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ABSTRACT

Nine pamphlets comprise this college-level curriculum support package about 1970 census data. "Teacher's Guide: Approaches to Census Data" describes unit objectives, discusses student materials and other publications the teacher may need, and suggests class exercises. A workbook for students gives an overview of 1970 census subject matter, geography, and data products; mentions related current data sources; provides guidance in finding particular data; and contains exercises to involve students in the use of census publications. Two case studies present a site-location problem in which students must refer to small-area data, and a problem of group migration requiring analysis of state and regional data. Focusing on social welfare applications of data, "Census Data for Community Action" studies concerns such as relocation projects and voter registration. As a sample of state summary reports, a profile of Maryland census data is provided. Three reports, called data access descriptions, provide references to census geographic products helpful in analysis of small-area data; discussion of individual items on the 1970 census questionnaire; and a bibliography of printed reports issued by the Bureau of the Census as a result of the 1970 census. All materials are available from the Bureau of the Census.

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TEACHER'S GUIDE:

Approaches to Census Data

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TEACHER'S GUIDE: APPROACHES TO CENSUS DATA*

Section 1: Introduction

This Teacher's Guide is an introduction to the topic of teaching students about census data. It is part of a set of materials the Bureau of the Census is developing to acquaint college students with its massive statistical resources. In their present form these materials focus on data from the 1970 Census of Population and Housing with some material on related annual data series.

Objectives for this Teaching Unit

Instructors in various disciplines teaching different levels of students and with diverse specializations of their own will obviously have varied ideas about what should be the objectives of a teaching unit on census data. Many instructors will want mainly to familiarize their students with the types of data available from the 1970 census, while others prefer to specialize in, for example, data collection methodology or detailed analytic techniques. These materials are more oriented toward the former, developing general familiarity with census data, with this important addition: that general familiarity should be supplemented by the development of skill in actually locating data of interest. We would phrase this objective as follows: that the student can specify and locate from the 1970 census desired data items for desired geographic areas with due attention to definitions and data limitations.

To amplify this objective, section 2 of this guide identifies several supporting goals and lists student performances or behaviors which can confirm that these objectives have been met. Thus, the instructional model used here is "goal-referenced"--the objectives of instruction being specified in terms of learner behavior. You, as the instructor, can use this statement in planning points to emphasize in class and in judging student accomplishment. In addition, your students may find the statement of objectives useful in understanding what they need to master. (Copies of section 2 are available in quantity for distribution to students.) Obviously the amount of time available for this unit will affect the degree to which these objectives can be achieved, and many instructors will have additional objectives for advanced classes, for example, relating to the use of computerized data products.

*This teacher's guide was prepared by Paul T. Zeisset, Chief of the Census Bureau's Data Access and Use Staff. Address correspondence (recommendations, requests for materials, etc.) to the CCSP Coordinator, Data Access and Use Staff, Data User Services Division, Bureau of the Census, Washington, D.C. 20233; phone (301) 763-7454.

Student Materials

Three pamphlets have been designed especially for use by college students without prior familiarity with census data. They may be used separately or in combination, depending on the desired specialization and the amount of time available. Each incorporates exercises which actively involve the student in using census data.

1. Student's Workbook on the 1970 Census. This pamphlet provides a general overview of 1970 census subject matter, geography, and data products; mentions related current data sources; provides guidance in finding particular data; and includes several useful reference charts. Several exercises are included to involve the student in the use of census publications. Albeit briefly, the workbook touches on each of the objectives and performances stated in section 2 of this guide. The exercises involve use of several publications including a PHC(1) Census Tracts report and a PC(1)-C General Social and Economic Characteristics report.
2. Case Study: The Location of a Playground. This case study and the one listed below present a quite different approach to census data. They start with a problem and then lead the student through various steps in its solution with questions for the student to answer along the way. The playground case study presents a site-location problem which refers primarily to small area data from the census (tracts, enumeration districts, blocks). Data tables required for completion of the case study (from a Census Tracts report) are included in the pamphlet, a useful virtue when library copies of reports are too few to accommodate the class. Questions included require the student to compile and draw conclusions from the data.
3. Case Study: Migration Patterns of Southerners. This pamphlet provides an exercise in the use of data from a PC(1)-C General Social and Economic Characteristics report, primarily at the State level, and from detailed subject reports, at the regional level. Appropriate subject report data are included but the student should have access to a PC(1)-C report for a State. Several questions check the student's comprehension along the way, and answers for most are provided in the back. This case study is somewhat more complex than the playground case study, but it exposes the student to a variety of data reports and reference aids.

One other pamphlet is worth considering if class interests are especially high in social welfare applications of data. Census Data for Community Action includes introductory material very similar to parts of the student workbook, but also discusses data applications in relocation projects, establishing adult education programs, voter registration, and similar concerns. The pamphlet concentrates on the use of Census Tracts and Block Statistics reports, and contains table outlines for both. No exercises are included.

Students who have significant prior familiarity with census data may find some of these materials too basic for their interests. Nonetheless the reference charts in the student workbook should be handy for any user. Advanced students may want to concentrate their study on the items discussed later under "Reference Materials." Many of the references are available in sufficient quantity for distribution to students, as specifically noted below on pages 4 and 5.

Teaching Methods

The above-mentioned student materials have been designed so that they could be used in independent study. Nonetheless classroom activity is also very important--in reinforcing the written materials, in amplifying them, in applying them to research problems in the field of study in which they are presented, and in fostering the likelihood of future use of census data. In pretesting these materials we found that students responded more positively to the idea of using census data when they had been in classes where the concepts and materials had been discussed, rather than only assigned the materials as homework.

The Instructor's Reference Manual has been prepared in outline form to facilitate the preparation of lectures. Material can be included or skipped as relevant to a particular class. Taken in its entirety the reference manual provides a comprehensive introduction to the field without being overbearing in length. The reference manual provides sufficient breadth to treat most student questions arising from home study of the student materials. The manual also makes frequent reference to other available sources for more depth.

There are also a number of alternatives to lecturing as a way of presenting census data in class. One is the "inquiry method," a problem-solving approach where students are challenged to discover answers through trial and error, but with the instructor's guidance. Several exercises embodying the inquiry approach are presented in section 3 of this manual. In this less structured learning process, students develop skills by asking their own questions and finding their own answers rather than being told what they ought to know. With the inquiry method, students are likely to work together and share ideas among each other. The instructor's work is as a facilitator and is to provide guidance and the materials the students will need to find the answers to their questions. One of the interesting inquiry-method applications involves showing the class a colored data display map in either the Urban Atlas series, GE-80, or the nationwide county map series, GE-50 and GE-70. Students visualize spatial relationships and can be led to form hypotheses and ask questions which lead them into the more detailed data in printed reports.

Two award-winning 16mm films produced by the Census Bureau are distributed by the Modern Talking Picture Service. "We" is a popular sampling of the types of things we learn from the decennial census.

"Factfinder for the Nation" is an overview of the various types of data-gathering programs the Census Bureau is involved in. An order form for loan or purchase of these films is presented on page 23.

Another useful activity is familiarizing students with the census-related holdings of the school library. A list of publications with "call numbers" and a tour or map showing where census volumes are kept within the library could be quite useful to students.

Unless the students understand and appreciate the purposes for which they might use census data in the future, this unit may be little more than an academic exercise. Many of the exercises in various student materials attempt to encourage students to think in terms of data application. Unfortunately the same set of examples is called upon to serve classes in sociology, marketing, political science, library science, business administration, and all other disciplines. We strongly recommend that you spend time in class discussing both significant research applications of census data in your discipline and practical applications in vocational fields for which your students may be training. To assist you, we have compiled illustrative examples of 1970 census data uses in various types of professional fields in section 4.

Reference Materials

A substantial amount of reference materials are available from the Census Bureau. That material which is most useful in organizing this course of study is included in the Instructor's Reference Manual. The Index to Selected 1970 Census Reports, the Instructor's Reference Manual, and several other references or aids are provided to participating instructors. The manual also makes frequent reference to other reports, and thus serves to interrelate the many census guides and pamphlets.

Other reference materials fall into three categories:

1. Those generally useful to most students, of which multiple copies may be requested for classroom use.
2. Those useful to advanced students or students with specialized interests, also available in quantity where appropriate.
3. Those for which quantities are limited or which can be obtained only from the Government Printing Office.

Category 1 includes three Data Access Descriptions (DAD's) and four popular brochures. (We will try to provide requested quantities without charge, though we may have difficulty with orders for more than 30 copies.)

Data Access Description #39 "Reports Related to the 1970 Census of Population and Housing" is the most comprehensive annotated list of 1970 census publications.

Data Access Description #33 "1970 Census Geography: Concepts, Products, and Programs" provides definitions of geographic areas reported in the 1970 census, gives sources of census maps, and describes geographic coding schemes and geographic base files.

Data Access Description #14 "Items Contained in the 1970 Census of Population and Housing" provides an illustration and explanation of each item on the census questionnaire. Written just before the 1970 census was taken, it highlights its relationship to the 1960 census questionnaire.

Four brochures designed for distribution to the general public may also be of interest to your students. "Census USA" highlights the decennial censuses, including technological innovations, from 1790 to 1970. "The Nation's Census Taker" briefly describes each of the major subject areas in which the Bureau conducts censuses or takes surveys. A new brochure on census confidentiality will shortly be available. "USA Statistics in Brief" presents a broad range of statistics at the national level and a few items for States.

Category 2 comprises a rather lengthy list of brochures, many of which are in the Data Access Description series. These items are listed by topic in section 5. They may be useful in covering special topics, such as public-use samples or geographic base files, which are not otherwise covered in student materials.

Category 3 includes all remaining reference tools. Those directly related to the 1970 census are listed in Data Access Description #39 on pages 7 through 11. Key references for other Census Bureau programs are cited in the Instructor's Reference Manual. Availability of these reports varies. Some references, such as the Index to 1970 Census Summary Tapes, are available without charge to instructors on a single-copy basis. Others, such as technical documentation for computer tapes, are available for purchase only. Still others are out of print and are available only through libraries. Inquiries as to the availability of specific reports may be addressed to the Data Access and Use Staff (address under "Ordering Information," below).

Finally, we refer you to two sources which will keep you up to date on census products. The Census Bureau's monthly Data User News describes new data series, reference materials, and services, and occasionally provides reports of innovative things users have done with census data. Selected new publications are listed each month. An order form for Data User News is on page 25. The Bureau of the Census Catalog provides a comprehensive list of all publications issued during a certain period of time. It is issued quarterly, cumulative to an annual issue, and contains abstracts of each report. Monthly supplements are also included in the catalog subscription, providing titles of all new reports on a timely basis. An order form is on page 24.

Data Publications

Two types of data publications are essential for completion of exercises in the Student Workbook:

- Census Tracts, PHC(1), for one or more metropolitan areas.
- Characteristics of the Population, PC(1), for one or more States.

The latter was also published in four softbound chapters PC(1)-A, B; C, and D of which PC(1)-C, General Social and Economic Characteristics, would suffice for the exercises.

Many other data publications may be desirable, depending on special interests:

- Housing Characteristics for States, Cities, and Counties, HC(1), for one or more States (or chapters HC(1)-A and HC(1)-B published separately in softbound).
- Block Statistics, HC(3), for one or more urbanized areas.
- Urban Atlas, GE-80, one for each of the 65 largest SMSA's
- Population Profile of the U.S., 1975, P-20 No. 292.
- Statistical Abstract of the U.S., 1975 (available commercially as the 1976 U.S. Fact Book/American Almanac).
- Selected subject reports and other reports listed in DAD #39.

These reports should be available from your school library or a local public library. Census reports are available for sale by the Government Printing Office (Washington, D.C. 20402). Unfortunately, orders to GPO frequently require several months to fill. We are also aware that GPO no longer stocks a number of tract and block reports. It may be possible to purchase some reports if they are in stock at GPO bookstores (in 23 cities) or Department of Commerce district offices (in 43 cities, see page 22 of the student workbook).

If a data report needed for classroom use is not available through other sources, or time constraints prevent mail-ordering through GPO, we will endeavor to provide a single copy from our internal supply. See ordering information below.

Ordering Information

Requests for student materials, reference materials or data publications may be directed to the

Data Access and Use Staff/CCSP
Data User Services Division
U.S. Bureau of the Census
Washington, D.C. 20233
Telephone: (301) 763-7454

If you develop instructional exercises or other materials for your students, we would like to see them. If they are such that we would like to use them, we will ask your permission and cite you as the source if you wish.

Instructors on our College Curriculum Support Project mailing list will receive notices of new teaching materials as they become available.

Section 2: Teaching Unit Objectives

Central Goal:

That the student can specify and locate from the 1970 census desired data items for desired geographic areas with due attention to definitions and data limitations.

Supporting Goals:

The student

- understands the geographic concepts used by the Bureau of the Census
- is familiar with the subject items tabulated in the 1970 census
- is familiar with the publication program (data products) of the 1970 census
- can locate specific data in the 1970 census
- observes appropriate precautions when using the data
- is familiar with major census reference sources

So that the knowledge and skills to be attained are more explicit, we have prepared the following list of performances which can show the goal has been accomplished. The performances also provide a measure of achievement.

GOAL #1

The student understands the geographic concepts used by the Bureau of the Census.

Performances To Show the Goal Has Been Accomplished:

- a) The student can list at least ten types of geographic areas for which 1970 census data were tabulated.
- b) The student can define census geographic areas listed on page 2 of the student workbook.
- c) The student can state the hierarchical relationships of geographic units as shown in figure 2 of the student workbook.
- d) The student can select an appropriate geographic area for a particular research problem.

Data User Services Division, Bureau of the Census, revised August 1976.

GOAL #2

The student is familiar with the subject items tabulated in the 1970 census.

Performances To Show the Goal Has Been Accomplished:

- a) The student refers to figure 1 in the student workbook for a list of subject items.
- b) For definitions of the subject items, the student refers to the appendixes of the publications or the dictionary in the 1970 Census Users' Guide, Part I.
- c) The student uses the cross-reference guide of the Index to Selected 1970 Census Summary Tapes whenever unsure of the census terminology for a particular variable.
- d) The student can select appropriate census subjects for a particular research problem.

GOAL #3

The student is familiar with the publication program (data products) of the 1970 census.

Performances To Show the Goal Has Been Accomplished:

- a) The student can name the types of media used for publication of 1970 census data (printed publications, computer tapes, microfiche, microfilm, and data maps) and can indicate some circumstances in which each is most appropriate.
- b) The student is familiar with figure 5 in the student workbook and can use it to describe publications in terms of the series designation, the geographic areas covered, the unit of issue (State, Nation, etc.) of the publication, and the type of data. Particular attention is paid to the following series: PC(1), HC(1), PHC(1), PC(2), HC(3), and GE-80.
- c) The student is familiar with figure 6 in the student workbook and uses it to find which publications and which summary tape counts have data for specified geographic areas.
- d) The student can identify which publications and which summary tapes were produced from complete count data and which were produced from sample data. (See also 5c.)

- e) Given the problem of finding whether particular data are available as needed from the summary tapes, the student refers to the Index to 1970 Census Summary Tapes and to the appropriate Data Access Description or summary tape documentation (Part II, 1970 Census Users' Guide for Counts 1-4).
- f) The student has used Census Tracts and Block Statistics reports and is familiar with the types of maps they contain.
- g) Given a need for current and/or annual data on population or housing characteristics, the student is aware of Census Bureau current surveys (primarily national level) and population estimates (down to county and city level).
- h) The student refers to--
- Statistical Abstract for recent data (most at the national level) from a variety of sources;
Historical Statistics of the U.S., Colonial Times to 1970 for time series data at the national level;
County and City Data Book: 1972 for convenience in comparing data among counties, cities, SMSA's, regions, divisions, and the Nation and for data for these areas from a variety of sources.
- i) The student is aware of the various places to obtain census publications: libraries (especially Government Depository Libraries), Census Bureau regional offices, and Department of Commerce district offices; with copies being available for purchase from the Government Printing Office and, in some cases, the Census Bureau.

GOAL #4

The student can locate specific data in the 1970 census.

Performances To Show the Goal Has Been Accomplished:

- a) The student can successfully locate desired data by following the principles and using the references discussed in the student workbook, pages 3 and 4.
- b) If the data are not available as desired, the student considers altering the data requirements to fit what exists, or calls the Census Bureau to investigate the possibility of unpublished data or the feasibility of using public-use microdata samples.

GOAL #5

The student observes appropriate precautions when using the data.

Performances To Show the Goal Has Been Accomplished:

- a) The student finds the definition of terms in the appendixes of the publications and reads them before using the data.
- b) The student looks for relevant correction notes in the publication before using the data.
- c) The student is aware that all data based on samples are estimates and subject to chance variation which can be relatively large in the case of small estimates. The student uses appendix material in sample data reports to compute standard errors and confidence intervals for data for census tracts or other small areas.

GOAL #6

The student is familiar with major census reference sources.

Performances To Show the Goal Has Been Accomplished:

- a) The student refers to the lists of reference sources on pages 4 and 5 in the student workbook and in Data Access Description #39 for help in locating and interpreting desired data.
- b) The student refers to monthly issues of Data User News for announcements of new data and reference products and for updated information on existing products.
- c) The student refers to the Statistical Abstract of the U.S. to find data on subjects not in the 1970 census, using its index to locate tables in the Abstract, and using the bibliographic notes and guide to sources to find more detailed data.

Section 3: Exercises

(Six exercises which students can do on their own or in groups are incorporated in A Student's Workbook on the 1970 Census.)

Part A. Exercises using an "inquiry" approach as discussed on page 3.

1. Ask students to use a census volume to find information about their own individual house and family. They will quickly find that information is not given about individuals - only groups of individuals. This is your opportunity to introduce the concepts of confidentiality and "summary" versus "individual" data. (See the Reference Manual.)
2. Obtain an Urban Atlas for your SMSA or an SMSA near you (available only for SMSA's over 500,000 population). Ask students to verbalize some of the spatial relationships which can be inferred from particular maps. Encourage them to form hypotheses based on individual maps or apparent similarities or dissimilarities between two maps (such as population density and median family income). Note questions or hypotheses which require data in more detailed form for confirmation. These data may be available in numeric form in a Census Tracts report.
3. Use a GE-50 or GE-70 series map (listed in Data Access Description No. 39, page 9) showing data by county across the Nation. Ask students to make generalizations and hypotheses as suggested in (2) above. Look for major regional variations. Are regional variations more significant than differentials between metropolitan and nonmetropolitan areas?
4. If you live in an urbanized area, ask students to count the number of housing units in a specific block and compare their count to the HC(3) Block Statistics report. This exercise will--
 - involve students in using the detailed maps in the HC(3) report;
 - require students to learn the definition of a "housing unit" (refer to HC(3), Introduction);
 - teach students the difficulty of the seemingly simple task of counting; and
 - teach students about change in small areas over time.
5. Ask students to describe an area of interest to them. What is the geographic distribution of the population? Do many people live out of town and commute to work? What are the major occupations of the area? How well educated are the people (do census data really answer this)? What is the racial composition of the area? What is the age composition? What are the housing patterns and conditions? Do people move in and out of the area much? What are the implications of these characteristics?

Part B. Exercises useable as simple test questions

6. Check which items were included in the 1970 Census of Population and Housing.

	Answers
<input type="checkbox"/> Persons per room	X
<input type="checkbox"/> Employment status	X
<input type="checkbox"/> Place of work	X
<input type="checkbox"/> Housing vacancy	X
<input type="checkbox"/> Dilapidated housing	
<input type="checkbox"/> Air quality	
<input type="checkbox"/> Age, sex, race	X
<input type="checkbox"/> Religious affiliation	
<input type="checkbox"/> Income	X
<input type="checkbox"/> Death rates	
<input type="checkbox"/> Smoking habits	
<input type="checkbox"/> Expected family size	
<input type="checkbox"/> Unemployment	X
<input type="checkbox"/> College graduates	X

Answers can be determined using figure 1 in the Student Workbook. Unemployment is defined by "employment status" in the figure and college graduates are defined by "years of school completed."

7. Write in the correct type of geographic area. (Optional: also name the specific one you live in, if applicable)
- _____ A statistically defined subdivision of a metropolitan area and commonly used by planners. Published for all SMSA's defined at the time of the 1970 census in report series PHC(1).
 - _____ The smallest area for which 1970 census data are available (but only complete count population and housing items). Published in HC(3) report series for all urbanized areas and in places which contracted for publication of data at this level.
 - _____ Subdivisions of census tracts and county subdivisions (MCD's/CCD's) assigned to enumerators for collecting questionnaires. These are the smallest geographic areas to be used as building blocks outside of urbanized areas. Not in printed reports.
 - _____ A statistically defined area made up of a central city plus the surrounding closely settled urban fringe (sometimes called "suburbs").
 - _____ West, South, Northeast, North Central (four major groupings of States).
 - _____ Nine groups of contiguous States.

- g. _____ A metropolitan area.
- h. _____ The complement of the urban population frequently subdivided into farm and nonfarm components.
- i. _____ Subdivisions of counties (e.g., townships, towns, etc. in selected States).
- j. _____ A concentration of population which is not legally defined as a city. Shown in the reports only if there are at least 1,000 inhabitants.

Answers

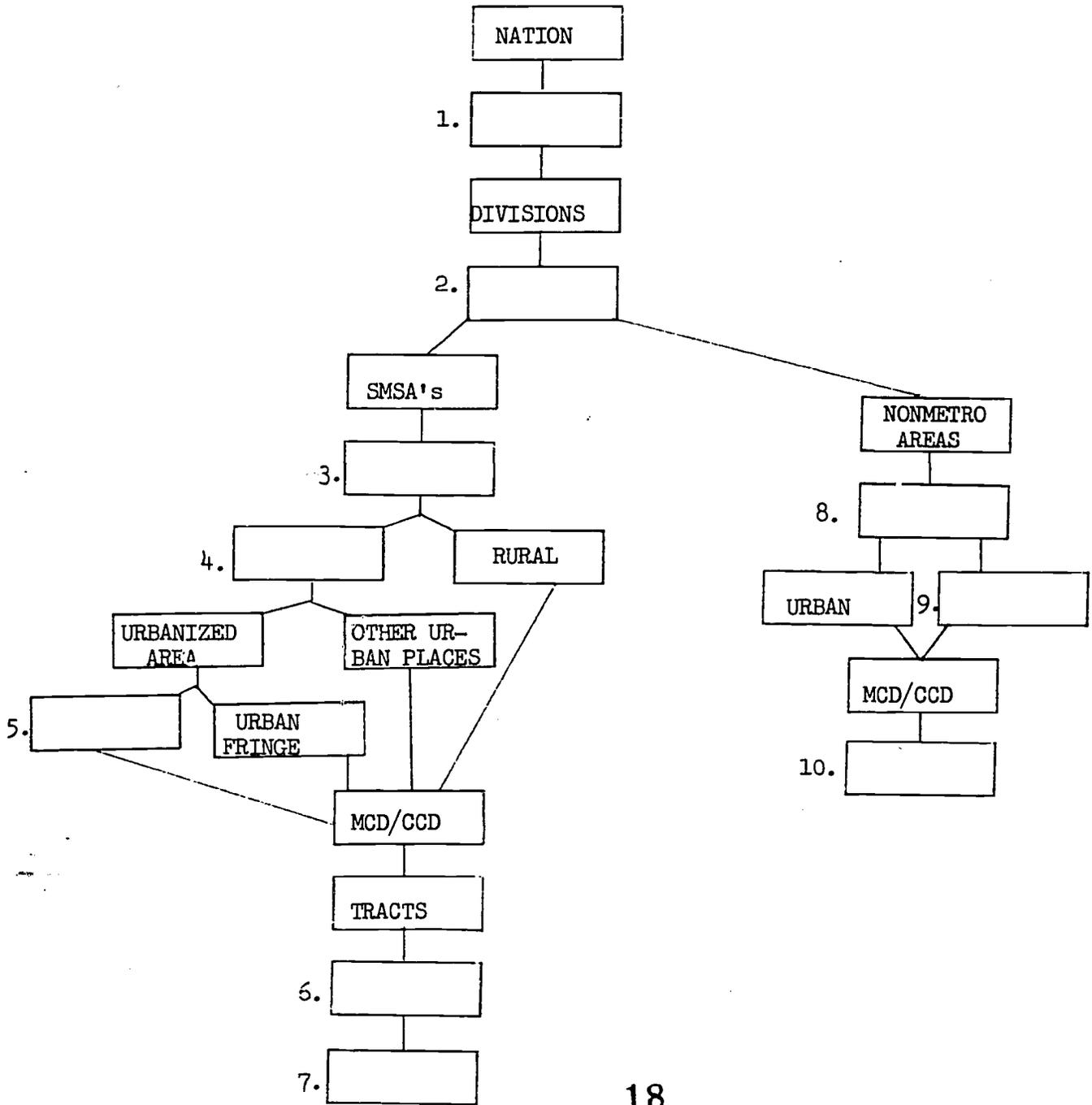
<u>Type of Area</u>	<u>Specific Area (example: the White House)</u>
a. tract	tract 57.02 (determined from an HC(3) or PHC(1) map)
b. block	block 101 in tract 57.02 (determined from HC(3) map)
c. enumeration district	not applicable (determined from an HC(3) map or from unpublished maps outside urbanized areas)
d. urbanized area (UA)	Washington, D.C.-Md.-Va. urbanized area (PC(1)-A urbanized area maps)
e. region	South (map in Migration Case Study or many data reports)
f. division	South Atlantic (map in Migration Case Study or many data reports)
g. standard metropolitan statistical area (SMSA)	Washington, D.C.-Md.-Va. SMSA (map in a PC(1) report, any chapter)
h. rural	not applicable (rural areas have no specific names)
i. minor civil division (MCD)	no MCD's are recognized in D.C. (PC(1)-A county subdivision maps)
j. unincorporated place	not applicable (unincorporated places are identified by name in PC(1)-A; for maps refer to HC(3) maps or unpublished maps for outside urbanized areas)

8. Fill in the chart on page 16

Answers

- | | |
|---------------------|--|
| 1. Regions | 6. Block groups (BG's) or enumeration districts (ED's) |
| 2. States | 7. Blocks |
| 3. Counties | 8. Counties |
| 4. Urban | 9. Rural |
| 5. Central city (s) | 10. Enumeration districts |

8. Fill in the boxes with the correct geographic unit:





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Michael G. Garland, Chief

acknowledgments

This pamphlet is a revision of *A Student's Introduction to Accessing the 1970 Census* prepared in 1975 by Cynthia Murray Taeuber. This project is under the general direction of Paul T. Zeisset, Chief, Data Access and Use Staff, Data User Services Division.

The purpose of this publication is to acquaint new users of the 1970 Census of Population and Housing with the basic information needed to successfully access and use this data base. The major topics covered include the publication program, census geographic concepts, subject data content, and reference sources. Exercises are provided to reinforce the learning of these basics and to involve the reader in the actual use of 1970 census publications. This publication is part of the Census Bureau's college curriculum support project. Comments and inquiries are encouraged. Write to the Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

For sale by the Superintendent of Documents
U.S. Government Printing Office, Washington, D.C. 20402
Price 55 cents

A student's workbook on the 1970 census

reprinted september 1976

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CASE STUDY
THE LOCATION OF A PLAYGROUND *

- Using Census Data for Small Areas -

Situation: A city Parks and Recreation Director was recently appointed in a metropolitan area of about 100,000 people; the central city, Middletown, has about 65,000. The immediate task of the park director is to present a plan to the city manager for locating a new city playground in a neighborhood with a large number of children from low-income families where there is currently a lack of play areas. The playgrounds are used most regularly by children aged 5-14. The plan must be presented to the city council with documentation for the recommendation.

What does the park director need to know?

- Where in the city are the playground users?
- Where are the existing playgrounds?
- Where is land available for a playground?
- Where are the neighborhoods with a large number of children from low-income families?

Where should the park director go to get her information?

- Some is available from her own office (e.g., location of existing playgrounds). She has a large map of the city and draws in the boundaries of the existing parks.
- To determine where land is available, the park director goes to the city planning office and discusses the problem with the director who shows her a map of all existing vacant land sites. The two identify several possible locations which they map onto a cellophane sheet to overlay on the map of other park locations. (See page 5.)
- The park director still needs to know the location of low-income families with children. The city planner suggests she consult 1970 Census data to obtain the information. Age and income data are available for neighborhood-like areas in SMSA's called "census

* This case study was prepared by Cynthia Murray Taeuber, Data User Services Division, Bureau of the Census, Washington, D.C. 20233, (301/763-7019), as part of a curriculum support project for college classes. The contents of these materials are preliminary and comments are invited.

- (3) the number of families whose incomes are from public assistance or public welfare;
- (4) percent of families with a given ratio of family income to the poverty level less than 1.0 (the standard definition of poverty used in 1970);
- (5) the number of families with incomes below the poverty level; or
- (6) the number of families with incomes below the poverty level with related children under 18 years.

Similar data are available for the black and Spanish-language population in Tables P-5 through P-8 for tracts with at least 400 members of the specified group. (These tables are not reproduced in this report.)

The park director studies each possibility in light of her particular needs. She must first decide on a definition of low-income. She can use the 1970 census poverty index or her own operational definition using the income data in options 1 or 2. Even doing that, however, with options 1-5, she can find areas with a concentration of low-income families but she won't know if children were present (a recommendation to place a playground in a predominantly low-income elderly neighborhood would not win the park director a promotion!). Option 6 is a count of families with children under 18 and whose family income is below the poverty level. She cannot directly determine the number of 5-14 year olds from this summary. Thus she has the following choices:

- (1) Use counts of low-income families with children under 18 (Table P-4) and the counts of children aged 5-14 (Table P-1) from all families.
- (2) Approximate the number of 5-14 year olds in low-income families. An approximation can be made by using Table P-4 to compute the number of related children under age 18 in low-income families (multiply the mean number of such children by the number of low-income families with children). Then, using the age data for the total population from Table P-1, compute the proportion of the under age 18 population which is 5-14 years old and apply that to the number of children in low-income families. Appendix C of this case study illustrates the method of approximating. Note that the mean number of children in the families varies considerably and it is not sufficient to make a decision based solely on the number of families.
- (3) Get the data in the exact form desired by a "special tabulation" from the Census Bureau. The park director called the Census Bureau for a rough estimate and found that a special tabulation would cost about \$3,000.

She decided that in this particular case it was not worth the expense of a special tabulation. With the aid of a calculator, she filled in the computation sheet shown in Figure 2 (page 6) to estimate the number of children aged 5-14 in low-income families. While developing the computation sheet, she noticed that tracts 6, 7, 8, 11, 12, 14, 16, and 17 have data listed in three places: under "Middletown", the "balance of county", and "totals for split tracts." These split tracts, as shown on the tract maps,

cross the city boundaries (broken line), and thus separate data are given for the part of the tract in the city of Middletown, the part outside the city (balance columns), and the total for the entire tract. For this study she used only the data for the Middletown section of the tracts.

The city planner discussed some aspects of the data the user should be aware of:

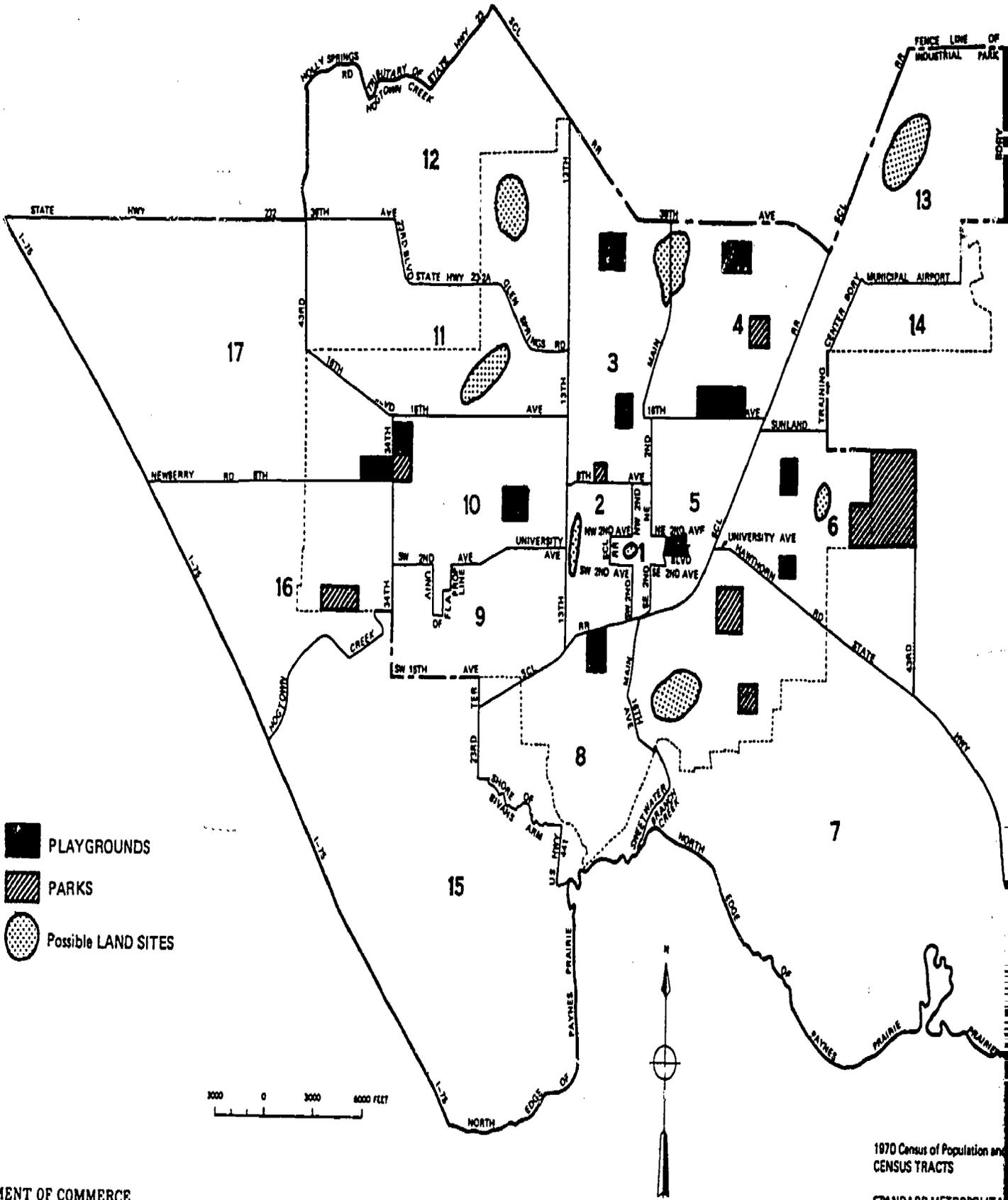
- The census was taken April 1, 1970. After several years, the characteristics of the population change, especially for small geographic areas, as people age and move in and out of the area. Lacking a source of more recent data, the park director can only assume that the relationship among the tracts are relatively the same as they were in 1970.
- Census data can never be viewed as exact. In any mass statistical operation such as a decennial census, human and mechanical errors occur although efforts are made to keep these non-sampling errors at an acceptably low level. Also, some data are based on a sample and thus subject to sampling variability. (See Appendix D for a more complete discussion.)
- Sometimes data are omitted and replaced by "... " in the data tables. This occurs when (1) the number of people in a certain category is so small that it might be possible to identify them if the information were released and thus the data are withheld to maintain confidentiality; or (2) when the base of a derived figure (such as median or percentage) is too small to provide reliable data, the statistics are not computed to maintain data quality.

The park director reviewed the data with others in the community who worked in the tracts she picked as possible location sites and then she wrote her report for the city council.

EXERCISES

- (1) Compute an approximation of the number of children aged 5-14 in low-income families in Middletown (Use Figure 2. An illustration of the computation is in Appendix C of this case study.).
- (2) Enter onto the map on page 13 the figures for the approximate number of related children aged 5-14 in low-income families in the census tracts of Middletown.
- (3) Make a second map showing the number of all children aged 5-14 in the census tracts of Middletown.
- (4) Write a report for the city council recommending a location site for the playground in a tract with a relatively large number of children from low-income families with limited playground facilities. Consider in your recommendation the supplementary information on the total number of children aged 5-14 in the tracts as this will impact on the total demand for play space and equipment.

FIGURE 1 EXISTING PLAYGROUNDS, PARKS, AND POSSIBLE LAND SITES: 1971 Census Tracts in Middletown and Vicinity



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FIGURE 2

Computation of an Approximation of the Number of Children
Aged 5-14 in Low-Income Families in Middletown: 1970

	(1)	(2)	(3)	(4)	(5)
Tract No.	Number of children under 18 in low-income families ^{1/}	Total No. of 5-14 yr. olds	Total No. under 18 yrs.	<u>Pop. aged 5-14</u> Pop. under 18	Estimated No. aged 5-14 in 1 families
Total SMSA	7137 ^{2/}	18861	32923	0.57	4068
Middletown	3699	10098	17922	0.56	2071
0001					
0002					
0003					
0004					
0005					
0006					
0007					
0008					
0009					
0010					
0011					
0012					
0013					
0014					
0016					
0017					

^{1/} These do not add to 3699 because of suppression in tracts 0001 and 0017.

^{2/} Middletown plus the balance do not add to 7137 because of rounding.

FIGURE 2

Computation of an Approximation of the Number of Children Aged 5-14 in Low-Income Families in Middletown: 1970

(1)	(2)	(3)	(4)	(5)
of children in low-income families ^{1/}	Total No. of 5-14 yr. olds	Total No. under 18 yrs.	<u>Pop. aged 5-14</u> Pop. under 18	Estimated No. of children aged 5-14 in low-income families
37 ^{2/}	18861	32923	0.57	4068
99	10098	17922	0.56	2071

not add to 3699 because of suppression in tracts 0001 and 0017.

own plus the balance do not add to 7137 because of rounding.

Table P-1. General Characteristics of the Population: 1970

(For minimum base for derived figures (percent, median, etc.) and meaning of symbols, see text)

Table with columns for Census Tracts, County (Total, Middletown, Balance), and MIDDLETOWN (Tract 0001-0010). Rows include RACE, AGE BY SEX, RELATIONSHIP TO HEAD OF HOUSEHOLD, TYPE OF FAMILY AND NUMBER OF OWN CHILDREN, and MARITAL STATUS.

CENSUS TRACTS

MIDDLETOWN SMSA P-1



Where N = total population of the geographic area (in this case, there are a total of 1309 families in census Tract 0007.) Note that " N " is the number of housing units, families, or persons in the geographic area, not those with a given characteristic. In this example, you would not use the total number of families in poverty in the tract as this is a base defined by a particular type of population; rather you use the total number of families in the tract which is 1,309.

f = the sampling fraction $1/5$.

n = fN (in this case: $1/5 \times 1,309$)

p = $\frac{X}{N}$ where X is the estimated number - in this case, 391

q = $1 - \frac{X}{N}$

Thus the problem is:

$$\sqrt{(1,309)^2 \left(1 - \frac{1}{5}\right) \left(\frac{\left(\frac{391}{1,309}\right) \left(1 - \frac{391}{1,309}\right)}{\left(\frac{1}{5}\right) (1,309)}\right)}$$

$$= \sqrt{1,097}$$

* 33, the approximate standard error

It is common practice to use a 95 percent confidence interval so in this case both add and subtract 66 (two standard errors) to 391; the range for Tract 0007 is then from 325 to 457 low-income families with children under 18.

Tables D-F also enable you to compute standard errors of percentages. For example, in Tract 0007, almost 30 percent ($391/1,309$) of the families were low-income families with children under 18. To determine the approximate standard error of this percentage, use Table E. Once again, a full range of numbers is not given. You could use 2.7 in this example as this is the closest approximation for the particular estimated percentage and base of the percentage. But you could also interpolate or use the formula:

$$\sqrt{(1 - f) \frac{pq}{n}}$$

where the letters have the same meaning they had in the previous formula.

CASE STUDY
MIGRATION PATTERNS OF SOUTHERNERS*

Situation

Southern States have recently experienced many changes in long-standing population trends. During the Sixties, growth from in-migration became important for many of the States, and in the early 1970's it has also been an important source of growth for even the most rural of the Southern States which have traditionally had heavy population losses. A group of Southern governors decided to meet to discuss mutual problems related to population change and possibly devise some population policies. They were primarily concerned with two issues: (1) population distribution (e.g., what are the characteristics of people who migrate into, out of, and within the region? what are the costs and benefits of large cities? are there policies which can effectively encourage people to remain in small- and medium-sized towns? what are the effects on the environment of alternative forms of population distribution?); and (2) the interrelations of population and economic development policies (could the governors effect industrial location and population distribution at the same time? what are the educational and occupational characteristics of migrants to and from the South, and how might this impact on economic development, etc?).

Prior to the meeting, a demographer was hired as a consultant to prepare information about the Southern population that would be useful to those making public policies. One part of the study will be concerned with the migration patterns of Southerners. The demographer turns to several data sources, one of which is the decennial censuses.

Census Questions Relevant to a Migration Study:

On April 1, 1970, a census of the United States population took place. Several questions asked at that time are relevant to a study of migration. For example, the demographer wants to determine the demographic and socio-economic characteristics of migrants so as to provide some information about their impact on economic development. She wants to know something about the comparative propensity for migration of metropolitan and nonmetropolitan residents and the characteristics of those who move and those who do not, information which may be useful input for devising population distribution policies.

Question 1: List some questions asked in the decennial census relevant to a study of migration patterns (refer to Appendix B of PC(1)-C or figure 1).

*Prepared by Cynthia Murray Taeuber, Data User Services Division, Bureau of the Census. Comments on this case study are invited.

Figure 1. Subject Items Included in the 1970 Census

COMPLETE COUNT DATA ITEMS

-Shown for all census areas including city blocks

	Population Items	Housing Items
100 percent	<ul style="list-style-type: none"> Relationship to head of household Color or race Age Sex Marital status 	<ul style="list-style-type: none"> 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 (owner/renter) Commercial establishment on property Value Contract rent Vacancy status Months vacant

SAMPLE DATA ITEMS

-Not shown in some reports, e.g., Block Statistics
 -Summaries are subject to sampling variability

	Population Items	Housing Items
20 percent	<ul style="list-style-type: none"> State or country of birth Years of school completed Number of children ever born Employment status Hours worked last week Weeks worked in 1969 Last year in which worked Occupation, industry, and class of worker Activity 5 years ago Income in 1969 by type Country of birth of parents 	<ul style="list-style-type: none"> Components of gross rent Heating equipment Year structure built Number of units in structure and whether a trailer Farm residence
15 percent	<ul style="list-style-type: none"> Mother tongue Year moved into this house Place of residence 5 years ago School of college enrollment (public or private) Veteran status Place of work Means of transportation to work 	<ul style="list-style-type: none"> Source of water Sewage disposal Bathrooms Air conditioning Automobiles
5 percent	<ul style="list-style-type: none"> Mexican or Spanish origin or descent Citizenship Year of immigration When married Vocational training completed Preserve and duration of disability Occupation—industry 5 years ago 	<ul style="list-style-type: none"> Stories, elevator in structure Fuel—heating, cooking, water heating Bedrooms Clothes washing machine Clothes dryer Dishwasher Home food freezer Television Radio Second home

DERIVED VARIABLES (Illustrative examples)

Population Items	Housing Items
<ul style="list-style-type: none"> Families Family type and size Poverty status Spanish surname Spanish heritage Population density Size of place Foreign stock 	<ul style="list-style-type: none"> Persons per room ("crowding") Household size Plumbing facilities Institutions and other group quarters Gross rent



The information on these questionnaires is collected and computerized at the Census Bureau for research purposes and, most importantly, to aid governmental units in their decisions on needed programs and policies and on the allocation of funds for these programs. By law, answers by individuals to census questions are held in strictest confidence, and thus names and addresses are never released and a particular individual can never be identified by any data released.

Sample Questions:

Some of the data are collected from every individual (100 percent or complete count data items) and some from only a sample of those answering the questionnaires ("sample" data come from 20 percent, 15 percent, and 5 percent of the population). Sampling permits the collection of data which reflect the characteristics of all people in an area even though the entire population was not actually questioned. This process also allows the data to be obtained at a much lower cost.

Question 2: Figure 1 indicates which data items collected from the questionnaire are complete count items and which are sample items. Indicate whether the data items you listed in question #1 are complete count or sample items.

Sample data for areas with small populations should be used with caution. Appendix C of the Census population reports gives specific information about the accuracy of the data. The published sample data can be thought of as approximations of the exact statistics that would have been found had there been a 100-percent count of those items. One can compute a range of possible values in which the exact statistic would probably be found; the magnitude of this range can be computed from instructions given in Appendix C. While sample data must be used with caution for areas with small populations, it is reliable for larger population groups.

Definition of the Region:

Just how does one define the South? The Census Bureau gives some data for regions, groupings of contiguous states, one of which is called the South. The region is further divided into divisions (smaller groupings of contiguous States), and the South has three. A map, "Census Regions and Geographic Divisions of the United States," is shown in Figure 2.

Question 3: List the States for the region and divisions of the South.

FIGURE 2.—Census Regions and Geographic Divisions of the United States

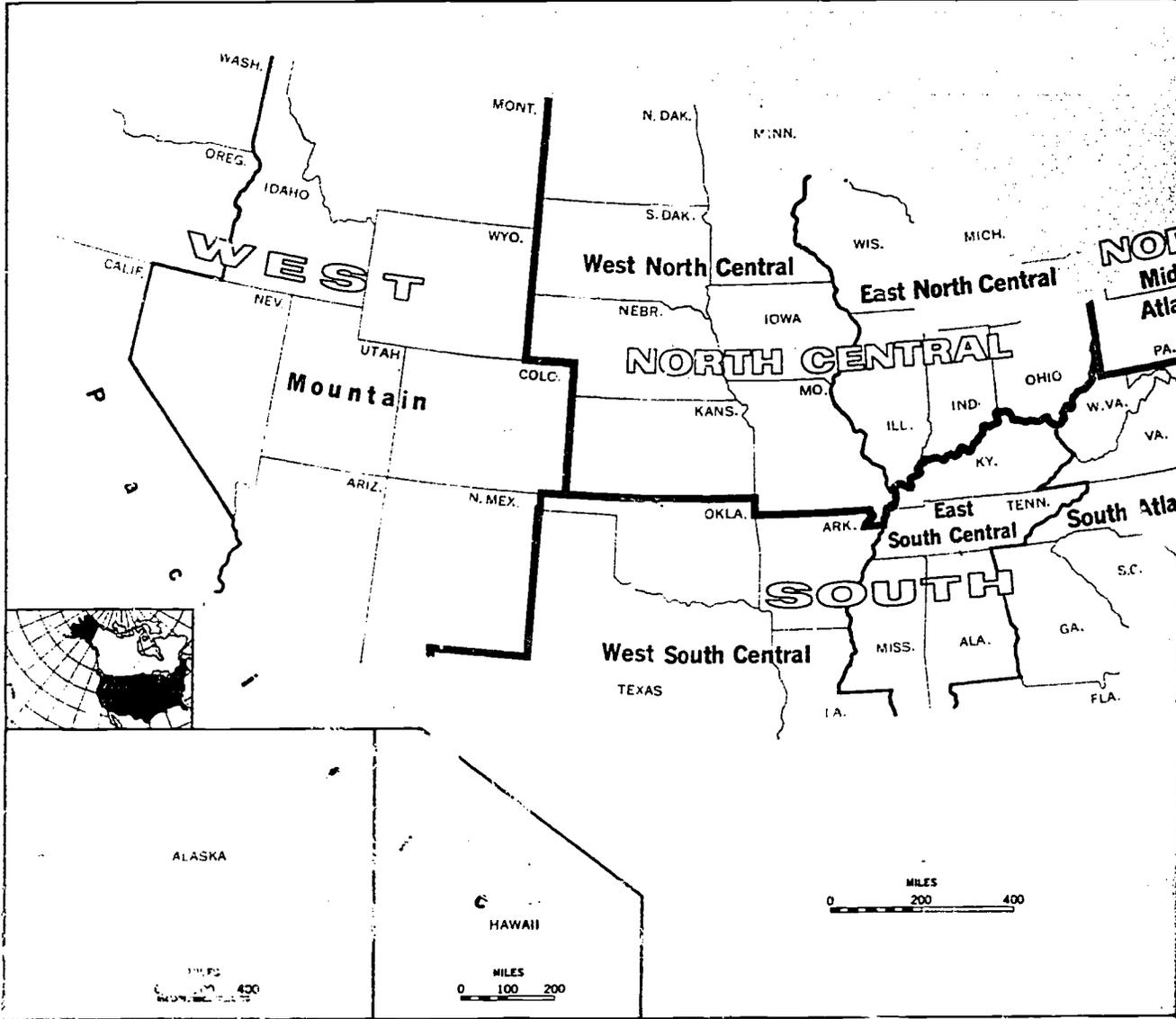
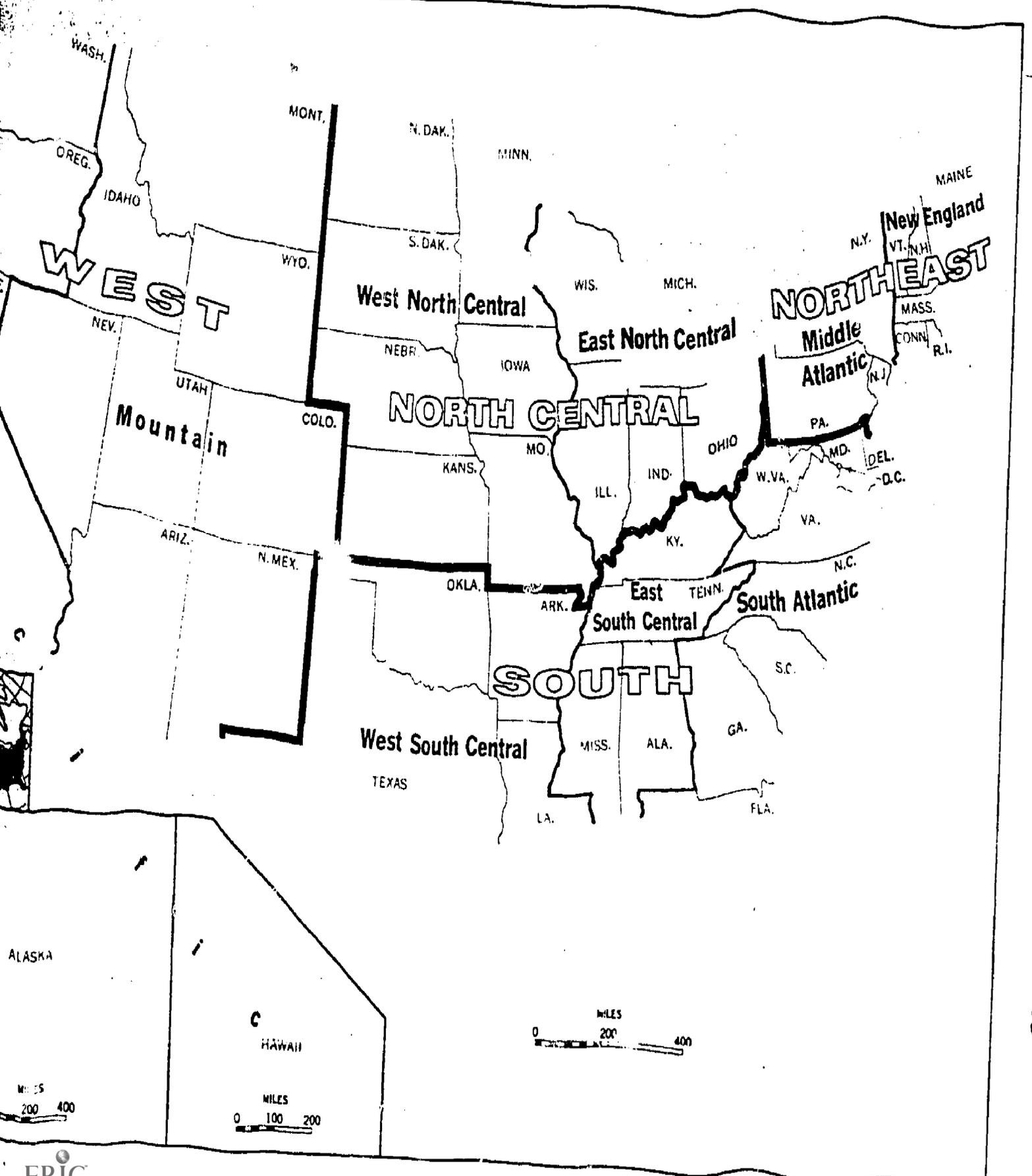


FIGURE 2.—Census Regions and Geographic Divisions of the United States



In this case, the group of governors is from all of the above States (the Census South) except Delaware and the District of Columbia. Thus, in some cases the researcher can obtain the data by adding the individual States; in some cases by using the Census South data and subtracting the relevant Delaware and Washington, D. C., data; and in some cases the data are published only for the Census region and divisions. When the publications do not have the data in the desired form, the researcher should also check the documentation for the census computer tapes which have more data than the printed reports for different geographic levels.

Data Summaries:

The basic format for the presentation of 1970 Census data is as statistical summaries for geographic areas. Summary data are aggregations of data derived from the individual questionnaires for geographic areas such as blocks, tracts, counties, States, divisions, regions, etc. This is the type of data presented in the printed reports and computer summary tapes.

Question 4: Using the Table Finding Guide from the U. S. Summary Report, PC(1)-C1, "General Social and Economic Characteristics" (figure 3), find which tables show data on residence in 1965 compared to residence in 1970. What tables are concerned with "residence in 1965" for regions, divisions, and States? What are the subdivisions of the major heading, "residence in 1965"? (See figure 6.)

Printed Publications and the Data:

For this particular piece of research, the demographer intends to use only printed reports although more data are available on computer tapes. There are four volumes on population characteristics for each State and the United States which were published in a combined hard-cover edition (PC(1), Chapters A-D) and four separate soft-bound volumes (below).

- Number of Inhabitants, PC(1)-A
- General Population Characteristics, PC(1)-B
- General Social and Economic Characteristics, PC(1)-C
- Detailed Characteristics, PC(1)-D

There are several ways of finding which tables contain the needed data. As mentioned earlier, for general information it is probably simplest to open to the very beginning of the book where a "Table Finding Guide" (figure 3) is located which lists the table numbers for subjects by geographic areas for which data can be found. If extensive cross-classifications are desired, it is best to use the Census Bureau's Index to Selected 1970 Census Reports¹

¹ Available from Subscriber Services Section, U.S. Bureau of the Census, Washington, D.C. 20233, \$3.70.

For example, the researcher knows that the South had net in-migration during the 1960's. She is interested in knowing whether migrants have moved primarily to the metropolitan or nonmetropolitan South and whether there are differences in this movement by race. (It's like being a detective--if there is a difference, the researcher would want to look further for a reason. For example, is there a difference in job availability for blacks and whites which can be altered by public policies? Or is there a difference in lifestyle preferences which will affect any public policies made?)

She already knows the information is not in the U. S. Summary volume (from Question #4) but guesses it may be in the individual State volumes which give more information. Turning to the Table Finding Guide in the State population volumes, she finds "residence in 1965" under the subject listings; under the metro/nonmetro column, Table 72 is listed but the researcher cannot find the guide if race or any other characteristics are included in the table. Turning to that table she finds that metropolitan and non-metropolitan are further subdivided but no characteristics such as race are included. To find out if the specific information wanted is available in any of the other tables of the State reports, the researcher turns to the Index of Selected 1970 Census Reports (see figure 4). As this page shows, there are a number of cross-classifications of population characteristics and geographic areas for this subject but none are by race and by metropolitan/nonmetropolitan residence. Studying the Index, the researcher discovers it is possible to get this data by race and by urban/rural residence in Table 50 of the PC(1)-C State report. Using the "urban-rural" dichotomy rather than the metro/non-metro dichotomy is acceptable for her purposes. The data given in this table are for "residence in 1965," "State of birth," "year moved into present house," all by race and urban/rural residence.

Because the researcher wants to compare 15 States and the data are all in separate volumes, she must prepare a table.

Question 5: From Table 50 in the PC(1)-C State reports, fill in the correct data for the table on page 9 for any State(s) you wish to pick. Compare the States to the total United States by filling in the table from the data in Table 8/ (figure 6, page 10). (The Index to Selected 1970 Census Reports has a table which gives the correspondence between State report and U. S. Summary report table numbering.) The correct data for the State of Maryland are given (figure 5).

The researcher will prepare such a table for the 15 Southern States she is concerned with and will add the State data to obtain regional data. The individual States can thus be compared to regional trends and the region to the Nation.

If the researcher had been satisfied with using the Census definition of the South, she could use Table 137 in the U. S. Summary PC(1)-C report which is reproduced here (figure 7, page 12). Note, however, that these tables do not give any race data. Averages for the total Southern population can

MOBILITY FOR STATES AND THE NATION

Table 25. Region of Birth of Native White and Native Negro Males 25 Years Old and Over Living in the South by Age, Years of School Completed, and Income in 1969: 1970-Continued

(Data based on 15-percent sample; see text for meaning of symbols; see text)

Table with columns for Native white and Native Negro, subdivided by birth location (Born in South, Born in North, Born in West) and living status (Living in South in 1965, Outside South or abroad in 1965). Rows include age groups (35 to 44 years old, 45 to 64 years old) and education levels (College, High school, Elementary) with income brackets.

Includes natives for whom State of birth was not reported and natives born in outlying areas or born abroad

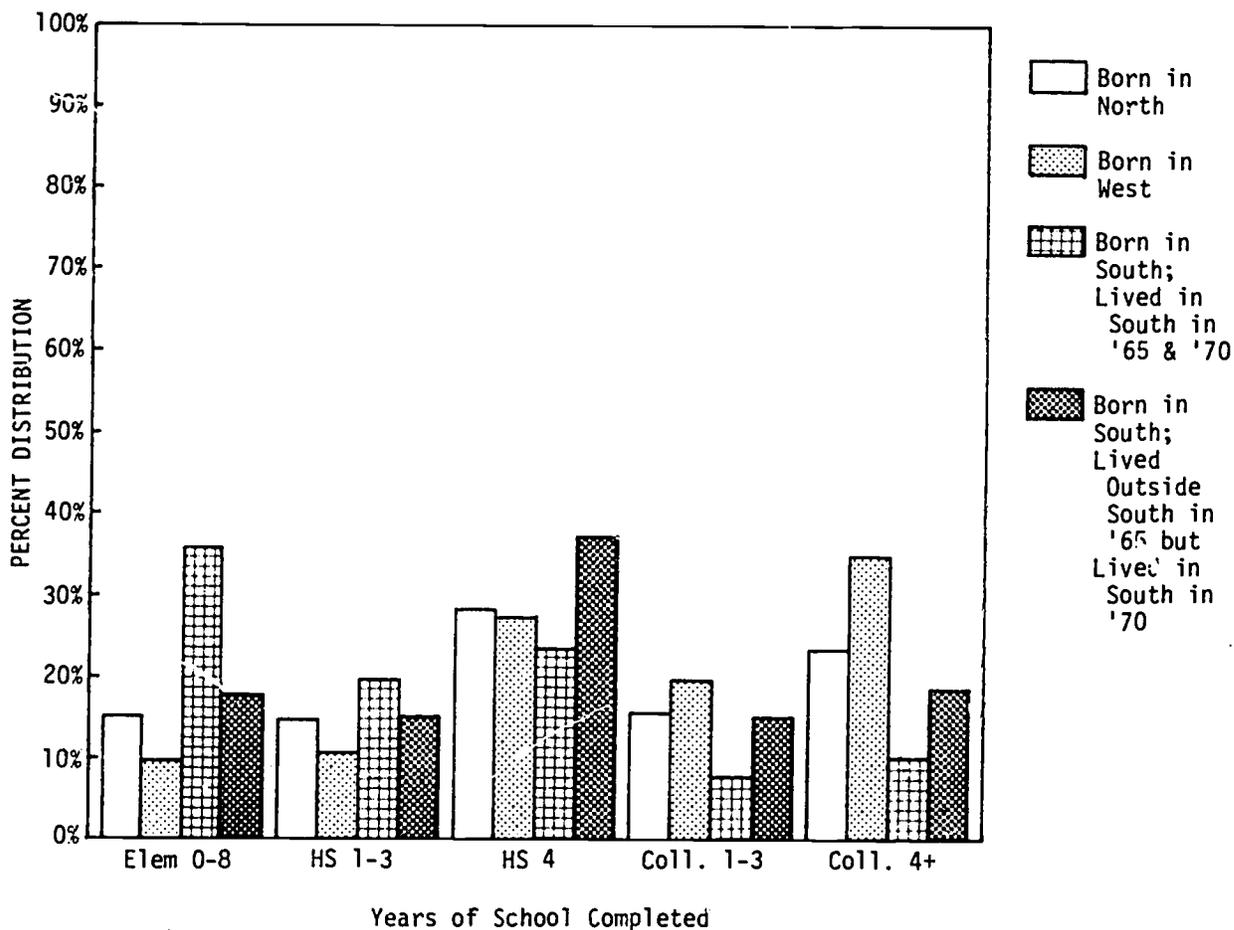
Includes persons with no report on State of residence in 1965

Includes persons reporting State but not metropolitan-nonmetropolitan status of 1965 residence



Question 11: From the percentage distribution table computed in Question 9, make a bar graph like the one below for black males 25+, white males 25-34, and black males 25-34.

YEARS OF SCHOOL COMPLETED FOR WHITE MALES, AGED 25+,
LIVING IN CENSUS SOUTH IN 1970 BY PLACE OF BIRTH



Question 12: What would you tell the governors about the policy implications of the data and information derived from the table in Question 9? (Of course, policymakers need more than just demographic data to make their decisions, but with such information they are better able to make policy decisions which fit the demographic trends).

CASE STUDY ON MIGRATION

ANSWER SHEETQUESTION #1

Identification of migrants: State of birth; year moved into this house; where person lived in 1965; current place of residence. Possible characteristics of movers: race; sex; age; educational attainment; occupation; income; etc.

QUESTION #2

State of birth--20%	Sex--100%
Year moved into this house--15%	Age--100%
Place of residence 5 years ago--15%	Years of school completed--20%
Current place of residence--100%	Occupation--20%
Race--100%	Income--20%

QUESTION #3South RegionSouth Atlantic Division

Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida

East South Central Division

Kentucky, Tennessee, Alabama, Mississippi

West South Central Division

Arkansas, Louisiana, Oklahoma, Texas

QUESTION #4

Table 146 gives information for regions, divisions, and States. Tables 131 and 137 give the information for regions only but also give information about migration by race and by urban/rural residence.

The subdivisions are:

Same house (nonmovers)

Different house in U. S., same county as in 1965

Different house in U. S., different County, same State

Different house in U. S., different county, different State

Abroad in 1965

Moved, 1965 residence not reported.

QUESTION #5

The answer depends on the States chosen. Maryland is given as an example.

QUESTION #6 (answers for Maryland)

	Urban White	Urban Negro	Urban Spanish Language	Rural White	Rural Negro	Rural Spanish Language
--	-------------	-------------	------------------------	-------------	-------------	------------------------

(a) PERCENT NONMOVERS (Same House \div Total Population Aged 5+):

U. S.	51.8	49.0	41.7	57.2	61.9	48.0
Maryland	51.1	45.8	25.2	55.7	57.3	34.6

(b) PROPORTION TO A DIFFERENT REGION

$$\frac{\text{Total Different State - South}}{\text{Total Population Aged 5+}}$$

Maryland	.08	.02	.11	.06	.01	.16
----------	-----	-----	-----	-----	-----	-----

PROPORTION TO THE SAME REGION (South \div Total Population Aged 5+):

Maryland	.06	.09	.12	.05	.03	.11
----------	-----	-----	-----	-----	-----	-----

(c) SHORT-DISTANCE MOVES (Same County \div Total Population Aged 5+):

Maryland	.19	.28	.19	.19	.18	.16
----------	-----	-----	-----	-----	-----	-----

WITHIN THE SAME STATE (Different County in Same State \div Total Pop. Aged 5+):

Maryland	.09	.03	.06	.09	.06	.07
----------	-----	-----	-----	-----	-----	-----

TO A DIFFERENT STATE (Different State \div Total Population Aged 5+):

Maryland	.14	.11	.23	.10	.03	.27
----------	-----	-----	-----	-----	-----	-----

(d) From part (a) above, persons living in the rural areas of Maryland in 1970 were more likely to have moved sometime in the preceding 5 years than were those in urban places. Maryland's urban blacks were more likely

QUESTION #6 (cont.)--Answer

to make short distance moves than the other groups, while the black population had the lowest proportion moving for all the longer distance moves. Of the three groups, the Spanish-language population was the most likely to have moved from another State and region since 1965.

- (e) Because "other races" are not shown here. Total Population = white + Negro + other races.
- (f) Spanish language is not a racial category although almost all persons of Spanish language are part of the white population. Thus persons of Spanish language are already included in the counts of the population by race.
- (g) Different House = Same County (Different House) + Different County
 Different County = Same State (Different County) + Different State
 Different State = Northeast + North Central + South + West

QUESTION #7

Tables 119; 125; 130

QUESTION #8

The answer depends on the State chosen. The data must be compiled by adding together the data for all the counties in each SMSA in the State.

QUESTION #9

See chart on next page.

QUESTION #10 (possible answer)

- (a) Male migrants to the South, both black and white, are generally better educated than the resident population. Among both black and white males, the majority of those born outside the South but living in the South in 1970 had at least a high school education, while the majority of native Southern males had a high school education or less.
- (b) Return migrants were more like those born in the North and West--the majority had at least a high school education.
- (c) The differences are related to the lower education levels among the older Southern population; among the young, the majority of both native Southern males and nonnatives had at least a high school education; among white nonnatives, however, there was also a large number with at least four years of college. Migrants to the South, especially the younger ones, have relatively high education levels.

QUESTION #10 (cont.)--Answer

- (d) Migrants to the South, being better educated on the whole, are likely to provide stiff competition for available jobs. One might also wish to study education cross-classified with income as shown in figure 8 and the occupation of migrants and natives (see another subject report: Occupation and Residence in 1965, PC(2), Table 1).
- (e) It implies that industry will be able to find a skilled, relatively well-educated labor force (provided the migrants congregate somewhat rather than becoming diluted in the larger population) and thus better paying industries are able to move South.

QUESTION #11

The other graphs are similar to the one shown on page 20.

QUESTION #12

Answers will vary.

CENSUS DATA FOR COMMUNITY ACTION

Revised August 1975

U. S. DEPARTMENT OF COMMERCE

Rogers C. B. Morton, Secretary

James L. Pate, Assistant Secretary for Economic Affairs

BUREAU OF THE CENSUS

Vincent P. Barabba, Director





BUREAU OF THE CENSUS

Vincent P. Barabba, Director

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INTRODUCTION

The purpose of this publication is to demonstrate how 1970 census population and housing data can be used in community action projects and to provide the background information needed in order to use the data. Emphasis is placed on what can be found in 1970 census reports, which are often available in libraries and offices of city planners, chambers of commerce, and other community agencies, or can be purchased for a modest price. Information about more technical products, such as census data on computer tape, can be found in other materials (see the concluding section, p. 19).

In explaining "community action," it is common to cite projects carried out by the citizens of a neighborhood, such as setting up a day-care center, pressing local government for a playground for their children, or encouraging voter registration. The emphasis in explanations is usually on the "action" phase of community action. But there often are three earlier phases as well: First, people begin to realize that a problem exists and want to do something about it; second, there is thought and study to learn the nature and extent of the problem; and third, planning and organizing to tackle the problem are begun. Information from the census, collected in April 1970, can often help out in each of these three phases, that is, in detecting a problem, determining its seriousness, and planning ways to solve it. The community action projects mentioned above furnish good examples of ways in which census data can be used. Consider the first, setting up a day-care center:

Community-supported day-care facilities are often needed in neighborhoods having many working women with small children, or families with no father in the household. The income level of the neighborhood has bearing too, since families with higher incomes can more easily afford adequate private care. Several kinds of useful information about neighborhoods can be found in census reports, such as the number of working mothers who live with their husbands and have children under six years old, the number of families with incomes below the poverty level without a father present, and the average number of children under 6 years old in such families. This kind of information can help in estimating how many mothers might be interested in a day-care center, how many children might be involved, and where the best location would be.

This is just one of many possible applications of census data. We will discuss it and several others in greater detail in the section titled "Examples of Census Applications." But first there is certain basic information about the census which should be covered.

Using census data requires some study and patience. Only certain kinds of information are collected in the census, and the results are published for only particular kinds of areas. Also, since it is necessary to get a lot of information in a relatively small space, the tables in census reports may seem hard to read and the technical terms hard to understand. With these problems in mind, much of the remainder of this report is devoted to giving an introduction to the census which will make using census data easier and less time-consuming.

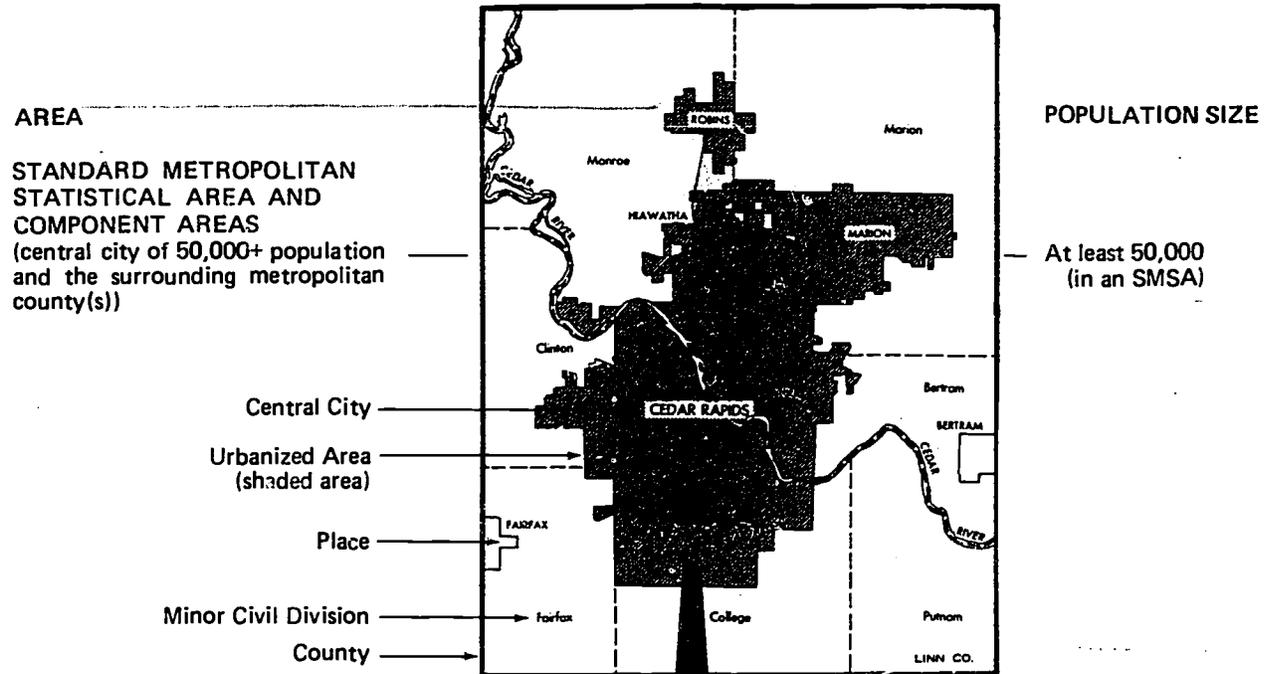
INFORMATION FROM THE CENSUS

In the 1970 census, questions were asked about such subjects as age, race, education, income, ownership or rental of houses and apartments, and number of rooms in houses or apartments. (See figure 1 for a complete list.) Similar information was collected in the 1960 census. While you cannot obtain information from the Census Bureau about specific individuals or homes because this is forbidden by law, you can obtain summary information about geographic areas such as city blocks, neighborhoods, cities, counties, and States as a whole. By summary information we mean the total number of persons or housing units with particular characteristics, such as the number of men 25 to 34 years old, families headed by females, or housing units renting for \$150 to \$200 per month.

Some 1970 census questions were asked of everyone or asked about every housing unit (apartment or house). The summary information resulting from these questions is called 100%, or complete-count, data. Other questions were asked of just a sample of all households, either 20%, 15%, or 5%. This was accomplished by giving every fifth household a "long form" with the complete-count questions plus some additional ones. The summary information resulting from the sample questions is called sample data. To make it comparable to the complete count data, the sample data is "inflated" to represent the total population (e.g., data collected from a 20 percent sample of all households is multiplied by approximately five).

Figure 2

Geographic Areas in 1970 Census Reports



CENSUS TRACT (small, homogeneous, relatively permanent area; all SMSA's recognized at the time of the 1970 census are entirely tracted)

Average 4,000

311	312	104	103	102	101
310	309	105	106	107	108
307	306	108	118	111	310
306	305	109	118	118	118
303	302	204	202	212	201
302	301	204	202	212	201
409	408	407	406	405	404
408	407	215	214	213	212
404	403	302	303	304	305
403	402	312	311	310	309
403	402	312	311	310	309
403	402	312	311	310	309

Average 100

SPRUCE ST.	
1ST ST.	311
LAUREL ST.	

BLOCK (identified in all urbanized areas and some selected areas)

computer tape from the Census Bureau, along with maps showing their boundaries. These subdivisions are called enumeration districts, and they have an average population of about 800. (See page 19, "Additional Information.")

CENSUS REPORTS

The 1970 census reports are divided into three principal series: population census reports (the PC reports), housing census reports (the HC reports), and joint population and housing reports (PHC reports). Those which are most likely to be of value in community action planning are briefly described in figure 3. The HC(3) Block Statistics Reports and PHC(1) Census Tract Reports will generally be of greatest value because of the relatively small size of the areas reported.

HOW TO USE CENSUS REPORTS

The clearest way to describe how to use census reports is by giving an example which illustrates, step-by-step, what is involved.

Objective: To locate information on employment and income for a particular neighborhood in a large city (50,000 or more people) or its surrounding area.

Report needed: Two considerations come into play in selecting the right report: the need for small area (neighborhood) data and the need for employment and income data, which are sample data (see figure 1). City block data would best meet the first requirement, but no sample data can be published for such small areas. Census tracts are the smallest areas for which employment and income data are available. Therefore, the Census Tract Report which includes the desired city is needed.

Select tracts: To find out if a census tract or combination of tracts can satisfactorily represent your neighborhood, you will need a census tract map. One is contained in each Census Tract Report. For illustration, the tract outline map for Great Falls, Montana, and vicinity is shown on page 6. Since a tract generally has a population of around 4,000, it may seem too large for your purposes. Also, your neighborhood may lie in parts of two or three tracts. Since it is not possible to separate out data for the portions of interest to you, it will be necessary to deal only with the tract having the largest portion of your neighborhood or to add the data for each tract together to obtain data for the combined two- or three-tract area. For example, in the Great Falls map illustration, census tract 2 might adequately represent a

Figure 3

Descriptions of Selected Report Series from the 1970 Census of Population and Housing

Number of Inhabitants (PC(1)-A). One per State. Final official population counts are presented for States, counties, SMSA's, urbanized areas, minor civil divisions, census county divisions, all incorporated places, and unincorporated places of 1,000 inhabitants or more.

General Population Characteristics (PC(1)-B). One per State. Statistics on age, sex, race, marital status, and relationship to head of household are presented for States, counties, SMSA's, urbanized areas, minor civil divisions, census county divisions, and places of 1,000 inhabitants or more.

General Social and Economic Characteristics (PC(1)-C). One per State. These reports focus on the population subjects collected on a sample basis. Each subject is shown for some or all of the following areas: States, counties, SMSA's, urbanized areas, and places of 2,500 inhabitants or more.

General Housing Characteristics for States, Cities, and Counties (HC(1)-A). One per State. Statistics on 100-percent housing subjects are presented for States,

counties, SMSA's, urbanized areas, and places of 1,000 inhabitants or more.

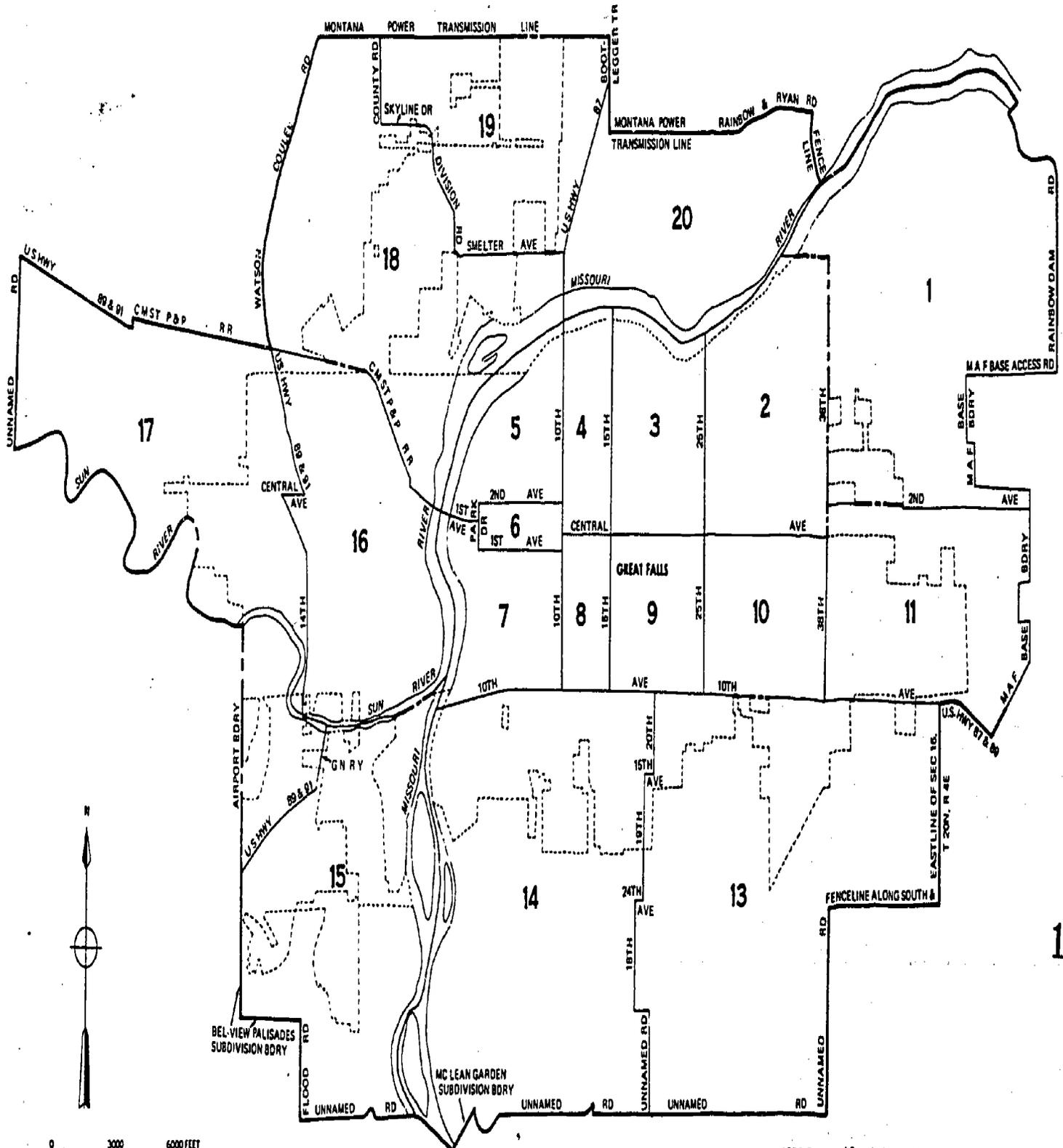
Detailed Housing Characteristics for States, Cities, and Counties (HC(1)-B). One per State. These reports focus on the housing subjects collected on a sample basis. Each subject is shown for some or all of the following areas: States, counties, SMSA's, urbanized areas, and places of 2,500 inhabitants or more.

Block Statistics (HC(3)). One report for each urbanized area showing data for individual blocks on selected 100-percent housing and population subjects. The series also includes reports for the communities outside urbanized areas which have contracted with the Census Bureau to provide block statistics from 1970 census.

Census Tract Reports (PHC(1)). One report for each SMSA, showing data for most of the population and housing subjects included in the 1970 census. Some tables are based on the 100-percent tabulation, others on the sample tabulation.

Figure 4

Census Tracts in the Great Falls, Mont. SMSA Inset Map-Great Falls and Vicinity



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1970 Census of Population and Housing
 CENSUS TRACTS
 GREAT FALLS, MONT.
 STANDARD METROPOLITAN STATISTICAL AREA
 Final Report PHC(1)-81

neighborhood, or perhaps tracts 2 and 10, combined, would be a more meaningful area.

Read background material: Before proceeding to look up data, acquaint yourself with the key background material. It will be helpful to read the introduction to the Census Tract Report, beginning on p. IV, and the discussion of census tracts and standard metropolitan statistical areas in Appendix A of the report. Also, read the definitions in Appendix B which are relevant to the data you are interested in (in this case, the definitions for "reference week," "employment status," "income in 1969," and "poverty status in 1969"). It will probably be helpful to familiarize yourself with the other definitions, as well, at this time or later.

Locate the data: Check the table of contents to locate the tables with data you need. Table P-3, "Labor Force Characteristics," will include data on employment, and table P-4, "Income Characteristics," will include the income data. If the tracts in which you are interested have more than 400 Negroes or Spanish Americans, table P-6, "Economic Characteristics of the Negro Population," and table P-8, "Economic Characteristics of Persons of Spanish Language," may provide additional useful data. (Figure 7, page 13-18, shows the contents of each tract table.)

You will find that most tables in tract reports cover several pages. This is necessary because a tract requires an entire column when reported in a table. Each tract is identified in tables and on the tract maps by a code number unique within the SMSA. However, rather than being presented in numerical order for the entire SMSA, the tracts in each table are in numerical order within places of 25,000 or more and within the balance of the

county. This is explained in more detail under "Content of the tables" on page IV of the Census Tract Reports.

Reading the table: The first section of table P-3, titled "Employment Status," furnishes data specifically on employment. Figure 5 shows this section of a table for several census tracts in Great Falls, Montana, as well as for Cascade County, Great Falls, and the balance of the county (the area in Cascade County, but not in Great Falls). The first few items of data for each census tract are about those people who are "male, 16 years old and over." They are followed by data for males, 16 to 21 years old, and females, 16 years old and over.

Taking tract 2 ("0002") as an example, we can learn that 1,643 males, 16 years old and over, live there. Of this number, 1,244 are in the labor force; that is, either have a job or are unemployed and looking for work (see "employment status" in Appendix B of the report for a complete definition of "labor force" and related terms). A few lines farther down, we see that 25 males, 16 years old and over, are unemployed--2.2% of the total number of such males in the civilian labor force.

When reading the entries in the stub (left-hand side of the table), it is important to be aware of indentation. Except when a percent, median, or some other derived indicators are being given, indentation indicates that an entry is a part of the preceding entry. For example, under "male, 16 to 21 years old," we see that 63 are "not enrolled in school." Of those not enrolled in school, 26 are "not high school graduates." Of those not high school graduates, 12 are "unemployed or not in the labor force." "Not high school graduates" is indented under "not enrolled in school," and "unemployed or not in labor force" is indented under "not high school graduates."

Figure 5

Table P-3. Labor Force Characteristics of the Population: 1970

[Data based on sample, see text. For minimum base for derived figures (percent, median, etc.) and meaning of symbols, see text]¹

Census Tracts	Cascade County			Great Falls								
	Total	Great Falls	Balance	Tract 0001	Tract 0002	Tract 0003	Tract 0004	Tract 0005	Tract 0006	Tract 0007	Tract 0008	Tract 0009
EMPLOYMENT STATUS												
Male, 16 years old and over	26 845	19 040	7 805									
Labor force	21 796	15 073	6 723	236	1 643	1 452	911	1 102	424	1 272	743	1 354
Percent of total	81.2	79.2	86.1	205	1 244	1 136	671	803	280	833	550	1 027
Civilian labor force	17 160	13 677	3 483	169	1 120	957	612	623	255	700	461	994
Employed	16 232	12 928	3 304	153	1 095	902	569	601	193	604	437	900
Unemployed	928	749	179	16	25	55	43	22	62	96	24	94
Percent of civilian labor force	5.4	5.5	5.1	9.5	2.2	5.7	7.0	3.5	24.3	13.7	5.2	9.5
Not in labor force	5 049	3 967	1 082	31	399	316	240	299	144	439	213	317
Inmate of institution	169	162	7	-	-	11	18	4	-	17	7	-
Enrolled in school	1 443	1 146	297	21	151	69	67	34	11	41	20	111
Other under 65 years	1 202	904	298	5	79	62	35	68	59	158	64	75
Other 65 years and over	2 235	1 755	480	5	169	174	120	193	74	223	122	131
Male, 16 to 21 years old	4 321	2 785	1 536	32	243	253	152	190	31	155	93	286
Not enrolled in school	2 027	890	1 137	-	63	102	81	128	26	92	41	82
Not high school graduates	333	228	105	-	26	20	18	17	11	47	12	34
Unemployed or not in labor force	117	98	19	-	12	10	12	6	-	28	-	21
Female, 16 years old and over	27 377	21 333	6 044	218	1 846	1 746	1 088	1 386	422	1 241	923	1 741
Labor force	11 008	9 110	1 898	124	801	700	421	556	222	508	361	859
Percent of total	40.2	42.7	31.4	56.9	43.4	40.1	38.7	40.1	52.6	40.9	39.0	49.3
Civilian labor force	10 941	9 089	1 852	124	801	700	421	556	222	497	361	859
Employed	10 039	8 376	1 663	118	740	626	404	529	195	434	299	762
Unemployed	902	713	189	6	61	74	17	27	27	63	62	97
Percent of civilian labor force	8.2	7.8	10.2	4.8	7.6	10.6	4.0	4.9	12.2	12.7	17.2	11.3
Not in labor force	16 369	12 223	4 146	94	1 045	1 046	667	830	200	733	564	882
Morried women, husband present	17 848	13 117	4 731	183	1 246	1 071	565	603	95	558	590	912
In labor force	6 869	5 410	1 459	103	479	394	197	149	55	231	206	445
With own children under 6 years	5 465	3 792	1 673	67	333	257	166	184	11	158	186	197
in labor force	1 572	1 199	373	30	99	61	28	30	6	54	64	85

¹ A dash "-" represents zero. Three dots "..." indicate that the data are being withheld to avoid disclosure of information for individual housing units, or that the base average, percentage, or ratio is too small for it to be shown.

ACCURACY OF THE DATA

Most census reports include some discussion of the accuracy of the data. In Block Statistics Reports, information on accuracy is found on page IX. In Census Tract Reports, it is presented in Appendix C. Broad considerations and problems are dealt with, rather than specific difficulties which may affect the data for the particular area being reported. For example, the procedures are described for inflating sample data so that the reported figures reflect approximate characteristics of the entire population, rather than only 20, 15, or 5 percent.

Errors discovered in the data after a report has been compiled, but before it has been printed, are reported in a "correction note" on the page preceding the first table of the report. It is a good idea to check any correction notes before using data from the reports.

Studies are now underway to learn how effective the Census Bureau was in counting everyone. After the 1960 census, such studies suggested that about 3% of the total population had been missed, including about 10% of the Negro population. We anticipate that 1970 data will prove to be more complete; however, at the small-area level there may sometimes be serious problems of accuracy. For example, in low-income, inner-city neighborhoods it is often difficult to reach everyone, particularly males in the 15-30 age range. Also, processing difficulties, misplaced records, low response rate, and similar problems will in rare cases significantly affect data for particular small areas.

The possibility of substantial changes in the characteristics of areas since April 1970, when the census was collected, should also be kept in mind. Such activities as highway construction, which requires housing demolition, or the addition of new apartment buildings can have dramatic impacts on the characteristics of neighborhoods in the course of a couple of years.

EXAMPLES OF CENSUS APPLICATIONS

The following examples suggest a few of the ways in which census data may be of use in community action programs. Three examples concern fairly complicated programs and require detailed discussion. They are followed by three briefer examples.

Most specific references to census data in the following examples are for data found in Census Tract Reports and Block Statistics Reports. Figures 6 and 7, pages 12-18, present complete descriptions of their contents. Persons living in areas which do not have tract and block statistics (see pp. 3-4) may use statistics for the place or county as a whole (Figure 3, p. 5, indicates in which

reports these statistics can be found) or arrange to obtain statistics for enumeration districts (see page 19, "Additional Information").

Evaluation of Projects Involving Relocation

In urban areas, projects are often proposed and carried out which convert residential land to use for other purposes and involve relocation of varying numbers of people. Expressway construction, urban renewal, construction of office buildings, and similar projects may have this effect. Understandably, community groups frequently seek to influence decision-making relating to these projects in order to change their design, change their location, or have them cancelled. Census data may be very valuable in both developing and evaluating plans for changes in land use, particularly if the area to be affected involves one or more city blocks. The following discussion of expressway location will help to illustrate this.

Location is an extremely important and often controversial consideration in expressway construction through heavily populated areas. Of the many problems associated with expressways, such as noise, pollution, and the creation of a "wall" dividing neighborhoods, the greatest concern is probably the frequent need to displace people and destroy residential units. Census data can be useful in evaluating the impact of various routes on people and housing. Highway planners often use census data for this purpose, and community groups may wish to as well.

First, let us consider how Block Statistics Reports could be used. Counts of the number of people in each affected block can be summed and compared with such figures for alternate routes. The average number of persons per housing unit can be calculated for each block* and used in conjunction with total population figures, number of occupied units (owner plus renter), and number of one-person households to help in estimating housing requirements of persons to be displaced. The figures on average number of rooms, average property value of owner-occupied units, and average rent are also useful in anticipating housing requirements.

The percent Negro and percent 62 years and over deserve special consideration. Since there may be discriminatory practices in housing sale or rental in some areas, Negro families may need special assistance in finding satisfactory alternate housing. The elderly may also face added difficulties, as will be discussed below, so the percent 62 years and over or approximate number in this age group (total population multiplied by the proportion 62 years and over) should be noted.

*The calculation is total population minus number in group quarters, divided by the total number of occupied units.

Census Tract Reports are also an important source of statistics for assessing the impact of expressway construction. A greater quantity of data is available for tracts than for blocks, and sample data (income, education, occupation, etc.) are also included. As a result, tract data permit a much more thorough understanding of neighborhoods which may be affected by proposed construction. However, since tracts in densely settled areas are made up of several blocks and generally have a population numbering around 4,000, it is not possible to focus on the path of proposed construction with the precision made possible by block statistics.

A variety of types of tract data deserve consideration—number of young children (Census Tract Report, table P-1), number of a particular foreign stock (table P-2), number of families with incomes below the poverty level (table P-4), number of units lacking complete plumbing facilities (table H-1), count of units according to the year that present residents moved in (table H-2), and various other types of data. The application of such data in evaluating expressway routes or other major construction is not easy or straightforward, but the result may be a more complete understanding of the potential social impact involved. The following discussion about the elderly will help to illustrate this.

As mentioned earlier, the elderly face added difficulties if required to find new housing. They often own low or moderate-value homes and have modest fixed incomes. In many communities comparable alternate housing at a price they can afford to pay is scarce or unavailable. Also, if they have lived in the same neighborhood for a number of years, moving may mean disrupting a social pattern which has been important in their lives and which may be impossible to replace.

Census tract data will help in assessing the impact of a project on the elderly. Counts of the numbers of men and women 60 to 64 years, 65 to 74 years, and 75 and over are given in table P-1. Table P-3 provides a count of the number of males 65 years and older who are not in the labor force. The number of families with Social Security income and the average ("mean") amount of such income for those families is presented in table P-4. In the same table, several indicators of income below the poverty level among persons over 65 years are given.

Establishment of Adult Education Programs

City school systems, junior colleges, or other community organizations sometimes conduct adult education programs to enable persons to complete high school, learn new skills, or study other subjects of interest to them. A community action organization may find census statistics of considerable value in proving the need for an adult education program or in convincing

officials to add particular types of courses or conduct courses in more convenient facilities.

The nature of the neighborhood involved will suggest the types of census data which should be checked in connection with assessing the need for adult education programs. In general, data on education, employment status, income, and similar subjects will be of greatest value. (See the content and coverage list on page 2). Since the key subjects are based on sample results, census tracts are the smallest area which can be studied.

A quick review of some of the kinds of tract data and their implications for adult education planning will demonstrate their potential value.

Table P-1 (see page 13)

-The number of persons 65 years old and over is important in determining the need for daytime and evening courses oriented towards arts, crafts, and other leisure-time pursuits.

Table P-2 (see page 13)

-The count of persons with Spanish language background or Puerto Rican birth or parentage may suggest a need for courses taught in Spanish and courses to improve English language usage.

-A low percent of 16 and 17 year olds enrolled in school, and the percent of 16 to 21 year olds not high school graduates and not enrolled in school, might indicate the need for offering high school completion courses.

-Counts of persons 25 years old and over in each tract by the years of school completed will help in determining the appropriate academic level for adult education courses to be offered.

Table P-3 (see page 14)

-Number and percent unemployed, along with the number of males 16 to 21 years old who are not high school graduates and are unemployed, will be useful in determining the need for job training and the kind which should be offered. Employment opportunities in the area are also an important determinant.

Table P-4 (see page 14)

-The number of families with income below the poverty level and with children under 18 or children under 6 may suggest the need for instruction in low budget meal planning, health care, and similar family and home oriented subjects.

The preceding illustrations suggest some of the ways in which census data may relate to adult education

planning. Each community group will probably be able to find others which are specifically appropriate for its neighborhood. Also, it will usually be necessary to consider several different characteristics in order to press for or help plan an adult education program which will meet all the needs of the community.

Assessing Day-Care Requirements

A neighborhood's need for day-care facilities depends upon a variety of conditions, such as availability of day-care at major places of employment, availability of required relatives or neighbors who might care for children, and the number of employed women with small children. Census data can be of value in assessing some of these conditions.

As with most neighborhood-related problems, relevant data at the block level would be desirable. However, the Block Statistics Reports include only a couple of possibly relevant statistics. One, the number of persons 62 years and over, is a very rough measure of potential part-time day-care center employees. The other, number of families headed by women, might be helpful in judging the areas within a neighborhood where day-care center needs may be greatest.

The Census Tract Report presents information of more direct interest. Table P-1 furnishes the number of 3 and 4 year olds and the number under 5 by sex in each tract. Table P-2 shows the number of children (3 years or older) enrolled in nursery school and in kindergarten. Table P-3 gives the number of married women, living with their husbands, with children under 6 years old and the number of such women in the labor force (working or looking for work). Table P-4 furnishes median and mean family income, the number of families in various income brackets, and number and percent of families below the poverty level. It also gives the number of families below the poverty level with children under 6 years old, the number of such families headed by females, and related statistics.

Census statistics, such as those just mentioned, may prove of value for comparing areas and getting a rough idea of where day-care centers might be most needed. They do not measure actual demand, though. Additional information, perhaps generated by door-to-door canvassing of the neighborhood, would be required for that.

OTHER COMMUNITY PROJECTS

Playgrounds

The need for more playground space may seem obvious to many community residents, but the responsible city officials are usually dealing with many demands for funds and need solid information to help them decide among the competing demands. Census Tract Reports

furnish the number of children by age—how many under 5 years old, how many 5 to 9 years old, etc.— and Block Statistics Reports provide the percent of the total population under 18. By itself, this kind of information can be a rough indication of the need for more playgrounds. It will be even more effective if the neighborhood group can get information from the local government on the amount of area now devoted to playground space, figure out how much space is available per 100 or 1,000 children, and compare with similar information for other parts of the city. If there is more than one possible site for a new neighborhood playground, census data can be helpful in picking the site most convenient to the largest number of children.

Voter Registration

It is always important for a neighborhood to exercise its fair share of impact at the polls, and one part of making sure that the impact is as great as possible is to have a high portion of the eligible voters registered. If voter precincts can be approximated by combining census blocks and tracts, then statistics on the number of persons of voting age can be compared with counts of the people actually registered to help detect a low registration rate and determine whether a special registration drive is needed. If registration statistics by age (e.g., number of registered persons 18-20, 21-24, etc.) are available, they can be compared with census statistics by age to see if particular age groups need to be reached.

Housing Improvement

While community groups are seldom in a position to undertake housing improvement programs such as low interest loans, strong code enforcement or renovation of deteriorating housing, they may be able to tackle such programs indirectly through convincing local officials of the need. Census tract and block reports contain a great deal of information which reflects aspects of housing adequacy. For example, the number of units lacking hot water, a toilet, or a bath for private use and the number of overcrowded (1.01 or more persons per room) units is given for each block. Similar information, in greater detail, is presented in tables H-1 and H-2 of the tract reports. Information of this kind would be an important part in a presentation or report on the need for housing improvement in particular neighborhoods.

BLOCK AND TRACT REPORT CONTENTS

The Block Statistics Reports and Census Tract Reports are the principal sources of census data for community action projects. The following two figures, numbers 6 and 7, show the complete range of data presented in each. Figure 6 is an excerpt from an actual Block Statistics Report. Figure 7 shows only the stubs of the census tract tables, (figure 5, on page 8, illustrates a part of one of these tables with real data.)

Figure 7

Published Census Tract Report-Population Data

Table P-1. General Characteristics of the Population

Census Tracts

RACE

All persons

White

Negro

Percent Negro

AGE BY SEX

Male, all ages

Under 5 years

3 and 4 years

5 to 9 years

9 years

10 to 14 years

14 years

15 to 19 years

15 years

16 years

17 years

18 years

19 years

20 to 24 years

20 years

21 years

25 to 34 years

35 to 44 years

45 to 54 years

55 to 59 years

60 to 64 years

65 to 74 years

75 years and over

Female, all ages

Under 5 years

3 and 4 years

5 to 9 years

9 years

10 to 14 years

14 years

15 to 19 years

15 years

16 years

17 years

18 years

19 years

20 to 24 years

20 years

21 years

25 to 34 years

35 to 44 years

45 to 54 years

55 to 59 years

60 to 64 years

65 to 74 years

75 years and over

RELATIONSHIP TO HEAD OF HOUSEHOLD

All persons

In households

Head of household

Head of family

Primary individual

Wife of head

Other relative of head

Not related to head

In group quarters

Persons per household

TYPE OF FAMILY AND NUMBER OF OWN CHILDREN

All families

With own children under 18 years

Number of children

Husband-wife families

With own children under 18 years

Number of children

Percent of total under 18 years

Families with other male head

With own children under 18 years

Number of children

Families with female head

With own children under 18 years

Number of children

Percent of total under 18 years

Persons under 18 years

MARITAL STATUS

Male, 14 years old and over

Single

Married

Separated

Widowed

Divorced

Female, 14 years old and over

Single

Married

Separated

Widowed

Divorced

Table P-2. Social Characteristics of the Population

Census Tracts

NATIVITY, PARENTAGE, & COUNTRY OF ORIGIN

All persons

Native of native parentage

Native of foreign or mixed parentage

Foreign born

Foreign stock

United Kingdom

Ireland (Eire)

Sweden

Germany

Poland

Czechoslovakia

Austria

Hungary

U.S.B.

Italy

Canada

Mexico

Cuba

Other America

All other and not reported

Persons of Spanish language

Other persons of Spanish surname

Persons of Spanish mother tongue

Persons of Puerto Rican birth or parentage

SCHOOL ENROLLMENT

Enrolled persons, 3 to 24 years old

Nursery school

Public

Kindergarten

Public

Elementary

Public

High school

Public

College

Percent enrolled in school by age:

16 and 17 years

18 and 19 years

20 and 21 years

22 to 24 years

25 to 34 years

Percent 16 to 21 years not high school graduates and not enrolled in school

YEARS OF SCHOOL COMPLETED

Persons, 25 years old and over

No school years completed

Elementary: 1 to 4 years

5 to 7 years

8 years

High school: 1 to 3 years

4 years

College: 1 to 3 years

4 years or more

Median school years completed

Percent high school graduates

CHILDREN EVER BORN

Women, 35 to 44 years old ever married

Children ever born

Per 1,000 women ever married

RESIDENCE IN 1965

Persons, 5 years old and over, 1970

Same house as in 1970

Different house

In central city of this SMSA

In other part of this SMSA

Outside this SMSA

North and West

South

Abroad

MEANS OF TRANSPORTATION AND PLACE OF WORK

All workers

Private auto Driver

Passenger

Bus or streetcar

Subway, elevated train, or railroad

Walked to work

Worked at home

Other

Inside SMSA

A city central business district

Balance of A city

Balance of A County

B County

C County

D County

E County

F County

G County

H County

I County

J County

K County

Outside SMSA

Place of work not reported



Published Census Tract Report-Population Data—Continued

Table P-3. Labor Force Characteristics of the Population

Census Tracts

EMPLOYMENT STATUS

Male, 16 years old and over

Labor force

 Percent of total

 Civilian labor force

 Employed

 Unemployed

 Percent of civilian labor force

Not in labor force

 Inmate of institution

 Enrolled in school

 Other under 65 years

 Other 65 years and over

Male, 16 to 21 years old

Not enrolled in school

Not high school graduates

Unemployed or not in labor force

Female, 16 years old and over

Labor force

 Percent of total

 Civilian labor force

 Employed

 Unemployed

 Percent of civilian labor force

Not in labor force

Married women, husband present

 In labor force

 With own children under 6 years

 In labor force

OCCUPATION

Total employed, 16 years old and over

Professional, technical, and kindred workers

 Health workers

 Teachers, elementary and secondary schools

 Managers and administrators, except farm

 Salaried

 Self-employed in retail trade

Sales workers

 Retail trade

Clerical and kindred workers

Craftsmen, foremen, and kindred workers

 Construction craftsmen

 Mechanics and repairmen

Operatives, except transport

Transport equipment operatives

Laborers, except farm

Farm workers

Service workers

 Cleaning and food service workers

 Protective service workers

 Personal and health service workers

Private household workers

Female employed, 16 years old and over

Professional, technical, and kindred workers

 Teachers, elementary and secondary schools

 Managers and administrators, except farm

Sales workers

Clerical and kindred workers

 Secretaries, stenographers, and typists

Operatives, including transport

Other blue-collar workers

Farm workers

Service workers, except private household

Private household workers

INDUSTRY

Total employed, 16 years old and over

Construction

Manufacturing

 Durable goods

Transportation

Communications, utilities, and sanitary services

Wholesale trade

Retail trade

Finance, insurance, and real estate

Business and repair services

Personal services

Health services

Educational services

Other professional and related services

Public administration

Other industries

CLASS OF WORKER

Total employed, 16 years old and over

Private wage and salary workers

Government workers

 Local government workers

Self-employed workers

Unpaid family workers

Table P-4. Income Characteristics of the Population

Census Tracts

INCOME IN 1969 OF FAMILIES AND UNRELATED INDIVIDUALS

All families

Less than \$1,000

\$1,000 to \$1,999

\$2,000 to \$2,999

\$3,000 to \$3,999

\$4,000 to \$4,999

\$5,000 to \$5,999

\$6,000 to \$6,999

\$7,000 to \$7,999

\$8,000 to \$8,999

\$9,000 to \$9,999

\$10,000 to \$11,999

\$12,000 to \$14,999

\$15,000 to \$24,999

\$25,000 to \$49,999

\$50,000 or more

Median income

Mean income

Families and unrelated individuals

 Median income

 Mean income

Unrelated individuals

 Median income

 Mean income

TYPE OF INCOME IN 1969 OF FAMILIES

All families

With wage or salary income

 Mean wage or salary income

With nonfarm self-employment income

 Mean nonfarm self-employment income

With farm self-employment income

 Mean farm self-employment income

With Social Security income

 Mean Social Security income

With public assistance or public welfare income

 Mean public assistance or public welfare income

With other income

 Mean other income

RATIO OF FAMILY INCOME TO POVERTY LEVEL¹

Percent of families with incomes:

Less than .50 of poverty level

.50 to .74

.75 to .99

1.00 to 1.24

1.25 to 1.49

1.50 to 1.99

2.00 to 2.99

3.00 or more

INCOME BELOW POVERTY LEVEL¹

Families

Percent of all families

Mean family income

Mean income deficit

Percent receiving public assistance income

Mean size of family

With related children under 18 years

 Mean number of related children under 18 years

 With related children under 6 years

 Mean number of related children under 6 years

Families with female head

 With related children under 18 years

 Mean number of related children under 18 years

 With related children under 6 years

 Mean number of related children under 6 years

 Percent in labor force

 Mean number of related children under 6 years

Family heads

Percent 65 years and over

Civilian male heads under 65 years

Percent in labor force

Unrelated individuals

Percent of all unrelated individuals

Mean income

Mean income deficit

Percent receiving public assistance income

Percent 65 years and over

Persons

Percent of all persons

Percent receiving Social Security income

Percent 65 years and over

Percent receiving Social Security income

Related children under 18 years

Percent living with both parents

Households

Percent of all households

Owner occupied

 Mean value of unit

Renter occupied

 Mean gross rent

Percent lacking some or all plumbing facilities



Published Census Tract Report-Population Data—Continued

Table P-7. General and Social Characteristics of Persons of Spanish Language: 1970

Census Tracts With 400 or More Persons of Spanish Language

AGE BY SEX

Male, all ages	
Under 5 years	
3 and 4 years	
5 to 9 years	
5 years	
6 years	
10 to 14 years	
14 years	
15 to 19 years	
15 years	
16 years	
17 years	
18 years	
19 years	
20 to 24 years	
20 years	
21 years	
25 to 34 years	
35 to 44 years	
45 to 54 years	
55 to 59 years	
60 to 64 years	
65 to 74 years	
75 years and over	
Female, all ages	
Under 5 years	
3 and 4 years	
5 to 9 years	
5 years	
6 years	
10 to 14 years	
14 years	
15 to 19 years	
15 years	
16 years	
17 years	
18 years	
19 years	
20 to 24 years	
20 years	
21 years	
25 to 34 years	
35 to 44 years	
45 to 54 years	
55 to 59 years	
60 to 64 years	
65 to 74 years	
75 years and over	

RELATIONSHIP TO HEAD OF HOUSEHOLD

All persons	
In households	
Head of household	
Head of family	
Primary individual	
Wife of head	
Other relative of head	
Not related to head	
In group quarters	
Persons per household	

TYPE OF HOUSEHOLD

All households	
Male primary individual	
Female primary individual	
Husband-wife households	
Households with other male head	
Households with female head	

SCHOOL ENROLLMENT

Persons, 16 to 21 years old	
Not attending school	
Not high school graduates	
Percent of total	

YEARS OF SCHOOL COMPLETED

Persons, 25 years old and over	
No school years completed	
Elementary: 1 to 4 years	
5 to 7 years	
8 years	
High school: 1 to 3 years	
4 years	
College: 1 to 3 years	
4 years or more	
Median school years completed	
Percent high school graduates	

RESIDENCE IN 1965

Persons, 5 years old and over, 1970	
Same house as in 1970	
Different house	
In central city of this SMSA	
In other part of this SMSA	
Outside this SMSA	
North and West	
South	
Abroad	

Table P-8. Economic Characteristics of Persons of Spanish Language: 1970

Census Tracts With 400 or More Persons of Spanish Language

EMPLOYMENT STATUS AND OCCUPATION

Male, 16 years old and over

Labor force	
Civilian labor force	
Employed	
Unemployed	
Not in labor force	
Female, 16 years old and over	
Labor force	
Civilian labor force	
Employed	
Unemployed	
Not in labor force	
Married women in labor force, husband present	
With own children under 6 years	
Total employed, 16 years old and over	
Professional, technical, and kindred workers	
Managers and administrators, except farm	
Sales workers	
Clerical and kindred workers	
Craftsmen, foremen, and kindred workers	
Operatives, except transport	
Transport equipment operatives	
Laborers, except farm	
Farm workers	
Service workers, except private household	
Private household workers	
Female employed, 16 years old and over	
Professional, technical, and kindred workers	
Managers and administrators, except farm	
Sales workers	
Clerical and kindred workers	
Operatives, including transport	
Other blue collar workers	
Farm workers	
Service workers, except private household	
Private household workers	

FAMILY INCOME IN 1969

All families

Less than \$1,000	
\$1,000 to \$1,999	
\$2,000 to \$2,999	
\$3,000 to \$3,999	
\$4,000 to \$4,999	
\$5,000 to \$5,999	
\$6,000 to \$6,999	
\$7,000 to \$7,999	
\$8,000 to \$8,999	
\$9,000 to \$9,999	
\$10,000 or more	
Median income: Families	
Families and unrelated individuals	

RATIO OF FAMILY INCOME TO POVERTY LEVEL¹

Percent of families with incomes:

Less than .50 of poverty level	
.50 to .74	
.75 to .99	
1.00 to 1.24	
1.25 to 1.49	
1.50 to 1.99	
2.00 or more	

INCOME BELOW POVERTY LEVEL¹

Families	
Percent of all families	
Mean family income	
Mean income deficit	
Percent receiving public assistance income	
Mean size of family	
With related children under 18 years	
Mean number of related children under 18 years	
With related children under 6 years	
Mean number of related children under 6 years	
Families with female head	
With related children under 18 years	
Mean number of related children under 18 years	
With related children under 6 years	
Mean number of related children under 6 years	
Percent in labor force	
Mean number of related children under 6 years	
Family heads	
Percent 65 years and over	
Civilian male heads under 65 years	
Percent in labor force	
Unrelated individuals	
Percent of all unrelated individuals	
Mean income	
Mean income deficit	
Percent receiving public assistance income	
Percent 65 years and over	
Persons	
Percent of all persons	
Percent receiving Social Security income	
Percent 65 years and over	
Percent receiving Social Security income	
Related children under 18 years	
Percent living with both parents	
Households	
Percent of all households	
Owner occupied	
Mean value of unit	
Renter occupied	
Mean gross rent	
Percent locking some or all plumbing facilities	

Published Census Tract Report—Housing Data—Continued

Table H-3. Occupancy, Utilization, and Financial Characteristics of Housing Units With Negro Head of Household:

Census Tracts With 400 or More Negro Population

All occupied housing units

TENURE AND PLUMBING

Owner occupied
With all plumbing facilities

Renter occupied
With all plumbing facilities

ROOMS

1 room
2 rooms
3 and 4 rooms
5 and 6 rooms
7 rooms or more
Median

PERSONS

1 person
2 and 3 persons
4 and 5 persons
6 persons or more
Median

Units with roomers, boarders, or lodgers

PERSONS PER ROOM

1.00 or less
1.01 to 1.50
1.51 or more
Units with all plumbing facilities—1.01 or more

VALUE

Specified owner occupied units

Less than \$5,000
\$5,000 to \$9,999
\$10,000 to \$14,999
\$15,000 to \$19,999
\$20,000 to \$34,999
\$35,000 or more
Median

CONTRACT RENT

Specified renter occupied units

Median

Table H-4. Structural, Equipment, and Financial Characteristics of Housing Units With Negro Head of Household

Census Tracts With 400 or More Negro Population

All occupied housing units

UNITS IN STRUCTURE

1 (includes mobile home or trailer)
2 to 4
5 or more

YEAR STRUCTURE BUILT

1940 to March 1970
1950 to 1959
1949 or earlier

SELECTED EQUIPMENT

With air conditioning
With more than 1 bathroom
With central or built-in heating system
With public water supply
With public sewer
With automobile(s) available

1
2 or more

YEAR MOVED INTO UNIT

1968 to March 1970
1960 to 1967
1959 or earlier

GROSS RENT

Specified renter occupied units

Less than \$40
\$40 to \$59
\$60 to \$79
\$80 to \$99
\$100 to \$149
\$150 to \$199
\$200 or more
No cash rent
Median

GROSS RENT AS PERCENTAGE OF INCOME

BY INCOME

Less than \$10,000
25 percent or more
35 percent or more
Not computed
Median

Table H-5. Characteristics of Housing Units With Household Head of Spanish Language

(Same data items as shown in Tables H-3 and H-4)

WHERE TO FIND CENSUS REPORTS

Many public libraries obtain the principal census reports for their communities. If the branch or neighborhood library does not have them, the main library probably will. The city planning office, city government library, mayor's office, chamber of commerce, or similar public and private agencies also often have census reports on hand.

A community action group may discover that it has frequent need to refer to census reports. If so, copies are available at a reasonable cost. Department of Commerce field offices in 43 cities (see the list on top of page 20) stock many of the reports for their cities and surrounding areas, or orders may be sent directly to the U.S. Superintendent of Documents. Order forms may be obtained by writing to the Publications Services Division, Bureau of the Census, Washington, D.C. 20233.

ADDITIONAL INFORMATION

A number of data products and services have been developed in connection with the 1970 census which are primarily of interest to census users who have substantial and frequent need for census data. Of greatest importance is the availability of 1970 census data on computer tape. The data are statistics, like those found in census

reports, for blocks, tracts, cities, and other areas. However, because of the compact nature of storing data on tape, much more data can be put on tape than can be published in reports, including data for some areas not found in reports, such as enumeration districts.

Anyone may purchase these tapes. There are many organizations, both public and private, which are buying census tapes and offering data services, such as preparing printouts and suggesting ways to apply the statistics. A public listing of these organizations, called Summary Tape Processing Centers, is maintained by the Census Bureau—see the "Request for Information" form below.

The Census Bureau has published a great deal of descriptive information about 1970 census programs. For example, the 2-volume 1970 Census Users' Guide is a comprehensive reference resource. Also, there are occasional pamphlets and bulletins (Data Access Descriptions and Census Users Bulletins), a monthly newsletter (Data User News), and a quarterly Bureau of the Census Catalog—see the "Request for Information" form below.

If you would like to discuss the use of census data in your community activities or have questions about Census Bureau products and services, contact the Data Access and Use Laboratory, Data User Services Division, Bureau of the Census, Washington, D.C. 20233.

REQUEST FOR INFORMATION ABOUT THE '70 CENSUS

Data Access and Use Laboratory
Data User Services Division
Bureau of the Census
Washington, D.C. 20233

Please send me samples of the Census Bureau's monthly newsletter and occasional pamphlets, a list of Summary Tape Processing Centers, and more information on the 1970 census.

Name _____
Organization _____
Address _____
City, State, & ZIP _____

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Racial Makeup. The white population totaled 3,194,888 in 1970. Other racial groups included 699,479 blacks (35 percent more than in 1960); 6,520 Chinese; 5,170 Filipinos; 4,239 American Indians; and 3,733 Japanese.

Age of the Population. The median age of the Maryland population was 27.1 years, compared with 28.7 years for the U.S. Of Maryland's 1970 population, 299,682 were 65 and older and 344,267 under 5 years. The total of school age, 5 to 17, was 1,037,225 and the college age group, 18 to 21, numbered 262,237. The remainder, 22 to 64, totaled 1,978,988.

Single, Married, Divorced. Among women age 14 and older, 337,025 had never married; 925,354 were married (54,124 of them separated); 164,326 widowed; and 49,062 divorced. Totals for men 14 and older were: 392,646 single; 906,860 married (37,073 of them separated); 36,331 widowed; and 31,050 divorced. There were 971,877 families in the State, 832,716 of them husband-wife families.

Income. Half of Maryland's families had above and half below an income of \$11,057 in 1969, ranking the State 5th in median family income (1969 income was reported in the 1970 census). The U.S. median was \$9,586. The Maryland median for white families was \$11,629; for its black families, it was \$7,696.

Nearly 8 percent of the State's families (74,849 families) were below the low-income or poverty line in 1969. The 1969 poverty level was \$3,743 for a nonfarm family of four.

Schooling. There were 1,168,116 persons in Maryland 3 to 34 years old enrolled in school or college at the time of the census: 24,651 were in nursery school; 737,363 in kindergarten or elementary school; 275,083 in high school; and 131,019 in college.

Of the 2,082,549 persons 25 or older in Maryland, 52 percent had completed at least 4 years of high school and 14 percent at least 4 years of college. The median number of school years finished by this age group was 12.1, the same as the national median. Among those in their working years (16 to 64), 31 percent of the men and 23 percent of the women with less than 15 years of schooling had had vocational training of some type.

Workers and Jobs. There were 1,035,924 men workers age 16 or older in 1970; 946,844 of them had civilian jobs and 62,818 were in the Armed Forces. Women workers totaled 619,771 of whom 591,922 had civilian jobs and 2,783 were in the Armed Forces.

There were 201,334 men working as craftsmen, foremen, and kindred workers (in skilled blue collar jobs); 185,966 as professional, technical, or kindred workers; and 111,704 as nonfarm managers and administrators; while operatives, except transport, totaled 91,428 (chiefly operators of equipment in manufacturing industries).



A total of 238,900 women were employed in clerical and kindred jobs; 105,027 in professional, technical, and kindred work; 82,710 in nonhousehold service work; 57,469 as nontransport operatives; and 43,642 in sales work.

There were 210,061 Federal employees, 56,067 State employees, and 129,680 local government employees at the time of the 1970 census.

Maryland Housing. Housing units for year-round use numbered 1,234,509 in 1970, a 35 percent increase over 1960. They had a median of 5.5 rooms per unit, and 69 percent were single family homes. Thirty percent of the units were built between 1960 and 1970.

A total of 1,175,073 units were occupied with an average of 3.2 persons per unit. Fifty-nine percent were occupied by the owners. Median value of owner-occupied homes was \$18,800 and renters paid a median of \$127 per month.

The presence of piped water, toilet, and bath for exclusive use of the household is an indication of housing quality. In 1970, only 4 percent of all year-round housing in Maryland lacked complete plumbing facilities, compared with 7 percent for the United States.

Ninety-seven percent of the households had television; 72 percent clothes washing machines; 41 percent clothes dryers; 27 percent dishwashers; 27 percent home food freezers; 37 percent two or more automobiles; and 4 percent owned a second home.

Farming in Maryland. Maryland's farms, like those of the country as a whole, are becoming fewer and larger. The 1969 Census of Agriculture counted 17,181 farms in the State, 17 percent fewer than in 1964. The average size of farms rose from 153 acres to 163 acres in the 5 years. Their 1969 average value was \$104,370; the average value per acre, \$640.

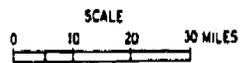
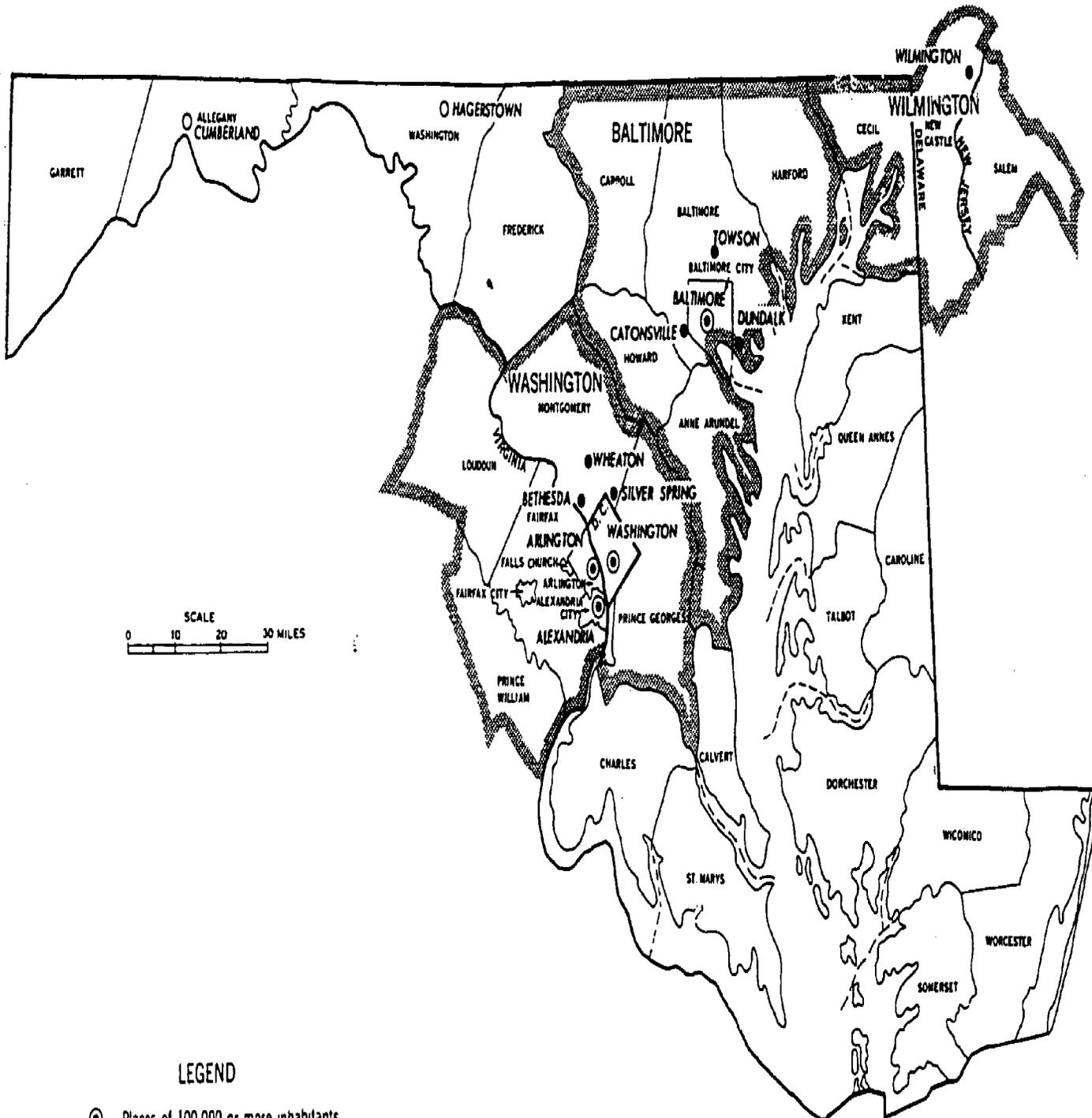
The 1970 farm population totaled 62,385, a 43 percent decrease from 1960.

The market value of all agricultural products sold by Maryland farms was \$339.6 million in 1969. Livestock, poultry, and their products accounted for \$237.6 million; crops, including nursery products and hay, \$100.4 million; and forest products, \$1.6 million.

A map of Maryland on the back page shows the counties, standard metropolitan statistical areas, and selected places.

* * * * *

Most figures are from Maryland reports: 1970 Population Census, Vol. I; 1970 Housing Census, Vol. I; 1969 Agriculture Census, Vol. I. Copies are in many libraries or may be purchased. Write to Publications Distribution Section, SESA, Washington, D.C. 20233 for order forms.



LEGEND

- ⊙ Places of 100,000 or more inhabitants
- Places of 50,000 to 100,000 inhabitants
- Places of 25,000 to 50,000 inhabitants outside SMSA's

 Standard Metropolitan Statistical Areas (SMSA's)

A UNITED STATES
DEPARTMENT OF
COMMERCE
PUBLICATION



data access descriptions

DAD No. 33
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August 1973

U.S. DEPARTMENT
OF COMMERCE
Social and Economic
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Data Access Descriptions are developed in the Data User Services Office under the direction of **Michael G. Garland**, Chief, Data Access and Use Laboratory. **Ann D. Casey**, User Information Services, is responsible for general supervision. Editorial supervision was provided by **Valerie McFarland**.

This report was prepared by **Gerald O'Donnell**.

Any suggestions, comments, or inquiries from users of Data Access Descriptions will be appreciated by the Bureau. Letters should be addressed to the Director, Bureau of the Census, Washington, D.C. 20233.

For sale by Publications Distribution Section, Social and Economic Statistics Administration, Washington, D.C. 20233. Subscription price \$5.50 for 4 to 6 issues of Data Access Descriptions (issued occasionally), along with 12 monthly issues of Small-Area Data Notes. Single copies vary in price. Price this issue 50 cents.

1970 Census Geography: Concepts, Products, and Programs

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INTRODUCTION

The objective of this Data Access Description is to explain the geographic aspects of the 1970 census. Special emphasis will be given to the census geographic products which assist users in their analysis of small-area data.

Geography played a crucial role in every stage of planning, enumerating, and tabulating the 1970 Census of Population and Housing. Identification of geographic areas was the basis for administrative control in taking the 1970 census and processing the returned questionnaires. Census tabulations were prepared for specific geographic areas-- whether the entire United States or a city block. Without the ability to assign or relate data to specific areas, the data collected from a census would be of little value other than for furnishing national totals. Statistics which present characteristics for States, counties, cities, and smaller areas make the censuses important to most data users.

The geographic work for a census basically involves determining boundaries, coding geographic areas, and preparing maps. However, additional geographic work was required for the

1970 census in the development of mailing lists of residential addresses for the metropolitan areas which were enumerated by mail rather than by census takers. Work relating to geography resulted in several products, such as new types of census maps, geographic code schemes, and address coding guides, which are of value to census data users as well as the Bureau of the Census.

1970 CENSUS GEOGRAPHIC AREAS

In the 1970 census substantial improvements have been made in providing tabulations for small geographic areas. Although there is no precise definition of "small areas," for the purpose of this Data Access Description geographic areas at the State level and below are considered "small-areas." (Examples include standard metropolitan statistical areas (SMSA's), counties, cities, census tracts, and blocks.) Small-area census data are used by the Federal government in the development of national policies. State and local governments use small-area census data for planning and implementing many of their programs. Semipublic agencies, university faculties, and the business community also are interested in small-area census data.

Boundaries of the geographic areas for which the Bureau of the Census collected and tabulated 1970 census data were established in several ways. Boundaries of political areas--States, congressional districts, counties, minor civil divisions, incorporated places, and city wards--are based on information received from the appropriate authorities. Boundaries of statistical areas are determined by groups with special interests, often with the advice and assistance of the Bureau of the Census. For example, the Office of Management and Budget of the Executive Office of the President, with the assistance of other Federal agencies, defines standard metropolitan statistical areas. Boundaries of functional or administrative areas are defined outside the Census Bureau by the appropriate agency, such as the ZIP code areas defined by the U.S. Postal Service. In addition, the Bureau of the Census established the boundaries of several sets of geographic areas for which it tabulated 1970 census data--urbanized areas, census county divisions, unincorporated places, census tracts (in cooperation with local census tract committees), enumeration districts, block groups, and blocks. Census county divisions and unincorporated

places are defined with local assistance at several levels of government.

To meet the processing and tabulation requirements of the 1970 census, numeric codes were used in lieu of names to identify areas for which census data were summarized. The geographic codes were derived primarily from a master coding scheme prepared by the Bureau, and they appear on the 1970 census summary tapes and related geographic products. Each level in the census geographic hierarchy, from the State down to the block, has an associated code scheme, with individual codes ranging in length from one to six digits.

In appendix A, definitions are presented for the key geographic areas for which 1970 census data are tabulated. The definitions specify the unique characteristics of the geographic area, the number of units of each type of area (example: 50 States, 3,141 counties), and the type of geographic code used to identify the area (example: minor civil divisions are assigned a 3-digit numeric code according to their alphabetic sequence within county). Figure 1 shows how most of the geographic areas relate to each other (e.g., census tracts are subdivisions of standard metropolitan statistical areas).

Data from the 1970 census have been tabulated for all of the geographic areas described in appendix A and are available in several different series of summary computer tapes and many printed reports derived from the tapes. It may be difficult for a user to determine where data for a given geographic area can be found. Figure 2 is designed to help reduce this problem by showing the geographic areas associated with each of the summary tape series and printed reports and microfilm derived from the tapes. For example, a user interested in data for census blocks can see that this information will be found on the Third Count Summary Tape and in the printed report series HC(3). General information on the summary tapes and printed reports can be found in *Data Access Descriptions* Nos. 18 and 27, respectively, which are available on request from the Data User Services Office, Bureau of the Census, Washington, D.C. 20233.

GEOGRAPHIC REFERENCE PRODUCTS

A number of geographic reference products have emerged from the 1970 census. These products are essential to the effective use of small-area data. For example, census maps show the boundaries of each census tract, enumeration district, and block. Geographic code schemes are required to permit identification of

census geographic areas contained on the summary tapes. Address coding guides and geographic base (DIME) files provide a means of relating local data to census geographic areas. (DIME is an acronym for Dual Independent Map Encoding.) Descriptions of the various geographic reference products are presented below.

Census Maps

Census maps are necessary for virtually all uses of small-area census data; they are needed in locating specific census geographic areas and in analyzing their areal relationships. There are basically five kinds of census maps which delineate small areas: The Metropolitan Map Series, county maps, place maps, county subdivision maps, and tract outline maps.

The Metropolitan Map Series (MMS) generally covers the urbanized areas of standard metropolitan statistical areas and shows, in great detail, the location of place and MCD/CCD boundaries, census tracts, congressional districts, enumeration districts, and blocks, and identifies the features which form the boundaries of these areas. These maps are at a common scale of 1 inch = 2,000 feet, with portions of some sheets enlarged to 1 inch = 800 feet. There are approximately 200 map sets in the series (one or more urbanized areas may be in a map set) comprising approximately 3,200 map sheets (each sheet including an area of 5 by 7 miles); the number of sheets in a set range from 2 to 144. The Metropolitan Map Series covers a total area of approximately 110,000 square miles. This coverage includes about two-thirds of the Nation's population. The series is available as part of the *Block Statistics* reports for urbanized areas, series HC(3) of the 1970 census reports. Each report is accompanied by a set of metropolitan maps for the urbanized area concerned. An HC(3) report for a medium-size urbanized area can be purchased for less than \$5 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The metropolitan maps contained in the HC(3) reports use color and shading to emphasize selected boundaries.

The county maps, which generally are reproductions of standard State highway department maps, show the boundaries of minor civil divisions or census county divisions, places, tracts, and enumeration districts for portions of counties not covered by the Metropolitan Map Series, as well as for all counties outside of SMSA's. It is important to note that the county maps show only a range of enumeration district (ED) numbers for places which contain more than one ED and do not identify the ED boundaries

within places--place maps are used for this purpose. County maps are generally at a scale of 1 inch = 2 miles. There are usually one or two map sheets for each county except for those counties larger in area. County maps are not published in any census reports. Copies may be obtained at a price of \$1 and up for each sheet from the Data User Services Office, Bureau of the Census, Washington, D.C. 20233.

Place maps are available for every incorporated and unincorporated place which was reported in the 1970 census but not included in the Metropolitan Map Series. These maps, which are usually reproductions of maps supplied to the Bureau of the Census by local agencies, identify streets and show boundaries for enumeration districts, tracts where applicable, and blocks if the place was under contract with the Bureau for preparation of block statistics. Place maps generally vary in scale from 1 inch = 400 feet to 1 inch = 1,500 feet. There is normally one map sheet for each place. Most place maps are not a part of any census report. They are sold individually by the Data User Services Office at a price of \$1.50 and up per map sheet, depending upon the size of the sheet. Place maps appear in the HC(3) reports for places participating in the contract block statistics program; however, these maps do not show ED's.

County subdivision maps of States show boundaries for counties and subdivisions of counties (minor civil divisions or census county divisions) as well as the location of all places which were recognized in the 1970 census. There is normally one map sheet for each State with the exception of a few States that have been combined on one sheet. The scale used for most of the county subdivision maps is 1 inch = 12 miles. The maps are priced at 20 cents per State and may be obtained from the U.S. Government Printing Office. Copies of the county subdivision maps on a smaller scale appear in sectionalized form in *Number of Inhabitants*, series PC(1)-A, of the 1970 census reports.

Tract outline maps show the boundaries of census tracts, counties, and all places with populations of 25,000 or more. Names of features which constitute tract boundaries are included on these maps except for very short segments. The scale of tract outline maps varies according to the size and complexity of the SMSA and, therefore, may range from 1 inch = 1/2 mile to 1 inch = 10 miles. Generally, there are two tract outline map sheets per SMSA. These maps are included as part of the *Census Tract* reports for SMSA's, series PHC(1) of the 1970 census reports. Most PHC(1) re-

ports cost less than \$2 and are available from the U.S. Government Printing Office.

In addition to the census maps already described in this section, there are two other kinds of maps published by the Bureau of the Census. These are the urbanized area maps and the United States Maps.

Urbanized area maps show the extent and components of the urbanized area by means of shading. Copies of these maps, at a scale of 1 inch = 4 miles, appear in *Number of Inhabitants*, series PC(1)-A, and in *General Housing Characteristics*, series HC(1)-A, reports, which can be obtained from the U.S. Government Printing Office. These maps can only be obtained by purchasing the reports. More detailed information on urbanized area boundaries can be found in the Metropolitan Map Series.

The United States Maps (the GE-50 map series) are statistical maps which show the geographic distribution, by county, of various social and economic data from the 1970 census as well as earlier censuses. Different color schemes are used to depict values of the data; county names and boundaries are easily seen through the color. Each map is a single sheet (generally 42" x 30" in size) at an approximate scale of 1 inch = 80 miles. Copies of these maps sell for 25 to 50 cents each. An order form listing the various maps in the GE-50 series is available upon request from the Publications Distribution Section, Social and Economic Statistics Administration, Washington, D.C. 20233.

To facilitate map acquisition, the Bureau of the Census has compiled an inventory of the Metropolitan Map Series, county maps, and place maps. The census map inventory lists the cost and the required number of map sheets for each State, county, and place for maps maintained and sold by the Bureau. Names and the relevant geographic codes for these areas are included. The inventory covers all 50 States and the District of Columbia. By checking the census map inventory for any State, county, or place, a person can quickly determine the required map sheets and their cost. The inventory is most useful when ordering place maps and county maps containing enumeration district and other census boundary designations that are not found in any 1970 census reports.

The U.S. Department of Commerce district offices and the Census Bureau and its regional Data Collection Centers have the census map inventory for the entire Nation on hand to assist users. The inventory can be purchased at a price of \$2 for individual States and \$75 for the complete set from the Data User Services Office.

Figure 1.—Census Geographic Areas

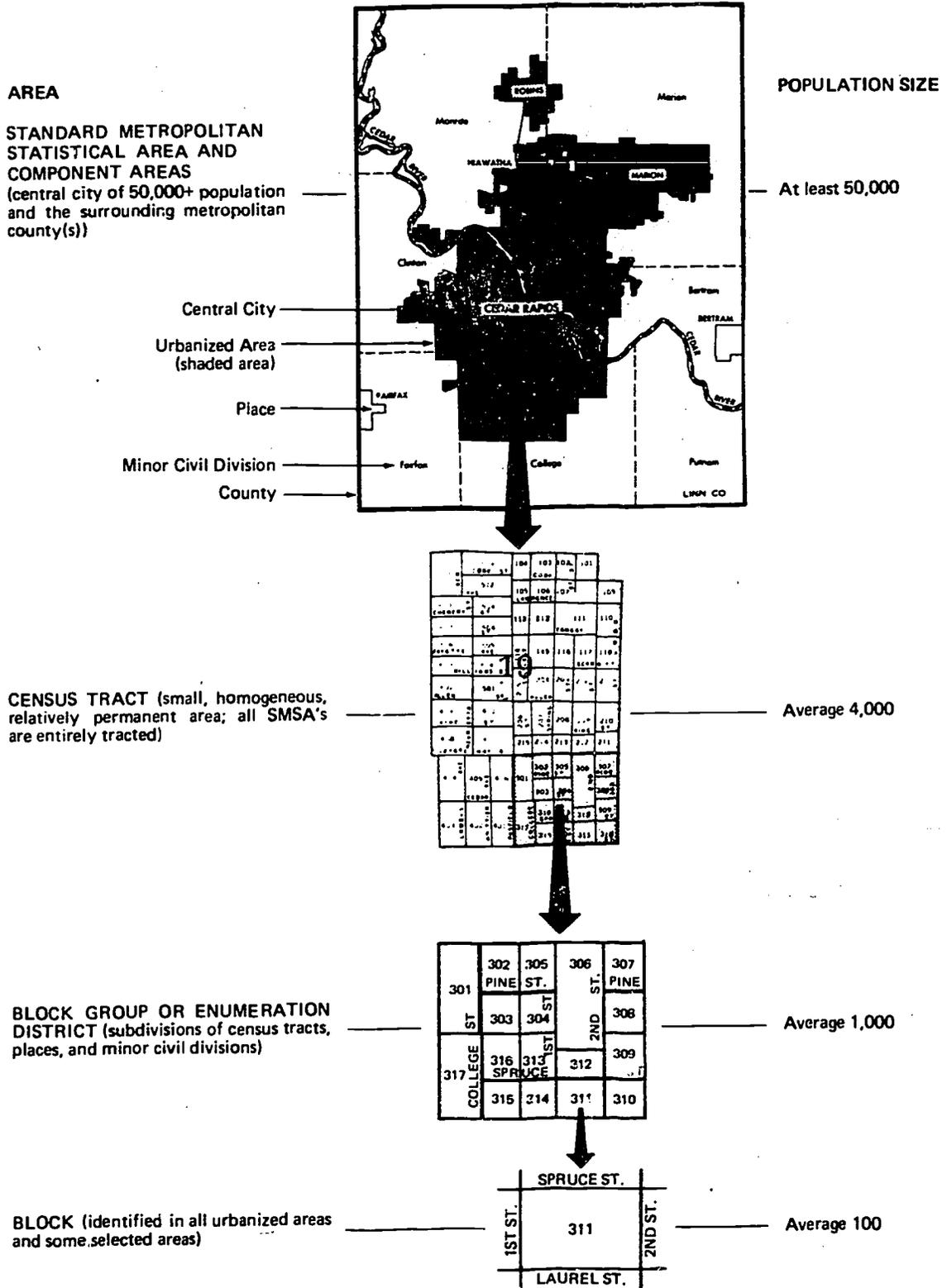


Figure 2.—Geographic Areas Summarized in 1970 Census Data Products

Geographic area	First count				Second count				Third count		Fourth count				Fifth count	
	Summary tape	Microfilm	PC(1)-A ¹	HC(VI) ¹	Summary tape	PC(1)-B ¹	HC(1)-A ¹	PHC(1) ¹	Summary tape	HC(3) ¹	Summary tape ²	PC(1)-C ¹	HC(1)-B ¹	PHC(1) ¹	Summary tape ³	Microfilm ³
Blocks.....									x	x						
Enumeration districts or blockgroups.....	'A	x													x	
Census tracts.....					'A			x	(⁴)		'A			x		
Minor civil divisions or census county divisions.	B	x	x		B	x					B				x	x
All places ⁵	B	x	x													
Places > 1,000 only ⁵					B	x	x									
Places > 2,500 only ⁵ ...											C	x	x			
Places > 10,000 only ⁵ ..				x												
Counties.....	B	x	x	x	B	x	x				C	x	x			x
Urban/rural parts of counties.....			x		B	x					C	x				
Standard metropolitan statistical areas.....	B	x		x	B	x	x	x			C	x	x			
Urbanized areas of SMSA's	B	x			B	x	x				C	x	x			
Components of MSA's.....					B			x			C					
Congressional districts..	B	x														
State.....	B	x	x	x	B	x	x				C	x	x			
ZIP codes.....																x

¹Titles of these reports are contained in Data Access Description No. 27.

²On the 4th and 6th Counts, population and housing data appear on separate files.

³Tabulations appearing in the 5th Count (ZIP code summaries) also have been prepared for enumeration districts, block groups, MCD's/CCD's, and counties.

⁴The 1st, 2nd, and 4th Counts have files designated A and B or A, B, and C.

⁵Tract totals appear for only that part of the tract which is covered by block summaries.

⁶Places include all incorporated places and unincorporated places of 5,000 or more in urbanized areas or of 1,000 or more elsewhere.

⁷Sixth Count tapes provide data for metropolitan counties, central cities, and other cities over 50,000 population. Sixth Count housing files also present data for nonmetropolitan areas of 50,000+.

Figure 2.—Geographic Areas Summarized in 1970 Census Data Products

First count			Second count				Third count		Fourth count				Fifth count		Sixth count			
Microfilm	PC(1)-A ¹	HC(VI) ¹	Summary tape	PC(1)-B ¹	HC(1)-A ¹	PHC(1) ¹	Summary tape	HC(3) ¹	Summary taps ²	PC(1)-C ¹	HC(1)-B ¹	PHC(1) ¹	Summary tape ³	Microfilm ³	Summary tape ³	PC(1)-D ¹	HC(2) ¹	
x							x	x										
			⁴ A			x	(⁵)		⁴ A			x						
x	x		B	x					B				x					
x	x		B	x	x				C	x	x			x				
		x							C									
x	x	x	B	x					C	x	x							
			B	x					C	x								
x		x	B	x	x	x			C	x	x							
x			B	x	x				C	x	x							
			B			x			C	x								
x									C									
x	x	x	B	x	x				C	x	x							

obtained in Data Access Description No. 27.
 Population and housing data appear on separate files.
 First Count (ZIP code summaries) also have been prepared for enumeration districts, block groups, MCD's/CCD's, and counties.
 Second Count files designated A and B or A, B, and C.
 Third Count files cover the part of the tract which is covered by block summaries.
 Fourth Count files cover places and unincorporated places of 5,000 or more in urbanized areas or of 1,000 or more elsewhere.
 Fifth Count files cover metropolitan counties, central cities, and other cities over 50,000 population. Sixth Count housing files also present data for nonmetropolitan counties



Users who submit frequent census map orders or copy and distribute large quantities of these maps will find the inventory to be of value.

Geographic Code Schemes

All geographic areas are identified on the 1970 census computer tapes only by their numeric codes--names are not used. Users, therefore, require some form of a geographic code scheme to associate the codes for geographic areas with their area names. Codes and the corresponding names for census geographic areas are contained in the following Census Bureau products: The Master Enumeration District List (MEDList), the Geographic Area Code Index (GACI), and the Geographic Identification Code Scheme (GICS).

The Master Enumeration District List, or MEDList, is a listing of the names of political and statistical subdivisions and related geographic codes from the State down to the county subdivision and place level. It also provides codes for unnamed areas below the county subdivision level--tracts, enumeration districts (ED's), and block groups--as well as population and housing total counts for most areas. (See figure 3 for an example of the MEDList.) The MEDList is designed to serve two basic purposes: (1) Furnish area and place names corresponding to the geographic codes which are used on the 1970 census summary tapes and (2) provide official population and housing unit counts for enumeration districts, block groups, and other areas.

A special version of the MEDList containing the latitude and longitude coordinates for the estimated population center points for each of 242,000 enumeration districts and block groups has also been prepared by the Bureau of the Census. The center points, or centroids, were visually estimated from census maps. Coordinate values were then assigned to the points by an electronic digitizer. The coordinates are expressed in decimal degrees carried to four places. The MEDList without coordinates is available for the United States on three reels of tape for \$210; the MEDList with coordinates is sold on a State-by-State basis (one tape reel for each State) at a cost of \$70 per reel. Both products are available from the Data User Services Office, Bureau of the Census.

An abbreviated version of the MEDList, called the Geographic Area Code Index (GACI), is a source of names and related geographic codes for States, counties, places, and county subdivisions (MCD's/CCD's). No area smaller than the county subdivision and place is referenced in the GACI. Population and housing unit counts do

not appear. The GACI is useful for persons not requiring all of the information included in the MEDList. The GACI for the entire United States is available from the Data User Services Office on one reel of tape for \$70 or on one reel of microfilm for \$8.

The 1970 Geographic Identification Code Scheme (GICS) is a four-volume guide to the geographic codes for the component parts (county subdivision and larger areas) of each State. Each volume reports on a different region of the country (Northeast, North Central, South, and West). The information published in the GICS is also available from the MEDList and GACI computer tapes. For each State within a region the GICS presents two tables. Table 1, arranged by counties within the State, shows the following codes, as appropriate, for counties, county subdivisions, and places: State, county, SMSA, MCD or CCD, place, place description, and place size. Table 2 presents alphabetically all the places within the State with their corresponding county, county subdivision, and place codes. A third table, shown once for each volume, presents SMSA and urbanized area codes for the entire United States. (See figure 4 for illustration of tables.) Copies of the GICS may be purchased from the U.S. Government Printing Office for the following prices: Northeast, \$1; North Central, \$1.75; South, \$1.50; and West, 50 cents.

Some of the codes included in the MEDList, GACI, and GICS are codes that have been standardized for use by all Federal agencies in the exchange of computer-readable information. The Federal standard codes in the Bureau products noted above include State, SMSA, county, and congressional district. (The Bureau of the Census includes this last code only in the MEDList). These codes are published by the National Bureau of Standards, U.S. Department of Commerce, in a series known as the Federal Information Processing Standards Publications (FIPS PUB) and are sold by the U.S. Government Printing Office. The titles and prices for these reports are:

FIPS PUB 5-1	State Codes	20 cents
FIPS PUB 6-1	County Codes	45 cents
FIPS PUB 8-2	SMSA Codes	30 cents
FIPS PUB 9	Congressional District Codes	10 cents

For some users, the FIPS PUB series might be more suitable as a source of geographic codes than the Census Bureau's geographic code schemes, especially if a user is interested in only one set of codes (such as codes for all counties in the Nation) rather than several sets of codes for each State and its component parts (SMSA, minor civil division, and place).

Michigan

Figure 3.-MASTER ENUMERATION DISTRICT LIST (MEDList)

State		Fed. Std. County	County of tab.	CCC	MCD/CCD	Place			SCA	SMSA	Urbanized area	Tracted area	Univ. area		SEA	ESR	CBD	Area name	Tract			ED			Cong. dist.	
1970	1960					Code	Desc.	Size					Prefix	Code					Basic	Suffix	Blk. grp.	Code	Suffix	Urb./rural		Ward
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
26	34	121		1														MUSKEGON								
26	34	121		1	090													Ravenna TWP								
26	34	121		1	090	2275	4	02		5320		5320	1	34062	06	050	1	Ravenna Village	0029			0442		1	09	
26	34	121		1	090		7			5320		5320	1	34062	06	050	1	Remainder of MCD (or CCD)	0029			0443		1	09	
26	34	121		1	095													Roosevelt Park City								
26	34	121		1	095	2345	4	06		5320	5320	5320	1	34062	06	050		Roosevelt Park City								
																	1		0022		1			0	09	
																	1				2			0	09	
																	1				3			0	09	
26	34	121		1	110		7			5320		5320	1	34062	06	050		White Hall TWP								
																	1		0030				0404		1	09
																	1		0036				0405		1	09
																	1		0037				0406		1	09
																	1		0038				0407		1	09
																	1		0040		1				0	09
																	1				2				0	09

Note: Explanation of column heading abbreviations: Federal Standard County; County of Tabulation; Central County Code (CCC); Minor Civil Division (MCD)/Census County Division (CCD); Place Description; Standard Consolidated Area (SCA); Standard Metropolitan Statistical Area (SMSA); Universal Area Code; State Economic

Area (SEA); Economic Sub-Region (ESR); Central Business District (CBD); Block Group; Enumeration District (ED); Congressional District.

Figure 3.—MASTER ENUMERATION DISTRICT LIST (MEDList)

Frame No. 001 0

SCA (10)	SMSA (11)	Urbanized area (12)	Tracted area (13)	Univ. area		SEA (16)	ESR (17)	CBD (18)	Area name (19)	Tract		ED			Ward (26)	Cong. dist. (27)	1970 counts	
				Basic (20)	Suffix (21)					Blk. grp. (22)	Code (23)	Suffix (24)	Urb./rural (25)	Housing (28)			Pop. (29)	
									MUSKEGON							49831	149493	
	5320		5320	1	34062	06	050	1	Ravenna TWP								650	2102
	5320		5320	1	34062	06	050	1	Ravenna Village	0029			0442		09		250	801
									Remainder of MCD (or CCD)	0029			0443	1	09		400	1301
	5320	5320	5320	1	34062	06	050		Roosevelt Park City								633	2578
								1	Roosevelt Park City	0022	1			0	09		633	2578
								1			2			0	09		200	885
								1			3			0	09		312	1175
	5320		5320	1	34062	06	050		White Hall TWP						09		121	518
								1		0030			0404	1	09		581	1930
								1		0036			0405	1	09		30	90
								1		0037			0406	1	09		40	125
								1		0038			0407	1	09		72	150
								1		0040	1			0	09		60	130
								1			2			0	09		165	625
														0	09		214	810

heading abbreviations: Federal
ation; Central County Code (CCC);
sus County Division (CCD); Place
d Area (SCA); Standard Metropoli-
versal Area Code; State Economic

Area (SEA); Economic Sub-Region (ESR); Central Business District
(CBD); Block Group; Enumeration District (ED); Urban/Rural;
Congressional District.

Address Coding Guides

In conducting the 1970 Census of Population and Housing, two different enumeration methods were used: the mail-out/mail-back type of canvass, taken primarily in the large urban areas of the country, and the conventional house-to-house visit by enumerators in the remainder of the country.

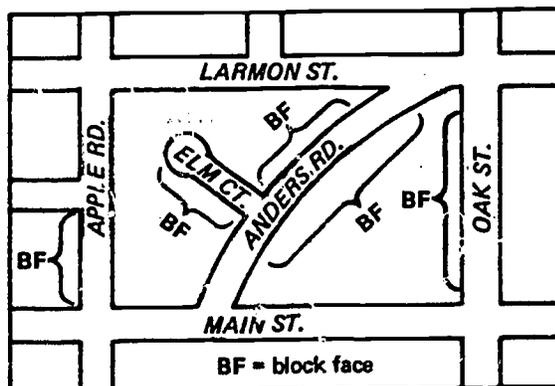
In 145 of the then 233 standard metropolitan statistical areas and in certain adjoining areas the mail-out/mail-back procedure was used. Approximately 60 percent of the Nation's population were canvassed by mail rather than by an enumerator's visit. Householders were asked to complete the census questionnaire in the privacy of their own home and mail it back to a local Census Bureau office. The remainder of the country was enumerated by the conventional house-to-house canvassing procedure which closely resembled enumeration methods of the 1960 and earlier censuses. Census takers visited every housing unit in their assigned areas and obtained the required information at the time of the questionnaires. Census geographic codes for each household were determined and coded on the questionnaire by the enumerator.

In the 145 SMSA's in which the mail-out/mail-back technique was used, a method of assigning specific census geographic codes to a mailing list address was needed. The solution decided upon called for the development of a master computer file for each area which would contain the information necessary to "geocode" the addresses. The file developed for this purpose was named the Address Coding Guide (ACG). The ACG, in essence, performed one of the functions of an enumerator, by providing the "census geography" of each address.

Address Coding Guides are simply computer listings which contain block face records for all streets within the city postal delivery area (which roughly corresponds to the urbanized area) of an SMSA. A block face is one side of a street between two intersections; a block face for a dead-end street is one side of a street from its beginning intersection to the dead end. Other features such as municipal boundaries, rivers, and railroad tracks are not included since there were no housing addresses for units associated with them. Figure 5 illustrates some typical block faces. Each ACG record identifies a single block face by street name, a range of addresses, the block number, and tract, place, and other geographic codes.

Census data users have found the Address Coding Guide valuable as a reference source for

Figure 5.—Typical Block Faces



assigning census geographic codes to local records containing addresses. This geographic coding can be performed by using an address matching program (such as the Census Bureau's ADMATCH program described on page 12) which matches individual addresses contained in local record files to address ranges in the ACG. Once a local record has been linked to its appropriate ACG record, all desired census geographic codes are then assigned to the local record file. (This operation represents computerization of the manual process of looking up geographic codes in a printed street index and posting appropriate codes to records, application forms, etc.) For example, crime incidence records may be coded to census tracts, which would permit a correlation study between crime and census socioeconomic data for tracts. The ADMATCH program would match each individual address of crime occurrence to the appropriate address range in the ACG and, upon a match, assign the desired census tract code contained in the ACG to the crime incidence record.

The ACG can be used in the assignment of codes other than census geographic codes. If local areas (i.e., police precincts, planning districts, neighborhoods) are defined in terms of blocks and/or tracts, codes for these local areas can be added to the ACG. (The addition of any local area codes to the ACG is the responsibility of local users.) The ADMATCH program will assign the local area codes to records containing addresses in the same manner that it assigns census geographic codes.

Address Coding Guides are available on computer tape (IBM-compatible format) at \$70 per tape reel from the Data User Services Office, Bureau of the Census. Most areas covered by the ACG are on one or two reels. The ACG's are also available as computer printed listings

on 11- by 14-inch paper. No pricing has been established for the printed version; however, the cost is normally two to three times that for tape versions.

Geographic Base (DIME) Files

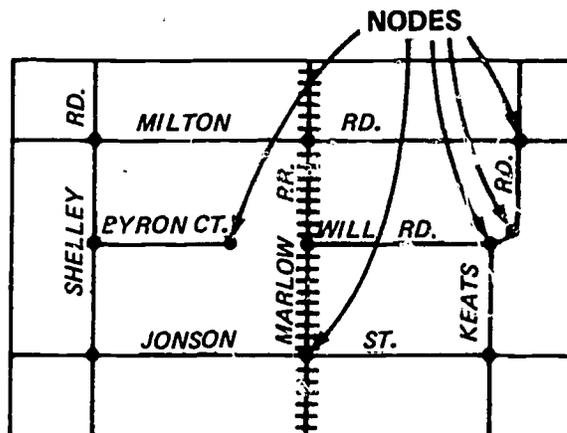
After preparation of the Address Coding Guides was well underway (and the 1970 census date was too near to permit a change in the system), an improved version of the ACG was developed. The improved ACG, which is known as a geographic base file, was developed by the Census Use Study (a small area data research group in the Census Bureau) using a technique called Dual Independent Map Encoding or DIME. The geographic base (DIME) file, commonly referred to as GBF/DIME, is characterized by: (1) An editing capability which improves the accuracy of the files and (2) an increased utility to local users as a result of added features.

The concept underlying the creation of the GBF/DIME files is derived from graph theory. Each street, river, railroad tract, municipal boundary, etc., that bounds a census block can be considered as one or more straight line segments; curved streets or other features can be divided into series of straight line segments. Where streets or other features intersect or change direction, node points are identified. Figure 6 illustrates street segments and nodes. While an Address Coding Guide is constructed on a block face basis, a GBF/DIME file is constructed on a street segment basis. Therefore, while each ACG record contains the appropriate census geographic codes for one side of a street between two intersections, each GBF/DIME segment record contains the appropriate codes for both sides of a street between two nodes. By uniquely identifying each segment (including segments that are not along streets) and each node point, and their geographic relationships, a geographic description which can be checked by computer for accuracy is made possible.

The GBF/DIME concept also serves a further and equally important function. By digitizing the node points (that is, assigning x-y coordinates), graphic outputs either in the form of geographic data displays or map images can be produced by applying computer mapping techniques.

The construction of a GBF/DIME file involves the transcription by local agencies of geographic information (i.e., street patterns, address ranges, area identifiers) from metropolitan maps and other sources into a form that can be read and manipulated by computer. Clerks enter the various types of geographic information on

Figure 6.—Street Segments and Nodes



worksheets which are then keypunched and entered into the computer. After the computer editing, appropriate correction, and insertion of coordinates, the GBF/DIME file is ready for use.

Essentially the same information is contained in both the ACG and GBF/DIME files: Street name, address ranges, block numbers, tract, place, and other geographic codes. The GBF/DIME file has three additional codes: (1) The left-right orientation code separating the census geographic codes for areas on each side of the street segment, (2) the identification numbers of the node points at each end of the segment, and (3) the x-y coordinates of each node point expressed in State plane coordinates (measured in feet relative to the State plane grid system), latitude and longitude (measured in degrees and ten-thousandths of a degree based on distance from the equator), and map set miles (measured in miles and thousandths of a mile from an arbitrary point at the southwest corner of the Metropolitan Map Series sheets.) The GBF/DIME file also contains block boundaries that do not follow streets; these are not contained in the ACG's. (See figure 7 for an example of a GBF/DIME file record.)

Originally, GBF/DIME files were created for 79 of the 88 nonmail SMSA's for use in assigning tract and block numbers to the workplace responses from the place of work question on the 1970 census questionnaire. The Census Bureau and other Federal and local agencies recognized that it would be desirable to add the GBF/DIME features to the already existing ACG's. Each of the 145 SMSA's included in the original ACG program was contacted and invited to participate in the development of a GBF/DIME file; 115 SMSA's agreed to do so. In total, 194 SMSA's (plus part of the San Juan, Puerto Rico

SMSA and the new SMSA of Appleton-Oshkosh, Wis.) participated in the Census Bureau program to develop such files. Of the remaining SMSA's, 32 participated only in the original ACG program and six did not participate in either the ACG or GBF/DIME programs. (See appendix B for a list of SMSA's by their ACG or GBF/DIME status.)

In addition to the geocoding capability described for the ACG's, there are other uses for the GBF/DIME files, as the following examples demonstrate. (1) Since a GBF/DIME file associates coordinates with computerized geographic records, it provides one of the essential elements for computer mapping. Regardless of the computer mapping system being used, spatial identifiers such as the coordinates found in the file are required. (2) A GBF/DIME file can be used in street network analysis. Street networks of varying degrees of detail are required for computerized study and design of routes for garbage trucks, ambulances, and other service vehicles. (3) Computer programs that are

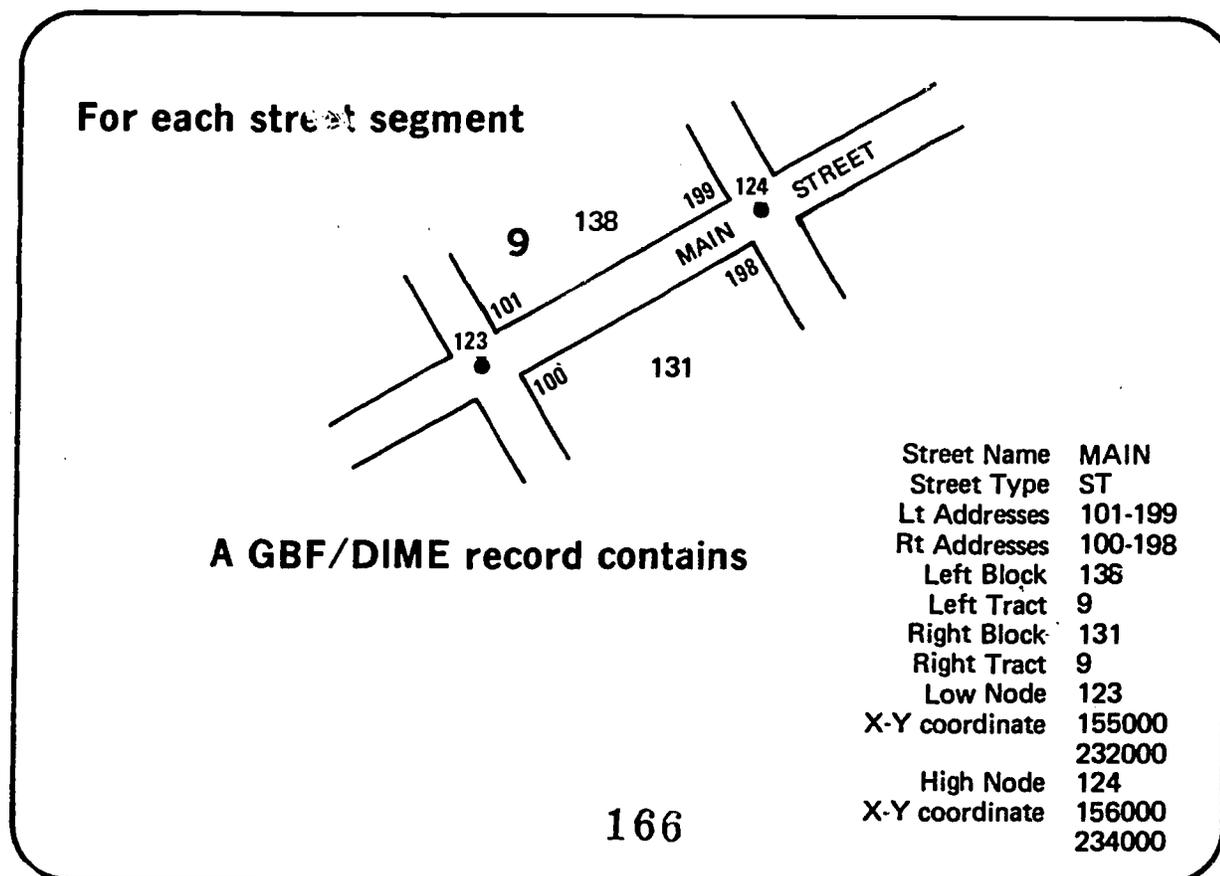
designed to allocate resources to facilities can also take advantage of a GBF/DIME file. For example, the file can be used in allocating people to community fallout shelters or children to schools, determining logical service areas for community health facilities, and evaluating alternative sites for new retail outlets.

The GBF/DIME files are available on computer tape (IBM-compatible format) at \$70 per tape reel, with most areas on one or two reels. These tape reels can be purchased from the Data User Services Office, Bureau of the Census. Printed listings of the files can also be obtained on a cost reimbursable basis--the cost is normally two to three times that for tape versions.

The CUE Program for GBF/DIME File Management

The GBF/DIME files contain a large amount of geographic information. Unfortunately, they

Figure 7.—GBF/DIME File Record



have some errors in them and like the associated source maps (Metropolitan Map Series) from which the files were constructed, they are becoming out of date. Both of these products reflect local urban geography as it existed immediately prior to the 1970 census. To be of most use to local agencies and the Census Bureau, the files and appropriate maps must be updated as well as corrected. To accomplish this, the Bureau has established the CUE program, referring to the Correction, Update, and Extension of the GBF/DIME file.

The purposes of the CUE program are as follows:

1. To make corrections as necessary to produce a complete and accurate GBF/DIME file and Metropolitan Map Series (MMS) for the SMSA's having an existing file.
2. To extend the GBF/DIME files and MMS to cover the entire SMSA. (At present only the urban core of SMSA's are covered.)
3. To establish GBF/DIME files and MMS for those SMSA's where GBF/DIME files and MMS do not currently exist.
4. To develop procedures by which each SMSA can systematically maintain current and accurate GBF/DIME files and MMS series.

Parts of the CUE program are now operational and many local agencies are beginning to correct and update their GBF/DIME files using computer programs developed by the Census Bureau. (See p.14 for descriptions of the FIXDIME and UPDIME computer programs.) Further information on the CUE program can be obtained from the Geography Division, Bureau of the Census, Washington, D.C. 20233.

COMPUTER PROGRAMS FOR GEOGRAPHIC APPLICATIONS

In addition to the 1970 census geographic reference materials previously described, a number of computer programs for geographic applications, most of which pertain to effective use of the geographic base (DIME) files, are available from the Bureau of the Census. Descriptions of these computer programs are presented in this section. Figure 8 shows the relationship between many of these programs. The FIXDIME and UPDIME programs are not shown in figure 8 because they represent a different stage of application.

All of these computer programs are available from the Data User Services Office, Bureau of the Census, Washington, D.C. 20233. Unless otherwise stated, the programs are sold on computer tape for \$70.

DIME (Dual Independent Map Encoding).-- DIME is a computer program package designed to aid local users in the creation of GBF/DIME files for nonmetropolitan cities. The package consists of a clerical procedures manual and a set of computer programs for file creation.

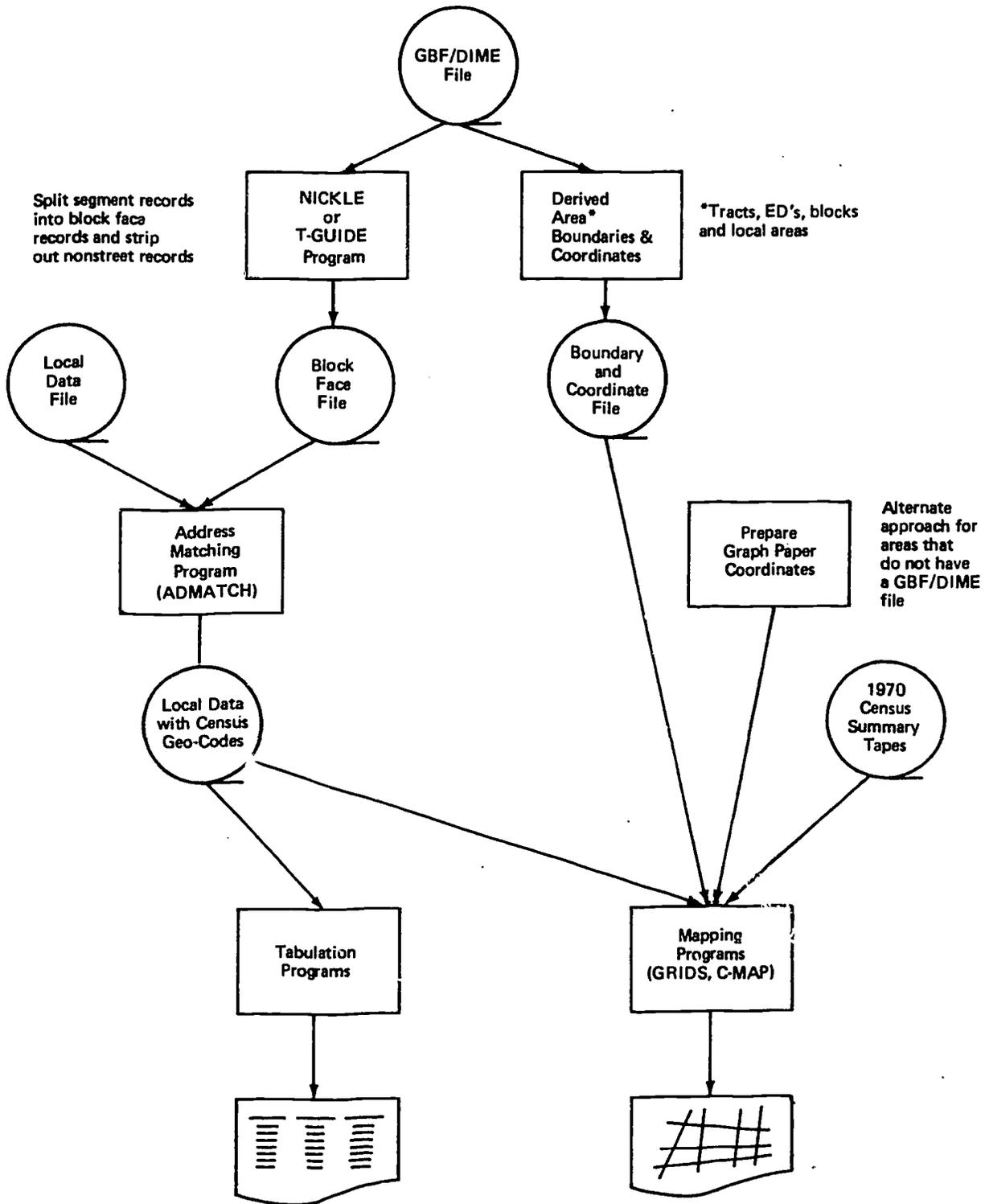
The manual supplies complete information on the clerical coding operation including personnel and space requirements, materials, training and supervising of coders, coding procedures, and problem resolutions. The set of computer programs converts the coded data to a master file for machine use, validates the completeness and accuracy of the clerical work, modifies the master file to correct errors and omissions, and inserts coordinates into the file.

The programs are written in ANSI standard FORTRAN IV for users of almost any computer system with a minimum core storage of 100K bytes.

ADMATCH (Address Matching).-- ADMATCH is a package of computer programs and documentation designed to assist in the assignment of geographic codes to computerized data records containing street addresses. Geographic codes for areas such as census tracts and blocks can be readily assigned to records in local data files using ADMATCH. ADMATCH compares the individual street addresses of local data files to the address ranges in the ACG or GBF/DIME records and upon a match, attaches the desired geographic codes contained in these files to the local data records. Local data records on crime incidents, school dropouts, new construction, or other matters can then be aggregated to census geographic areas for study in relation to the census data available for these areas.

Users need not be restricted to studying only census geographic areas. By creating equivalency tables that relate census tracts or blocks to local areas such as health districts, traffic zones, and school districts, the codes for these local areas can be added to an ACG or GBF/DIME file. Then ADMATCH can be used to assign these local area codes to records in local files in the same manner that it assigns census geographic codes.

Figure 8.—Relationship of Computer-Programs for Geographic Applications



The ADMATCH program package is written in IBM System/360 Assembler Language. Separate versions are available for use under 16K Disk or Tape Operating Systems (DOS or TOS) and under the Operating System (OS). The minimum core storage requirement is 32K bytes, and a line printer and three magnetic tape or disk units are needed.

NICKLE.--The NICKLE program is designed to split the street segment records of the GBF/DIME file into block face records. (To use ADMATCH or any other type of computer matching program, individual block face records rather than street segment records are required.) The program reads the GBF/DIME file, drops the nonstreet records, and then splits the segment records, thus creating a record for each side of the street (block face) much like records in the Address Coding Guide. The block face records may then be used for input to the ADMATCH program.

NICKLE is written for the IBM 360/40 (DOS) in COBOL. A program listing and record layout for the resulting NICKLE file can be obtained at no cost.

T-GUIDE.--The T-GUIDE program was developed to produce a street index at the census tract level from a GBF/DIME file. The index produced from applying T-GUIDE consists of all streets within each census tract included in the GBF/DIME file, indicating low and high address ranges for each side of the street. The program reads the file, drops all nonstreet records (such as railroad tracts, streams, etc.), splits the street segment records, thus creating a record for each side of the block, and then collapses the address ranges of the block side record along the length of the street within each census tract. This results in an approximate 60-percent reduction in the size of the GBF/DIME files and thereby allows for manual, as well as speedier mechanical, geocoding of census tracts to local data records.

The T-GUIDE program is written for the IBM 360/40 (DOS) in COBOL. A program listing and record layout for the resulting T-GUIDE file can be obtained at no cost.

FIXDIME.--The FIXDIME program was developed in conjunction with the Bureau's CUE program. FIXDIME enables local agencies to perform correction operations upon GBF/DIME files. The program deletes erroneous records, makes corrections in existing records, and adds

new records. All items in the files, with the exception of coordinate values, may be corrected.

The FIXDIME program is written in COBOL Level D for the IBM 360 system under DOS.

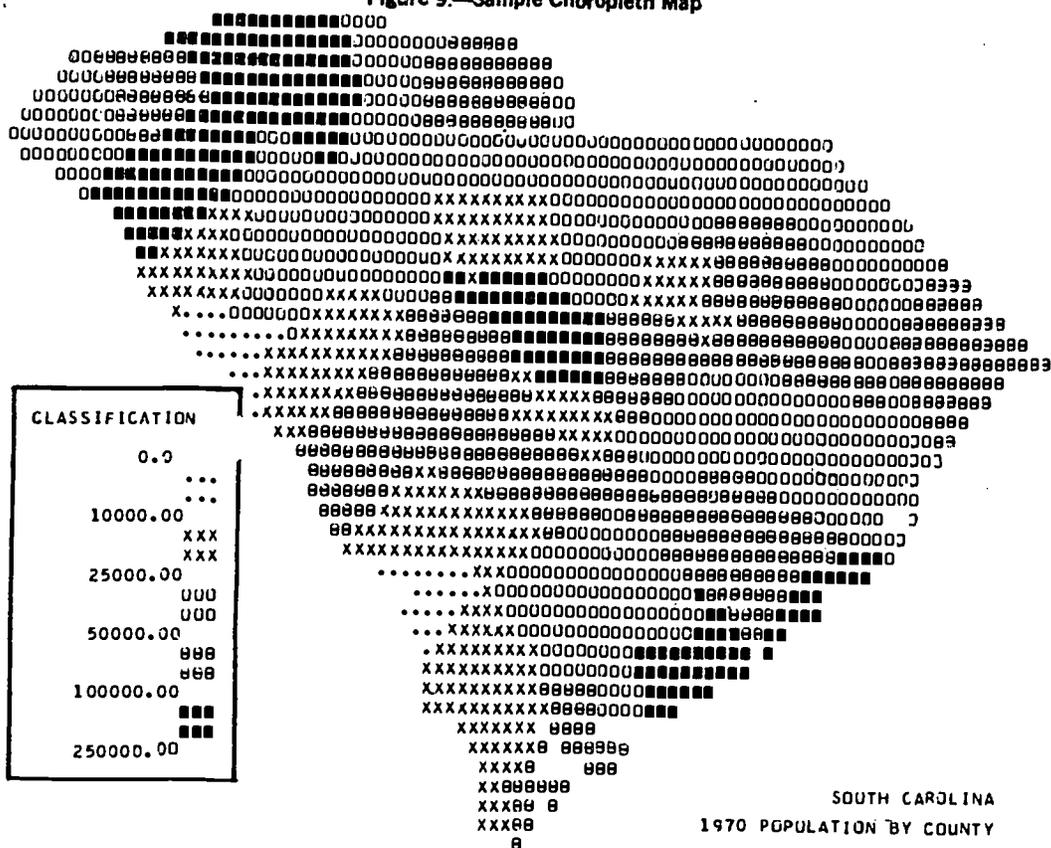
UPDIME.--Once the GBF/DIME files have been corrected using FIXDIME, the updating process of the CUE program can begin. As with the correction process, updating the files can only be carried out by the local agencies. To assist the local agencies in this effort, the Bureau has prepared a FORTRAN IV program called UPDIME. UPDIME makes possible the addition of new street segments to the file as well as the x-y coordinates for the new segments. It also contains a block chaining edit which detects the structural defects (e.g., missing street segments) in the GBF/DIME file. The UPDIME program is expected to be available in mid-1974.

GRIDS.--The Grid Related Information Display System (GRIDS) is a generalized computer graphics system capable of performing a wide variety of mapping tasks. It produces density, shading, and value maps within a grid pattern. A routine supplied with the system allows GBF/DIME file street networks to be printed displaying segments, city and census tract boundaries, and nodes. GRIDS is written in ASA Basic FORTRAN IV and will run on any computer system with a suitable FORTRAN compiler and sufficient storage, regardless of computer word size or operating system. GRIDS will operate on a machine as small as an IBM System/360 Model 30 computer with 32K bytes of storage.

C-MAP (Choropleth Mapping).--C-MAP is a simplified FORTRAN computer mapping program distributed by the Census Bureau to users who have small computers. Data for geographic areas (i.e., States, counties, census tracts) are printed on the map according to a classification of their statistical values. The user specifies the number and limits of the statistical classes and their perspective printer characters. Shading is achieved by overprinting two or more printer characters. (See figure 9 for a sample choropleth map.)

Punchcards are presently the input medium; however, the program can be modified for computer tape or disk input. A program listing and the procedures for preparing the necessary punchcards for the input process are available at no cost.

Figure 9.—Sample Choropleth Map



REFERENCE MATERIALS

Several series of publications issued by the Bureau of the Census provide additional information on the Bureau's geographic programs and activities and keep data users informed of new developments, applications, and products. These publication series are described below.

The results of extensive research conducted by the Bureau's Census Use Study are presented in a series of reports covering such topics as geographic base (DIME) file development, computer mapping, and address matching. An order form listing the various Census Use Study report topics can be obtained from the Publications Distribution Section, Social and Economic Statistics Administration, Washington, D.C. 20233.

The publication series GE-40, *Census Tract Papers*, makes available to all census data users the papers presented at the Census Tract Conferences held periodically to discuss the problems and uses of census tract and related small-area data. Another series of publications, the GE-60 series, *Computerized Geographic*

Coding, presents the proceedings of several conferences which were devoted to the local uses of ACG and GBF/DIME files. This series provides insight as to what local agencies are doing or plan to do with their files. Order forms for both publication series are available from the Publications Distribution Section.

The *1970 Census Users' Guide* is a two-part general reference manual. Part I contains information on census content, data products, geographic materials, and uses as well as a dictionary of census terms and a comparison of printed reports and summary tapes. Part II contains information specifically relating to the use of summary tapes. The Guide can be purchased from the U.S. Government Printing Office at the following prices: Part I, \$2.10; Part II, \$3.70; Parts I and II, \$5.80.

The monthly newsletter, *Small-Area Data Notes*, highlights Bureau of the Census activities, products, and services in the field of small-area census data. It provides information on new publications, the release of data in both printed reports and summary tapes, upcoming surveys

and censuses, developments in census geography, and local applications of census data. *Small-Area Data Notes* is available as part of a subscription package with *Data Access Descriptions* for \$5.50 per year. Orders should be sent to the Publications Distribution Section.

ACQUISITION OF GEOGRAPHIC REFERENCE PRODUCTS AND COMPUTER PROGRAMS

Information on how to acquire the geographic reference products, computer programs, and reference materials discussed in this Data Access Description is included in the descriptions of these materials within the text. All geographic products contained on computer tape sell for \$70 per reel. This price is based on the

cost of reproducing copies, plus the cost of the tape reels, the technical documentation, and the shipping and handling charges.

FURTHER INFORMATION

If further information is desired concerning the matters presented in this publication, address inquiries to:

Director
Bureau of the Census
Washington, D.C. 20233

(Please refer to *Data Access Description* No. 33, Census Geography Series, CG-3.)

APPENDICES

APPENDIX A

CENSUS GEOGRAPHIC AREAS

This Appendix describes the various geographic areas and associated codes contained in the 1970 census tabulations.

States--States are the major political units of the United States. The State codes are 2-digit numbers assigned to the alphabetically arranged 50 States and the District of Columbia.

Counties--Counties are the primary political and administrative divisions of the States. The only major exceptions are Louisiana, where the divisions are called parishes, and Alaska where 29 census divisions have been created as county equivalents for statistical purposes. There are a number of cities which are independent of any county organization and, because they constitute primary divisions within their States, are accorded the same treatment as counties in the preparation of census tabulations. (NOTE: The District of Columbia and the independent cities within the States of Maryland, Missouri, Nevada, and Virginia are all identified as county equivalents.) A total of 3,141 counties and county equivalents were recognized in the 1970 census. A 3-digit numeric code, unique within a State, has been assigned to each of these counties and county equivalents according to their alphabetic sequence.

Minor Civil Divisions (MCD's)--These are primary political and administrative subdivisions of counties in 29 States. The most common type of MCD is the township but there are also towns, precincts, magisterial districts, gores, etc. In the 1970 census there were 28,130 minor civil divisions. Each MCD is assigned a 3-digit numeric code according to the alphabetic sequence of these units within the county. The MCD codes are designated uniquely within county.

Census County Divisions (CCD's)--These are statistical subdivisions of counties in 21 States where minor civil divisions are not suitable for presenting census data. In these States the MCD's are either too small, have lost nearly all meaning locally, or have frequent boundary changes. Over 7,000 CCD's have been established as relatively permanent statistical areas by the Bureau of the Census in cooperation with State and local authorities. CCD's, like MCD's, are assigned unique

3-digit numeric codes according to their alphabetic sequence within the county. The States containing CCD's are: Alabama, Arizona, California, Colorado, Delaware, Florida, Georgia, Hawaii, Idaho, Kentucky, Montana, New Mexico, North Dakota, Oklahoma, Oregon, South Carolina, Tennessee, Texas, Utah, Washington, and Wyoming.

Places--There are two types of places recognized in census tabulations--incorporated and unincorporated. Incorporated places are political units incorporated as cities, towns, villages, or boroughs, regardless of size, with the following exceptions: Towns in New England, New York, and Wisconsin and the boroughs in Alaska are not recognized as places; rather, they are considered to be MCD's. Most incorporated places are subdivisions of minor civil divisions (or census county divisions). Some incorporated places, however, are coextensive with their MCD's or CCD's, while others cross MCD and county lines. In 1970, incorporated places numbered approximately 18,700.

Unincorporated places are closely settled population centers without legally defined corporate limits and having a population of at least 1,000. Each has a definite residential nucleus, and boundaries are drawn by the Bureau of the Census to include, insofar as possible, all the densely settled area. Most of these places were established by State agencies or local census tract committees in cooperation with the Bureau. Over 2,100 unincorporated places were recognized for the 1970 census.

A 4-digit numeric code has been assigned to identify each incorporated and unincorporated place uniquely within each State according to alphabetic sequence. For purposes of classification, places are also assigned place description and place size codes. The place description code is a 1-digit number which describes each type of place on the summary tapes. The codes are: 1 - central city of a standard metropolitan statistical area only, 2 - central city of an urbanized area only, 3 - central city of an SMSA and an urbanized area, 4 - other incorporated place, 5 - unincorporated place, and 7 - not a place (i.e., land area not classifiable in any of groups 1 through 5). Code 6 is not used. The place size code is a 2-digit number which identifies the size group (of 16 groups) of a place based on the

1970 census population count. The size codes are:

00	under 200
01	200 to 499
02	500 to 999
03	1,000 to 1,499
04	1,500 to 1,999
05	2,000 to 2,499
06	2,500 to 4,999
07	5,000 to 9,999
08	10,000 to 19,999
09	20,000 to 24,999
10	25,000 to 49,999
11	50,000 to 99,999
12	100,000 to 249,999
13	250,000 to 499,999
14	500,000 to 999,999
15	1,000,000 or more

Wards--Wards are political subdivisions of many cities and other incorporated places used for voting and representation purposes. Population totals for nearly 4,500 wards have been published for cities with 10,000 or more persons. Each ward is assigned a 2-digit code number uniquely within the city. Usually the ward code is the same as the ward number by which it is identified for local purposes.

Congressional Districts--These political areas are defined by State legislatures or the courts for the purpose of electing congressmen to the U.S. House of Representatives and are subject to change based on population census counts. Forty-one States revised their congressional district boundaries in 1971 and 1972 as a result of the 1970 census. The number of congressional districts is fixed by law at 435. A 2-digit numeric code, which corresponds to the congressional district number assigned in State legislation, is used to identify these areas.

Standard Metropolitan Statistical Areas (SMSA's)--As reported in the 1970 census, standard metropolitan statistical areas consist of a county or group of contiguous counties (except in the New England States) containing at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county(s) containing the central city(s), contiguous counties are included in an SMSA if, according to certain criteria, they are metropolitan in character and are socially and economically integrated with the central city. There is no limit to the number of contiguous counties included in the SMSA as long as they are integrated with

the central city; nor is an SMSA limited to a single State--boundaries may cross State lines.

In the New England States, SMSA's consist of groups of towns and cities instead of counties. The title of an SMSA identifies the central city or cities. SMSA's are defined by the Office of Management and Budget.

The 1970 census data were tabulated for a total of 247 SMSA's. A 4-digit numeric code is assigned to each SMSA. The sequence of these codes reflects the alphabetic sequence of all SMSA's in the country. A map of the United States delineating SMSA's recognized in the 1970 census appears at the end of this appendix. NOTE: Additional SMSA's were created during the period of 1971-1973; the total number is presently 267.

Urbanized Areas--An urbanized area consists of a central city (or "twin cities") of 50,000 inhabitants or more plus the surrounding closely settled incorporated and unincorporated areas which meet specific criteria of population size or density. Urbanized areas differ from SMSA's in that rural portions of the counties composing an SMSA are excluded, as are those places which are urban in nature but separated by rural territory from the densely populated area surrounding the central city. There is generally one urbanized area in each SMSA. Because urbanized areas are defined on the basis of the population distribution at the time of a census, their boundaries tend to change in each census. There are 252 urbanized areas defined in the 1970 census. A 4-digit numeric code is assigned to each urbanized area in the country. With a few exceptions, each urbanized area is identical in name and code with the SMSA with which it is associated.

ZIP Code Areas--These are special areas that have been established by the U.S. Postal Service to facilitate the delivery of mail. ZIP code areas do not coincide with census areas and change according to postal requirements. Their boundaries do not necessarily follow clearly identifiable physical features. Since ZIP code areas were developed within the last decade, the 1970 census is the first census to provide data for these areas. ZIP code areas are identified by 5-digit codes. The first three digits indicate a major city or sectional distribution center; the last two digits signify a specific post office's delivery area within the

center. There are 788 3-digit areas and about 39,000 5-digit areas in the United States.

Census Tracts--Tracts are statistical subdivisions most of which are within SMSA's. There are also tracts in a limited number of areas outside of SMSA's. Tract boundaries are determined by a local committee, subject to approval by the Bureau of the Census; they do not cross county lines. Tracts were designed initially to be relatively homogeneous with respect to population characteristics, economic status, and living conditions. The typical tract has about 4,000 to 5,000 residents. All SMSA's recognized at the time of the 1970 census were completely tracted and include about 32,000 tracts. Over 100 counties, cities, or parts of counties outside SMSA's are also tracted and include about 2,300 census tracts. Each tract is identified by a 6-digit number which also serves as the tract code. The first four digits identify the basic tract number. Generally, the last two digits are used to identify two or more tracts formed from what was originally a single tract. The census tract code is always unique within county, usually unique within SMSA, and in a few instances, unique within State.

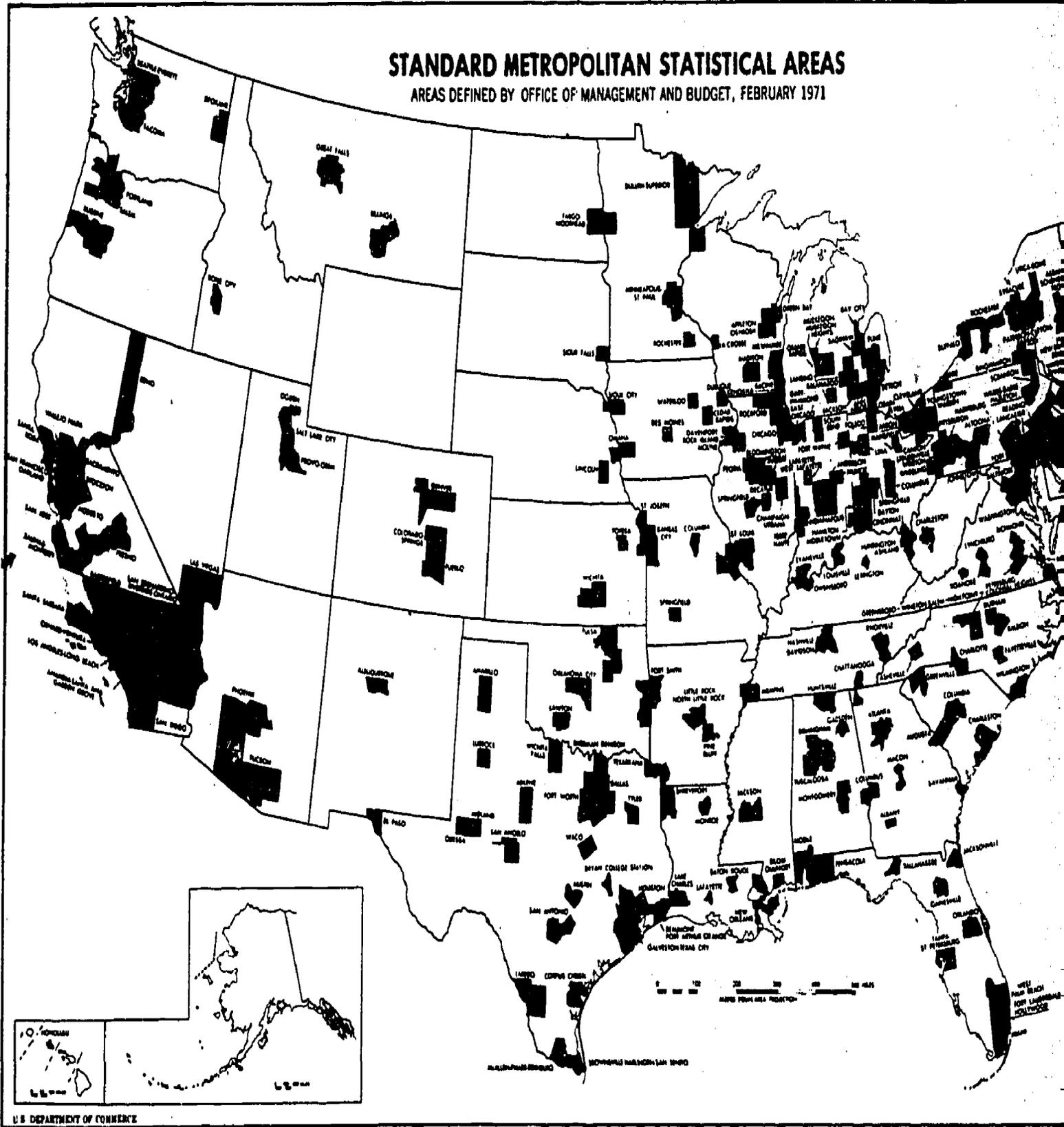
Enumeration Districts (ED's)--These are small areas defined by the Census Bureau, which have an average population of about 800. ED's are newly defined with each census for use as administrative units in the control of census operations. They never cross the boundary of a city, township, or other area (except city blocks) for which census data are tabulated. Some census tabulations are prepared for ED's; in the 1970 census, there are approximately 142,000 ED's for which data have been tabulated. In the larger metropolitan areas, where the census was taken by mail rather than by enumerators, block groups were used as tabulation units in place of ED's. Each ED is assigned a 4-digit code unique within the county. In addition, a one-letter suffix may appear, relating to ED's which have been split.

Block Groups--Block groups are tabulation units, defined by the Census Bureau, which are used only in the census-by-mail areas. The designation "block group" was new in 1970. A block group is a combination of contiguous city blocks and generally has a population of about 1,000. They are subdivisions of census tracts and are defined without regard to the boundaries of political or administrative areas, such as cities or minor civil divisions. Block groups that crossed one or more of these boundaries were split in tabulation and the resulting parts are also tabulated separately. For the purpose of providing small-area census data, block groups are the equivalent of enumeration districts in the built-up portions of the census-by-mail areas. The estimated total number of block groups is 100,000. Each block group is identified by a 1-digit numeric code which is unique within a census tract and is determined by the first digit of the 3-digit block number. For example: Block group "1" would contain any block in range 101-199, block group "2" in range 201-299, etc.

Blocks--Blocks are usually well defined pieces of land bounded by streets or roads. However, they may be irregular in shape and may be partially bounded by railroad tracks, streams, or other nonstreet features. Blocks do not cross census tract boundaries but may cross other boundaries such as city limits. Statistics for blocks are tabulated for all SMSA cities of 50,000 or more (for SMSA's existing at the time of the census) and the urbanized areas of these cities. The Bureau also collected and tabulated data for blocks on a contract basis in over 900 areas outside urbanized areas. (For a list of these contract block areas, see *Data Access Description* No. 15, available on request from Data User Services Office. A total of approximately 1,700,000 blocks were identified for the 1970 census tabulations. A 3-digit numeric code is assigned to each block; this code is unique within census tract.

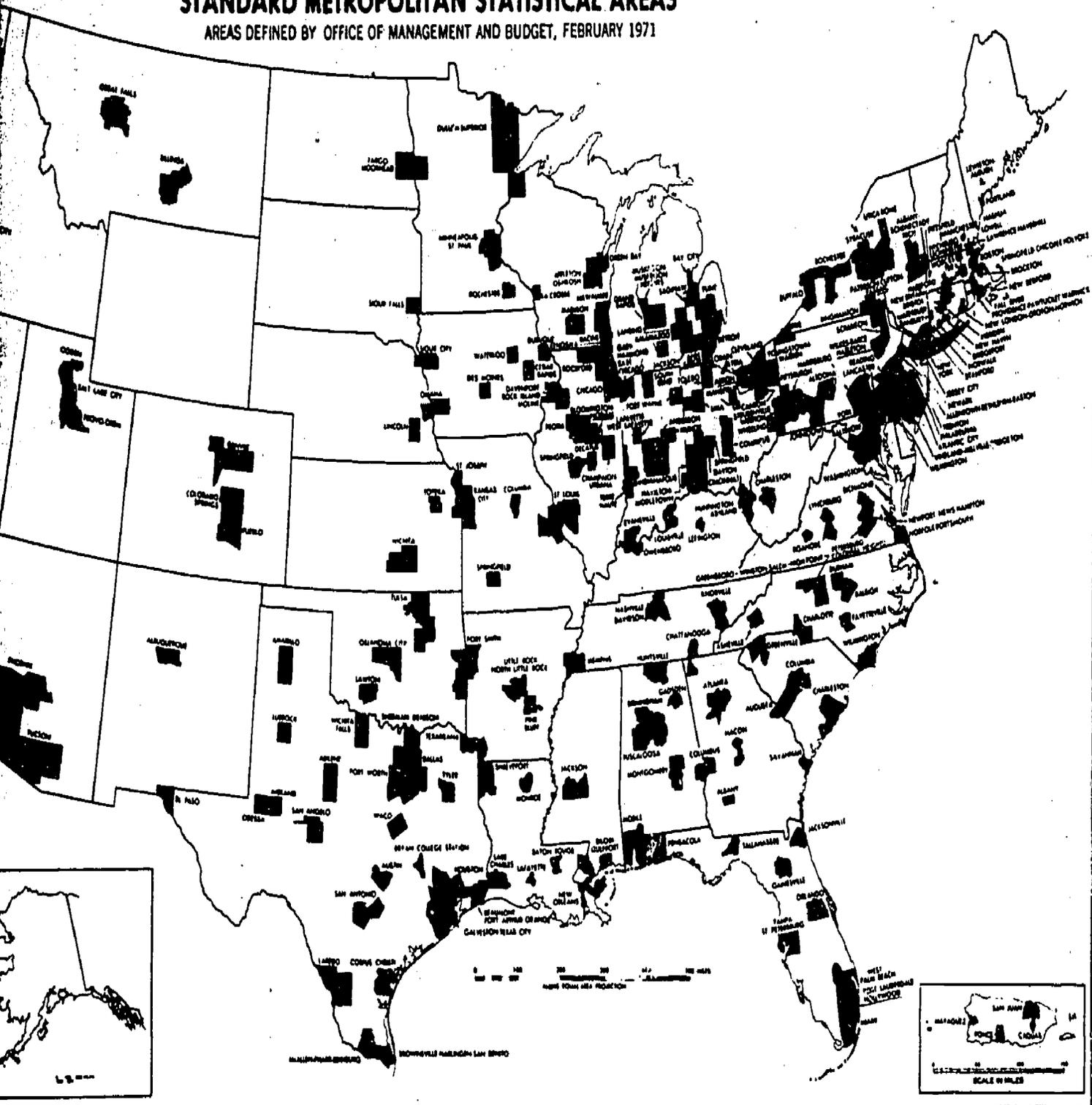
SMSA MAP

STANDARD METROPOLITAN STATISTICAL AREAS
AREAS DEFINED BY OFFICE OF MANAGEMENT AND BUDGET, FEBRUARY 1971



STANDARD METROPOLITAN STATISTICAL AREAS

AREAS DEFINED BY OFFICE OF MANAGEMENT AND BUDGET, FEBRUARY 1971



APPENDIX B

LIST OF AREAS WITH ACG OR GBF/DIME FILES

The following list is presented by SMSA name and shows, by means of a code identification whether the area has an ACG or GBF/DIME file. Included in the list are those SMSA's which do not have either file. The codes are as follows:¹

Code	Status
1	SMSA has GBF/DIME file
2	SMSA has ACG file
3	SMSA has neither ACG nor GBF/DIME file.

CODE	SMSA TITLE
1	Abilene, Tex.
1	Akron, Ohio
1	Albany, Ga.
2	Albany-Schenectady-Troy, N.Y.
1	Albuquerque, N. Mex.
1	Allentown-Bethlehem-Easton, Pa.-N.J.
1	Altoona, Pa.
1	Amarillo, Tex.
1	Anaheim-Santa Ana-Garden Grove, Calif.
2	Anderson, Ind.
1	Ann Arbor, Mich.
1	Asheville, N.C.
1	Atlanta, Ga.
2	Atlantic City, N.J.
1	Augusta, Ga.-S.C.
1	Austin, Tex.
1	Bakersfield, Calif.
1	Baltimore, Md.
1	Baton Rouge, La.
1	Bay City, Mich.
1	Beaumont-Port Arthur-Orange, Tex.
1	Billings, Mont.
1	Biloxi-Gulfport, Miss.
1	Binghamton, N.Y.-Pa.
1	Birmingham, Ala.
2	Bloomington-Normal, Ill.
1	Boise City, Idaho
1	Boston, Mass.
2	Bridgeport, Conn.
1	Brockton, Mass.

¹The list is based on SMSA's as they existed at the time of the 1970 census (April 1, 1970). The area of Appleton-Oshkosh, Wisconsin, which was not an SMSA at the time of the 1970 census, does have a GBF/DIME file. Although not on the list it has since been designated an SMSA.

CODE	SMSA TITLE--Con.
1	Brownsville-Harlingen-San Benito, Tex.
2	Buffalo, N.Y.
1	Canton, Ohio
1	Cedar Rapids, Iowa
1	Champaign-Urbana, Ill.
1	Charleston, S.C.
1	Charleston, W. Va.
1	Charlotte, N.C.
1	Chattanooga, Tenn.-Ga.
1	Chicago, Ill.
1	Cincinnati, Ohio-Ky.-Ind.
1	Cleveland, Ohio
1	Colorado Springs, Colo.
1	Columbia, S.C.
1	Columbus, Ga.-Ala.
1	Columbus, Ohio
1	Corpus Christi, Tex.
1	Dallas, Tex.
1	Davenport-Rock Island-Moline, Iowa-Ill.
1	Dayton, Ohio
2	Decatur, Ill.
1	Denver, Colo.
1	Des Moines, Iowa
1	Detroit, Mich.
1	Dubuque, Iowa
1	Duluth-Superior, Minn.-Wis.
1	Durham, N.C.
2	El Paso, Tex.
1	Erie, Pa.
1	Eugene, Oreg.
1	Evanville, Ind.-Ky.
1	Fall River, Mass.-R.I.
1	Fargo-Moorhead, N. Dak.-Minn.
1	Fayetteville, N.C.
1	Fitchburg-Leominster, Mass.
1	Flint, Mich.
1	Fort Lauderdale-Hollywood, Fla.
1	Fort Smith, Ark.-Okla.
1	Fort Wayne, Ind.
1	Fort Worth, Tex.
1	Fresno, Calif.
1	Gadsden, Ala.
1	Galveston-Texas City, Tex.
1	Gary-Hammond-East Chicago, Ind.
2	Grand Rapids, Mich.
1	Great Falls, Mont.
1	Green Bay, Wis.
2	Greensboro-Winston-Salem-High Point, N.C.
1	Greenville, S.C.
1	Hamilton-Middletown, Ohio
2	Harrisburg, Pa.
1	Hartford, Conn.
1	Honolulu, Hawaii
1	Houston, Tex.
1	Huntington-Ashland, W. Va.-Ky.-Ohio

CODE SMSA TITLE--Con.

1 Huntsville, Ala.
 1 Indianapolis, Ind.
 2 Jackson, Mich.
 1 Jackson, Miss.
 1 Jacksonville, Fla.

 2 Jersey City, N.J.
 1 Johnstown, Pa.
 1 Kalamazoo, Mich.
 1 Kansas City, Mo.-Kans.
 1 Kenosha, Wis.

 1 Knoxville, Tenn.
 3 Lafayette, La.
 3 Lafayette-West Lafayette, Ind.
 3 Lake Charles, La.
 2 Lancaster, Pa.

 1 Lansing, Mich.
 1 Laredo, Tex.
 1 Las Vegas, Nev.
 1 Lawrence-Haverhill, Mass.-N.H.
 1 Lawton, Okla.

 1 Lewiston-Auburn, Maine
 1 Lexington, Ky.
 1 Lima, Ohio
 1 Lincoln, Nebr.
 1 Little Rock-North Little Rock, Ark.

 1 Lorain-Elyria, Ohio
 1 Los Angeles-Long Beach, Calif.
 1 Louisville, Ky.-Ind.
 1 Lowell, Mass.
 1 Lubbock, Tex.

 1 Lynchburg, Va.
 1 Macon, Ga.
 1 Madison, Wis.
 1 Manchester, N.H.
 2 Mansfield, Ohio

 3 Mayaguez, P.R.
 1 McAllen-Pharr-Edinburg, Tex.
 1 Memphis, Tenn.-Ark.
 2 Meriden, Conn.
 1 Miami, Fla.

 1 Midland, Tex.
 1 Milwaukee, Wis.
 1 Minneapolis-St. Paul, Minn.
 1 Mobile, Ala.
 1 Monroe, La.

 1 Montgomery, Ala.
 1 Muncie, Ind.
 2 Muskegon-Muskegon Heights, Mich.
 2 Nashville, Tenn.
 1 New Bedford, Mass.

 1 New Britain, Conn.
 2 New Haven, Conn.
 2 New London-Groton-Norwich, Conn.
 1 New Orleans, La.
 1² New York, N.Y.

CODE SMSA TITLE--Con.

2 Newark, N.J.
 1 Newport News-Hampton, Va.
 2 Norfolk-Portsmouth, Va.
 2 Norwalk, Conn.
 1 Odessa, Tex.

 1 Ogden, Utah
 1 Oklahoma City, Okla.
 1 Omaha, Nebr.-Iowa
 2 Orlando, Fla.
 1 Oxnard-Ventura, Calif.

 2 Paterson-Clifton-Passaic, N.J.
 2 Pensacola, Fla.
 1 Peoria, Ill.
 1 Philadelphia, Pa.-N.J.
 2 Phoenix, Ariz.

 1 Pine Bluff, Ark.
 1 Pittsburgh, Pa.
 1 Pittsfield, Mass.
 3 Ponce, P.R.
 1 Portland, Maine

 1 Portland, Oreg.-Wash.
 1 Providence-Pawtucket-Warwick, R.I.-Mass.
 1 Provo-Orem, Utah
 1 Pueblo, Colo.
 1 Racine, Wis.

 1 Raleigh, N.C.
 1 Reading, Pa.
 1 Reno, Nev.
 2 Richmond, Va.
 1 Roanoke, Va.

 1 Rochester, N.Y.
 1 Rockford, Ill.
 1 Sacramento, Calif.
 1 Saginaw, Mich.
 1 St. Joseph, Mo.

 1 St. Louis, Mo.-Ill.
 1 Salem, Oreg.
 1 Salinas-Monterey, Calif.
 1 Salt Lake City, Utah
 1 San Angelo, Tex.

 1 San Antonio, Tex.
 1³ San Bernardino-Riverside-Ontario, Calif.
 1 San Diego, Calif.
 1 San Francisco-Oakland, Calif.
 1 San Jose, Calif.

 1 San Juan, P.R.
 1 Santa Barbara, Calif.
 1 Savannah, Ga.
 1 Scranton, Pa.
 1 Seattle-Everett, Wash.

 1 Sherman-Denison, Tex.
 1 Shreveport, La.
 1 Sioux City, Iowa-Nebr.
 1 Sioux Falls, S. Dak.
 1 South Bend, Ind.

²Only Nassau and Suffolk counties have a GBF/DIME file.

³Only San Bernardino County has a GBF/DIME file.

CODE SMSA TITLE--Con.

1 Spokane, Wash.
 2 Springfield, Ill.
 1 Springfield, Mo.
 1 Springfield, Ohio
 1 Springfield-Chicopee-Holyoke, Mass.-Conn.

2 Stamford, Conn.
 1 Steubenville-Weirton, Ohio-W. Va.
 1 Stockton, Calif.
 2 Syracuse, N.Y.
 1 Tacoma, Wash.

1 Tallahassee, Fla.
 1 Tampa-St. Petersburg, Fla.
 1 Terre Haute, Ind.
 1 Texarkana, Tex.-Ark.
 1 Toledo, Ohio-Mich.

1 Topeka, Kans.
 1 Trenton, N.J.
 1 Tucson, Ariz.
 1 Tulsa, Okla.
 1 Tuscaloosa, Ala.

CODE SMSA TITLE--Con.

1 Tyler, Tex.
 1 Utica-Rome, N.Y.
 1 Vallejo-Napa, Calif.
 2 Vineland-Millville-Bridgeton, N.J.
 1 Waco, Tex.

1 Washington, D.C.-Md.-Va.
 2 Waterbury, Conn.
 1 Waterloo, Iowa
 1 West Palm Beach, Fla.
 1 Wheeling, W. Va.-Ohio

1 Wichita, Kans.
 1 Wichita Falls, Tex.
 1 Wilkes-Barre-Hazleton, Pa.
 1 Wilmington, Del.-N.J.-Md.
 3 Wilmington, N.C.

1 Worcester, Mass.
 1 York, Pa.
 1 Youngstown-Warren, Ohio

PUBLICATIONS OF DATA ACCESS DESCRIPTIONS

DAD number	Date of issue	Series number	Title	Current status
3	December 1967	CT-1	General Information About Summary Tapes	See No. 18
4	February 1968	PA-1	Policy Governing Access to Census Bureau Unpublished Data and Special Services	See No. 21
6	April 1968	CT-2	First Count Summary Tapes From the 1970 Censuses of Population and Housing	See No. 13
7	July 1968	CEP-1	Items Contained in the 1970 Censuses of Population and Housing	See No. 14
8	August 1969	CT-3	Second Count Summary Tapes From the 1970 Census of Population and Housing	See No. 26
9	August 1969	CT-4	Third Count (Block) Summary Tapes From the 1970 Census of Population and Housing	See No. 25
10	December 1969	CEP-2	Availability of Place of Work Data in the 1970 Census	See No. 20
11	December 1969	CEP-3	Inclusion of Transient Persons in the 1970 Decennial Census	Current
12	December 1969	CG-1	1970 Census Geography	Current
13	March 1970	CT-2 (Rev.)	First Count Summary Tapes From the 1970 Census of Population and Housing	Current
14	March 1970	CEP-1(Rev.)	Items Contained in the 1970 Census of Population and Housing	Current
15	April 1970	CG-2	Contract Block Statistics Program	Current
16	April 1970	CT-5	Fourth Count Summary Tapes From the 1970 Census of Population and Housing	See No. 22
17	April 1970	CEP-4	Printed Reports From the 1970 Census of Population and Housing	See No. 27
18	June 1970	CT-1(Rev.)	General Information About Summary Tapes	Current
19	August 1970	CEP-5	Printed Reports From the 1970 Census--Housing, Volume II	Current
20	November 1970	CEP-2(Rev.)	Availability of Place of Work Data in the 1970 Census	Current
21	December 1970	PA-1(Rev.)	Census Bureau Unpublished Data and Special Services: Policy and Delineation	Current
22	March 1971	CT-5(Rev.)	Fourth Count Summary Tapes From the 1970 Census of Population and Housing	Current
23	March 1971	CT-6	Fifth Count (ZIP Code) Summary Tapes From the 1970 Census of Population and Housing	Current
24	May 1971	CT-8	Public Use Samples of Basic Records From the 1960 and 1970 Censuses	Current
25	July 1971	CT-4(Rev.)	Third Count (Block) Summary Tapes From the 1970 Census of Population and Housing	Current
26	December 1971	CT-3(Rev.)	Second Count Summary Tapes From the 1970 Census of Population and Housing	Current
27	January 1972	CEP-4(Rev.)	Printed Reports From the 1970 Census of Population and Housing	Current
28	May 1972	CEP-6	Delineation of Problem Housing Areas	Current
29	May 1972	CEP-7	Low-Income Data From the 1970 Census	Current
30	August 1972	CT-7	Sixth Count Summary Tapes From the 1970 Census of Population and Housing	Current
31	November 1972	ECPR-1	Printed Reports Issued by the Bureau of the Census for the Economic, Governments, and Agriculture Censuses	Current
32	May 1973	CEP-8	Subject Reports From the 1970 Census of Population and Housing	Current
33	July 1973	CG-3	1970 Census Geography: Concepts, Products, and Programs	Current



DAD No. 14
March 1970



Data Access Description

Collection, Evaluation, and Processing Series, CEP-1 (Rev.)

U.S. DEPARTMENT OF COMMERCE/Bureau of the Census

Items Contained in the 1970 Census of Population and Housing

Introduction

This Data Access Description (CEP-1 Revised) presents in final form all items to be included in the 1970 Census of Population and Housing. Changes which have been made in the 1970 census questionnaire since the original CEP-1 was released in July 1968 are reflected in this document. Data users should note, in particular, that sampling fractions have been changed from 25, 20, and 5 percent to 20, 15, and 5 percent and that a new 5-percent sample question on Spanish origin or descent has been added.

In addition, this Data Access Description provides historical background on the continuity of the items included in the 1970 census, suggests key reasons for their inclusion, and indicates the questions asked of only a sample of the population.

Legal Basis of Questions on the Census

The law (Title 13, U.S. Code) requires that a person answer census questions to the best of his knowledge. The same law also provides that all information given to the Census Bureau must be held in confidence and may be used only for statistical purposes.

The Bureau may release data in the form of statistical tabulations, and no reports nor any statistics may be released which might disclose information about any individual or household.

The Use of Samples in the Census in Relation to People and Housing Units

PEOPLE

Relatively few questions are asked of all individuals. These few items on relationship to household head, sex, race, age, and marital status permit the accurate count of persons in each area as required by the Constitution for a determination of representation to Congress. These items, called "complete-count" or "100-percent" census items, are the basic facts about people which are used to establish identity so as to insure against double-counting. The complete-count tabulations provide totals of these items (age, race, sex, relationship to household head, and marital status) for the geographic subdivisions of the counties of each State.

All other items about people are obtained from samples. Sampling permits the collection of data about an area which accurately reflect the characteristics of the persons in the area at a much lower cost than obtaining data from all persons. Sample cases are weighted to reflect the sampling percentages. In a tabulation based on the 20-percent sample, for example, all cases have weights which average 5, that is, all figures are multiplied by approximately 5, so the total figures will be estimates for all the people in an area instead of just 20 percent of them. Thus, for a particular area, the presence of one physician in the sample would be tabulated to yield an estimate of five physicians for the area. These characteristics of sample tabulations make identification of particular individuals impossible.

Data Access Descriptions are intended as introductions to means of access to
Census Bureau data for persons with data requirements not fully met by the printed reports.

There will be a 15-percent sample and a 5-percent sample in the 1970 census, and certain questions common to both samples will result in a 20-percent sample. (The size of the area for which the data will be tabulated is an important influence in determining whether a question is asked of everyone or of a sample of the people.) Information required for apportionment purposes and that which is needed for city blocks is collected on a 100-percent basis; that which is to be tabulated for areas as small as census tracts and most counties is to be on a 15- or 20-percent sample basis. The 5-percent sample will provide statistics for larger cities, standard metropolitan statistical areas, larger counties, and for States.

HOUSING UNITS

The basic unit in census sampling is the housing unit. Therefore, the sample percentages (20, 15, and 5) are the same for housing units as for people. For example, in a household where each person answers 15-percent sample questions, 15-percent sample housing information is also obtained. For the complete count, there are more housing unit questions than population questions because of the need for housing data on a city block basis where a sample would not be reliable because of the small number of cases. Housing block data are essential to public and private housing programs, renewal, city planning, and other work related to the physical characteristics of our environment.

1970 Census Subject Items Compared With 1960 Content

The sample percentages for population and housing items included in the 1970 census in comparison with the items in the 1960 census are shown below. Each item is discussed on the page indicated.

<u>Population Items</u>	<u>1960</u>	<u>1970</u>	<u>Page</u>
Relationship to head of household.....	100	100	7
Color or race.....	100	100	7
Age (month and year of birth).....	100	100	7
Sex.....	100	100	7
Marital status.....	100	100	8
State or country of birth.....	25	20	8
Years of school completed.....	25	20	8
Number of children ever born.....	25	20	8
Employment status.....	25	20	9
Hours worked last week.....	25	20	9
Weeks worked last year.....	25	20	9
Last year in which worked.....	25	20	9
Occupation, industry, and class of worker.....	25	20	9
Activity 5 years ago.....	-	20	3
Income last year:			
Wage and salary income.....	25	20	10
Self-employment income.....	25	1 ² 20	5
Other income.....	25	2 ² 20	6
Country of birth - parents.....	25	15	10
Mother: age at birth.....	25	15	10
Years moved into this house.....	25	15	11
Place of residence 5 years ago.....	25	1 ⁵	6
School or college enrollment (public or private)....	25	15	11
Veteran status.....	25	15	11
Place of work.....	25	4 ¹⁵	6
Means of transportation to work.....	25	15	11
Mexican or Spanish origin or descent.....	-	5	4
Citizenship.....	-	5	4
Year of immigration.....	-	5	4
When married.....	25	5 ⁵	7
Vocational training completed.....	-	5	4
Presence and duration of disability.....	-	5	5
Occupation-industry 5 years ago.....	-	5	4

¹Single item in 1960; two-way separation in 1970 by farm and nonfarm income.

²Single item in 1960; three-way separation in 1970 by social security, public welfare, and all other receipts.

³This item is also in the 5-percent sample but limited to State of residence 5 years ago.

⁴Street address included in 1970.

⁵In 1960, whether married more than once and date of first marriage; in 1970, also includes whether first marriage ended by death of spouse.

1970 Census Subject Items Compared With 1960 Content--Continued

<u>Housing Items</u>	<u>1960</u>	<u>1970</u>	<u>Page</u>
Number of units at this address.....	-	6100	5
Telephone.....	25	7100	11
Access to unit.....	100	100	11
Kitchen or cooking facilities.....	100	-	15
Complete kitchen facilities.....	-	10	5
Condition of housing unit.....	100	-	15
Rooms.....	100	100	11
Water supply.....	100	100	12
Flush toilet.....	100	100	12
Bathtub or shower.....	100	100	12
Basement.....	25	100	12
Tenure.....	100	100	12
Commercial establishment on property.....	100	100	12
Value.....	100	100	12
Contract rent.....	100	100	12
Vacancy status.....	100	100	13
Months vacant.....	25	100	13
Components of gross rent.....	25	20	13
Heating equipment.....	25	20	13
Tear structure.....	25	20	13
Number of units in structure and whether a trailer..	20	20	14
Farm residence (acreage and sales of farm products)..	25	20	14
Land used for farming.....	25	-	16
Source of water.....	20	15	14
Sewage disposal.....	20	15	14
Bathrooms.....	20	15	14
Air conditioning.....	5	15	14
Automobiles.....	20	15	14
Stories, elevator in structure.....	20	5	15
Fuel--heating, cooking, water heating.....	5	5	15
Bedrooms.....	5	5	15
Clothes washing machine.....	5	5	5
Clothes dryer.....	5	5	5
Dishwasher.....	-	5	5
Home food freezer.....	5	5	5
Television.....	5	5	7
Radio.....	5	5	15
Second home.....	-	5	5

⁶To be collected primarily for coverage check purposes.

⁷Required on 100-percent for field followup purposes.

1970 Census Items Not Included in the 1960 Census

The items planned as additions for 1970 are listed below. Some of these appeared in years prior to 1960.

POPULATION ITEMS

Activity 5 Years Ago (20 percent). For this new item respondents will be asked what they were doing 5 years ago--were they in the Armed Forces, working at a civilian job or going to college. Of those who report in the 20-percent sample that they were working 5 years

ago, one in four will be asked to state the occupation and industry in which they were employed, thus providing a 5-percent sample for that item.

A major purpose of these questions is to measure employment and job mobility in the five years prior to the census. The aim is to obtain information on gross changes, in contrast to the standard data which provide measures of net changes between two censuses. This question will also be useful in distinguishing streams of migration based on movement into and out of the Armed Forces, to and from college, and into and out of the labor force.

37. In April 1965, was this person— (Fill three circles)

- a. Working at a job or business (full or part-time)?
 Yes No
- b. In the Armed Forces?
 Yes No
- c. Attending college?
 Yes No

Occupation-Industry 5 Years Ago (5 percent).

This item will permit an understanding of the dynamics of manpower allocation and economic opportunity. For the first time analysts can compute meaningful out-migration rates by socioeconomic status and function in the labor force. For depressed areas, such information will be invaluable in delineating the "push" in migration; for growing areas, in measuring the "pull" and identifying the sources of recruitment. These data will give important insight into the actual efficiency of migration as a means of facilitating occupational mobility. This item will also permit analysis of gross as well as net changes in the employment situation of specified population groups such as Negroes, older persons, women, etc.

38. If "Yes" for "Working at a job or business" in question 37— Describe this person's chief activity or business in April 1965.

a. What kind of business or industry was this?

b. What kind of work was he doing (occupation)?

- c. Is he—
- An employee of a private company or government agency...
- Self-employed or an unpaid family worker.....

Mexican or Spanish Origin or Descent (5 percent). This new item will furnish data needed for a more complete understanding of the composition of our population. It may lead to methodological refinement in determining membership in our Spanish-American population.

13 b. Is this person's origin or descent— (Fill one circle)

- | | |
|------------------------------------|---|
| <input type="radio"/> Mexican | <input type="radio"/> Central or South American |
| <input type="radio"/> Puerto Rican | <input type="radio"/> Other Spanish |
| <input type="radio"/> Cuban | <input type="radio"/> No, none of these |

(Item 13a is discussed on page 8.)

Citizenship (5 percent). A question on citizenship was included in 1820, 1830, and every census from 1890 to 1950 (and in 1870, data were

collected on male citizens 21 years of age and over). Because over 5 million immigrants have come to the United States in a 20-year interval, there is a need for basic data on citizenship and the characteristics of aliens.

Information on citizens is useful in the measurement of the extent to which people entitled to vote actually do so and of the assimilation of various categories of the foreign born by naturalization.

16. For persons born in a foreign country—

a. Is this person naturalized?

- Yes, naturalized
- No, alien
- Born abroad of American parents

Year of Immigration (5 percent). A question on year of immigration was included in each census from 1890 to 1930. It permits the classification of the foreign born as long-term residents or recent arrivals. Those concerned with immigration legislation may evaluate effects of previous legislations by comparing the characteristics of immigration before and after the law became effective. There is now particular interest in the effect of the labor force provision in the Immigration Act of 1965.

16 b. When did he come to the United States to stay?

- | | | |
|----------------------------------|----------------------------------|-----------------------------------|
| <input type="radio"/> 1965 to 70 | <input type="radio"/> 1950 to 54 | <input type="radio"/> 1925 to 34 |
| <input type="radio"/> 1960 to 64 | <input type="radio"/> 1945 to 49 | <input type="radio"/> 1915 to 24 |
| <input type="radio"/> 1955 to 59 | <input type="radio"/> 1935 to 44 | <input type="radio"/> Before 1915 |

Vocational Training Completed (5 percent).

This information is needed to assist the Federal, State, and local government agencies in locating new vocational training facilities and assessing the potential market for various training programs. A comparison of the incomes and work experience of persons with and without vocational training, for specific occupations, will provide a rough measure of the financial return from an investment in vocational training.

27a. Has this person ever completed a vocational training program?

For example, in high school; as apprentice; in school of business, nursing, or trades; technical institute; or Armed Forces schools.

- Yes No— Skip to 28

b. What was his main field of vocational training? Fill one circle.

- Business, office work
- Nursing, other health fields
- Trades and crafts (mechanic, electrician, beautician, etc.)
- Engineering or science technician; draftsman
- Agriculture or home economics
- Other field— Specify 7

Presence and Duration of Disability (5 percent).

A question on disability was asked in 1880 and 1890, and one on duration of disability was also asked in 1890, but they have not been included in a census in the 20th century. Questions on this subject will show whether the person has a serious health condition which limits the amount or kind of work he can do, and how long it has lasted. The data will meet an urgent need by government and volunteer agencies for a factual basis on which to make an efficient allocation of billions of dollars annually for the assistance of disabled persons.

28a. Does this person have a health or physical condition which limits the kind or amount of work he can do at a job?

If 65 years old or over, skip to question 29.

- Yes
 No

b. Does his health or physical condition keep him from holding any job at all?

- Yes
 No

c. If "Yes" in a or b— How long has he been limited in his ability to work?

- | | |
|--|--|
| <input type="radio"/> Less than 6 months | <input type="radio"/> 3 to 4 years |
| <input type="radio"/> 6 to 11 months | <input type="radio"/> 5 to 9 years |
| <input type="radio"/> 1 to 2 years | <input type="radio"/> 10 years or more |

HOUSING ITEMS

Number of Units at this Address (100 percent).

The primary purpose of this item is to help enumerators find housing units which might otherwise be missed in certain types of multi-unit structures.

A. How many living quarters, occupied and vacant, are at this address?

- One
 2 apartments or living quarters
 3 apartments or living quarters
 4 apartments or living quarters
 5 apartments or living quarters
 6 apartments or living quarters
 7 apartments or living quarters
 8 apartments or living quarters
 9 apartments or living quarters
 10 or more apartments or living quarters
 This is a mobile home or trailer

Complete Kitchen Facilities (100 percent).

Complete kitchen facilities are defined as including a range or stove, a mechanical refrigerator, and a sink connected to piped water. This question is used as a component, together with mode of access, in defining a separate housing unit.

H3. Do you have complete kitchen facilities?

Complete kitchen facilities are a sink with piped water, a range or cook stove, and a refrigerator.

- Yes, for this household only
 Yes, but also used by another household
 No complete kitchen facilities for this household

Clothes Washing Machine, Clothes Dryer, Dishwasher, and Home Food Freezer (5 percent). The dishwasher item is new for 1970. Taken together, these appliances indicate levels of living. In addition, information on these items shows the need for water and sewage facilities and provides the data needed for the efficient planning of new utility lines and the modernization of existing facilities.

H27a. Do you have a clothes washing machine?

- Yes, automatic or semi-automatic
 Yes, wringer or separate spinner
 No

b. Do you have a clothes dryer?

- Yes, electrically heated
 Yes, gas heated
 No

c. Do you have a dishwasher (built-in or portable)?

- Yes No

d. Do you have a home food freezer which is separate from your refrigerator?

- Yes No

Second Home (5 percent). "Second" or "vacation" homes are becoming an increasingly large part of the housing inventory. Second homes are of a great variety ranging from rustic cabins to high-rise condominiums. The data are needed by Federal agencies, the Nation's home builders, and financial institutions to determine the effect of this incremental housing demand on planning and program requirements.

H30. Do you (or any member of your household) own a second home or other living quarters which you occupy sometime during the year?

- Yes No

1960 Census Items To Be Expanded in the 1970 Census

The Census Bureau plans to expand the following 1960 items:

Income Last Year--Self-Employment Income (20 percent). This was a single item in 1960.

In 1970 there will be a two-way separation by farm and nonfarm income.

<p>40b. How much did he earn in 1969 from his own nonfarm business, professional practice, or partnership? (Net after business expenses. If business lost money, write "Loss" above amount.)</p>	} \$ _____ .00 (Dollars only)	OR <input type="radio"/> None
<p>c. How much did he earn in 1969 from his own farm? (Net after operating expenses. Include earnings as a tenant farmer or sharecropper. If farm lost money, write "Loss" above amount.)</p>	} \$ _____ .00 (Dollars only)	OR <input type="radio"/> None

(Item 40c is discussed on page 10.)

Income--Other Income (20 percent).
Although this item in 1960, there will be a three-way separation by social security, public welfare, and all other receipts in 1970. The expansion in income detail for the 1970 census will provide new information on the levels and patterns of income of farmers and the composition and characteristics of families receiving public assistance payments.

<p>41. Income other than earnings in 1969— Fill parts a, b, and c. (If exact amount is not known, give best estimate.)</p>		
<p>a. How much did this person receive in 1969 from Social Security or Railroad Retirement?</p>	} \$ _____ .00 (Dollars only)	OR <input type="radio"/> None
<p>b. How much did he receive in 1969 from public assistance or welfare payments? Include aid for dependent children, old age assistance, general assistance, aid to the blind or totally disabled. Exclude separate payments for hospital or other medical care.</p>	} \$ _____ .00 (Dollars only)	OR <input type="radio"/> None
<p>c. How much did he receive in 1969 from all other sources? Include interest, dividends, veterans' payments, stocks, and other regular payments. (See instruction sheet.)</p>	} \$ _____ .00 (Dollars only)	OR <input type="radio"/> None

Place of Residence 5 Years Ago (15 and 5 percent). This question was asked in 1940 and 1960; in 1950 there was a question on place of residence the preceding year. In 1970 this item, in complete detail, will be asked of the 15-percent sample. In addition, this item will be asked in modified form, limited in detail to State of residence 5 years ago, of the 5-percent sample. Inclusion of this question will enable more accurate analyses of the relationship between occupational and geographic mobility.

15-percent sample:

<p>19a. Did he live in this house on April 1, 1965? If in college or Armed Forces in April 1965, report place of residence there.</p>	
<p><input type="radio"/> Born April 1965 or later Skip to 20</p>	<p><input type="radio"/> Yes, this house</p>
<p><input type="radio"/> No, different house</p>	
<p>b. Where did he live on April 1, 1965?</p>	
<p>(1) State, foreign country, U.S. possession, etc. _____</p>	
<p>(2) County _____</p>	
<p>(3) Inside the limits of a city, town, village, etc.?</p>	
<p><input type="radio"/> Yes <input type="radio"/> No</p>	
<p>(4) If "Yes," name of city, town, village, etc. _____</p>	

5-percent sample:

<p>36. In April 1965, what State did this person live in?</p>	
<p><input type="radio"/> This State</p>	
<p>OR</p>	
<p>(Name of State or foreign country; or Puerto Rico, etc.) _____</p>	

Place of Work (15 percent). For 1970 this item will be expanded to include street addresses. Expansion of this item will allow provision of place of work data for traffic zones, census tracts, and other segments of metropolitan areas. Such information is essential to persons planning highway construction and to urban planners generally.

<p>29c. Where did he work last week? If he worked in more than one place, print where he worked most last week. If he travels about in his work or if the place does not have a numbered address, see instruction sheet.</p>	
<p>(1) Address (Number and street name) _____</p>	
<p>(2) Name of city, town, village, etc. _____</p>	
<p>(3) Inside the limits of this city, town, village, etc.?</p>	
<p><input type="radio"/> Yes</p>	
<p><input type="radio"/> No</p>	
<p>(4) County _____</p>	
<p>(5) State _____</p>	
<p>(6) ZIP Code _____</p>	

(Items 29a and b are discussed on page 9 and 29d on page 11.)

When Married (5 percent). Data on whether married more than once and date of first marriage were collected in 1910 and in each census since 1940. In 1970 these same questions and an additional one on how the first marriage of remarried persons was terminated will be asked of a 5-percent sample of the population. These data will be used to measure the permanence of marriage in our society.

24. If this person has ever been married—

a. Has this person been married more than once?
 Once More than once

b. When did he get married? When did he get married for the first time?

Month	Year	Month	Year
-------	------	-------	------

c. If married more than once— Did the first marriage end because of the death of the husband (or wife)?
 Yes No

Television (5 percent). Data on television were collected in the 1950 and 1960 censuses. For 1970, the item has been expanded to obtain data on UHF-equipped television. The inquiry on television is of particular concern to the Federal Communications Commission.

H28a. Do you have a television set? Count only sets in working order.

Yes, one set
 Yes, two or more sets
 No

b. If "Yes"— Is any set equipped to receive UHF broadcasts, that is, channels 14 to 23?
 Yes No

Items Appearing in 1960 and 1970

Although minor changes may have been made in the wording of the 1970 census questions for the following items, they appear in essentially the same form as in the 1960 census.

POPULATION ITEMS

Relationship to Head of Household (100 percent). This information has been collected in each census since 1880.

2. HOW IS EACH PERSON RELATED TO THE HEAD OF THIS HOUSEHOLD?

Fill one circle.

If "Other relative of head," also give exact relationship, for example, mother-in-law, brother, niece, grandson, etc.

If "Other not related to head," also give exact relationship, for example, partner, maid, etc.

Head of household Roomer, boarder, lodger
 Wife of head Patient or inmate
 Son or daughter of head Other not related to head— Print exact relationship →
 Other relative of head— Print exact relationship →

Color or Race (100 percent). Collected in each census since 1790. For Alaska, the racial categories Aleut and Eskimo are substituted for Hawaiian and Korean.

4. COLOR OR RACE

Fill one circle.

If "Indian (American)," also give tribe.

If "Other," also give race.

White Japanese Hawaiian
 Negro or Black Chinese Korean
 Indian (Amer.) Filipino Other— Print race →
 Print tribe →

Sex and Age (month and year of birth) (100 percent). Collected in each census since 1790.

3. SEX

Fill one circle

Male

Female

DATE OF BIRTH					
5. Month and year of birth and age last birthday	6. Month of birth	7. Year of birth			
Print	Fill one circle	Fill one circle for first three numbers		Fill one circle for last number	
Month -----	<input type="radio"/> Jan.-Mar.	<input type="radio"/> 186-	<input type="radio"/> 192-	<input type="radio"/> 0	<input type="radio"/> 5
	<input type="radio"/> Apr.-June	<input type="radio"/> 187-	<input type="radio"/> 193-	<input type="radio"/> 1	<input type="radio"/> 6
Year ----	<input type="radio"/> July-Sept.	<input type="radio"/> 188-	<input type="radio"/> 194-	<input type="radio"/> 2	<input type="radio"/> 7
Age -----	<input type="radio"/> Oct.-Dec.	<input type="radio"/> 189-	<input type="radio"/> 195-	<input type="radio"/> 3	<input type="radio"/> 8
		<input type="radio"/> 190-	<input type="radio"/> 196-	<input type="radio"/> 4	<input type="radio"/> 9
		<input type="radio"/> 191-	<input type="radio"/> 197-		

Marital Status (100 percent). Collected in each census since 1880.

8. WHAT IS EACH PERSON'S MARITAL STATUS?

Fill one circle

Now married
 Widowed
 Divorced
 Separated
 Never married

State or Country of Birth (20 percent). Collected in each census since 1850. The information on State of birth is used in measuring the streams of internal migration from certain regions of the country to other regions, for example, Negroes from the South to the big cities of the North and West.

The Government finds information on country of birth essential in formulating immigration policy and in considering immigration laws. The information is also used by organizations concerned with the welfare of various ethnic groups and provides a measure of assimilation when the population, classified by nativity and country of origin, is tabulated by such characteristics as fertility, education, or occupation.

13a. Where was this person born? If born in hospital, give State or country where mother lived. If born outside U.S., see instruction sheet; distinguish Northern Ireland from Ireland (Eire).

State
 OR
 (Name of State or foreign country; or Puerto Rico, Guam, etc.)

(Item 13b is discussed on page 4.)

Years of School Completed (20 percent). Collected in each census since 1940. The educational level of the population is an important measure of the quality of the manpower pool. Education exerts a major influence in the social and economic condition of the individual. It also indicates the output of the educational system. Statistics on almost every item in the census are tabulated by education (as well as age, color, and sex) because of the information these cross-classifications provide on the relationship between successful completion of various levels of schooling and eventual success in other types of life adjustment.

21. What is the highest grade (or year) of regular school he has ever attended?
Fill one circle. If now attending, mark grade he is in.

Never attended school— Skip to 23
 Nursery school
 Kindergarten
 Elementary through high school (grade or year)
 1 2 3 4 5 6 7 8 9 10 11 12

College (academic year)
 1 2 3 4 5 6 or more

22. Did he finish the highest grade (or year) he attended?

Now attending this grade (or year)
 Finished this grade (or year)
 Did not finish this grade (or year)

Number of Children Ever Born (20 percent). Collected in most censuses since 1890. This item is the only source of census data on the entire number of children a family has had, including any who may have already left home or died. Statistics on children ever born are unique in providing significant information on the current and future trends of population growth through births and how the composition of the population is changing through differences in fertility of various population groups. Such data are used for projecting the age of the future population. In turn, these projections are needed by Federal, State, and local governments and private industry for the planning of various short- and long-range projects.

25. If this is a girl or a woman— How many babies has she ever had, not counting stillbirths? Do not count her stepchildren or children she has adopted.

1 2 3 4 5 6 7 8

9 10 11 12 or more None

Employment Status, Hours Worked Last Week, Weeks Worked Last Year, Last Year in which Worked (20 percent). Although elements of this subject were collected as early as 1820 in the census, the forerunner of the group of questions as they appear today began with the 1880 census. The census is the only source that provides data on employment, unemployment, hours worked, weeks worked, and other work activity characteristics for States, cities, and counties. These data are extensively used in developing and administering manpower training, welfare, education, and other government programs both on a national and local level. The data are widely used in State and local labor market analyses in determining the manpower resources and skills available in an area. The census data provide a much more detailed and comprehensive description of the Nation's work force and its labor reserve than is possible in the monthly data on the labor force.

31a. Has he been looking for work during the past 4 weeks?
 Yes No— Skip to 32

b. Was there any reason why he could not take a job last week?
 Yes, already has a job
 Yes, because of this person's temporary illness
 Yes, for other reasons (in school, etc.)
 No, could have taken a job

32. When did he last work at all, even for a few days?
 In 1970 1964 to 1967 1959 or earlier | Skip
 In 1969 1960 to 1963 Never worked | to 36
 In 1968

(From question 32, for the 5 percent sample, skip to 36; for the 15 percent sample, skip to 37.)

QUESTIONS 29 THROUGH 41 ARE FOR ALL PERSONS BORN BEFORE APRIL 1956 INCLUDING HOUSEWIVES, STUDENTS, OR DISABLED PERSONS AS WELL AS PART-TIME OR FULL-TIME WORKERS

39a. Last year (1969), did this person work at all, even for a few days?
 Yes No— Skip to 41

b. How many weeks did he work in 1969, ~~other~~ full-time or part-time? Count paid vacation, paid sick leave, and other service.
 13 weeks or less 40 to 47 weeks
 14 to 26 weeks 48 to 49 weeks
 27 to 39 weeks 50 to 52 weeks

29a. Did this person work at any time last week?
 Yes— Fill this circle if this person did full- or part-time work. (Count part-time work such as a Saturday job, delivering papers, or helping without pay in a family business or farm; and active duty in the Armed Forces.)
 No— Fill this circle if this person did not work, or did only own housework, school work, or volunteer work. Skip to 30

b. How many hours did he work last week (at all jobs)? Subtract any time off and add overtime or extra hours worked.
 1 to 14 hours 40 hours
 15 to 29 hours 41 to 48 hours
 30 to 34 hours 49 to 59 hours
 35 to 39 hours 60 hours or more

(Items 29c and 29d are discussed on pages 6 and 11 respectively.)

30. Does this person have a job or business from which he was temporarily absent or on layoff last week?
 Yes, on layoff
 Yes, on vacation, temporary illness, labor dispute, etc.
 No

Occupation, Industry, and Class of Worker (20 percent). Data on occupation have been collected in each census since 1850; industry in 1820, 1840, and each census since 1910; and class of worker in each census since 1910. The census is the only source providing data that includes all economically active persons, including such groups as self-employed, unpaid family workers, and private household workers. For States and local areas, tabulations by detailed occupation provide the only information we have on the occupational skills of the labor force. These data are used to formulate economic development programs, to provide data to government and private firms in locating facilities and new plants, as well as for the various manpower programs. The detailed listings of industry and occupation tabulated by other demographic and economic characteristics such as education and income are used in planning manpower training and utilization programs.

33-35. Current or most recent job activity
Describe clearly this person's chief job activity or business last week, if any. If he had more than one job, describe the one at which he worked the most hours.
If this person had no job or business last week, give information for last job or business since 1960.

33. Industry

a. For whom did he work? If now on active duty in the Armed Forces, print "AF" and skip to question 36.

.....
(Name of company, business, organization, or other employer)

b. What kind of business or industry was this? Describe activity at location where employed.

.....
(For example, junior high school, retail supermarket, dairy farm, TV and radio service, auto assembly plant, road construction)

c. Is this mainly— (Fill one circle)

Manufacturing Retail trade
 Wholesale trade Other (agriculture, construction, service, government, etc.)

(From question 33, for the 5 percent sample, skip to 36; for the 15 percent sample, skip to 37.)

34. Occupation

a. What kind of work was he doing?

.....
(For example, TV repairman, sewing machine operator, sprayer painter, civil engineer, farm operator, farm hand, junior high English teacher)

b. What were his most important activities or duties?

.....
(For example, Types, keeps account books, jacks, sells cars, operates printing press, cleans buildings, finishes concrete)

c. What was his job title?

.....

35. Was this person— (Fill one circle)

Employee of private company, business, or individual, for wages, salary, or commissions...

Federal government employee

State government employee

Local government employee (city counts, etc.)

Self-employed in own business, professional practice, or farm—

Own business not incorporated

Own business incorporated

Working without pay in family business or farm

Income Last Year--Wage and Salary Income (20 percent). Collected in each census since 1940. This question and the five others on

self-employment and other income are used to determine the income levels of specific areas measured by the census. Several Federal programs are now based directly on these data. For example, under the Economic Opportunity Act of 1964, and the Elementary and Secondary Education Act of 1965, Federal funds are distributed to States and counties in accordance with formulas that include census income as a basic element.

Census income information (earnings and income other than earnings) is the only source which provides income size distribution data for small areas and the only source which relates such data to social and economic characteristics such as residence, sex, color, education, family type, employment status, industry, occupation, type of income received, and others. It is one of the best indicators of the economic welfare of the population. This information is used widely by businessmen to conduct marketing studies, city planners to formulate urban development and transportation plans, government officials to develop social programs for low income families, and economists to construct State and regional development plans.

40. Earnings in 1969— Fill parts a, b, and c for everyone who worked any time in 1969 even if he had no income. (If exact amount is not known, give best estimate.)

a. How much did this person earn in 1969 in wages, salary, commissions, bonuses, or tips from all jobs? (Before deduction for taxes, bonds, dues, or other items.)

\$⁰⁰
 (Dollars only)
 OR None

(Items 40b and c are discussed on page 6.)

Country of Birth of Parents (15 percent). Collected in each census since 1870.

14. What country was his father born in?

United States

OR

.....
(Name of foreign country, or Puerto Rico, Guam, etc.)

15. What country was his mother born in?

United States

OR

.....
(Name of foreign country, or Puerto Rico, Guam, etc.)

Mother Tongue (15 percent). Collected in each census since 1910 (except 1950). In 1960 only persons born outside the United States were asked to respond to this question. Among other