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U. S. BUREAU OF THE CENSUS.

Census tract manual. Third edition,
revised and enlarged.

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DEPARTMENT OF COMMERCE
Bureau of the Census
Washington 25

U.S. Bureau of the Census

CENSUS TRACT MANUAL

Third Edition, revised
and enlarged

A large part of the new material in this Manual
was prepared by Howard Whipple Green, with
the assistance of Esther M. Wright

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January, 1947

CENSUS TRACT MANUAL

NATURE AND GENERAL USE OF CENSUS TRACTS

Information on a small-area basis is essential for the analysis of modern problems of large cities and for the efficient administration of their municipal, welfare, and commercial enterprises. To meet this need, certain large cities, and sometimes their suburbs, have been divided into census tracts. In current practice, each tract ordinarily contains a population between 3,000 and 6,000. The tracts are permanently established, so that comparisons can be made from year to year and from census to census; they are laid out with a view to approximate uniformity in population and with some regard for uniformity in size; and each is designed to include an area fairly homogeneous with respect to race, national origin, economic status, and living conditions.

Tracts were established in 1940 or earlier for all of the cities which had a population of 250,000 or more in 1930, together with a few smaller cities in which an active local interest had developed. It should be noted, then, that the census tracts are not a part of the uniform system of area subdivision used in the taking of censuses, but are the result, in most cases, of local initiative.

For those cities in which tracts were established in 1930 or earlier census data are already available for two or more decades; and with succeeding censuses, the series of comparable data will be expanded. Likewise local organizations in the cities collect their own data, year by year, and thus establish their own comparative series.

Census tracts provide a common base for all local statistics. Thus, health, juvenile delinquency, recreation, and school data may all be related on a tract basis.

Census tracts make it possible to isolate areas of change within a community which are obscured in the city totals. Tuberculosis rates, for example, may increase in certain tracts while decreasing in the city as a whole. Sales volume may fall off in some tracts while increasing generally. An analysis of the data by census tracts will often show whether changes observed are due to agency policies or to changing population or family characteristics.

Census tracts provide a simple means of relating various phenomena to the economic level of the population. Sales of commodities, bank deposits, birth and death rates, reading habits, crime--all are related to the economic status of the population. Combinations of widely separated census tracts having the same economic status, as measured by such census data as value or rent of home, are therefore frequently more useful to the analyst than an equally large area of contiguous tracts having quite dissimilar population characteristics.

OTHER SMALL-AREA DATA FOR CITIES

Enumeration districts.--An enumeration district is the area assigned to an enumerator in the federal census. Enumeration districts do not cross the boundaries of a county, township, incorporated place, ward, or other political subdivision. Each census tract, in the census tract cities, is composed of one or more enumeration districts.

No data are published for enumeration districts as such, since they have little significance beyond serving as administrative units for the enumeration of the population. In particular, they are not permanent areas, but are changed from census to census, in conformity with changes in population density, etc. The Bureau of the Census makes some tabulations by enumeration districts for control purposes, however. The subjects covered include sex, age, race, nativity, and farm residence of the population and various characteristics of housing. Transcripts of these tabulations, with maps showing the location of the enumeration districts, may be purchased at cost from the Census Bureau.

Blocks.--Certain basic housing data from the 1940 census were published by blocks for those cities which had a population of 50,000 or more in 1930. These data, which appear in a series of Supplements to the First Series Housing bulletins (often referred to as Block Supplements), include classifications by occupancy and tenure, state of repair and plumbing equipment, year built, and average monthly rent or rental value of all dwelling units; number of units occupied by nonwhite households; number of occupied units with 1.51 or more persons per room; mortgage status of owner-occupied dwelling units; and number of residential structures.

ORIGIN AND HISTORY OF CENSUS TRACTS

1910.--The census tract idea was originated by the late Dr. Walter Laidlaw in New York City in 1906. At that time Dr. Laidlaw was directing population studies for the Federation of Churches. He found statistics by boroughs practically useless for his purposes because of the wide diversity of population characteristics within these large areas. Statistics for assembly districts were equally unsatisfactory not only because they included a large, heterogeneous population but because their boundaries were changed from time to time. With the active support of the New York City Tenement House Department and the Department of Health, Dr. Laidlaw undertook the task of dividing the city into 40-acre tracts and persuaded the Bureau of the Census to adopt these areas in the enumeration and tabulation of the 1910 census for New York City. The Bureau of the Census also established

census tracts in the other seven cities having a population of 500,000 or more at that time. These were Baltimore, Boston, Chicago, Cleveland, Philadelphia, Pittsburgh, and St. Louis. New York City, however, was the only city to make use of the data by census tracts.

1920.—Although the Bureau of the Census tabulated census tract data in 1920 for this same list of cities, again only New York City made immediate use of the figures. The tabulations and analytical maps were published by the New York City 1920 Census Committee, Inc., in a large-size volume of 844 pages. About the middle of the decade, Cleveland and Chicago also obtained the census tract tabulations for their cities.

1930.—As the 1930 census approached, ten additional cities became interested in the census tract idea to the extent of laying out tentative tracts and obtaining the approval of these tracts from the Director of the Census, making a total of 18 cities for that census. The new census tract cities were Berkeley, Buffalo, Cincinnati, Columbus, Indianapolis, Los Angeles, Nashville, Syracuse, Washington, and Yonkers.

Organizations or individuals in most of the cities obtained the tabulations by census tracts from the Bureau of the Census for which they paid a sum estimated to cover most of the additional costs involved. In several of the cities, these data were published; in others, copies of the tabulations were made available to local organizations in need of them.

1940.—During the 1930's interest in small-area data was further encouraged, and 42 cities were added to the census tract list. At the time of the 1940 census 60 cities in continental United States¹ had been tracted. These included all but one of the 36 cities of 250,000 inhabitants or more (in 1940) and 25 smaller cities, most of which had a population well in excess of 100,000. More than one-fourth of the Nation's population lived in these cities.

Twenty-five cities have laid out tracts in adjacent suburban areas. In some instances these represent a part or all of the balance of the county; in other instances they include the entire metropolitan district.

The more important items tabulated for census tracts in 1940 were published by the Census Bureau in a series of bulletins, one for each census tract city, this being a change from the procedure in previous censuses, under which the cities receiving the census tract tabulations paid moderate amounts to cover the extra cost involved in taking readings for such small areas, making up the census tract tables, etc. These bulletins were distributed like other census publications. The response to this free service in many of the cities was very disappointing, however, several of them failing even to furnish adequate address lists for the distribution of their bulletins. Consequently, while no definite plans for 1950 have been established,

¹Tracts were also laid out in Honolulu, but since this was done as a part of a plan for setting up tracts in the entire Territory of Hawaii, where local subdivisions of the counties were urgently needed, this city has not been considered as a typical tract city.

there is an inclination to make some modification of the procedure followed in 1940. Consideration is being given to a program under which the cities would pay a substantial part of the extra cost involved in tabulating their census tract data.

A complete list of all the census tract cities, the population of the central city and its adjacent tracted area, if any, the number of tracts in each, the average population per tract, and the date of the first census taken on a tract basis are presented in Appendix A.

CENSUS DATA AVAILABLE BY CENSUS TRACTS

Published data.—In Volume I of the 1940 Population Reports, is given the population of each tracted area by census tracts, with 1930 figures for those cities which had tracts in 1930. There is in addition a map showing the boundaries of the tracts in each area. The census tract maps appear also in the First Series bulletins for the several States—the bulletins which were eventually bound up together to form Volume I.

Following is a list of the items included in the Census Tract bulletin for each city. Specified data for the nonwhite element in the population were published, in supplementary tables, for census tracts having a nonwhite population of 250 or more, as indicated below. In addition there are of course nonwhite data for all tracts in the three classifications involving race, namely, items 1, 2, and 8, in the following series:

1. Race and nativity.
2. Age by race, nativity, and sex. (Age is shown in 5-year groups and certain special age breaks, such as "21 and over.")
3. Years of school completed by persons 25 years old and over, by sex. (Published for nonwhite also.)
4. Employment status and class of worker for persons 14 years old and over, by sex. (Published for nonwhite also.)
5. Major occupation group of employed persons 14 years old and over, by sex. (Published for nonwhite in Southern cities also.)
6. Country of birth of foreign-born white, by sex.
7. Citizenship of foreign-born white 21 years old and over, by sex.
8. Occupancy status and tenure by race of occupants for all dwelling units.
9. Value of owner-occupied units. (Published for nonwhite also.)
10. Estimated monthly rent of owner-occupied units.
11. Contract monthly rent of tenant-occupied units. (Published for nonwhite also.)
12. Average and median monthly contract or estimated rent of all dwelling units.
13. Gross monthly rent of tenant-occupied nonfarm units.
14. Type of structure of all dwelling units.
15. State of repair and plumbing equipment of all dwelling units. (Published for nonwhite also.)

16. Size of household in occupied units. (Published for nonwhite also.)
17. Persons per room in all occupied units and in tenant-occupied units. (Published for nonwhite also.)
18. Radios in occupied units.
19. Refrigeration equipment in occupied units.
20. Heating fuel by type of central heating in occupied units.

The Block Supplement for each tracted city carries three items for census tracts not included in the Census Tract bulletin, namely,

1. Total structures.
2. Dwelling units by year built.
3. Mortgage status of owner-occupied units.

Volume IV of the 1940 Housing Reports also presents by tracts, in table 9, mortgage data for owned homes.

Unpublished data.—In addition to the data published in the Census Tract bulletins, there is considerable material available in tabulated but unpublished form. These tabulations can be obtained from the Bureau of the Census for the cost of transcription or photostating, plus the actual cost of any review or verification which may be necessary before the data can be released.

All 1940 tabulations for small areas, including census tracts, are outlined in complete detail in the "Key to the Published and Tabulated Data for Small Areas." As the title indicates, this booklet shows what tabulations were made and what data were published for small areas. It is available without cost from the Bureau of the Census.

In general, all population items were tabulated by race and nativity and all housing items by occupancy and tenure and color of occupants wherever applicable. This generalization applies to both published and unpublished tabulations. Tabulated but unpublished items for census tracts include:

1. Nativity of minor races.
2. School attendance.
3. Industry group of employed workers 14 years old and over.
4. Exterior material of residential structures.
5. Residential structures by type.
6. Farm or nonfarm location of urban dwelling units.
7. Number of rooms in dwelling units.
8. Lighting equipment.
9. Cooking fuel.
10. Heating equipment.
11. Water supply.
12. Toilet facilities.
13. Bathtub or shower.
14. Whether rent includes furniture.

ADMINISTRATIVE ARRANGEMENTS AND MATERIALS

Committee on Census Enumeration Areas.—A committee on Census Enumeration Areas was established in 1932 by the American Statistical Association to stimulate and develop local interest in the use of

census tract data. At present (Jan., 1947) the members of this committee are:

Howard Whipple Green, **Chairman**, Secretary, Cleveland Health Council and Director, Cleveland Real Property Inventory

C. E. Batschelet, Chief, Geography Division, Bureau of the Census, Washington, D. C.

W. Thurber Fales, Director of Statistical Section, Baltimore City Health Department, Baltimore, Md.

Ernest M. Fisher, Professor, Urban Land Economics, School of Business, Columbia University, New York City

Mrs. Shirley K. Hart, Director of Division of Statistics and Research, Federal Housing Administration, Washington, D. C.

Philip M. Hauser, Assistant Director, Bureau of the Census, Washington, D. C.

Vergil D. Reed, Associate Director of Research, J. Walter Thompson Company, New York City

Leon E. Truesdell, Chief, Population Division, Bureau of the Census, Washington, D. C.

Lent D. Upson, School of Public Affairs and Social Work, Wayne University, Detroit, Michigan

The major effort of this committee prior to 1940 was directed toward extending the number of tracted areas to include all cities of 250,000 inhabitants or more. The committee not only enlisted local interest in census tracts but also gave assistance to local groups in laying out tracts in their cities.

Each year the committee has held sessions in connection with the annual meetings of the American Statistical Association to discuss developments in the use of census tracts. A consistent effort has been made to distribute pertinent information to all interested persons.

Central library.—A library of publications in which census tract data are presented is maintained in Cleveland by Howard Whipple Green. All persons and organizations publishing material by census tracts have been asked to file one copy of each publication in this library. Their cooperation has made this central library of real assistance to persons desiring to study what others have done.

The Bureau of the Census also maintains a similar library of census tract publications.

Local Census Tract Committee and Key Person.—There should be a local Census Tract Committee in each tracted city. This committee should ordinarily comprise not more than five or six people, perhaps beginning with a selection from the larger committee which cooperated in making up the original census tract lay-out. (See p. 9). The committee should share responsibility in preparing and publishing a Census Tract Street Index and also adequate Census Tract Maps. The members should assume primary responsibility for developing census tract use among the group of interests each represents and the committee should serve as a clearing house for the exchange of ideas among the several interests within the city.

The Key Person acts as chairman or secretary of the committee, which should be responsible for choosing his successor upon his resignation or death. He

should be a leader in his community, capable of promoting the use of census tracts and actively engaged in work involving the use of tracts and tract data. He should be a "live wire," have broad community interests, and be in touch with city agencies, civic and welfare organizations, university research people, and the business interests of the city. He should be aware of the available statistical information about his city and have some knowledge of the needs for various types of data.

At the present time, Key Persons are about evenly divided among social agencies, business, universities, and municipal agencies. A list of the Key Persons is given in Appendix B.

Census tract maps.— Ideally, the local committee should have four kinds of maps available for quantity distribution. These include: (1) A street map showing census tracts and all streets; (2) an outline map showing census tracts and names of some boundary streets; (3) an outline map showing census tracts only; and (4) a map showing census tracts and nonresidential areas--parks, cemeteries, and industrial areas. Type (2) maps are published in the 1940 Reports of the Census Bureau and a specimen on a smaller scale is presented as Appendix C.

A detailed street map is required by any agency which covers the community or any part of the community on an address basis. Thus, such a map is required by the Community Fund in laying out its campaign areas, the Visiting Nurse Association for its administrative districts, and the Chamber of Commerce in locating business sites.

Outline maps are equally important because it is only by their use that an agency can present its facts visually for study and demonstration. Items most effectively presented in this manner may include the success of fund collections by area, distribution of services rendered, distribution of retail sales, or more general related information such as increases and decreases of population and distribution of population by economic status, race, age, and education.

Not only are outline maps essential for showing the geographical distribution of such items, but they are equally necessary in portraying visually the relationship between items such as fund collections and economic status, nursing service by type of population, retail sales by economic status, juvenile delinquency by nativity of parents, or any of a thousand and one phenomena under study by the civic, social, and business interests in every community.

The street map with census tract boundaries should be of such size that the street names are easy to read. The smaller the map the cheaper it is to print and the easier to handle. But the smaller the map, the harder the street names are to read.

The streets and street names should be printed in black with the tract boundaries and numbers in red. This means the preparation of two plates for lithographing--a plate showing streets and street names and a plate showing tract boundaries and numbers.

The second plate run alone provides outline maps showing only tract boundaries and numbers. By putting

the boundary street names on a copy of this outline map, one obtains an outline map showing tract boundaries and numbers and names of boundary streets. By shading nonresidential areas on a copy of the outline map, one obtains the fourth type of map, which shows residential and nonresidential areas. These maps may be lithographed to the same scale as the street map or in smaller sizes.

The first plate run in nonphotographic blue with the second plate in red provides a useful working map. Local data may be spotted by actual street locations, but the streets and street names are eliminated when the map is reproduced photographically.

The outline maps should be available in sizes 8-1/2 by 11 and 17 by 22. The latter is preferable because it is easier to work with, and imperfections in spotting and shading are eliminated when the map is reduced to 8-1/2 by 11 in publication.

Parks, cemeteries, and other semipublic properties and industrial areas should be blocked out with some shading which will not be confused with dots or shadings used in showing statistical data.

If the area outside the city limits is tracted, the entire tracted area should be shown on the various maps. In tract maps which include areas outside the central city, the boundaries of municipalities, townships, or counties should be lined more heavily than the other tract boundaries.

The Key Person should also have certain basic analytical maps available for distribution. Those most frequently requested are dot maps of population, families, white and Negro populations shown separately, and maps shaded according to home ownership and economic status. These are base data with which nearly every study starts. It is easier to visualize the usefulness of tracts if these basic factors are already mapped.

Census tract street index.— The census tract street index shows the tract in which every street number is located. It is used to allocate any specific event to the tract in which it occurred or in which the individual concerned resides. Until such an index is available, little, if any, local data will be tabulated on a tract basis. On the other hand, thousands of local records will be coded and tabulated by tracts if the working tools are made readily available.

As the first step in constructing this index, a card should be made for each street, avenue, boulevard, alley, or other thoroughfare, and the range of the possible numbers within each census tract listed on the card against the census tract designation. The street index is made up from these cards arranged in alphabetical order.

The street name should be printed in capital letters or bold type.

If a street is known by two names, it should be listed under each name. If a street name is changed, the old name should also be listed for a reasonable length of time. (The office responsible for distribution of the index should maintain a card file of all changes of street names for cross-reference purposes even after the old names are dropped from the published index.)

If the same street has more than one designation, as both "street" and "avenue," the less important designation should be shown in parenthesis.

If the same street has both north and south or east and west numbers, it should of course be listed twice.

Street numbers should be indented under the street name and should be listed consecutively.

The first and last possible numbers should be used rather than the actual numbers in order to allow for possible new buildings. For example, list 100 to 199 even though actual numbers in the block run from 111 to 167.

In the case of a street which forms the boundary between two tracts, the even numbers will refer to one tract, the odd numbers to the other tract. Attention should be drawn to this fact by adding the word "even" or "odd."

The census tract designation should be printed to the right of the street numbers. The column giving census tract identification should be set as close to the street numbers as possible in order that the eye can shift easily from street number to tract designation.

This index can be printed in narrow columns, 3 to 5 columns to the page. The larger the type the larger will be the number of pages. The smaller the type the smaller will be the number of pages, but the harder it will be to read. The material should not be reduced beyond the point of easy readability. The more addresses each page carries the less frequently a coder will have to turn the pages. Both sides of the page should be used.

Each page should carry in the upper outside corner the names of the first and last streets listed on the two facing pages.

The index should be bound in such a way that it can be opened flat and will not have to be held open while in use.

The census tract location should also be given for hospitals, hotels and apartment houses, office buildings, public and semipublic buildings, schools and colleges, and public housing developments. These should be listed by name in a separate section. The list should be arranged according to category and the specific hospitals, hotels, and so on within each category should be listed in alphabetic order. The street address and tract designation should be given under each name just as street numbers and census tract designations are listed under street names.

Clear and concise instructions on how to use the index should be included. A tract map should also be included.

Following is a suggested form for the street index, according to the principles outlined here:

ABBOTT CT.	ADAMS ST. (PL.)
800-1199..... 02	2700-4899..... 04
ABERDEEN AVE.	ADDISON ST.
700-1299..... 02	1-399..... 01
Even 1300-1498..... 01	400-799..... 02
Odd 1301-1599..... 02	
1600-2099..... 03	ADDISON DR.
2100-2199..... 04	3900-4015..... 09

ALLEN RD.	ARLINGTON ST. S.
	1-499..... 01
	500-799..... 04
ARLINGTON ST. N.	800-1299..... 05
1-499..... 01	
500-1099..... 02	
1100-1599..... 08	

Allocating records to census tracts.— Census data presented by census tracts provide material in themselves for social and economic studies of a community's population. These data are used directly by many municipal agencies, social and welfare organizations, and commercial firms in determining market potentials. The decennial census data should, however, be considered chiefly as a base. To realize the full value of census tracts, local data must be tabulated on a tract basis. Material collected locally can be evaluated against the background of population and housing data provided by the Census. Local series serve to keep the data current and provide data which the Bureau of the Census cannot supply.

If records are filled out "on the spot," the field worker or enumerator should enter the census tract identification at the same time he records the address. This is a very simple procedure and becomes almost automatic especially if the field worker is assigned to a definite area comprising only a few tracts. At first the field worker will refer to a census tract street map, and any enumerator going over a territory only once will certainly need such a map of the area.

If records are coded in the office, a census tract street index is essential. The work will be speeded up appreciably if the records are first sorted alphabetically by street. If the cards are already in some other order for permanent filing, they should be numbered consecutively before being sorted into street order so that they can be rearranged easily and exactly in the original permanent order. The amount of time required for such sorting is more than compensated in the time saved in looking up the street names in the census tract street index.

SPECIFIC USES OF CENSUS TRACT DATA

Important users.—The wide range of application of census tract data is indicated by the list of organizations specifically reported to be using these data, either the basic census statistics or local data classified by census tracts:

Tax-supported agencies: City engineers; departments of education; departments of health; departments of public properties, parks, etc.; departments of public utilities (water, light and power, sewage disposal); departments of public welfare; departments of public works; departments of recreation; fire departments; housing agencies; juvenile courts; planning commissions; police departments; probation commissions; public libraries; sanitary engineers; tax assessors; transit systems; zoning commissions; other city and county agencies; state and federal agencies.

Semipublic agencies: Area development associations; art museums; boy and girl scout organizations; boys' clubs; bureaus of municipal research; camp fire girls; child care agencies; churches and federations of churches; community chests; councils of social agencies; family relief agencies; foundations; health and welfare planning organizations; health councils; hospitals; hospital councils; housing agencies; leagues of women voters; parent-teachers associations; red cross chapters; salvation army; settlement houses; tuberculosis leagues; urban leagues; visiting nurse associations; young men's christian associations; young women's christian associations.

Business interests: Advertising agencies; automobile clubs; banks; chain drug and grocery stores; chambers of commerce; department stores; gas companies; house-to-house selling firms; industrial committees; insurance companies; light and power utilities; manufacturers; marketing research firms; mortgage bankers; newspapers; radio stations; real estate firms; retail stores; savings and loan associations; telephone companies; transportation companies.

Items allocated by tracts.--Local public and semipublic records allocated by tracts include the following:

Accidents, especially traffic and home accidents; births; cases attended by public health nurse, visiting nurse, or other nurses; children attending summer camps; communicable disease cases, especially tuberculosis and venereal disease; condemnations; contributors to public fund collections; crimes; deaths; fires; foreclosures; juvenile delinquency (by place of both residence and of occurrence); memberships in various kinds of organizations; members of churches; patients at maternal and child health centers; patients using facilities of hospitals; patients using out-patient departments of hospitals; permits for new building, conversions, and demolitions; persons participating in specific group recreational and educational activities: Boy scouts, girl scouts, Y.M.C.A., Y.W.C.A., settlement houses, etc.; persons using facilities of public libraries; persons using public playgrounds, golf courses, swimming pools, etc.; public relief cases; school census records; subscribers to blue cross and other hospitalization plans; unemployment compensation cases; votes in elections.

Business records allocated by census tracts include:

Charge customers; depositors in banks; insurance policy holders; origin and destination of users of public transportation; owners of automobiles, refrigerators, etc.; purchasers of all kinds of merchandise; store sales; subscribers to magazines and newspapers; telephone subscribers; users of electricity; users of gas.

To recapitulate, uses of census tract data are of three main types. Census data by tracts serve as a basis for dividing the city into administrative or business areas having homogeneous populations or populations of known characteristics. Local data by

tracts are analyzed against the background of population and housing information provided by the Census. Finally, tracts provide a common small-area base for the comparison of all local data as well as census data.

City planning.--It has become an accepted principle in residential area planning that families find the most satisfactory living arrangements in neighborhoods set apart from each other and from nonresidential areas by existing or proposed major streets or other barriers, not cut by thoroughfares nor cut into by conflicting business and industrial development, and large enough to support and be provided with their own school, recreational and shopping facilities and institutions.² Residential areas are grouped into relatively homogeneous neighborhoods and neighborhoods into communities conforming to census tract boundaries. The areas are designed on the basis of block and census tract data concerning land use, types of dwellings, value and age of dwellings, families per acre, race, country of birth of foreign born, etc.

Citizen participation in civic affairs is believed to be much more alert and active when the municipal government and planning are organized on a relatively small community basis. With this kind of city plan, the activities of municipal and welfare agencies can be better coordinated. Each individual agency in a large city, like a large business concern, must analyze its market if it is to function efficiently.

Transportation.--Traffic surveys and studies of the use of public transportation can be effectively made on a census tract basis. Some cities have provided useful series of maps showing the mode of transportation used by employed persons going to and from work. Plans for future expansion or contraction of transit service must be made on a long-term basis, and the need for a sound basis for estimating future population growth by tracts is imperative. Origin and destination checks may be made on a tract basis with origin and destination zones representing combinations of tracts. Transit companies have sometimes disregarded tracts because transit lines run along main streets which are also tract boundaries. In these instances, the zones can be designed to include census tracts on either side of the main thoroughfares so that all of the territory feeding the line will be included and the transit company will have base population data from census tract publications as well as information collected from riders. Census tract data are also used in selecting stops, especially on express lines.

Housing.--The need for housing data on a small area basis seems almost too obvious to discuss. It is, of course, essential that any agency interested in housing conditions must have detailed information on value, occupancy status, age, state of repair and plumbing equipment, new construction, conversions, demolitions, condemnations, population trends, family movements, and so on.

²"A General Plan of Central Cleveland," Cleveland City Planning Commission, October, 1945.

Health.—A knowledge of the geographical distribution of certain population groups and of the various mortality and morbidity cases is essential to a public health program. "Well-baby" clinics should be located where the babies requiring such service live. Hospital out-patient departments should be distributed throughout the city where they will be convenient to patients. Nursing services should be organized to care for cases in greatest need. Tuberculosis and venereal disease clinics should be located where such cases are prevalent. Furthermore, the characteristics of the "problem" areas should be thoroughly analyzed in order that public health education can be concentrated where it is needed most and slanted to reach the right public. The public health official should know whether he is combating low incomes, poor housing, old-world traditions, ignorance, or just indifference.

Recreation.—Recreational facilities also can be developed wisely only if the administrators have a thorough knowledge of the population distribution, age, education, health, crime rate, existing recreational opportunities, and so on. One Commissioner of Recreation reports, for example, that census tract data readily resolved a recent controversy regarding a proposed site for a new neighborhood house. To demonstrate the relative needs of two areas under consideration, he gave the City Council a series of census tract maps on which he had spotted the number of children 6 to 20 years of age, children under 6--the future "market"--cases of juvenile delinquency, cases of venereal disease, illegitimate births, active clubs and club memberships, commercial recreation facilities including movies, skating rinks, dance halls, pool rooms, and bars, as well as public recreation facilities. These maps, he said, told their own story and the City Council had no doubt where the next neighborhood house should be located.

Public playgrounds, swimming pools, golf courses, and parks should be located and operated in relation to the needs of the population. Similarly, settlement houses, Boys Clubs, Boy Scout, Girl Scout, Campfire Girl organizations, Y.M.C.A., Y.W.C.A., and many others should spot their active memberships against the part of the population to which they appeal in order to see what groups they are missing and in what areas they are needlessly duplicating efforts.

Education.—To supplement the decennial census population data, many school censuses are now taken by census tracts. The school board relies on these data together with tract tabulations of births to estimate both immediate and long-term requirements for school facilities in each area. Census data by tracts also provide basic information on the population characteristics of each school area. Similarly, school authorities require tract data on child health, recreation, juvenile delinquency, and so on. All of these combined with the department's own records of school performance, attendance, and sickness form the basis for determining teaching methods and health, recreation, and social programs designed to meet the needs of each school.

Fire and police.—The fire department spots fires and relates these to neighborhood conditions

conducive to conflagrations. Special control measures may be established according to age and material of structures, heating and lighting equipment common in each neighborhood, density of building, and so on. Census tracts have also been found very useful in analyzing false alarms.

Similarly, the police department establishes details according to the frequency and type of crimes in each area. Especial attention has been given in recent years to areas where juvenile crimes are common. The juvenile court is likewise interested in the neighborhood and population characteristics of areas where these "children in trouble" live.

Libraries.—Libraries, too, find they are visited more frequently if they know their populations and stock their shelves accordingly. The success story of the Norwood Library in Cleveland is especially interesting. A large percentage of the population is of foreign extraction with the Yugoslavs predominating. It was intended that this library should become a cultural center for the neighborhood. The site was selected and the program developed only after intensive study of the population characteristics of the area.

Churches.—Federations of churches in several cities have organized their neighborhood committees on a census tract basis. Many individual churches have analyzed their performance and their opportunities in terms of the census tract of residence of their members and the population characteristics of the area immediately surrounding them. One church, for example, discovered on the eve of moving that its downtown location, which had once been a residential area of large homes later replaced by business, was going through a new phase of development into an apartment house area. This church stayed and today is serving a larger population than ever.

Business uses.—How many persons are there? How many families? How large are the families? Where do they live? Do they own or rent? Do they live in single-family houses, two-family houses, or apartment houses? Do they have telephones, electricity, gas, and running water? What kind of work do they do? What are their incomes? What educational background do they have? Are they white or Negro? Are they foreign born and, if so, what is the country of their birth? These are some of the questions many business men ask about their markets. City totals are frequently of little use to him, but data by census tracts give him the answers by which he can measure his sales performance and evaluate his market potentials.

Certain products are purchased chiefly by home owners. Some products sell best to persons in homes having electricity, gas, oil heat, and running water. Some products sell best in homes equipped with mechanical refrigerators, bathtubs, radios, and central heating installations. With census tracts it is easy to find out where such homes are concentrated and how many there are.

Commodities bought for individual rather than household use also vary in salability. The kind and amount of clothing purchased is related to age, sex, and occupation as well as to income. Reading habits

are related to these characteristics and to educational attainment.

The market analyst will determine these relationships, based upon past performance, in order to define the potential market. The sales department will establish its sales territories in accordance with them. The advertising department will write its advertisements to appeal to the market and select the advertising media which best reach this market.

Retail outlets are located wisely only after careful study of market potentials. Hardware stores, for example, do not have the market potentialities in an apartment house area that they have in a neighborhood of single-family dwellings. A suburban ladies' apparel shop, open from 9 to 5, has little success in an area where most of the women are employed downtown during the same hours. Even types of stores which can reasonably expect success in any location must stock their shelves with the right commodities, the right brands, and the right price-ranges, according to the buying habits of their potential customers. Most small retail outlets depend upon quick turnover of stock. If they find out what sells best entirely through the painful trial-and-error procedure, they may learn too late.

Manufacturers of national brands, of course, are just as much interested in market characteristics as individual retailers. Some cities have regular pantry-inventory surveys to determine not only the commodities but the specific brands purchased in different sections of the city. National concerns regularly analyze sales by areas. Frequently they are surprised to find they are losing ground in some one specific area despite an over-all increase in sales. A study of this one area may quickly reveal the cause of their weakness and serve as a warning against possible future losses in other similar areas.

Newspapers, magazines, and radio stations are constantly analyzing their areas of influence. They want to know their coverage for their own sales promotion purposes. An advertiser wants to know not only the total circulation but also where this circulation is and whether it is in the areas he wants to reach.

Utility companies use census tract data for many purposes. They must know how many people and how many families live in an area, whether they live in single-family or multi-family structures or apartment houses, where vacancies are, what neighborhoods are relatively stable and what neighborhoods are characterized by frequent moves, which areas are likely to decline in population, and which to increase, and which areas may remain approximately the same in population size but change in character as from white to Negro or from single-family to rooming house neighborhoods. These data are essential for planning extension or curtailment of telephone, electric light, gas, and transportation service, planning territories for meter readers and collectors, and for planning sales promotion campaigns. Telephone companies have a special need for tract data since they must install trunk lines and construct exchanges well in advance of the arrival of large populations. This poses a very real problem in suburban areas where population centers may be widely separated.

Finally, any firm interested in real estate finds a veritable gold mine in census tract statistics. The real estate appraiser is interested in property location and neighborhood characteristics and trends. Census tract and block statistics are sometimes the only source of precise information on neighborhood characteristics such as age of neighborhood, economic rating, population trends, prevailing race or nationality, percentage of home ownership, prevailing type of employment (class of worker and occupation), prevailing type of family unit, vacancy trends, average monthly contract or estimated rent, mortgage status of owned homes, etc. From local series he can usually obtain census tract tabulations of new construction, conversions, and demolitions.

It is not possible here to outline in detail the methods of applying block and census tract statistics to many specific public welfare and business problems. This review attempts to show the possibilities. Every agency knows its problems better than any one else. It is hoped that this summary of uses of census tract data may give the reader an idea of their potentialities for him. Other ideas will develop with actual use of the data.

GRAPHIC PRESENTATION OF CENSUS TRACT DATA

The distribution of families, population, educational and nationality characteristics, economic status, telephones, refrigerators, sales of commodities, shopping centers, and many other factors can be presented easily on maps. Maps, like charts, should tell a story at a glance.

Dot maps provide the simplest means of presenting data by census tracts. They are easy to make and easy to understand. (See example in Appendix D.) Leroy and payzant pens of different sizes make dots of different sizes. A drop pen or a bow compass makes circles, which when filled in provide larger dots. Two classifications, such as male and female, may be shown on the same map by using black and red dots, open circles and filled-in circles, or dots and crosses. More than two classifications may be shown by using different colors, but the use of more than two symbols usually creates confusion. It is better to present each on a separate map. Dots should be of uniform size on any one map or on any series of maps. Dots should be spread evenly over the tract, but occasionally it may be desirable to spot some items such as the location of stores by exact address. Dot maps, of course, show only the geographical distribution of absolute numbers.

Cross-hatched or shaded maps are used to show a characteristic for each tract in terms of percentages or averages, such as average monthly rent, or percentages of owner-occupied homes. In black and white maps, the class intervals should be shown by shadings in order of their intensity or by differences in the proportion of area covered by ink. In making colored maps, the colors of the rainbow should be used, with blue indicating low values and red, high values. Percentage change from one date to another may also be shown by means of cross-hatching.

Overlay maps are especially effective in showing relationships. An easy way of comparing one area with the rest of the community is to superimpose an overlay map with the outlines of the specific area under investigation over dot maps and shaded maps showing various facts about the whole community.

Census tract data are especially useful in relating various factors to economic status. Although income statistics are not available by census tracts, average monthly contract or estimated rent is available and usually serves as a good index of economic status. The relation of this factor to other characteristics of the population may be readily determined. From many records which the research worker may want to study, economic status is not available. Sales slips, birth and death records, reportable disease records, and hundreds of others carry no indication of economic status other than the address. Spotting these factors by census tract of address reveals the relationship between them and economic status.

Census tracts may be grouped according to class intervals of contract or estimated rent, or they may be arrayed by magnitude of average rent and divided into groups with equal numbers of families. Halves, fourths, fifths, or tenths are most commonly used. For example, the number of families in Cleveland in 1940 may be classified according to economic status in either of the following ways:

ECONOMIC STATUS OF FAMILIES IN CLEVELAND, OHIO: 1940

Average monthly contract or estimated rent	Percent of families	Average monthly contract or estimated rent	Percent of families
Under \$15.00	0.7	\$ 7.73 - \$18.96	10.0
\$15.00 - \$19.99	8.7	19.35 - 22.00	10.0
20.00 - 24.99	14.4	22.01 - 24.64	10.0
25.00 - 29.99	17.3	24.65 - 27.55	10.0
30.00 - 34.99	22.1	27.56 - 30.66	10.0
35.00 - 39.99	11.8	30.67 - 32.44	10.0
40.00 - 44.99	5.0	32.45 - 35.10	10.0
45.00 - 49.99	5.1	35.11 - 40.90	10.0
50.00 - 54.99	3.3	41.01 - 54.42	10.0
55.00 and over	11.6	55.07 - 202.81	10.0
	100.0		100.0

The practice of relating various factors to economic status by dividing census tracts into economic groups of equal numbers of families has been most effectively developed in Cleveland. Howard Whipple Green uses "economic tenths" in all of his analyses of the Real Property Inventory and in the studies he conducts for the Cleveland Health Council. Other cities have recently begun to use this technique.

Finally, a review of recent studies based upon census tract data prompts a caution to research workers to be sure that they know what they want to show. Often a death rate rather than the absolute number of deaths is the more informative figure for a tract. The percentage of total automobile sales in each census tract is quite a different thing from the percentage of total families in each tract purchasing automobiles. Similarly, the percentage of the city's total refrigerators in each tract does not tell the same story as the percentage of homes having refrigerators in each tract.

A good rule to follow is this: Be sure of what you want to show, make your map clear and simple, and let it tell the story.

NEW CENSUS TRACT AREAS

In connection with the 1950 census additional large cities may be tracted, or the tract scheme may be extended into the suburban areas of more of the present tracted cities. The conditions under which new tract cities will be approved for 1950 have not yet been finally determined. The most important elements receiving consideration will be the size of the city and the indication of wide-spread and active local interest. It is recognized that in a number of cities the extension of tracts into suburban areas would very greatly improve the usefulness of census tract tabulations.

For a city which has not yet been tracted, it will be necessary to organize a local planning committee to do the planning and to negotiate with the Census Bureau. Likewise, it will ordinarily be necessary to expand the permanent census committee, especially by adding representatives of the outside areas, for the work involved in tracting the suburban area.

Local planning committee.—The local planning committees vary greatly in composition from one city to another. The following list indicates some of the types of representation in which are to be found the various cities.

1. An official of the Police Department.
2. An official of the Fire Department.
3. The business manager of a local newspaper.
4. A public utility man.
5. A member of the Real Estate Board.
6. The Secretary or Research Director of the Chamber of Commerce or Board of Trade.
7. The Chief Engineer of the Planning Commission.
8. The Health Commissioner or the Registrar of Vital Statistics of the City Health Department.
9. The Director of the Public Housing Authority.
10. The Executive Secretary or Research Director of the Council of Social Agencies.
11. The Chief Librarian.
12. A professor of sociology in a local college or university.
13. A representative churchman.
14. The superintendent of schools.
15. The president of a local bank.

Before a city is tracted, such a committee should be organized to plan the lay-out of the census tracts in order that there may be general agreement as to the subdivisions which will best serve all the interests of the community. One person should be chosen to assume responsibility for the actual work. If he submits the plans to the committee for discussion from time to time, this will help to forestall serious errors and at the same time everyone will understand the basis of various compromises or apparent peculiarities in the lay-out. If a widely representative committee is active in the planning stages, local organizations are more likely to be ready to make use of census tracts as soon as they are established.

The need for getting all the local interests together in the planning stages cannot be over-emphasized. The Bureau of the Census will base its decisions regarding any tract plan in considerable part upon evidence concerning the support of local organizations which would be expected to use tract data.

If the tract plan includes the entire metropolitan district or county, it is essential to include the county and suburban officials in the planning committee.

Persons or groups of persons proposing to tract a community should be cautioned that the project will take time. A thorough study of existing conditions and probable trends must be made in order to design useful, homogeneous areas. Many agencies will have already divided the community into sections for their own purposes, and it will require much study and negotiation to devise tracts which will meet their needs. If such care is not taken, the planners will soon find that the tracts are not used.

When the Bureau of the Census approves the tract plan and the city officially joins the list of tracted cities, the person who did most of the work usually becomes the Key Person and other members of the Planning Committee are selected to constitute the permanent Census Tract Committee.

Laying out census tracts.—The size of the tracts will necessarily vary in different parts of the city. Ideally, tracts should be as nearly equal in population as possible and should have an average population of about 7,500. The average size of the present tracts is thus somewhat too small. In the densely populated sections of the city, tracts of very small area will have large populations, of course; but in no case should the population of any one tract exceed 12,000. In the outlying sections, on the other hand, tracts of large area may have small populations; but no tract should ordinarily have less than 5,000 population. Size and homogeneity of population and uniformity in characteristics of dwellings rather than area should be the basic criteria in laying out tracts. Each tract, however, should be compact.

When tracting undeveloped parts of the city, the local committee should bear in mind the expected pattern of development so that eventually, after the area is built up, some of the tracts may be further subdivided into tracts more nearly approximating the ideal population. Historical continuity will be maintained because the sum of these new tracts may be compared with the old tract as used in prior censuses. When new territory is annexed to the city, this area should be set up as a new tract or tracts whenever possible and not added to an old tract or tracts.

It is important that the boundary lines of the tracts be definite. These boundary lines should ordinarily be the centers of streets. Rivers, railroad tracks, and park boundaries may be used where these are definite and permanent dividing lines between one section of the city and another. Alleys should not be used since they tend to disappear as the city develops. Neither should "imaginary" or "described" lines be used since they cannot be identified in the field. One part of a tract should not be located on

a high hill and the remainder in a valley since this arrangement would render needlessly difficult the use of the tract lines as boundaries of an administrative district by any agency.

So far as practicable, each tract should contain a population reasonably homogeneous both as to racial characteristics and as to economic status. The type of living accommodations of the area affords the best available index to economic status. It is recognized that the racial and economic characteristics of the population may not be maintained over a long period of years. In general, however, the same changes will occur throughout a small area so that eventually there will again be homogeneity although the characteristics may be different from those of the original population. In any case, any one tract should not originally include areas with widely dissimilar characteristics. It would be unfortunate to have one part of the tract composed of expensive homes and the other part composed of slum dwellings since over-all or average statistics for the tract would not reflect the status of either group.

Especially care should be taken to include all of a given housing development in one tract. If the development is large enough, it may constitute a separate tract.

It is a good idea to allot a single tract to each very large, permanent institution within the city. For example, a large prison, tuberculosis sanatorium, or military installation should be given a tract allocation of its own. Usually, these institutions are not under municipal jurisdiction. Many of them are under an agency set up for the purposes of administering institutions. Other agencies, therefore, exclude these population groups from their administrative planning, operation, and reports. These groups are also frequently excluded from the base population in the calculation of city rates, and they are certainly excluded from the estimates of potential markets for most kinds of businesses.

A few cities have had the same ward boundaries for a long period. In these instances, they have found it advantageous to design tracts to conform with ward boundaries, since many agencies have previously maintained their records on a ward basis and since population data from previous censuses are also available by wards. If ward boundaries are not likely to remain permanent or if they violate the other criteria for tract boundaries, a good design of tracts should not be sacrificed for the sake of conforming to ward boundaries.

If tracts are extended to the suburban area outside the city limits, these tracts should conform to the boundaries of the minor civil divisions (townships, etc.). Each incorporated place, unless very small, should constitute one or more separate tracts. The area outside incorporated places should be divided into tracts with each tract embracing all or a part of the remainder of a minor civil division, depending upon its area and population. In other words, suburban tracts should be so designed that they can be recombined to give totals for the larger incorporated places and for minor civil divisions.

The physical starting point for laying out tracts in a given city is a map of the city drawn on a fairly large scale, say 800 feet to the inch. This map should, of course, show all streets.

A copy of the map showing the enumeration districts used in the last census should be obtained from the Bureau of the Census, together with the tabulations of census data by enumeration districts. In 1940 these tabulations included race, nativity, sex, and age of the population.

Basic housing data were tabulated by blocks in 1940 for cities which had 50,000 inhabitants or more in 1930. The blocks can be combined to make up proposed census tracts. The block data include all dwelling units classified by occupancy status and tenure, state of repair and plumbing equipment, and contract or estimated monthly rent; occupied dwelling units by color of occupants and number reporting more than 1.51 persons per room; mortgage status of owner-occupied units; and number of residential structures. Analytical block maps based on these data are also available for some cities. This information by blocks and enumeration districts will be helpful in defining homogeneous areas.

It may be possible to lay out some of the tracts so that they will be made up of groups of the enumeration districts used in the last census. In this event, the tabulations for enumeration districts can be summarized by tracts for comparison with the next census. No attempt should be made, however, to have the new tracts conform with the old enumeration districts at the cost of having poorly designed tracts.

A special effort should be made to obtain all maps showing characteristics of different parts of

the city, such as land use zones, property values, and the location of parks, cemeteries, railroad property, industrial establishments, retail stores, and apartment houses. City maps may be secured not only from the city engineer's office or the planning commission, but from social agencies, academic research departments, and commercial firms. The maps prepared by the Sanborn Map Company for the use of fire insurance companies are worthy of specific mention.

If the tract plan extends beyond the city limits, maps of the suburban areas may be obtained from the county and state planning commissions, from state highway departments, and from the U. S. Geological Survey. In some instances the electric light or telephone company may have maps showing all roads and the location of all dwellings in the suburban area it serves.

Numbering census tracts.—The simplest method of numbering census tracts is consecutively: 1, 2, 3, etc.

Some cities have devised tract numbers which also identify areas larger than the tract. Each of the larger areas is assigned a prefix number or letter, the tracts within the area being numbered consecutively. For example, when an entire county is tracted, the tract numbers are keyed to each incorporated place and to the unincorporated balance of the county. This practice not only makes it easy to identify the general location of the tract when reference is made to it by number but also facilitates compilation of totals for each of the larger areas.

Where tracts have been designed to conform with ward boundaries, the ward number may similarly be employed as a prefix.

APPENDIX A.—STATUS OF CENSUS TRACT CITIES: 1940

CITY	ENTIRE TRACTED AREA			CITY PROPER			AREA OUTSIDE CITY			Date of first tract census
	Number of tracts	Population	Average per tract	Number of tracts	Population	Average per tract	Number of tracts	Population	Average per tract	
Akron, Ohio.....	68	289,365	4,255	57	244,791	4,295	11	44,574	4,052	1940
Atlanta, Ga.....	112	458,567	3,914	75	302,288	4,031	37	156,079	3,678	1940
Atlantic City, N. J.....	23	84,094	2,787	23	84,094	2,787	-	-	-	1940
Augusta, Ga.....	16	88,548	4,284	15	85,819	4,395	1	2,629	2,629	1940
Austin, Texas.....	14	87,930	6,281	14	87,930	6,281	-	-	-	1940
Baltimore, Md.....	157	859,100	5,472	157	859,100	5,472	-	-	-	1910
Berkeley, Calif.....	130	492,788	3,791	26	85,547	3,290	32	105,078	3,284	1930
Oakland, Calif.....				72	302,163	4,197				
Birmingham, Ala.....	52	287,583	5,146	52	287,583	5,146	-	-	-	1940
Boston, Mass.....	158	770,316	4,941	158	770,316	4,941	-	-	-	1910
Buffalo, N. Y.....	72	575,901	7,999	72	575,901	7,999	-	-	-	1930
Cambridge, Mass.....	30	110,879	3,696	30	110,879	3,696	-	-	-	1940
Camden, N. J.....	24	117,536	4,897	24	117,536	4,897	-	-	-	1940
Chicago, Ill.....	935	3,396,808	3,633	935	3,396,808	3,633	-	-	-	1910
Cincinnati, Ohio.....	151	544,766	3,606	107	455,610	4,258	44	89,156	2,026	1930
Cleveland, Ohio.....	348	1,232,252	3,541	208	878,336	4,264	142	353,896	2,492	1910
Columbus, Ohio.....	61	306,087	5,018	61	306,087	5,018	-	-	-	1930
Dallas, Texas.....	64	319,480	4,992	58	294,734	5,062	6	24,746	4,124	1940
Dayton, Ohio.....	54	218,370	4,044	53	210,718	3,978	1	7,652	7,652	1940
Denver, Colo.....	44	322,412	7,328	44	322,412	7,328	-	-	-	1940
Des Moines, Iowa.....	44	159,819	3,632	44	159,819	3,632	-	-	-	1940
Detroit, Mich.....	482	2,066,296	4,287	369	1,623,452	4,400	113	442,846	3,919	1940
Duluth, Minn.....	38	101,065	2,660	38	101,065	2,660	-	-	-	1940
Elizabeth, N. J.....	21	109,912	5,234	21	109,912	5,234	-	-	-	1940
Flint, Mich.....	64	207,369	3,240	41	151,543	3,696	23	55,846	2,428	1940
Hartford, Conn.....	57	248,128	4,353	41	166,267	4,055	16	81,861	5,116	1940
Houston, Texas.....	50	384,514	7,690	50	384,514	7,690	-	-	-	1940
Indianapolis, Ind.....	141	447,279	3,172	107	386,972	3,617	34	60,307	1,774	1940
Jersey City, N. J.....	258	1,081,800	4,193	63	301,173	4,781	97	350,867	3,617	1940
Newark, N. J.....				98	429,760	4,385				
Kansas City, Mo.....	92	399,178	4,339	92	399,178	4,339	-	-	-	1940
Long Beach, Calif.....	589	2,785,643	4,729	31	184,271	5,299	255	1,117,095	4,381	1940
Los Angeles, Calif.....				503	1,504,277	4,965				
Louisville, Ky.....	101	342,298	3,389	89	319,077	3,585	12	23,221	1,935	1940
Macon, Ga.....	25	85,783	3,351	17	57,865	3,404	8	25,918	3,240	1940
Memphis, Tenn.....	84	305,510	3,637	75	292,942	3,908	9	12,568	1,396	1940
Milwaukee, Wis.....	153	587,472	3,840	153	587,472	3,840	-	-	-	1940
Minneapolis, Minn.....	132	537,065	4,069	121	492,370	4,069	11	44,695	4,063	1940
Nashville, Tenn.....	40	157,402	4,185	40	157,402	4,185	-	-	-	1930
Newark, N. J. (see Jersey City)	-	-	-	-	-	-	-	-	-	-
New Haven, Conn.....	33	160,805	4,867	33	160,805	4,867	-	-	-	1940
New Orleans, La.....	133	494,537	3,718	133	494,537	3,718	-	-	-	1940
New York City, N. Y.....	5,345	7,454,995	2,152	5,345	7,454,995	2,152	-	-	-	1910
Bronx.....	495	1,594,711	2,729	495	1,594,711	2,729	-	-	-	-
Brooklyn.....	927	2,698,285	2,874	927	2,698,285	2,874	-	-	-	-
Manhattan.....	279	1,889,924	6,750	279	1,889,924	6,750	-	-	-	-
Queens.....	1,334	1,297,634	924	1,334	1,297,634	924	-	-	-	-
Richmond.....	512	174,441	529	312	174,441	529	-	-	-	-
Oakland, Calif. (see Berkeley)	-	-	-	-	-	-	-	-	-	-
Oklahoma City, Okla.....	73	219,744	3,010	80	204,424	3,407	13	15,320	1,178	1940
Paterson, N. J.....	31	159,656	4,505	31	159,656	4,505	-	-	-	1940
Philadelphia, Pa.....	404	1,931,334	4,781	404	1,931,334	4,781	-	-	-	1910
Pittsburgh, Pa.....	491	1,411,589	2,875	194	871,659	3,462	297	739,880	2,491	1910
Portland, Oreg.....	60	305,394	5,090	60	305,394	5,090	-	-	-	1940
Providence, R. I.....	49	253,504	5,174	49	253,504	5,174	-	-	-	1940
Richmond, Va.....	47	193,042	4,107	47	193,042	4,107	-	-	-	1940
Rochester, N. Y.....	88	324,975	3,693	88	324,975	3,693	-	-	-	1940
St. Louis, Mo.....	247	1,237,465	5,010	128	816,046	6,375	119	421,417	3,541	1910
St. Paul, Minn.....	80	292,371	3,655	78	287,736	3,788	4	4,635	1,159	1940
San Francisco, Calif.....	119	634,536	5,332	119	634,536	5,332	-	-	-	1940
Savannah, Ga.....	44	117,970	2,681	37	96,996	2,594	7	21,974	3,159	1940
Seattle, Wash.....	79	368,302	4,662	79	368,302	4,662	-	-	-	1940
Syracuse, N. Y.....	61	205,967	3,377	61	205,967	3,377	-	-	-	1930
Toledo, Ohio.....	55	282,349	5,134	55	282,349	5,134	-	-	-	1940
Trenton, N. J.....	28	124,697	5,668	22	124,697	5,668	-	-	-	1940
Washington, D. C.....	96	663,091	6,907	96	663,091	6,907	-	-	-	1930
Yonkers, N. Y.....	24	142,598	5,942	24	142,598	5,942	-	-	-	1930

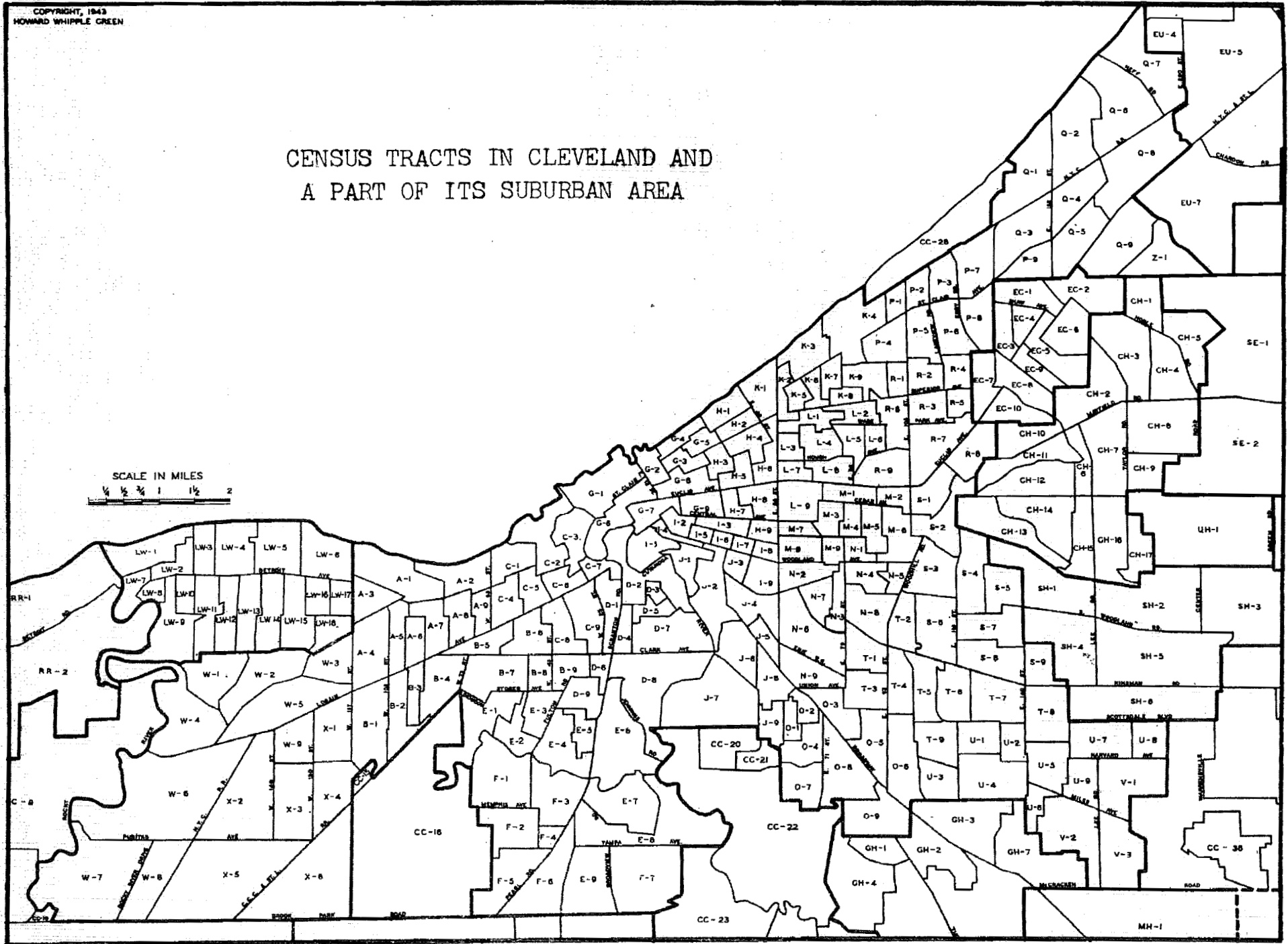
Appendix B.—LIST OF CENSUS TRACT KEY PERSONS (JAN. 1, 1947)

- Akron, Ohio: Dr. H. O. DeGraff, Head, Dept. of Sociology, University of Akron, 302 E. Buchel Ave.
- Atlanta, Ga.: Frank K. Shaw, Engineer, The Industrial Bureau, Atlanta Chamber of Commerce, 33 Pryor St., N. E.
- Atlantic City, N. J.: Mall Dodson, Public Relations Officer, City Hall
- Augusta, Ga.: L. S. Moody, Secretary, The Chamber of Commerce
- Austin, Texas: Dr. Carl M. Rosenquist, Department of Sociology, University of Texas
- Baltimore, Md.: Dr. W. Thurber Fales, Director, Statistical Section, Baltimore City Health Department, Municipal Office Building
- Berkeley, Calif.: Samuel C. May, Director, Bureau of Public Administration, University of California (4)
- Birmingham, Ala.: George V. Truss, Director, Bureau of Vital Statistics, Jefferson County Board of Health, Fourth Ave. and Nineteenth St., N.
- Boston, Mass.: Miss Dorothy W. Myers, Statistician, Greater Boston Community Council, 261 Franklin St. (10)
- Buffalo, N. Y.: Miss Sara Kerr, Executive Secretary, Buffalo Foundation, 232 Delaware Ave. (2)
- Cambridge, Mass.: Noyes Collinson, Executive Secretary, Cambridge Community Council, 18 Brattle St. (38)
- Camden, N. J.: Clarence E. Moullette, Director, City Planning Commission, City Hall
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- Denver, Colo.: Dr. F. L. Carmichael, Director, Bureau of Business and Social Research, University of Denver, 2011 Glenarm Place
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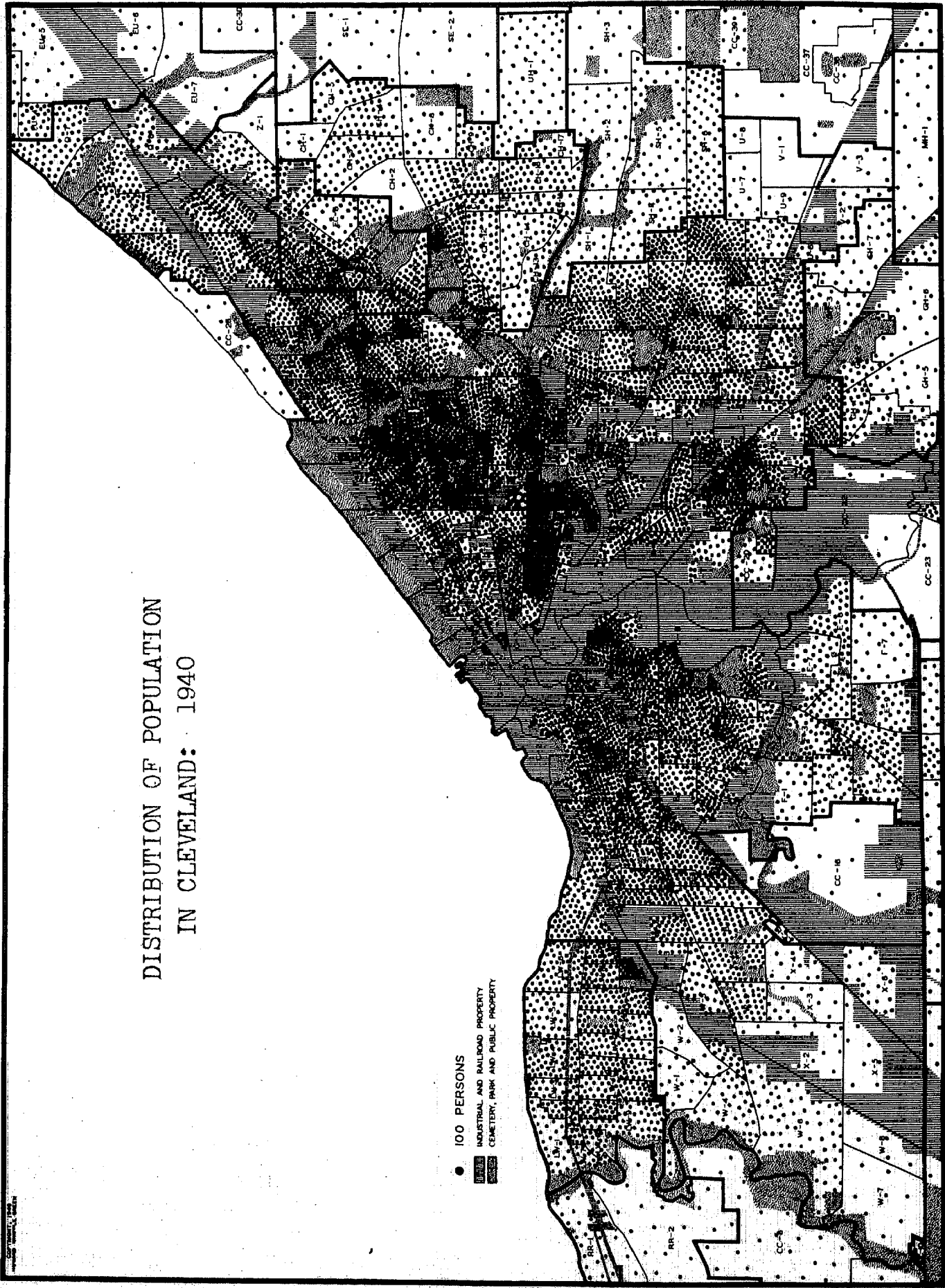
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CENSUS TRACTS IN CLEVELAND AND A PART OF ITS SUBURBAN AREA

SCALE IN MILES



DISTRIBUTION OF POPULATION
IN CLEVELAND: 1940



● 100 PERSONS
▨ INDUSTRIAL AND RAILROAD PROPERTY
▤ CEMETERY, PARK AND PUBLIC PROPERTY
▧ WATER

DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS
WASHINGTON 25

Procedures for Defining Census Areas in Tracted Cities for
Presentation of Retail Trade and Other Data

(A Supplement to the Census Tract Manual, 3rd Edition
Revised and Enlarged, January 1947)

June 1950

Purpose of this Supplement - This supplement establishes means for defining areas within tracted cities which will be accorded precedence in the tabulation and presentation of Census data for groups of tracts. Where feasible, the areas should be so defined that they can provide a uniform pattern for presentation of population, housing, income, retail trade, and other Census statistics. However, as immediate use can be made of intra-city areas for the presentation of retail trade data from the 1948 Census of Business, this supplement also makes provision for defining a set of areas specifically for this purpose for those cities where it is not feasible to define "general purpose" areas at this time. The "general purpose" and "special purpose" areas will be identified subsequently in this manual as Census Community areas and Census Retail Trade areas, respectively.

Publication of Retail Trade Data - In its regular publication program, the Bureau of the Census publishes data on number of retail stores, their sales and payroll, and the number of employees and proprietors for each incorporated place of 2,500 inhabitants or more, as well as for each county, standard metropolitan area, and State. For the smallest communities, data are presented for a maximum of ten major kind-of-business groups; for the largest ones, detail is provided for as many as 90 individual kinds of business. The regular publications, however, provide no tabulations for areas within cities.

Limitations on the Presentation of Retail Trade Data - The presentation of Census Bureau data on retail trade is subject to limitations resulting from the requirement for applying Census rules which are designed to prevent the disclosure of figures for individual businesses. These rules limit presentation to data in which the figures for no one business establishment are predominant and in which there are at least three business establishments represented. The types of disclosure covered by these rules include both the disclosure which is directly made apparent by the published figures, and indirect disclosure, i.e., disclosure which can occur by subtracting figures included in one table from those included in another. The disclosure rules do not apply to the figures on number of establishments classified by kind of business but do apply to data concerning the business activity of those establishments, e.g., sales, payroll, employment, etc.

The likelihood of having to withhold data on retail establishments to avoid disclosure becomes greater as the kind-of-business detail required is increased or as the size of individual areas as measured by the number of retail

stores is decreased. Most individual Census tracts, for example, have too few retail stores to permit showing data in kind-of-business detail. Even for areas considerably larger than tracts, indirect disclosure can result if tabulations in the same kind-of-business detail are prepared for more than one set of areas within the same community. This can occur because the overlapping of the areas of one set with those of another has the effect of providing data for fractions of areas by subtraction, thereby increasing the disclosure probability.

The Necessity for a Standard Area Pattern - Individual business organizations, concerned with marketing their own products or with making market analyses for others, may have their own area basis for compiling data for a community. In these cases, Census retail trade data might be of maximum value to them if compiled for their own sets of areas. Although the Census Bureau would be willing to prepare such tabulations on a reimbursable basis, the application of disclosure rules results in a progressive decrease in the kind-of-business detail which can be provided for each successive tabulation (i.e., each different set of areas) for any community, and the disclosure analysis which is required before data can be released becomes progressively more costly. In order to avoid discrimination among those requesting special area tabulations, the Census Bureau is providing in this supplement means for adoption of standard area patterns which should be designed to have the optimum value generally to users of retail trade data, even though they do not exactly correspond with the patterns for which data could be made available if there were no restrictions resulting from application of disclosure rules. The standard pattern of areas is to be accorded precedence in the tabulations made for the communities where adopted. Because of the disclosure problem, any subsequent tabulations for such communities will be subject to a reduction in detail and to added cost of preparation as compared with the tabulation for the standard pattern.

Approved Area Types - The types of areas which can be set up in accordance with the procedures in this manual are:

- (1) Census Community Areas - general purpose areas suitable for presentation of various Census data.
- (2) Census Retail Trade Areas - special purpose areas designed specifically for use in connection with the presentation of retail trade data.

The subsequent procedure also makes provision for the defining of certain types of sub-areas within the regular area patterns.

Local Census Tract Committee Responsibility - The Local Census Tract Committee has the responsibility for recommending to the Census Bureau an area plan for tabulating Census data for its own community. The Bureau of the Census will make the final determination.

Because of the particular interest of business groups in data for such areas, it is necessary that any recommendation of an area pattern be made with full knowledge of the requirements of advertising agencies, newspapers, utilities, market analysis organizations, and other groups which need information on the

distribution of retail trade within the city. It shall be the responsibility of the local key person to arrange for adequate representation on the committee of such groups, including invitations to each of the principal local daily newspapers, Chamber of Commerce (or Board of Trade), American Marketing Association local chapter, American Statistical Association local chapter, and each of the more important utility companies located within the community. In addition, the participation of other groups usually represented on the Local Tract Committee, such as departments of the municipal government, including planning commissions, welfare agencies, etc., also is desirable. Compliance with the above requirements for representation is a prerequisite for Census Bureau approval of the area plan. The Census Bureau will inform the local key person of requests for city tabulations of Census data which have been made directly to the Bureau.

Cities for which Census Community or Census Retail Trade Areas can be Defined - Because of the difficulties involved in determining the specific area location of business establishments where the areas are not defined by tract boundaries, it generally is not feasible to attempt to establish Community or Retail Trade areas in non-tractated cities. Where the city is located in a standard metropolitan area, it may be feasible to extend the area pattern to cover the whole metropolitan area, provided tracts have been established. If it is important to cover the whole metropolitan area, the Census Tract Committee should take the steps necessary to tract untractated areas. Community or Retail Trade area boundaries may be established before tract boundaries are formally established; however, in such cases, it will be considered that there is a commitment to so designate tract boundaries that the previously established area boundaries in all cases will coincide with tract lines.

Area Boundaries - Census Community or Census Retail Trade areas in tractated cities are to consist of whole Census tracts or combinations of tracts. Where these areas are to be extended beyond the boundaries of a tractated city, the additional limitation applies that any individual area covering more than one incorporated place cannot be restricted to only a part of an incorporated place but must cover it entirely. In addition, where an area is to cover both an incorporated place and adjacent unincorporated territory, all of the incorporated place must be covered in that area. Because Census retail trade data will be published for each place of 2,500 inhabitants or more, areas consisting of all of an incorporated place and of an adjacent unincorporated territory should be as large as possible to minimize the disclosure which might result from subtracting figures for the incorporated place from those for an area which includes both the incorporated place and adjacent territory.

The above rules require area boundaries to follow tract lines. This not only makes it possible to compile data other than those from the Census of Business on the same basis but permits tabulation of Census of Business data at a considerable saving over what would otherwise be possible. Where following present tract lines seriously limits the value of tabulations of business data, the local Census Tract Committee may recommend establishing new tracts to be created by splitting existing tracts. However, this should be done only very rarely because of the increased tabulation costs resulting from the larger number of tracts for which data would have to be separately summarized and because comparisons from Census to Census are more difficult where such changes

are made. Criteria provided in the Census Tract Manual specifically for the purpose of determining tract boundaries should be observed in proposed splits of tracts. Approval of the Census Bureau is required before splits in tracts can be adopted.

Sub-Areas - The establishment of sub-areas within areas is not precluded by this supplement and may be desirable to accommodate data requirements necessitating differing degrees of detail or differing area sizes. Adoption of a sub-area pattern may also provide a bridge between a community area pattern and a retail trade area pattern where there is difficulty in designing the former to meet important needs for retail trade data. It should be observed, of course, that as compared with whole areas, tabulations for sub-areas will require a sacrifice in kind-of-business detail and an increased cost of preparation.

Sub-area boundaries are required to follow the same rule as those for the Census Community or Census Retail Trade areas. However, where it is important to make tabulations for "principal thoroughfares" regardless of tract boundaries, a request for advice on such sub-areas should be referred to the Census Bureau before any work is done. In general, "principal thoroughfare" tabulations are comparatively very costly to make because of the map search necessary to locate stores within areas which are not identified in terms of the location information recorded on Census report forms and because of the nature of the disclosure analysis required.

Permanence of Areas - As the value of area tabulations is greatly increased by the ability to make comparisons over time, it is important that the areas be designed with the understanding that they will continue to be used, without revision of boundaries, in tabulations to be made from future Censuses. Even though it is not always possible to anticipate changes in the composition of city neighborhoods, the value of permanent boundaries and of being able to make comparisons from time to time outweighs any advantages which might be obtained by revising boundaries to reflect shifts within the city. The above is not intended to preclude the addition of new areas in cases where the boundaries of the city have been extended.

Size of Areas - There are no rigid specifications with respect to the size of any individual Census Community or Census Retail Trade area except as implied in the requirement for following tract lines. However, the areas in any city should average at least 400 retail stores and 30,000 inhabitants. It is expected that in most cities a somewhat higher average will be found to be desirable, particularly with respect to the number of stores. For the purpose of showing retail trade data in kind-of-business detail, it should be observed that the greater the number of stores within the area, the more detail can be shown without violation of Census disclosure rules.

The following table with respect to the kind-of-business detail which can be provided may be useful as a guide in establishing areas:

<u>Number of retail stores in Area</u>	<u>Approximate number of kind-of-business groups for which data can be shown</u>
Under 50	Total only
50-99	3
100-199	10
200-499	15
500 and over	25

To aid Local Census Tract Committees in devising areas so they will be of desired size, in terms of number of retail stores, the Census Bureau, on request, will furnish a tabulation of the approximate number of retail establishments, by Census tract. A list of the specific kinds of business which can be shown at various levels of details also will be provided on request.

Cost of Area Tabulations - All special area tabulations will be prepared by the Census Bureau on a reimbursable cost basis. The charge for such tabulations, however, does not include the cost of collecting the data but only the additional cost involved in the tabulation and issuance of the data on the area basis. Cost estimates can be secured from the Bureau. The Bureau reserves the right to include in its own publications area tabulations prepared on a reimbursable basis.

Approval of Area Plan - The area pattern recommended by the Local Census Tract Committee should be transmitted to the Census Bureau for approval. The transmittal should include a list of persons, and the organizations which they represented, who participated in this undertaking of the Committee; the criteria followed in designing the areas; the tract numbers which comprise each area and sub-area; and any additional information, such as maps or street boundaries, which are necessary to describe the Committee's recommendations.

The area pattern recommended by the Local Census Tract Committee if possible should represent agreement of all participants. If complete agreement on a set of areas cannot be obtained, both majority and minority reports should be submitted.

THE DEFINITION AND ESTABLISHMENT OF CENSUS TRACTS
BY LOCAL TRACT COMMITTEES

(Second Supplement to Census Tract Manual, January 1947)

November 1952

Preface

This statement is a supplement to the Census Tract Manual, January 1947, and serves as a revision of pages 9-11 dealing with the procedures of defining census tracts. Attention is also directed to the first supplement to the Census Tract Manual of June 1950, Procedures for Defining Census Areas in Tracted Cities for Presentation of Retail Trade and Other Data.

I. Nature and General Use of Census Tracts

Census statistics on a small-area basis have many uses in the analysis of problems of large cities and other urban territory and in the efficient administration and management of municipal, welfare, and business enterprises. To meet this need certain large cities and Standard Metropolitan Areas are divided into census tracts.

Census tracts are small, permanently-established, geographical areas for which census data are compiled and by the use of which comparisons can be made from one census to the next. They are laid out with a view to approximate uniformity in population and with some regard for uniformity in size, and each is designed to include an area fairly homogeneous with respect to racial characteristics and economic status.

II. Census Tract Committee

Delineation of census tracts should be performed under the direction of a local census tract committee. If a permanent committee of this type has not been established, one should be organized. Representatives of various local groups interested in local data should be invited to serve. Such groups will include city and county planning boards, chambers of commerce, colleges and universities, councils of social agencies, real estate boards, representatives of city and county governments, local housing authorities, newspaper publishers, public utilities, and advertising and market analysis agencies. Representatives of the local chapters of the American Statistical Association and the American Marketing Association should be invited.

The initial delineation of the proposed census tracts should be entrusted to an individual or to a small subcommittee of the main committee. The individual or individuals chosen should be thoroughly familiar with the area and should understand the purposes of tracting.

The Definition and Establishment of Census Tracts by Local Tract Committees

III. Aids in Tracting from the Bureau of the Census

An "enumeration district" map will be furnished to the committee on request by the Bureau of the Census for each county, city, town, or other political area which is to be divided into tracts. This map or these maps will show the boundaries and identifying number for each enumeration district which was established within the area for the taking of the 1950 Census. An enumeration district, often referred to as an "E.D.," is a small work area, normally containing several hundred people, which is set up before the taking of a census. Later during the course of the census each E.D. is canvassed or enumerated by one person who is known as the enumerator.

A list of the E.D.'s by their identifying number designations will accompany the map and give the total 1950 population for each E.D.

The E.D. maps together with the E.D. population totals provide the information on how many people live in the various parts of the area and thus assist the committee in designing tracts which will have approximately the population desired.

Attention is called to the fact that certain population and housing tabulations have been prepared for E.D.'s and may be obtained at the cost of photostating. The population tabulation shows the distribution of the population by race, sex, and nativity as well as by color and age. The content of the E.D. housing tabulation is substantially the same as the tabulation by city blocks and is available for all areas outside block cities. Block statistics from the 1950 Census of Housing are published in Series H-E with a separate report for each of the 209 cities which in 1940, or in a subsequent census prior to 1950, had a population of 50,000 or more.

The Bureau of the Census also stands ready to answer the questions of local committees concerning tracting problems. Inquiries may be sent to any field office of the Bureau of the Census or to the Director, Bureau of the Census, Washington 25, D.C.

In addition, arrangements may be made for field representatives of the Bureau of the Census to give advice locally on the definition and establishment of census tracts in the area.

IV. Population of Tracts

The proposed tracts should be laid out to contain from 2,500 to 8,000 inhabitants, or even more, with about 4,000 being the minimum average size for the needs of local and national users. Where a tract with fewer than 2,500 inhabitants is proposed, the reasons for so doing should be given, unless the tract is an institution and has 2,000 inhabitants or more.

V. Boundaries of Tracts

Census tract boundaries should follow permanent and easily recognizable lines as far as possible. These include streets, highways, railroads, streams, county, city, and town limits, and the like.

The Definition and Establishment of Census Tracts by Local Tract Committees

The use of a major business street as a census tract boundary may not be advisable. The tract boundary may be moved over by perhaps one block so that all of the business establishments facing the major business street lie within the same census tract. This would permit the inclusion in the same tract of business establishments that are part of the same business nucleus. It would also facilitate a meaningful grouping of tracts into larger areas such as census retail trade or census community areas (See the June, 1950 Supplement to the Census Tract Manual).

VI. Homogeneity of Tracts

Census tracts should be homogeneous as far as practicable, that is, they should contain people of similar racial or nationality characteristics, of similar economic status, and with similar housing. It is not desirable, for example, to have one part of a tract composed of expensive homes and the other part of slum dwellings, because average statistics for the tract as a whole would not reflect the status of either group.

The use of groups of E.D.'s for census tracts is ordinarily not advisable. Not only are E.D.'s temporary work areas whose boundaries were selected without reference to homogeneity, but their boundaries may change from census to census so that comparable E.D. figures from past decades would generally not be available.

Some attention should be given in the design of census tracts to the distribution of business establishments so that business statistics, if collected by tracts, may not bring together in the same tract those establishments which represent different centers of business (See the June, 1950 Supplement to the Census Tract Manual). In all the larger cities, at least one tract should be delineated to include the central business district even though its population may fall below 2,500.

VII. Delineation of Tracts

The drawing of the proposed census tract boundaries should be done on a large-scale, current map or maps of the area which show streets, highways, railroads, streams, city limits, etc. In drawing the boundaries use should be made of all available maps and statistical information including the E.D. map and population data. The criteria already mentioned should be closely adhered to, and for convenience are summarized below.

A. Population:

From 2,500 to 8,000 inhabitants or more with 4,000 being the minimum average size. Any tract with fewer than 2,500 should have a supporting explanation.

B. Boundaries:

Permanent and easily recognizable lines, such as streets, highways, railroads, streams, city limits, etc. Major business streets should be used with caution.

The Definition and Establishment of Census Tracts by Local Tract Committees

C. Homogeneity:

1. As far as practicable census tracts should contain people of similar racial or nationality characteristics, of similar economic status, and with similar housing.
2. E.D.'s being temporary working areas planned for each census without regard to homogeneity are not necessarily suitable units for designing census tracts.
3. Attention should be given to the grouping of business establishments.

D. Additional instructions applicable to the tracting of urban fringe territory and the remainder of counties are:

1. Each separately incorporated or unincorporated place (recognized in a 1950 Series A Population Bulletin) which has 2,500 inhabitants or more should form at least one census tract.
2. The remainder of the area should consist of one or more census tracts.

a. In the following States where minor civil divisions (towns, townships, etc.) form relatively permanent areas, are well known locally, and are significant as governmental units, the boundaries of the M.C.D.'s should be observed in establishing census tracts:

Connecticut	Minnesota	North Dakota
Illinois	Missouri	Ohio
Indiana	Nebraska	Pennsylvania
Iowa	Nevada	Rhode Island
Kansas	New Hampshire	South Dakota
Maine	New Jersey	Vermont
Massachusetts	New York	West Virginia
Michigan	North Carolina	Wisconsin

This does not mean that every M.C.D. should be designated as one or more census tracts. If M.C.D.'s have small population, they should be combined. Where an urban place (with 2,500 inhabitants or more) is set up as a tract, the balance of the M.C.D. in which it is located may be a tract, or if it is too small, it should be combined with adjacent M.C.D.'s or parts of M.C.D.'s to form a tract.

b. In the following States the boundaries of minor civil divisions also should be observed in establishing census tracts unless it can be clearly demonstrated that these units do not have significant local use:

Arkansas	Mississippi
Delaware	Oklahoma
Maryland	Virginia

The Definition and Establishment of Census Tracts by Local Tract Committees

- c. In the State of Washington the minor civil divisions (election precincts) were replaced for census purposes by census county divisions. New census tracts in this State should observe the boundaries of the census county divisions.
- d. In the remaining States where M.C.D.'s have frequently changing boundaries or are not well known locally, the tracts should be laid out with permanent and easily recognizable boundaries without regard to M.C.D. boundaries.

VIII. Numbering of Tracts

Tracts should be identified by a series of consecutive numbers (1, 2, 3, etc.) within each county. The central city should be numbered first and then the remainder of county. The numbering in the county preferably should start in the northeast corner. It is also preferable that consecutive numbers be assigned contiguous tracts.

Prefixes (A, B, C, D, etc. for example) may be used as desired to distinguish the city or the remainder of county or parts of either, such as community areas. In the remainder of county a separate prefix could be used for each urban place.

The Bureau of the Census will be glad to advise new tracted areas on the details of their numbering systems at the time tracts are established.

The proposed tract numbers should be entered on the map within the tract boundaries.

IX. Written Descriptions of Tract Boundaries

In addition to drawing the proposed tract boundaries on a map, a typed description of the boundaries of each tract should be furnished. The description should start at the northwestern corner of the tract and proceed in a clockwise direction as in the example below:

Tract 11:	Oswego Blvd.	(North)
	Kirkpatrick (St.)	(East)
	New York Central R.R.	(South)
	Hiawatha Blvd.	(West)

X. Review by Local Tract Committee

The proposed tracts, after approval by the Bureau of the Census, become "official" for the purpose of compiling future census statistics. It is important, therefore, that they represent the best judgment of those representative local groups which use small-area census data. After the initial delineation of the tracts has been accomplished, they should be scrutinized by the local census tract committee and changes considered desirable should be made before the recommendations are transmitted to the Bureau of the Census.

The Definition and Establishment of Census Tracts by Local Tract Committees

It is much to be preferred that the final review of the proposed tracts be made at one time and at one meeting of the census tract committee to which all interested people have been invited. In this way suggested changes can be discussed and decided upon according to the wishes of the majority present, a procedure which cannot be followed if the recommendations are considered separately by various groups and individuals.

A convenient time and place for the review meeting should be set and sufficient advance notice given. Under such circumstances those who were invited but did not attend will have little justification at some future date to question the layout of the tracts as recommended to the Bureau of the Census.

XI. Approval of Tracts by City and County Officials

From each incorporated place which is divided into two or more census tracts there should be provided a statement or letter from the mayor, city manager, or other responsible official which indicates his approval of the census tract plan. If this official is a member of the census tract committee, it is assumed that he has approved, and accordingly such a letter is not necessary. For tracts in the county outside of incorporated places a statement or letter of approval from a responsible county official is needed. An exception is made in the New England States where a statement or letter is desired from an official in each town that is divided into two or more census tracts.

These letters or statements should be obtained after the census tract plan has been reviewed by the Bureau of the Census and an agreement on the final boundaries has been reached by the Bureau and the local committee. It is well, however, to obtain the cooperation of the government officials early in the preparation of the tract plan.

XII. Transmittal of Tract Recommendations

After the proposed tracts are agreed upon by the census tract committee, the chairman should forward the following material by registered mail to the Bureau of the Census, Geography Division, Washington 25, D.C.:

1. Maps of the areas tracted showing,
 - a. Tract boundaries
 - b. Tract numbers

It is desirable that a duplicate copy of the maps be submitted. This will facilitate the work of review at the Bureau of the Census and make it possible to return one copy if any changes are suggested.

2. Estimated population of proposed tracts.
3. A typed description of the boundaries of each tract.
4. Names of local organizations and individuals on the census tract committee and any others who reviewed the tract proposal.

The Definition and Establishment of Census Tracts by Local Tract Committees

XIII. Approval of Tracts by the Bureau of the Census

Final approval of the census tracts rests with the Bureau of the Census. If any changes in the layout of the proposed tracts are deemed desirable, they will be described in a letter to the local census tract committee.

After approval the Bureau will use the tracts in those censuses where data are collected for small areas.

XIV. Further Requirements by the Bureau of the Census

After tracts are approved, the Bureau of the Census expects the local census tract committee to prepare and publish a census tract base map and a census tract street index. The census tract map or maps show the boundaries of each tract and are tools for local users of census tract data. The census tract street index is another tool for the use of census tract data which makes it possible to allocate quickly any data collected by street address to the proper census tracts. The availability of these two aids for any tracted area and the existence of an active local census tract committee are considered by the Bureau of the Census to be the minimum evidence of a strong local interest in census tract data.

In an extension of the tract program, however, the Bureau of the Census wants to make it clear that the establishment of satisfactory tracts within an area does not automatically mean that detailed statistics will be published for such areas. It does mean that the boundaries of such areas can be observed in the enumeration and in tabulations made for small areas. The degree to which the Bureau can undertake the publication of these data is contingent on the availability of funds for this purpose. The establishment of the tracts, however, will place the city or area in a position to obtain data by tracts at relatively low cost from Major Censuses.

XV. Committees on Census Enumeration Areas

A Committee on Census Enumeration Areas appointed by the American Statistical Association advises the Bureau of the Census on census tract problems and helps to promote the extension of census tracts and their wider use. The chairman of this committee, Mr. Howard Whipple Green, has given long and valuable service to the census tract program. Mr. Green appoints the Key Census Tract Person who has the responsibility for representing the local committee in its relations with the Bureau of the Census.