B	1	3	1	6	-	-	-	-
Option C	11	38	7	47	1	33	3	27
Option D	4	14	3	20	1	33	-	-

As shown by the table, Option A was preferred by 45 percent of the groups that responded to the question on mid-decade census options. The reasons given most often for this choice were (1) the obsolescence of the data collected in the decennial census and (2) the need for data that would be comparable to that collected by the decennial census.

The table also shows that most of the regional planning commissions preferred Option A whereas more of the State departments preferred Option C which would provide similar

information except that housing data would be collected from a sample rather than 100 percent of the population.

The options preferred by the regional planning commissions and State departments were consistent with their expressed needs for subject and geographic information (see pp. 21 and 22.) in that nine of the 11 regional planning commissions expressed a need for housing data whereas two of the 17 State departments expressed such a need and the regional planning commissions required information for smaller geographic areas than did the State departments.

Positions of Federal program officials

We requested comments from officials of selected Federal domestic assistance programs as to the reliability and currency of available census data and the adequacy of the geographic and subject detail. Also, if they believed that improvements were needed in any of these areas, we requested that they indicate the means they favored for satisfying their data needs.

We received comments covering 27 of the 44 programs for which census data are used. Of the 27 responses, 12 indicated satisfaction with the data presently available and 15 indicated that improvements were needed for the effective administration of the programs. Information contained in the 15 responses favoring data improvements indicated that 10 programs would benefit from more current information and improved geographic detail, two programs would benefit from improved geographic and subject detail and more reliable data, one would benefit from improved subject detail, and one would benefit from more reliable data. One of the 15 responses did not indicate what specific improvements were needed.

Of the 15 responses, eight favored a mid-decade census for satisfying data needs, three favored a mid-decade census supplemented by special censuses or sample surveys, one favored special censuses or sample surveys, and three did not indicate a preference.

CHAPTER 6

APPRAISAL OF METHODS FOR SATISFYING

INTERCENSAL DATA NEEDS

The merits and limitations of one method over other methods in satisfying intercensal data needs are contingent on the needs of the user. Three principal considerations come into play:

- The desired subject detail.
- The desired geographic detail
- The tolerable margin of error in the statistical data.

Estimates of the total population for the Nation as a whole, for example, might satisfy a user's needs as well as the decennial census. It might make a difference to the same user, however, if the estimates were known to have a margin of error of 10 percent. Again, if a user wanted information on specific population characteristics, such as age and race, at the census-tract level, estimates of total population for the Nation would not satisfy his needs.

In this chapter we discuss various methods of developing intercensal data as they relate to the data needs outlined in chapters 3 and 4. Among these methods are population estimates, sample surveys, use of administrative records, and a mid-decade census.

ESTIMATING POPULATION

Methods

Several different methods of estimating the population between decennial censuses have been developed. All the methods use official census figures either as a base point or to develop the relationship between population and other factors. Two or more methods are often used to make separate estimates of the population for an area; the results are then averaged to arrive at the final estimate. A brief description of the more prominent methods of estimating the population follows.

Component--the change in population, due to births and deaths, from the date of the last census to the date of the estimate is determined from official records. To this change is added the change due to migration in and out of the area. Changes in school enrollment, not accounted for by aging of the school-age population and births, since the last census are used to estimate changes due to migration.

Composite--separate estimates are made for broad age groups or age-sex groups, using different types of current data for each group. The estimates are then combined to produce the estimate of total population.

Housing unit--the estimated number of dwelling units is multiplied by the vacancy rate and by the average number of persons per dwelling unit. The number of dwelling units is estimated from the number of electric, gas, or water meter connections in the area or by updating the number of dwelling units as of the last census, using building and demolition permits. The vacancy rate and the average number of persons per dwelling unit are taken from the last census or are estimated on the basis of trends derived from the census or from other data.

Vital rates--estimates are made on the basis of a comparison of trends in births and deaths for States or local areas with those expected on the basis of national trends in birth and death rates.

Regression--this method uses a mathematical equation, which expresses the relationship between population and other factors for a base period and applies it to comparable data available on a current basis. In one equation used by the Bureau of the Census to estimate State populations, the following factors were used: births, deaths, elementary school enrollment, votes cast in congressional elections, and motor vehicle registrations.

Bureau of the Census estimates

The Bureau develops annual population estimates for the United States as a whole, each of the 50 States, the 100 largest metropolitan areas, and the 289 counties constituting these metropolitan areas. In 1965 the Bureau also estimated

the population for all counties in the United States. This, however, was a one-time effort. Population estimates by age, race, or sex are developed only on a national basis.

State and local estimates

Most states and many metropolitan areas develop population estimates. A December 1969 survey by the Bureau of the Census showed that 45 States developed total population estimates for their constituent counties. Of the 45 States 19 also developed estimates for smaller subdivisions, such as cities and towns. Nearly all the estimates developed by the States are published annually. Only a few of the States reported that they estimated population by race, age, or sex.

Most of the estimates developed by the metropolitan areas include total population for the counties and major cities within the areas, and some areas also estimate population by census tracts. Most of these estimates are developed annually, but few are broken down by race, age, or sex.

Accuracy of estimates

The Bureau's estimate of the 1970 total population for the United States deviated from the 1970 census count by only two tenths of 1 percent. Its annual estimates of State populations were not quite so accurate. The Bureau's comparison of the 1970 estimates of State populations with 1970 census figures disclosed that the estimates deviated from the actual figures by an average 1.9 percent. In only three cases were the estimates off by more than 5 percent, the largest being off by 7 percent.

A similar comparison of the estimates of the populations for the 100 largest metropolitan areas with the 1970 census figures disclosed that the average deviation was 2 percent, almost the same as that for the estimates for the States. However, the deviation for 10 of the 100 areas was more than 5 percent. The Bureau also compared the estimates of the populations for the 289 counties included in these metropolitan areas with 1970 census figures. The estimates for the 120 central counties deviated from the census figures by an average 2.3 percent; 12 of the estimates deviated by more than 5 percent. The average deviation for the 169 suburban

counties was 3.7 percent; 45 of the estimates deviated by more than 5 percent.

As part of a Federal-State cooperative program to improve population estimates at the county level, 47 of the States are developing or have already developed estimates of the 1970 population for each of their counties for comparison with 1970 census figures. In this effort the States are using standardized estimating methods developed by the Bureau. Results from the comparison of estimates with actual figures will be available in April 1972.

In 1968 Bureau officials summarized a variety of studies which compared estimated county population figures with actual Bureau figures, primarily the 1960 census. They concluded that estimates for counties can be developed with expected average errors, as follows:

<u>Population</u>	<u>Average error</u>
More than 100,000	Less than 3 percent
25,000 to 100,000	3 to 4 percent
Less than 25,000	5 percent and higher

Although some localities develop estimates for census tracts, we are aware of no comparison of these estimates with actual figures. Because census tracts average about 4,000 persons, however, these estimates probably are not very accurate.

Bureau officials informed us that migration--which is a significant factor in developing population estimates--is the most difficult factor to measure between censuses. As noted by one Bureau official, the accuracy of population estimates in one decade does not guarantee similar performance in later decades.

In his statement before the House Subcommittee on Census and Statistics in June 1971, the Director of the Bureau of the Census stated that the Bureau, recognizing the widespread use of small area data for a number of purposes, was undertaking intensive work on the applicability of administrative records and would ask for a budget supplement of \$500,000 for a study to be conducted during the next 12 months.

A Bureau official informed us that this effort would be directed primarily to improving the methods of estimating the total populations of counties and of standard metropolitan statistical areas. According to the official the study will involve comparing actual migration for 20 to 25 areas (cities, counties, and the State of Delaware), as disclosed by the 1970 decennial census, with estimates of migration for those areas for the period 1967 to 1970. The migration estimates will be based on special censuses of the populations for those areas, which were taken in 1967, and on Internal Revenue Service records.

The Bureau has also been experimenting with using the Social Security Administration's 1-percent continuous work-history sample to estimate migration at the State level. Because this sample is too small to develop reliable county and local estimates, the Bureau is considering using a sample size of 10 percent.

Uses of population estimates

As indicated in chapters 3 and 4, total counts of the population are of major importance to Federal and State Governments, especially in carrying out statutory requirements. Because population estimates are reasonably accurate for the Nation, States, and larger metropolitan areas and counties, such estimates could meet and, in some instances, probably now are meeting the needs of Government for population counts at these levels. For smaller areas--under 25,000--the margin of error of the estimates is relatively large; consequently the usefulness of such estimates would depend largely on the error tolerances among the data users.

The Bureau's current study of the use of Internal Revenue Service data to estimate changes due to migration may lead to improved population estimates, including those for smaller metropolitan areas and counties.

Two other observations are noteworthy: (1) the Bureau's current estimating program does not provide characteristics of the population below the national level, and only a few of the State and metropolitan areas develop estimates of the population by age, race, or sex and (2) some State and Federal statutes specifically require the use of census

population data collected by actual enumeration and thereby create a legal obstacle to the use of the population estimates.

SAMPLE SURVEYS

Current Population Survey

Considerable reliance is now placed on sample surveys as a means of providing updated census-type information. The Current Population Survey conducted by the Bureau of the Census is the most comprehensive of such surveys, covering about 50,000 households throughout the country scientifically selected for monthly visits by interviewers. The principal purpose of this survey is to provide information on employment, unemployment, and other characteristics of the labor force. These labor statistics are transmitted to the Bureau of Labor Statistics, Department of Labor, and are published by that agency.

Also information is gathered on a recurring basis for persons outside the labor force, such as students and disabled or retired persons, and on a periodic basis as part of special studies dealing with other social and economic characteristics. Many of these studies are sponsored by other Federal agencies to satisfy their statistical needs.

In fiscal year 1971 it cost \$5.8 million to conduct the population survey. Of this amount, about \$3.9 million was used for collecting labor-force statistics for the Bureau of Labor Statistics; \$1.2 million for collecting information on population and housing and evaluating the results of the 1970 decennial census; and the balance for collecting data for use by and at the request of other Federal agencies. The data collected for other Federal agencies covered a wide variety of subjects. For example, data on hired farm workers and characteristics of the farm population were collected for the Department of Agriculture; data on veteran status were collected for the Veterans Administration; and data on fishing and hunting were collected for the Department of the Interior.

Annual housing survey

Beginning in fiscal year 1974, an annual housing survey to be conducted by the Bureau of the Census will provide a new source of current housing information. The Department of Housing and Urban Development will finance a substantial part of the survey costs. According to a Bureau official,

the sample size will be about 200,000 households--of which 50,000 will be covered by the Current Population Survey. The 150,000 households not covered by the population survey, as well as 10,000 of those covered, will be included in a separate survey of about 20 standard metropolitan statistical areas.

Although the complete details had not been firmed up as of September 1971, proposals made up to that time provided for surveying the standard metropolitan statistical areas on a 3-year rotational basis to collect information on a wide range of housing subjects. The Bureau official informed us that the housing questions included in the survey would probably be more comprehensive than those of the 1970 decennial census.

The Department of Housing and Urban Development has earmarked about \$1.3 million for the survey. Estimates are set at \$2 million and \$2.5 million for fiscal years 1973 and 1974, respectively. An official of the Bureau of the Census estimated that the collection of data would begin in fiscal year 1973 and that the first reports would be published in fiscal year 1974.

Use of sample surveys to satisfy needs

The principal limitation of sample surveys is similar to that of population estimates--small area data are subject to relatively large statistical error. For example, because the monthly statistics from the Current Population Survey are collected from a relatively small sample of the Nation, the data are meaningful, for the most part, only as they relate to the Nation as a whole. According to a Bureau official, averaging of monthly data for a 12-month period would allow for the development of fairly reliable annual estimates of employment, unemployment, and other characteristics of the labor force for the 10 largest States and the 20 largest standard metropolitan statistical areas. A Bureau official informed us that the sample would have to be expanded to 200,000 households if monthly employment data were desired for these areas. According to the Bureau official, averaging of those monthly statistics would produce acceptable yearly data for all 50 States and for some additional standard metropolitan statistical areas.

As discussed on page 50, even a sample size comprising 25 percent of the population--which, in terms of the estimated 1970 housing inventory, would total about 16 million households--would produce small area data which would be subject to relatively large sampling errors. Therefore the sample survey is not a potential source of reliable small area data for all areas of the country, unless the data uses are such that large sampling errors can be tolerated.

ADMINISTRATIVE RECORDS

The administrative records developed as part of the business activity carried out by both the public and private sectors contain considerable statistical data for local areas. Included, for example, are data on income earned, housing starts, unemployment insurance claims, births, deaths, school enrollments, and automobile registrations. What uses are or could be made of such information to update census data?

As noted on page 37, some data derived from administrative records are used in developing population estimates for larger areas. For example, one mathematical equation for estimating State population by the regression method uses data on births, deaths, elementary school enrollment, votes cast in congressional elections, and motor vehicle registrations.

Also the State employment security agencies develop annual estimates of unemployment by State and county, partly on the basis of information submitted by firms coming under the Federal-State unemployment insurance programs and of unemployment compensation claims filed with the State employment security offices.

Similarly the total and per capita personal income estimating program carried out by the Bureau of Economic Analysis (formerly the Office of Business Economics), Department of Commerce, is based mainly on records of business and Government--including the Internal Revenue Service, the Social Security Administration, and State employment security agencies--which show disbursements made to individuals.

Although administrative records provide some measures of change, such as those indicated above, they should not be considered as sources to replace census data for local areas. As noted previously population estimates for small areas are subject to relatively large statistical error and, therefore, are of questionable reliability. Unemployment rate estimates for small areas are likewise of questionable reliability-- as we reported to the Congress in May 1971 (More Reliable Data Needed as a Basis for Providing Federal Assistance to Economically Distressed Areas, B-133182). Commerce Department officials point out that, although the Bureau of Economic Analysis' per capita personal income estimating program is the most promising alternative to using decennial census income data, the data are unstable for small areas.

Potential for more efficient
use of administrative records

The Bureau of the Census developed and utilized a geographical-coding scheme for tabulating the results of the 1970 decennial census for the larger metropolitan areas. Currently address coding guides have been produced for 233 standard metropolitan statistical areas. Through the use of a computer program called ADMATCH, the coding guide can be used as a geographic reference source to code data by census tract, block, etc. The ADMATCH program requires that the input data file be machine-readable and contain structure address identifiers. Improved coding guides called DIME (Dual Independent Map Encoding) files contain identifying numbers for intersections at the ends of each street segment and an identification of the block on each side of the street. The DIME files also add such nonstreet features as rivers.

Geographical coding--through the use of coding guides and DIME files and the ADMATCH program--has potential for application in assigning administrative records data, such as births, deaths, crimes, and vehicle registrations, to small areas on the basis of an address-coding scheme. The uses of, and the methods of presenting, small area data using geographical coding will require considerable study, however, before this potential can be fully appraised. A joint study of this subject is currently under way by the Southern California Association of Governments (an association of local and county governments) and the Bureau of the Census.

Because street names and numbers are the key elements in the computerized geographical-coding system, the system has been applied only to metropolitan areas. Many of the dwelling units in nonmetropolitan areas do not have addresses with street names and house numbers. Geographical coding will not help in developing estimates for smaller non-metropolitan areas, therefore, until a feasible method for address coding these areas is developed. At the present time no attempts are being made to develop such a method.

MID-DECADE CENSUS PROPOSALS

As noted in the introductory chapter, for purposes of this evaluation and as agreed with the Subcommittee, we have considered four mid-decade census proposals which were presented during hearings held by the Subcommittee on Census and Government Statistics in 1961 and 1962.

The following descriptions of the four mid-decade census proposals were presented by the Director, Bureau of the Census, in his testimony before the Subcommittee on Census and Statistics in June 1971. The Bureau's cost estimates showed what each proposal would cost as of January 1, 1971, on the basis of work load projections to 1975.

Level I proposal

The level I proposal provides for (1) a head count of the entire population and the accumulation of information on the basic characteristics of name, address, relationship to head of household, sex, race, and age, and (2) a collection of information concerning persons of Spanish cultural heritage. The Director indicated that data collected could be tabulated for every State, every county and its subdivisions, and every census tract in the metropolitan areas and for areas as small as enumeration districts. Also the data for enumeration districts could be arranged to provide data for larger areas, such as voting districts, school districts, and other special areas for which such data were needed. The Bureau's estimated cost for this proposal is \$154 million.

Level II proposal

The level II proposal would seek answers to all those questions asked of 100 percent of the population in the 1970 decennial census. This would include the same information as the level I proposal, plus additional information on such basic housing characteristics as type of unit, condition, occupancy, rooms, tenure, vacancy, and plumbing facilities. The Director said that this information could be tabulated in the same degree of geographic detail as that under the level I proposal and could be tabulated also by city block for the urbanized areas within the metropolitan areas. The Bureau's estimated cost for this proposal is \$169 million.

Level IV proposal

The level IV proposal is similar to the 1970 decennial census and provides for the collection of the same type of data as the level II proposal, plus data--to be gathered by a sampling of all households--on such topics as education, income, employment and unemployment, commuting, migration, foreign origin, type of work, method of heating housing units, fuels used, age of structure, and air-conditioning systems. Although the Director did not specify the sampling ratio to be used, it was implied that the ratio would be the same as that of the 1970 decennial census, which ranged from 5 to 20 percent. Bureau officials informed us that the tabulations and publications program for this proposal could be similar to that for the 1970 decennial census. The Bureau's estimated cost for this proposal is \$228 million.

Level III proposal

The level III proposal provides for the collection of the same type of data as the level IV proposal. All the data, however, would be collected from a sample of 25 percent of the households. The Bureau's estimated cost for this proposal is \$170 million.

ERRORS AND ESTIMATES IN CENSUS DATA

As indicated on pages 40 and 43, some margin of error is associated with the various sample survey and estimating programs for developing intercensal statistical data. To establish the proper perspective in comparing the reliability of this data with that of decennial census data, it is necessary to point out the limitations associated with census data.

Like most statistical data, census figures contain errors. These errors may be categorized as coverage errors or content errors. The 1960 census was estimated to have undercounted the total population of the country by 3 percent, with the Negro undercount estimated at 10 percent. The degree of undercount could very well be greater in some small areas, such as census tracts or city blocks, although no estimates have been made at other than the national level. Content errors refer to errors caused by incorrect reporting, recording, coding, or tabulating.

Much of the data from the decennial census--including that on employment, education, and income--is obtained by sampling, rather than by 100-percent enumeration.

Sampling, by definition, includes only a part of the population, and it is unlikely that sample estimates will agree with the true value that would be obtained by a complete enumeration. The amount that the sample estimate can vary from the true value is called sampling error. Statistical theory permits the calculation of the sampling error and the probability that it will not be exceeded.

For example, assume that the number of persons employed in a census tract is estimated to be 1,200 with a relative sampling error of 10 percent. This means that (1) the best single estimate of the number employed that can be made from the sample data is 1,200 and (2) there is a 68-percent chance that a complete enumeration would show that the actual number employed is between 1,080 and 1,320. Conversely, there is a 32-percent chance that the actual total is outside this range.

Also sampling theory permits the calculation of the

sampling error for any degree of probability desired. In the example above, there is a 95-percent chance that the number employed lies somewhere between 960 and 1,440. Thus, raising the probability or confidence level from 68 to 95 percent increases the size of the range within which it is expected that the true value lies. The best single estimate of the number employed, however, remains at 1,200.

The number of persons or households sampled is the key factor in the size of the sampling error for a given subject. The larger the number sampled in a given area, the smaller the sampling error. In the 1970 decennial census, a uniform sampling ratio was used; i.e., the sampling ratio was not varied with the total population of the area. The estimate for the census tract will thus have a smaller sampling error than will the estimate for a city block.

Much of the data collected in the 1970 census was based on a sample of 5, 15, or 20 percent of all households. Use of the 15- and 20-percent ratios produces estimates which the Bureau considers accurate enough for publication at the census-tract level but not accurate enough for publication at the city-block level. Use of the 5-percent ratio produces estimates which the Bureau considers accurate enough for publication only for the States, all large counties, and the larger metropolitan areas.

Because the level III proposal would provide sample data for all questions asked, we requested estimates from Bureau officials of the relative sampling errors that could be expected in data produced from a 25-percent sampling of the population.

The Bureau estimated that the relative sampling errors for total population counts would be as follows:

<u>Population of area or place</u>	<u>Percent of relative sampling error (note a)</u>
1,000,000	0.20
500,000	.28
250,000	.39
100,000	.62
50,000	.87
25,000	1.2
10,000	2.0
5,000	2.8
1,000	6.2

^aError at 68-percent confidence level. At the 95-percent confidence level, the error would be about twice as great.

The table shows that total population counts for large areas can be quite accurately estimated from a 25 percent sample. For areas or places under 25,000, however, the extent of the uncertainty connected with the estimate becomes relatively large. For example, if the population is estimated at 5,000, there is a 68-percent chance that the actual population is somewhere between 4,860 and 5,140 and a 95-percent chance that the actual figure is between 4,720 and 5,280.

The Bureau's estimates of the relative sampling errors that could be expected with estimates of population characteristics--sex, race, and age--and certain housing characteristics are given in appendixes XIII and XIV. Appendix XV contains their estimates of the expected error for the unemployment rate and number of low-income families by size of place.

We were informed by a Bureau official that a 20-percent sample with a 100-percent population and housing data base would produce more accurate data, i.e., data with smaller sampling errors, for some questions than would the level III proposal, which calls for a 25-percent sample but does not provide the 100-percent population- and housing-data base. The smaller sampling error occurs when a large percentage of the population has the characteristic in question.

The same Bureau official stated, however, that the decrease in sampling error was not of such magnitude that it would justify obtaining 100-percent population and housing data solely for improving the quality of the sample data.

CHAPTER 7

CONCLUSIONS

AND MATTER FOR CONSIDERATION

OF THE SUBCOMMITTEE

The needs and uses of census data are extensive. This conclusion is supported not only by the extensive testimony before congressional committees but also by our surveys of census needs and uses at the Federal and State levels of government.

It is also evident from both the public record and our surveys that a period of 10 years is much too long to wait for comparable statistics to measure social and economic change or to use in the general functioning of government.

The costs of collecting meaningful statistical data run high--especially for small areas. Because of such costs some persons have suggested that, in preference to more frequent censuses, intercensal data needs should be met by sample surveys specially directed toward certain areas or characteristics or by the utilization of data gathered as part of our everyday business activity.

Unfortunately the benefits which might accrue from a mid-decade census, for the most part, are not susceptible to quantification. The merits of any one of the four mid-decade census proposals over another in terms of satisfying intercensal data needs are relative to the specific needs of the users--more specifically, the desired subject detail, the desired geographic detail, and the margin of statistical error which can be tolerated. Therefore, although we believe that the major needs of the Federal and State Governments could be met best by a mid-decade census, we were unable to conclude that any one of the four mid-decade census proposals would represent a more effective use of Federal funds.

The report points out the existing needs for census data. The extent to which the Federal Government should meet these needs is a determination which we believe lies properly with the Congress.

Our surveys showed considerable need for small area data, most notably by the States. The advent of revenue-sharing proposals enhances this need, since under such proposals States would be given an even greater responsibility for redistributing funds to the local levels of government largely on the bases of census statistics.

Specially directed sample surveys and estimating programs serve a very useful and important purpose in the Federal statistical system. They alert the Nation to changing conditions and give cause for reexamination of our public priorities, policies, and programs. They serve as input for the decisionmaking processes of both the public and private sector.

In some instances, the results of these programs are used directly as a basis for allocating funds and for other purposes. However, such programs, for the most part, are not substitutes for census information. Although the statistics produced by these programs for the Nation as a whole, for some of the larger States, and for other areas are reasonably accurate, the small area data are subject to relatively large errors. Furthermore, sample surveys and estimating programs are not as comprehensive as the decennial census. Sample surveys, however, may cover one or more subjects in greater depth than the census, as is the case in the Current Population Survey which focuses primarily on labor-force statistics.

The statistical program favored most by census data users is a mid-decade census. Very few offer comments as to what a mid-decade census should entail.

The cost of a mid-decade census could vary substantially, depending on the desired geographic and subject detail. We considered four proposals which, briefly stated, included:

- The level I proposal for collecting basic population data on a 100-percent basis, at an estimated cost of \$154 million.
- The level II proposal for collecting both basic population and basic housing data on a 100-percent basis, at an estimated cost of \$169 million.

- The level IV proposal for collecting information similar to that collected in the decennial census, at an estimated cost of \$228 million.
- The level III proposal for collecting the same type of data as the level IV proposal but for only 25 percent of the households, at an estimated cost of \$170 million.

The level I proposal would satisfy the most important of the data requirements (population characteristics) but would fall considerably short of meeting all the major data needs of the Federal and State Governments. The level II proposal would have the same limitation as the level I proposal, except that it would provide information on basic housing characteristics. Income data requirements, however, were mentioned by the States almost as frequently as, and by the Federal program officials more frequently than, housing data requirements.

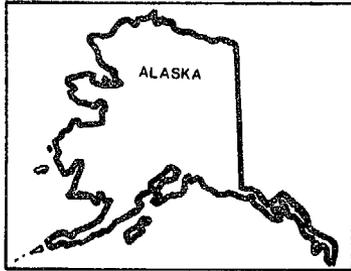
The subject content of a mid-decade census could be substantially less than that of the 1970 decennial census and still meet the major data needs of the Federal and State Governments. Therefore the levels III and IV proposals appear to overrespond to the need for data.

Also the reliability of some of the data provided by the level III proposal would be less than that associated with the decennial census which provides population and certain housing data for the total population. A Bureau of the Census official informed us that the decrease in sampling error was not of such magnitude that it would justify obtaining 100-percent population and housing data solely for improving the quality of the sample data.

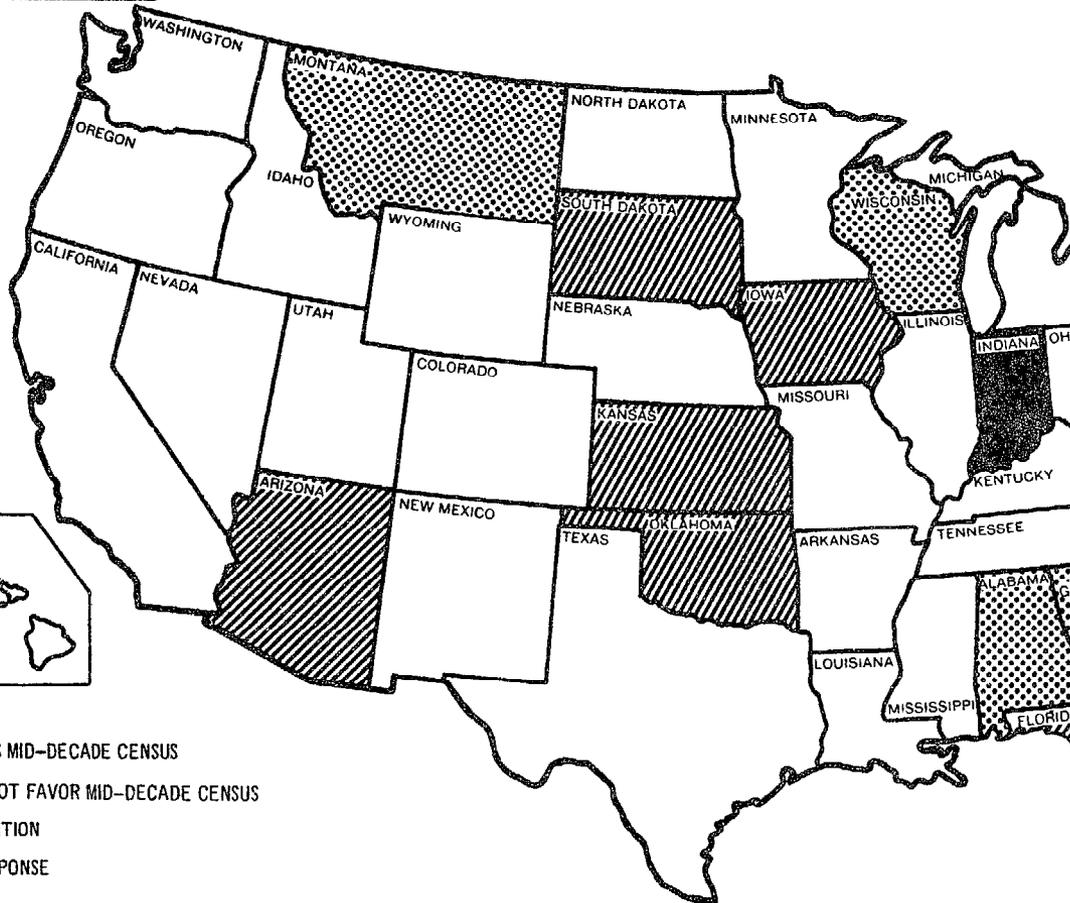
None of the various proposals, therefore, would exactly meet the needs of the Federal and State Governments. Their major data needs could best be met by a mid-decade census covering population, income, housing, and employment information; however, this census would contain less detail than the decennial census.

MATTER FOR CONSIDERATION OF THE SUBCOMMITTEE

If the Subcommittee decides that the data needs of Federal and State Governments warrant a mid-decade census, we recommend that the mid-decade census cover population, income, housing, and employment information, but that this census contain less detail than was included in the 1970 census.



STATES POSITIONS ON NEED FOR MID-DECADE CENSUS



KEY:

-  FAVORS MID-DECADE CENSUS
-  DOES NOT FAVOR MID-DECADE CENSUS
-  NO POSITION
-  NO RESPONSE

APPENDIX II

DATA CATEGORIES AND SUBJECT ITEMS

INCLUDED IN 1970 CENSUS

<u>Data categories and subject items</u>	<u>Percent of sample 1970 census</u>
POPULATION:	
Name, relationship to head of household, sex, race, age, and marital status	100
HOUSING:	
Number of units at this address, telephone, private entrance to living quarters, complete kitchen facilities, rooms, water supply, flush toilet, bathtub or shower, basement, tenure, commercial establishment on property, value, contract rent, vacancy status, and months vacant	100
Components of gross rent, heating equipment, year structure built, number of units in structure and whether a trailer, and farm residence	20
Source of water, sewage disposal, bathrooms, air conditioning, and automobiles	15
Stories and elevator in structure, fuel, bedrooms, clothes washing machine, clothes dryer, dishwasher, home food freezer, television, radio, and second home	5
PLACE OF ORIGIN AND MIGRATION:	
State or country of birth	20
Country of birth of parents, mother tongue, year moved into this house, and place of residence 5 years ago	15

<u>Data categories and subject items</u>	<u>Percent of sample 1970 census</u>
Mexican or Spanish origin or descent, citizenship, and year of immigration	5
EDUCATION:	
Years of school completed	20
School or college enrollment	15
MARRIAGES AND BABIES BORN:	
Number of children ever born	20
When married	5
MILITARY SERVICE:	
Veteran status	15
EMPLOYMENT AND OCCUPATION:	
Employment status; hours worked last week; weeks worked in 1969; last year in which worked; occupation, industry, and class of worker; and activity 5 years ago	20
Place of work and means of transportation to work	15
Vocational training completed, presence and duration of disability, and occupation-industry 5 years ago	5
Income	20

APPENDIX III

EXAMPLES OF USES OF CENSUS DATA AS REQUIRED BY STATE STATUTES

<u>Census use</u>	<u>State</u>
DISTRIBUTION OF FUNDS TO LOCAL GOVERNMENTS:	
Revenue sharing	Alaska, New York, South Carolina
Liquor store revenues	Alabama
Sales tax revenue	Alabama, Michigan, New York, Wyoming
Revenue arrangements	Missouri
Motor fuel taxes	Alabama, Delaware, Nevada
Alcoholic beverage and cigarette taxes	Nevada, Rhode Island
County-city relief tax	Nevada
Allocation of State funds for road construction	Montana, Wyoming
Aid for public libraries	New York
Aid for local health programs	New York
Aid for community mental health services	New York
Aid for court costs	New York
Aid for home relief	New York
Aid for youth services	New York
Aid for veterans services	New York
Aid for recreation for the elderly	New York
Aid for disposal of refuse	Rhode Island
ORGANIZATION, RIGHTS, POWERS, AND OBLIGATIONS OF LOCAL GOVERNMENTS:	
Qualifying the rights and obligations of various governmental and governmentally regulated persons and entities	Colorado
Structure and powers of municipal governments	South Carolina
Classification of cities	Kentucky, West Virginia, Wyoming
Incorporation of villages, cities, charter townships, and metropolitan districts	Michigan
Rankings of political subdivisions	Missouri
Formation and definition of municipal and metropolitan districts	Connecticut
The district boundaries of district attorneys, judges, magistrates, and county commissioners	New Mexico
Jurisdiction over improvement districts	Nevada
Determine minor civil divisions or magisterial districts for administering justice	West Virginia
Apportionment of funds on the division of a town	Connecticut
Authority to extend hours of the Drivers License Division	Nevada
Duties of county assessor	Nevada
APPORTIONMENT OF STATE LEGISLATURES	
	Alaska, Maine, Montana, South Carolina, Wyoming
REGULATORY PURPOSES:	
Cost of privilege and store licenses	Alabama
Number and cost of liquor licenses	Montana
Minimum capital requirement for State banks	Colorado
Use of water meters	Nevada
Jurisdiction over taxicab operations	Nevada
STATE LEGISLATIVE REDISTRICTING	
	Connecticut, New Mexico
ASSIGN FINANCIAL RESPONSIBILITY:	
State installation, operation, and maintenance of traffic signs and control devices	Colorado
Cost of street improvements	Wyoming
County share in cost of operating veterans' service offices	Colorado
COMPENSATION OF PUBLIC OFFICIALS:	
Compensation of district attorneys	Colorado
Officials' salaries	Wyoming
MISCELLANEOUS:	
Representation on regional planning commissions	Connecticut, Maine
Applicability of laws	Alabama

NEW YORK STATE STATUTES REQUIRING OR
IMPLYING THE USE OF CENSUS INFORMATION

<u>Activity</u>	<u>State funds expended</u>		<u>Programs affected</u>
	<u>Amount (millions)</u>	<u>Years</u>	
Education	\$ 14.3	1969-70	Aid to public library systems operating under approved plans, distributed according to population of area served.
Education	0.6	1969-70	Aid for the establishment of recreational programs for the elderly, distributed according to number of residents aged 60 and over.
State finance	455.0	1970-71	State-local revenue sharing, distributed according to population.
Public health	45.9	1969-70	Aid to counties and cities of 50,000 or more for the operation of local health programs.
Mental hygiene	54.5	1969-70	Aid for community mental health services operating costs, distributed according to population.
Judiciary	3.7	1969-70	State aid to counties for a share of court costs, amounts distributed by level of population.
Social services	171.1	1969-70	State pays 50% or more of expenditures for home relief according to percent of population in district on home relief.
Tax	-	-	County sales tax revenues are distributed to localities according to their population.
Executive	7.3	1969-70	Aid to localities for the promotion of youth bureaus, recreation and youth service projects based on youth population.
Executive	.5	1969-70	Aid to localities for the operation of veterans' service agencies based on population.

APPENDIX V

CENSUS TABULATIONS MOST IMPORTANT
TO STATE OF NEW MEXICO
ARRANGED ACCORDING TO
1970 SUMMARY COMPUTER TAPE SERIES

FIRST COUNT SUMMARY TAPE INFORMATION:

Contains final complete-count population and housing data for enumeration districts or areas or block groups (in portions of mail census areas having Address Coding Guides), States, counties, minor civil divisions or census county divisions, places, and congressional districts.

TABULATIONS:

Count of all persons
Count of all housing units
Count of persons in rural areas
Count of persons in SMSA's (note a)
Count of persons in urban portions of central cities of SMSA's
Aggregate dollar value (of housing)
Age and sex
Negro and other races (except white) by age and sex
Occupancy/vacancy status
Units with 1.51 or more persons per room by household type

SECOND COUNT SUMMARY TAPE INFORMATION:

Contains the same subjects as the first-count tapes but in much greater detail. It will be summarized for States, counties, minor civil divisions or census county divisions, places, SMSA's, and census tracts.

TABULATIONS:

Race and sex
Single years of age, race, and sex
Year-round, seasonal, and migratory status
Duration of vacancy and vacancy status
Value of units with all plumbing facilities

FOURTH COUNT SUMMARY TAPE INFORMATION:

Contains 20-, 15-, and 5-percent sample population and housing characteristics, such as education, occupation, income, citizenship, vocational training, and household equipment and facilities. Data summaries for State, counties, SMSA's, places, minor civil divisions or census county divisions, and census tracts. Sample data summaries will not be available for areas smaller than census tracts.

TABULATIONS (POPULATION):

Aggregate dollar family income of families
 Aggregate dollar income of unrelated individuals 14 years of age and over
 Aggregate dollar income of population 14 years of age and over, by sex
 Nativity and parentage
 Spanish indicators
 State of birth for the native population
 Population 18 to 24 years old, by completion of high school and college
 Population 16 to 21 years old not enrolled in school, by years of school completed, employment status, and sex
 Population 25 years of age and over, by years of school completed and sex
 Males 20 to 49 years old and females 15 to 44 years old, by years of school completed
 Employed population 16 years of age and over, by occupation
 Employed females 16 years of age and over, by occupation
 Employed males 14 to 15 years old, by occupation
 Employed females 14 to 15 years old, by occupation
 Employed population 16 years of age and over, by industry and sex
 Employed population 14 to 15 years old, by industry and sex
 Employed population 14 years of age and over, by occupation and sex
 Employed population 14 years of age and over, by industry and sex
 Family income
 Income of unrelated individuals

APPENDIX V

Males 16 years of age and over in the experienced civilian labor force, by earnings and occupation
Females 16 years of age and over in the experienced civilian labor force, by earnings and occupation
Type of income and sex
Ratio of family income to poverty level
Aggregate number of persons in families below poverty level
Number of families below poverty level receiving income or selected types
Farm residences
Sex
Race
Age
Nativity
Nativity of parents
Population 14 years of age and over, by income and sex
Population 14 years of age and over, by aggregate income and sex

TABULATIONS (HOUSING):

Count of negro persons
Count of Spanish-American persons
Allocations for sale of farm products
Households by type, age of head, income, tenure, and race of head
Number of persons, year head of household moved into units, tenure, and race of head
Number of persons, income, tenure, and race of head
Value, income, tenure, and race of head
Value, value-income ratio, tenure, and race of head
Gross rent, income, tenure, and race of head

^aStandard metropolitan statistical areas.

SUBJECT ITEMS FOR WHICH DATA ARE

NEEDED BY 24 STATES AND ARE

AVAILABLE FROM DECENNIAL CENSUS (note a)

<u>Information category/subject item</u>	<u>Number of States</u>
POPULATION:	
Age	20
Race	17
Sex	16
Relationship to head of household	8
Marital status	4
INCOME	20
HOUSING:	
Value	8
Contract rent	6
Vacancy status	6
Rooms	5
Tenure	5
Number of units at this address	4
Water supply	3
Flush toilet	3
Bathtub or shower	3
Source of water	3
Sewage disposal	3
Bathrooms	3
Months vacant	2
Heating equipment	1
Fuel	1
Components of gross rent	1
Farm residence	1
Year structure built	1
Telephone	1
Private entrance	1
Commercial establishment on property	1
Kitchen facilities	1
Basement	1

APPENDIX VI

<u>Information category/subject item</u>	<u>Number of States</u>
EMPLOYMENT AND OCCUPATION:	
Occupation, industry, and class of worker	8
Employment status	6
Place of work	6
Means of transportation to work	4
Presence and duration of disability	2
Vocational training completed	1
EDUCATION:	
Years of school completed	6
School or college enrollment	1
PLACE OF ORIGIN AND MIGRATION:	
State or country of birth	2
Year moved into this house	1
Place of residence 5 years ago	1
Country of birth of parent	1
Mexican or Spanish origin or descent	1
MILITARY SERVICE:	
Veteran status	1

^aOf the 29 States that furnished information as to decennial census data needs, 24 identified specific subject items.

SUMMARY OF STATUTORY REQUIREMENTS BY POPULATION TOTALS AND ACTIVITIES AS REPORTED BY VIRGINIA, WISCONSIN, AND ILLINOIS

Activity	State	Statutory references to population data									
		References in laws				Ranges within which base population totals fall (note a)					
		Total refer-ences	Population ranges or totals not specified or not known (note b)	Popula-tion ranges specified	Base popula-tion totals specified	1 to 25,000	25,001 to 50,000	50,001 to 100,000	100,001 to 500,000	500,001 to 1,000,000	Over 1,000,000
Elections	Virginia	5	4	-	1	1	-	-	-	-	-
	Wisconsin	41	3	2	36	11	1	4	20	-	-
	Illinois	139	34	7	98	32	10	10	35	8	3
		<u>185</u>	<u>41</u>	<u>9</u>	<u>135</u>	<u>44</u>	<u>11</u>	<u>14</u>	<u>55</u>	<u>8</u>	<u>3</u>
Boards and commis-sions	Virginia	1	-	-	1	-	1	-	-	-	-
	Wisconsin	70	14	3	53	6	1	5	41	-	-
	Illinois	134	33	12	89	14	9	4	39	19	4
		<u>205</u>	<u>47</u>	<u>15</u>	<u>143</u>	<u>20</u>	<u>11</u>	<u>9</u>	<u>80</u>	<u>19</u>	<u>4</u>
Local officials	Virginia	11	-	9	2	1	1	-	-	-	-
	Wisconsin	69	12	-	57	1	3	1	52	-	-
	Illinois	141	14	43	84	9	8	8	45	11	3
		<u>221</u>	<u>26</u>	<u>52</u>	<u>143</u>	<u>11</u>	<u>12</u>	<u>9</u>	<u>97</u>	<u>11</u>	<u>3</u>
Courts	Virginia	8	2	1	5	2	1	2	-	-	-
	Wisconsin	74	6	-	68	2	2	-	64	-	-
	Illinois	28	10	-	18	3	-	-	9	3	-
		<u>110</u>	<u>18</u>	<u>1</u>	<u>91</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>73</u>	<u>3</u>	<u>-</u>
Licenses and permits	Virginia	4	1	1	2	-	-	2	-	-	-
	Wisconsin	22	2	-	20	11	-	-	9	-	-
	Illinois	34	6	2	26	1	-	-	18	7	-
		<u>60</u>	<u>9</u>	<u>3</u>	<u>48</u>	<u>12</u>	<u>-</u>	<u>2</u>	<u>27</u>	<u>7</u>	<u>-</u>
Real property and assessments	Virginia	15	1	8	6	6	-	-	-	-	-
	Wisconsin	21	6	-	15	1	-	1	13	-	-
	Illinois	53	2	3	48	1	-	4	19	24	-
		<u>89</u>	<u>9</u>	<u>11</u>	<u>69</u>	<u>8</u>	<u>-</u>	<u>5</u>	<u>32</u>	<u>24</u>	<u>-</u>
Streets, sewage, util-ities, and mainten-ance	Virginia	10	1	2	7	6	1	-	-	-	-
	Wisconsin	49	4	2	43	18	1	-	24	-	-
	Illinois	38	6	-	32	4	-	3	23	2	-
		<u>97</u>	<u>11</u>	<u>4</u>	<u>82</u>	<u>28</u>	<u>2</u>	<u>3</u>	<u>47</u>	<u>2</u>	<u>-</u>
Taxes and apportion-ment of funds	Virginia	12	12	-	-	-	-	-	-	-	-
	Wisconsin	51	10	-	41	3	2	-	36	-	-
	Illinois	148	26	7	115	9	4	5	61	30	6
		<u>211</u>	<u>48</u>	<u>7</u>	<u>156</u>	<u>12</u>	<u>6</u>	<u>5</u>	<u>97</u>	<u>30</u>	<u>6</u>
Hospitals, institu-tions, schools, homes, public health, and welfare	Wisconsin	51	6	-	45	4	5	5	31	-	-
	Illinois	35	9	1	25	6	1	5	10	3	-
		<u>86</u>	<u>15</u>	<u>1</u>	<u>70</u>	<u>10</u>	<u>6</u>	<u>10</u>	<u>41</u>	<u>3</u>	<u>-</u>
Applicability of law	Virginia	7	2	4	1	-	-	1	-	-	-
	Illinois	27	5	2	20	2	-	4	11	2	1
		<u>34</u>	<u>7</u>	<u>6</u>	<u>21</u>	<u>2</u>	<u>-</u>	<u>5</u>	<u>11</u>	<u>2</u>	<u>1</u>
Defining terms and localities	Virginia	9	4	-	5	5	-	-	-	-	-
	Illinois	37	6	-	31	5	2	2	15	6	1
		<u>46</u>	<u>10</u>	<u>-</u>	<u>36</u>	<u>10</u>	<u>2</u>	<u>2</u>	<u>15</u>	<u>6</u>	<u>1</u>
Construction	Illinois	45	9	1	35	5	3	3	20	4	-
Redistricting	Illinois	23	15	-	8	5	-	1	2	-	-
Miscellaneous	Virginia	5	-	3	2	1	1	-	-	-	-
	Wisconsin	13	-	2	11	1	-	1	9	-	-
	Illinois	360	88	10	262	40	12	12	151	38	9
	<u>378</u>	<u>88</u>	<u>15</u>	<u>275</u>	<u>42</u>	<u>13</u>	<u>13</u>	<u>160</u>	<u>38</u>	<u>9</u>	
Number	Virginia	87	27	28	32	22	5	5	-	-	-
	Wisconsin	461	63	9	389	58	15	17	299	-	-
	Illinois	1242	263	88	891	136	51	62	458	157	27
Total		<u>1790</u>	<u>353</u>	<u>125</u>	<u>1312</u>	<u>216</u>	<u>71</u>	<u>84</u>	<u>757</u>	<u>157</u>	<u>27</u>
Percentage to total sections specifying base population				100	16.5	5.4	6.4	57.7	12.0	2.0	

^aThe base totals are those totals specified in the State statutes and were generally accompanied by the words "more than," "less than," "not more than," or "not less than."

^bDetail of statutory provisions furnished was not sufficient in some instances to identify population totals.

APPENDIX VIII

TOTAL AND SAMPLE NUMBER OF FEDERAL DOMESTIC
ASSISTANCE PROGRAMS BY ORGANIZATIONS
AND SUMMARY OF CENSUS DATA REQUIREMENTS

Organizations	Number of Federal domestic assistance programs (note a)	Number of programs in sample	Required use of census data					Census data not used	No reply	Invalid (note b)
			Adminis- trative	Statutory	Adminis- trative and statutory	Not spec- ified	Total			
Department of Agriculture	84	8	3	1	1	-	5	2	-	1
" " Commerce	40	3	2	-	-	-	2	1	-	-
" " Defense	41	5	-	-	-	-	-	5	-	-
" " Health, Ed- ucation, and Welfare	315	31	6	4	5	1	16	14	1	-
Department of Housing and Urban Development	85	9	4	-	1	-	5	3	-	1
Department of the Interior	102	10	-	-	-	2	2	6	-	2
" " Justice	28	3	1	-	-	-	1	2	-	-
" " Labor	46	4	2	-	1	1	4	-	-	-
Post Office Department	1	-	-	-	-	-	-	-	-	-
Department of State	11	1	-	-	-	-	-	1	-	-
" " Transporta- tion	25	2	-	-	1	-	1	1	-	-
Department of Treasury	4	1	-	-	-	-	-	1	-	-
Appalachian Regional Com- mission	12	1	1	-	-	-	1	-	-	-
Atomic Energy Commission	31	3	-	-	-	-	-	3	-	-
General Services Adminis- tration	7	1	-	-	-	-	-	1	-	-
Library of Congress	7	1	-	-	-	-	-	1	-	-
National Foundation of the Arts and Humanities	17	2	2	-	-	-	2	-	-	-
National Science Founda- tion	37	4	1	-	-	-	1	3	-	-
Office of Economic Oppor- tunity	17	1	-	-	1	-	1	-	-	-
Small Business Administra- tion	13	1	-	-	1	-	1	-	-	-
The Smithsonian Institu- tion	20	2	-	-	-	-	-	2	-	-
Veterans Administration	34	3	1	-	-	-	1	2	-	-
Other agencies (35)	<u>66</u>	<u>6</u>	<u>1</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>1</u>	<u>4</u>	<u>1</u>	<u>-</u>
	<u>1,043</u>	<u>102</u>	<u>24</u>	<u>5</u>	<u>11</u>	<u>4</u>	<u>44</u>	<u>52</u>	<u>2</u>	<u>4</u>

^aSource: Catalog of Federal Domestic Assistance.

^bFour questionnaires were considered invalid for statistical purposes because the programs were no longer being adminis-
tered by the agencies or the information in the response applied to more than the one program sampled.

BEST DOCUMENT AVAILABLE

SUMMARY TABLE OF CENSUS DATA
REQUIREMENTS OF FEDERAL AGENCIES

<u>Type of data</u>	Number of pro- grams (total 44)	Importance indicated			<u>Required by</u>			<u>Fund alloca- tion</u>	<u>Program eligi- bility</u>
		<u>Major</u>	<u>Minor</u>	<u>Major and minor</u>	<u>Stat- ute</u>	<u>Adminis- trative regula- tion</u>	<u>Statue and adminis- trative regula- tion</u>		
Population	41	29	8	4	3	26	8	20	18
Housing	14	6	3	5		13		4	6
Employment and occupation	12	6	3	3		11	1	2	3
Income	21	17	3	1	2	15	3	9	12
Place of origin and migration	6	2	3			4	2	1	1
Education	7	3	3	1	2	3	2	2	1
Marriages and babies born	3	1	2		1	1	1		
Military service	1	1				1			

APPENDIX X

SUBJECT ITEMS FOR WHICH DATA ARE NEEDED

BY FEDERAL AGENCIES

AND ARE AVAILABLE FROM DECENNIAL CENSUS

<u>Information category--subject item</u>	<u>Number of programs (total 44)</u>
POPULATION:	
Race	17
Age	18
Total count	16
Sex	7
Relationship to head of household	6
Marital status	3
INCOME	21
HOUSING:	
Value	9
Vacancy status	7
Contract rent	6
Number of units at this address	6
Rooms	5
Water supply	5
Bedrooms	5
Bathtub or shower	4
Tenure	4
Flush toilet	4
Heating equipment	4
Components of gross rent	4
Year structure built	4
Months vacant	4
Telephone	1
Television	1
Radio	1
Source of water	1
Sewage disposal	1
Automobiles	1
Fuel	1
Air conditioning	1

<u>Information category--subject item</u>	<u>Number of programs (total 44)</u>
EMPLOYMENT AND OCCUPATION:	
Employment status	7
Occupation, industry, and class of worker	7
Means of transportation to work	3
Presence and duration of disability	3
Occupation-industry 5 years ago	2
Vocational training completed	2
Hours worked last week	1
Activity 5 years ago	1
Place of work	1
EDUCATION:	
Years of school completed	6
School or college enrollment	4
PLACE OF ORIGIN AND MIGRATION:	
Mexican or Spanish origin or descent	4
State or country of birth	2
Year moved into this house	1
MARRIAGES AND BABIES BORN:	
Number of children ever born	3
MILITARY SERVICE:	
Veteran status	1

SUMMARY TABLE OF CENSUS DATA REQUIREMENTS
FOR THE ADMINISTRATION OF
FEDERAL PROGRAMS BY GEOGRAPHIC DETAIL

Geographic level	Number of programs (total 43)	Frequency of geographic detail req for data categories (note a)				
		Population (total 41)	Housing (total 14)	Employment and occupation (total 12)	Income (total 21)	Place of origin and migration (total 6)
Nation	2	2	-	-	-	-
State	23	21	5	7	9	3
Standard metropolitan statistical areas	9	8	1	4	3	2
Region/State planning area	2	1	-	1	2	-
County	13	12	5	3	7	3
Urban/rural area	6	6	2	-	1	2
City	7	7	1	-	-	1
School district	2	1	-	-	-	-
Census tract	3	3	2	-	2	-
Block	4	4	4	2	3	1

^a Totals represent the total number of programs needing each of the data categories.

SUMMARY TABLE OF CENSUS DATA MOST USEFUL TO 29 STATES

<u>Data categories most useful</u>	Number of States	<u>Other data categories</u>				
		<u>In-</u> <u>come</u>	<u>Employ-</u> <u>ment</u> <u>and</u> <u>occupa-</u> <u>tion</u>	<u>Educa-</u> <u>tion</u>	<u>Place of</u> <u>origin</u> <u>and</u> <u>migra-</u> <u>tion</u>	<u>Mili-</u> <u>tary</u> <u>ser-</u> <u>vice</u>
POPULATION CHARACTERISTICS	2					
Plus one other cate- gory	1	x				
	1		x			
Plus two other cate- gories	2	x	x			
Plus three other cate- gories	1	x	x		x	
HOUSING CHARACTERISTICS	1					
POPULATION AND HOUSING CHARACTERISTICS	4					
Plus one other cate- gory	2	x				
Plus two other cate- gories	3	x	x			
	1	x		x		
Plus three other cate- gories	3	x	x	x		
	2	x	x		x	
Plus four other cate- gories	4	x	x	x	x	
Plus five other cate- gories	1	x	x	x	x	x
OTHER CATEGORIES	1				x	

APPENDIX XIII

RELATIVE SAMPLING ERRORS FOR SELECTED
ESTIMATED POPULATION CHARACTERISTICS
BY SIZE OF PLACE FOR 25-PERCENT SAMPLE (note a)
(68-percent confidence level)

Total population of place	Sex (note d)	Race (note b)			Age (note c)			
		White	Negro	(Other)	0 to 4	5 to 17	18 to 45	Over 45
(percent)								
1,000,000	0.26	0.17	0.61	1.3	0.58	0.40	0.32	0.35
500,000	.37	.25	.86	1.9	.81	.56	.45	.50
250,000	.52	.35	1.2	2.7	1.1	.80	.64	.70
100,000	.83	.55	1.9	4.2	1.8	1.3	1.0	1.1
50,000	1.2	.78	2.7	5.9	2.6	1.8	1.4	1.6
25,000	1.6	1.1	3.9	8.4	3.6	2.5	2.0	2.1
10,000	2.6	1.7	6.1	13.0	5.8	4.0	3.2	3.5
5,000	3.7	2.5	8.6	19.0	8.1	5.6	4.5	5.0
1,000	8.3	5.5	19.0	42.0	18.0	13.0	10.0	11.0

^aThe data in this appendix and appendixes XIV and XV were supplied by the Bureau of the Census. The transmittal letter contained the following paragraph concerning the sampling errors shown in these tables.

"The sampling errors depend partially on the size of the estimates. For example, an area in which the negro population is 20 percent will have a different sampling error than one in which it is 40 percent. We have used percentages which approximate national distributors, (they are shown in footnotes) but if a specific area actually deviates greatly from these percentages, so will the sampling errors. These tables should therefore be thought of as approximates rather than as precise figures. However, I believe they are good enough for most practical uses."

^bAssumed to be 75-percent white, 20-percent Negro, 5-percent other races.

^cPopulation assumed to be 11 percent in ages 0 to 4, 23 percent in ages 5 to 17, 36 percent in ages 18 to 45, and 30 percent over 45.

^dAssumed to be 50-percent male, 50-percent female.

RELATIVE SAMPLING ERRORS FOR SELECTED
ESTIMATED HOUSING CHARACTERISTICS BY
SIZE OF PLACE FOR 25-PERCENT SAMPLE
(68-percent confidence level)

<u>Total population of place</u>	<u>Complete kitchen facilities (note a)</u>	<u>Hot and cold piped water (note b)</u>	<u>Flush toilet (note c)</u>	<u>Bathtub or shower (note d)</u>
(percent)				
1,000,000	0.15	0.12	0.12	0.13
500,000	.21	.17	.17	.18
250,000	.30	.24	.24	.26
100,000	.47	.38	.38	.41
50,000	.66	.54	.54	.57
25,000	.94	.76	.76	.82
10,000	1.5	1.2	1.2	1.3
5,000	2.1	1.7	1.7	1.8
1,000	4.7	3.8	3.8	4.1

^aIt is assumed that 80 percent of units have complete kitchen facilities.

^bIt is assumed that 87 percent of units have hot and cold piped water.

^cIt is assumed that 87 percent of units have a flush toilet.

^dIt is assumed that 85 percent of units have a bathtub or shower.

APPENDIX XV

RELATIVE SAMPLING ERRORS FOR ESTIMATES
 OF NUMBER OF LOW-INCOME FAMILIES AND
 UNEMPLOYMENT RATE BY SIZE OF PLACE FOR
 25-PERCENT SAMPLE

(68-percent confidence level)

<u>Total population of place</u>	<u>Low-income families (note a)</u>	<u>Unemployment rate (note b)</u>
	(percent)	
1,000,000	0.6	1.1
500,000	.9	1.6
250,000	1.2	2.2
100,000	1.9	3.6
50,000	2.7	5.0
25,000	3.9	7.1
10,000	6.1	11.0
5,000	8.6	16.0
1,000	19.0	36.0

^aLow-income families assumed to be 20 percent of all families.

^bUnemployed assumed to be 6 percent of the persons in the labor force. The number of persons in the labor force is assumed to be 35 percent of total population.