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Catalogue 92-310E



Geography Guide Book

Geographic Reference



21

Census



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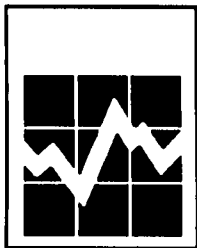
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Statistics Canada

Geography Guide Book

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Preface

This publication is one of a number of reference guides published in support of the Census of Population and Housing. It is intended mainly to assist those interested in using Census data who are not familiar with the complexities of the geographical perspective of the data.

This guide has been prepared by the Geography Division of Statistics Canada. This Division is responsible for designing and maintaining the geographical systems used in the Census and many other statistical programs at Statistics Canada. Additional information on the products and services of the Geography Division can be obtained from the **1991 Geography Catalogue**. As well, a computerized reference product called **GEOREF** will also assist users with geography reference requirements. Other general reference documents that may be of interest include the **1991 Census Dictionary** (Catalogue 92-301E) and the **1991 Census Catalogue** (Catalogue No. 92-302E). Pages 29 to 32 of this booklet provide a full listing of geographical reference products and services followed by instructions on how to obtain them.

The most recent Census of Population and Housing is a comprehensive statistical snapshot of Canada taken as of June 4, 1991 and continues a long tradition in Canada that dates back to 1666. Information compiled by the Census covers many topics such as housing, ethnicity, language, family status, age, income, labour force status and occupation. Census results are critical elements in research undertaken by all sectors of Canadian society including government, business and education.

I would like to express my appreciation to the millions of Canadians who completed their Census questionnaires as well as to those who assisted Statistics Canada in planning and conducting the Census.

Ivan P. Fellegi

Chief Statistician of Canada

Introductory Note

This publication is intended as a guide for those who are not familiar with the use of Statistics Canada's data in a geographical context. For simplicity's sake, some of the more complex features are excluded or are treated very lightly. Statistics Canada staff in any Regional Reference Centre would be pleased to answer questions applying to your situation.

The following table of contents describes how the booklet is organized. The five case studies give specific examples of how to tap into the geographical aspects of common types of data requests. While the specific names and research cases are fictitious, the types of situations depicted are very common. The cases are simplified and focus only on the geographical aspects of the situation. In most cases, many other research and business considerations are also important but not explored.

Many 1991 Census publications and electronic products are referred to in this booklet. Some are available at the time of publication of this booklet while others will be forthcoming. The release status of any product can be obtained from any Statistics Canada Regional Reference Centre.

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1. How Statistics Canada Organizes Its Census Data Geographically

Questions such as: what's happening in this province? this market area? or this neighbourhood? require answers with geographical perspectives. The ability to produce data for specific geographical areas depends upon the way the data are collected, stored and retrieved. If the measurement is of something that occurs throughout Canada and surveys everyone, then very detailed geographical information can be produced. For this reason, the Census of Population and Housing releases the most detailed data for small geographical areas available of any data program produced by Statistics Canada. This guide book discusses the geography of the 1991 Census of Population and Housing.

The Beginning

The **Census of Population and Housing** (hereafter called the census) collects data on every person in Canada based on where they live. The basic unit of measurement is the dwelling. In other words, the census begins by locating all places of residence in Canada. For each "occupied private" dwelling there is one household which consists of one or more persons. (Special procedures have been put in place to deal with persons who do not live in a dwelling.) For subsequent tabulation purposes, each dwelling is given a series of geographical identifiers.

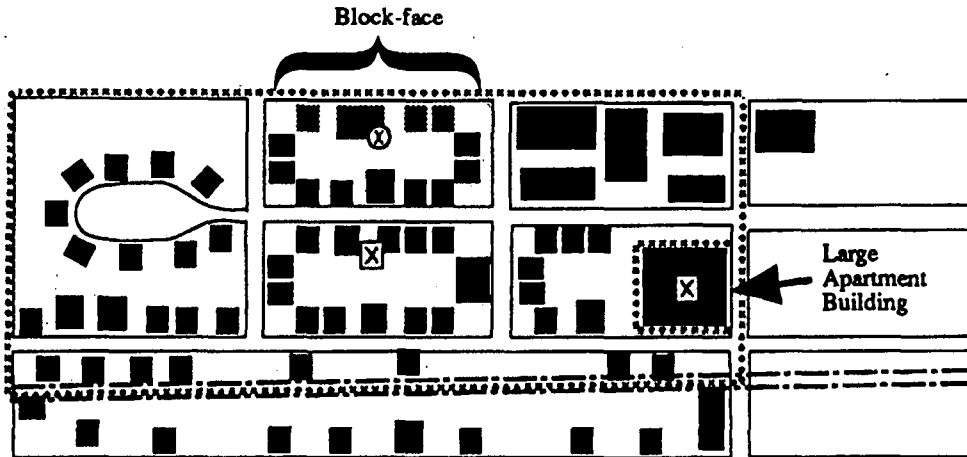
The first geographical identifier assigned is a direct result of the initial collection step. Since all dwellings are located by a physical search of an area assigned to a **Census Representative**, that area is given a specific geographical identification and it also has specific geographical boundaries to ensure no double counting or gaps. In rural settings this "territory" can cover wide reaches of land, but in urban settings it is usually several city blocks (see diagram on page 2). Because the census representative used to be called an enumerator, this area is called an **Enumeration Area** or EA for short. All dwellings in the enumeration area are given the enumeration area's unique geographical code (this assists in classifying geographical areas).

Until 1971, no further geographical breakdown was available. Now, within larger urban centres, there is a more detailed geographical identification system used that permits smaller geographical presentations of the data. It is called the **Block-face**, which usually refers to one side of a street between two consecutive intersections or major intersecting geographical features such as railway tracks. In effect, it is a small strip of houses. For large apartment buildings, separate block-face designations are assigned if the apartment building constitutes a complete EA. In fact, a very large apartment building can be subdivided into more than one EA, and each EA will have its own block-face.

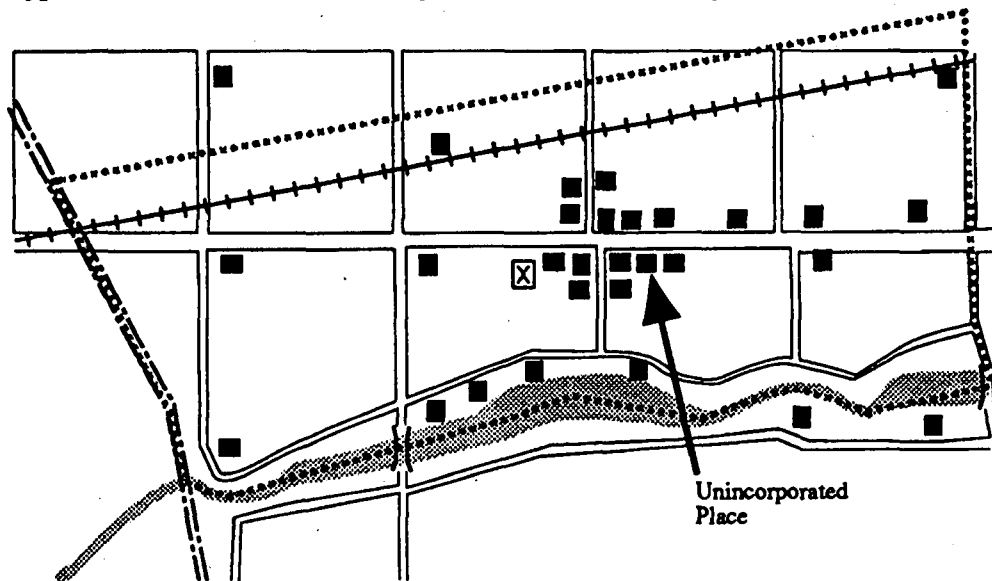
Block-faces in large urban centres and enumeration areas in smaller urban centres and rural areas provide the finest geographical detail available for almost all geographical applications. In other words, when tabulating census data geographically, either all households in the basic unit (block-face or EA depending on the area's location) must be included or excluded. Case C, later in this booklet, deals with the one limited exception.

For many applications, it is easier to regard the EA or the block-face as a single point rather than a small area or strip. Thus a **Representative Point** (formerly called a centroid) is identified that is suitably located within the EA or block-face. The diagram on page 2 has several examples of this representation; however, not all representative points are indicated.

Enumeration Areas



Typical enumeration areas in a large urban area (covered by Street Network File)



Enumeration area outside Street Network File coverage.

- | | |
|---|------------------------|
| Enumeration area boundary | + + + + + Railway line |
| ⊠ Enumeration area representative point | == Hydro line |
| ⊗ Block-face representative point | |

The Geographical Hierarchies

The general geographical approach adopted by the census to organize the dissemination of data is to use a building block system. Smaller units add together to form larger units which in turn form even larger units until they all add up to the total of Canada. Each addition forms its own level of a geographical hierarchy. However, since there are different factors to take into consideration for many types of users, this hierarchical system gets somewhat complicated.

The first complication is that much of Canada and the provinces and territories are already divided into official areas for local and regional government purposes. This is one of the key systems used to organize census data, and is referred to as the “**administrative**” hierarchy of geography. This hierarchy covers officially organized local units such as municipalities, townships, Indian reserves (whether fully recognized by a province as a local municipality or not), counties, regional districts and regional municipalities.

However, not all of Canada is officially organized in this consistent manner. For instance, Newfoundland, Manitoba, Saskatchewan and Alberta do not have the intermediate level of local government between provinces and municipalities (often called counties or regional districts or regional municipalities) found in the other provinces. Thus, Statistics Canada, in consultation with the provinces, has defined equivalent areas. Likewise, areas within Newfoundland, Nova Scotia and British Columbia do not have official local municipalities, and they are directly governed by the county, provincial or federal government. Therefore, equivalent areas were created after consultation.

The geographical hierarchies include a variety of steps, some of which nest completely within the larger level and others that do not. By “**nest**”, it is meant that adding all areas within a larger area leaves no part uncovered nor does it result in any overlap. Also, there are a number of different hierarchies to deal with due to differing origins of the geographical units.

The first and smallest building block covering all of Canada, and the first step in all hierarchies, is the enumeration area. In 1991, there were 45,995 EAs, averaging 400 persons in rural areas and 900 persons in urban centres. All larger geographical units are subdivided into whole EAs.

The Administrative Hierarchies of Geography

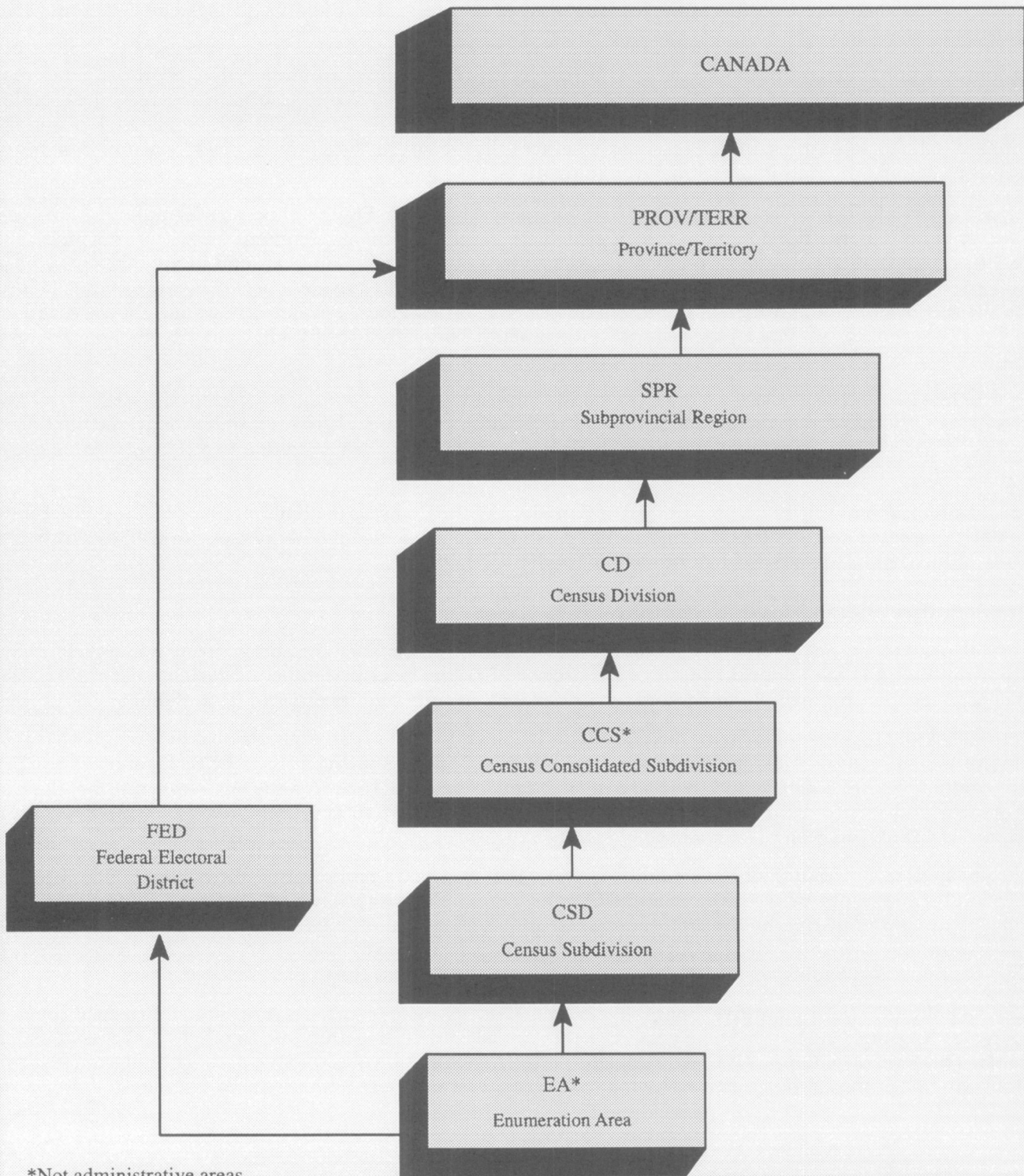
The census is used to apportion federal electoral representation, thus, one of the administrative hierarchies that builds up from the EA is the **Federal Electoral District** or FED (the federal Member of Parliament's riding). The FEDs then add together to form provinces and territories that, in turn, add together to form Canada.

The fact that EAs add together to form municipalities and their equivalents is an example of another administrative hierarchy. Municipalities and their equivalents are referred to as **Census Subdivisions** or CSDs for short. The CSDs then add together to form counties and their equivalents that are referred to as **Census Divisions** or CDs. The CDs form provinces and territories. For instance, in Nova Scotia there are 18 counties such as Guysborough and Colchester. The CD of Colchester is composed of six CSDs.

An important special aggregation of census subdivisions is the **Census Consolidated Subdivision** (CCS). The CCS provides a level of geography between the CSD and CD which facilitates data analysis. In the rural context the CCS is a grouping of smaller municipalities, usually contained within a larger municipality. For instance, a town located within a surrounding township will be grouped together with the township to form a CCS. In urban areas, CCSs are formed by contiguous groupings of CSDs. A principal user of the CCSs is the Census of Agriculture.

A further step in this administrative hierarchy is that CDs in most provinces are added together to form **Subprovincial Regions** (SPRs) – in some provinces they are administrative units and in others they are statistical equivalents. This level of geography is used primarily for the dissemination of economic data. The diagram featured on the following page shows the interrelationship that exists between these administrative areas.

Administrative Geographical Hierarchy



The Statistical Hierarchies of Geography

Urban-focused economies tend not to be influenced by official municipal boundaries in terms of shopping trips and commuter travel. As a result, Statistics Canada has created groupings of municipalities in order to encompass the area under the influence of a major urban centre. Specific guidelines are used to group municipalities that are closely interconnected due to people working in one municipality and living in another. These units are called **Census Metropolitan Areas (CMAs)** in the case of larger urban centres (over 100,000 in their urbanized core in the previous census) and **Census Agglomerations (CAs)** in the case of smaller urban centres (with an urbanized core of over 10,000, but less than 100,000 in the previous census). For instance, in Newfoundland, the CMA of St. John's includes 19 municipalities ranging from Pouch Cove in the north end down to Witless Bay, an area over ten times the size of the city of St. John's itself. In the 1991 Census there are 25 CMAs and 115 CAs.

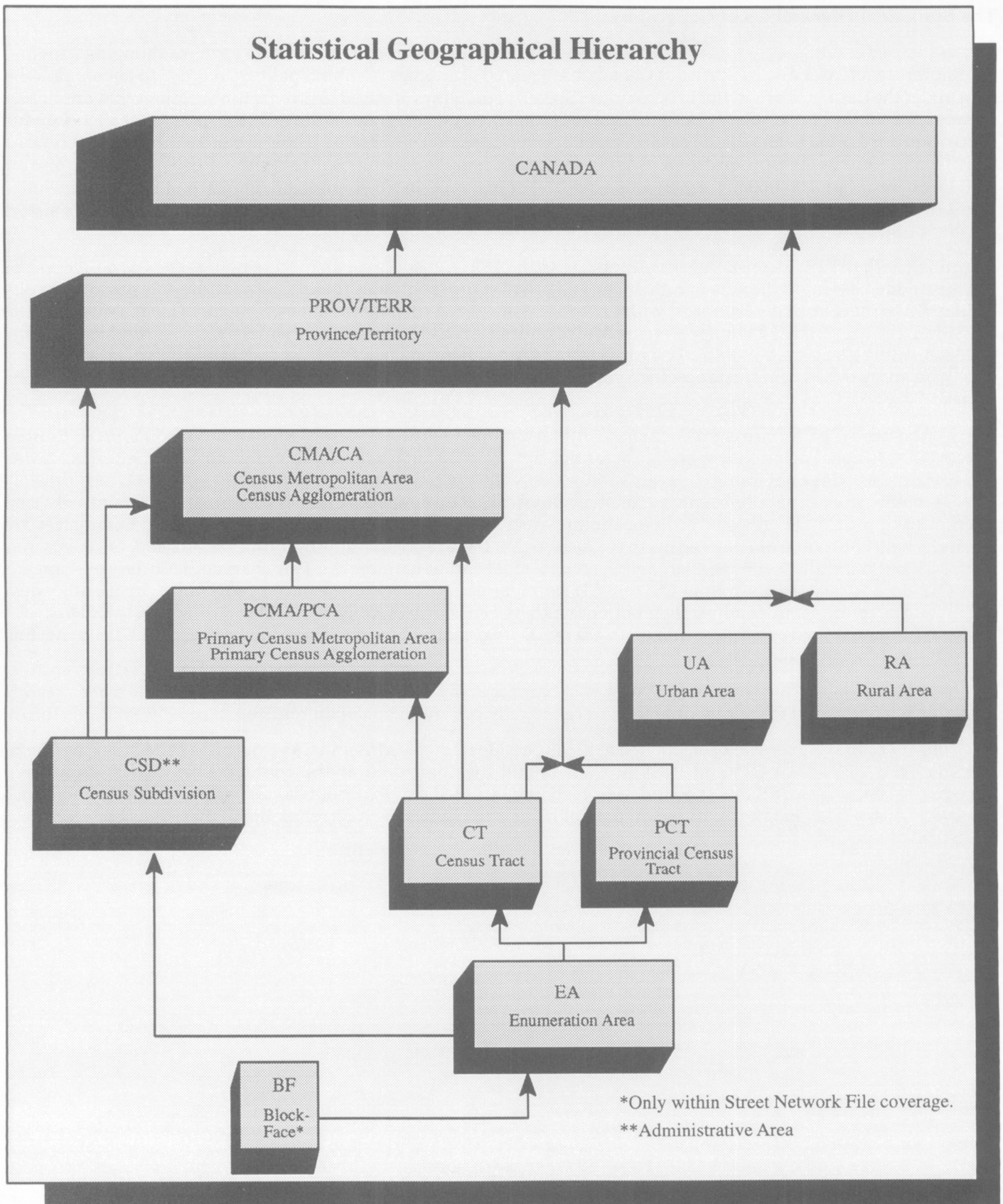
Beginning with the 1986 Census and continuing with the 1991 Census, a further refinement to the CMA/CA concept has been added. Because the area of influence of an urban centre continues to expand over time, it is possible for one CMA or CA to more strongly "connect" with a nearby CMA or CA. When this happens, Statistics Canada identifies the individual components as **Primary Census Metropolitan Areas (PCMAs)** and **Primary Census Agglomerations (PCAs)** forming a larger CMA or CA. Thus, in selected CMAs, there will be a PCMA as well as one or two PCAs. In a few CAs there are two PCAs. For instance, the Sydney CA in Nova Scotia is composed of the Sydney PCA and the Sydney Mines PCA.

Users often need data for areas that are smaller than a municipality. As a result, Statistics Canada created **Census Tracts (CTs)** to equal neighbourhood-like areas of 2,500 to 8,000 people (preferably close to 4,000) within all CMAs and certain CAs (CAs containing a census subdivision with a population exceeding 50,000 in the previous census). The CT boundaries generally follow permanent physical features such as major streets and railway tracks and attempt to approximate cohesive socio-economic areas. One unique feature of CTs is that their boundaries are generally held constant from one census to the next so that CTs are comparable over time. A subsequent census may split a CT, but normally it can be easily aggregated to equal earlier boundaries. This characteristic, however, means that CTs do not necessarily follow CSD or CD boundaries. This lack of nesting occurs most frequently when neighbouring municipalities adjust their boundaries between censuses. Only at the external outline of a CMA or a CA does a CT boundary have to follow that of a CSD or CD. In practice, however, there are few cases of CTs not nesting perfectly within CSDs and CDs.

CTs have had a long history of being the unit of choice for analyzing neighbourhoods since data have been readily available for them (and for a long time they were the only sub-municipal data released in readily available form).

The concept of the CT has also been applied to areas outside tracted CMAs and CAs where it is called the **Provincial Census Tract (PCT)**. All CTs and PCTs in Canada add together to cover the country. Like CTs, PCTs will not necessarily conform to CSD or CD boundaries. It should be noted that PCT boundaries have not been updated since the 1981 Census. The diagram featured on the following page shows the interrelationship that exists between these statistical areas.

Statistical Geographical Hierarchy



Other Geographical Units and Designations

There are some special subprovincial aggregations that are used for some surveys taken by Statistics Canada that are not in general use. The Labour Force Survey uses **Economic Regions**, which are very similar to subprovincial regions (SPRs). Also, agricultural data programs use a similar approach called **Agricultural Regions**, also known as **Crop Districts**. In both cases, CDs are the predominant building block.

Urban and rural are other geographical designations by which EAs are classified. Outside CMAs and CAs, land is either an **Urban Area** or **Rural**. In CMAs and CAs, land area is designated as being part of an **Urbanized Core**, **Urban Fringe** (the two making up urban areas) or a **Rural Fringe**. Certain rules with respect to population and density are used to make the designations.

Postal Code System

The mechanization of the postal system and the growth of direct mail have given rise to much more interest in the postal code system as a geographical system. Because it is designed by Canada Post solely to facilitate the delivery of the mail, it is quite different from the geographical systems used by Statistics Canada.

The postal code system is hierarchical in that it builds from small units of location (often a block-face in urban centres) to a larger territory. The familiar six-character alpha-numeric postal code is a reflection of that hierarchy. The first three characters refer to the **Forward Sortation Area (FSA)**, which in urban areas is about the size of 4-6 census tracts. The last three characters are the **Local Delivery Unit (LDU)**, which in urban areas is often equivalent to a block-face (normally one side of a city street between two consecutive intersections). There are many LDUs in each FSA. In areas with carrier delivery, groupings of LDUs form the carrier's delivery route, called a **Postal Walk (PW)** which is larger than an EA but smaller than a CT. Unlike census geography which is "frozen" for five years, postal geography is constantly changing.

Most postal area boundaries and routes have very little correspondence with census boundaries, even though they usually build up from the same base in urban areas (the block-face). In addition, the many delivery complexities such as post office boxes, community mail boxes ("super-boxes"), heavy volume mail users and rural routes make it difficult to always be able to fit postal geography into Statistics Canada's geography or vice versa. To assist postal geography users, Statistics Canada has created a linkage file called the **Postal Code Conversion File (PCCF)**. The PCCF indicates in which EA (or EAs) each postal code (FSA-LDU) is located, where possible. It also shows the representative point or representative points for the postal code, based on the block-face or the EA information. The PCCF facilitates the analysis of information that is coded by postal code with data coded by census geography. Users should be aware that postal geography and census geography do not match perfectly.

Statistics Canada publishes little data using postal geography, and what data it does publish are usually for urban FSAs. There are some Statistics Canada programs that do publish data according to postal geography where the links are reasonably accurate (such as the **Urban FSAs Profiles** series from the 1991 Census), or where the original data included the postal code (such as Statistics Canada's administrative data programs featuring tax filer information). In all cases, caution must be exercised because of the continuously changing boundaries of the postal code system.

Other Geographical Systems

Many other ways of organizing Canada have a spatial context including telephone exchanges, soil zones, broadcast listening areas or "footprints", election polling stations, provincial ridings, municipal election wards, climatic zones, drainage basins, and so on. None of these necessarily fit easily into census geography. However, it is still possible to compile reasonable estimates of census data as long as lines can be drawn on a map. Case C explores these types of situations more fully.

A Note on Numbering and Naming

The main components of the administrative hierarchy (CSD, CD and provinces and territories) are reflected in the **Standard Geographical Classification (SGC)**. This is a three-tier coding system that assigns a unique number to each area covered by the classification.

Additional numbering systems are used for EAs (linked to the FED, province or territory code), CTs (linked to the CA/CMA code), CMA/CA (including the province code which is unique except for British Columbia, the Yukon Territory and the Northwest Territories that begin with the digit 9). Manuals which list all the codes, and the location of the areas on maps, are available for reference purposes – see Section 10.

Statistics Canada follows certain naming conventions. All municipalities that are recognized governmental units have their officially designated names listed in the SGC. For geographical units designated for statistical purposes (EAs and CTs), numbers are used. Geographical groupings of a number of geographical units that are designated by Statistics Canada such as CMAs and CCSs, take the name of the most prominent locale.

2. Key Considerations For Working With the Census Geography

As with any research endeavour, there are always caveats and pitfalls to be aware of when working with data and their geographical elements. The following are the most notable.

Boundary Revisions

Geographical boundaries for cities, townships, etc. are “frozen” by Statistics Canada in the year of the census (normally January 1st of the census year). Therefore, any boundary changes implemented by a city or town after that date will not be reflected in the geographical tabulations of census data. For instance, if a municipality annexed a portion of an adjoining township on March 15th, 1992, the official 1991 Census results for that municipality will reflect the previous boundaries (as will all reference maps from the census), even though the data were released later in 1992 or 1993. A special calculation would be done by Statistics Canada to put the population data on the new boundaries (See Case E).

Statistics Canada redefines, at each census, the boundaries for geographical units that it is responsible for defining (such as EAs, CMAs, etc). These alterations are made in order to improve collection efficiencies or due to growth and change in urban areas.

Changes Since 1986

The major geographical change in the 1991 Census compared to the 1986 Census was the complete revision of CD boundaries in Quebec. This change reflects Quebec's changes to its counties.

Unlike previous censuses, there were few changes in CMA and CA boundaries between 1986 and 1991. There are no new CMAs for 1991. There are 7 new CAs; 6 CAs from the 1986 Census were dropped because their urbanized cores fell below the minimum 10,000 population requirement. Minor boundary adjustments occurred in 5 CMAs and 23 CAs. However, users are cautioned that major boundary adjustments and definitional changes have been made between earlier censuses.

Since census metropolitan areas and census agglomerations are meant to enclose the extent of urban influence of a market area, irrespective of administrative boundaries, their outer boundaries will expand if the urban area expands. Thus, data on a specific area by its boundaries from one census may not be comparable to data for the area with the same name from the next census. Similarly, changes in administrative boundaries (such as annexations) between censuses will provide comparability problems. Statistics Canada does indicate in its published data that changes have occurred.

Random Rounding and Area Suppression

In all census products released, procedures are applied to prevent the possibility of associating statistical data with any identifiable individual; the data are randomly rounded and they are suppressed for certain geographical areas.

Random rounding is a method whereby all figures in a tabulation, including totals, are randomly rounded (either up or down) to a multiple of “5”, and in some cases “10”. This technique provides strong protection against direct, residual or negative disclosure, without adding significant error to census data. However, figures on population counts only are not rounded since they provide no information on the characteristics of these populations.

Area suppression results in the deletion of all characteristic data for geographic areas with populations below a specified size. If the data are released at the postal code level or contain an income distribution, those areas with

populations below 250 persons are suppressed; otherwise, areas with a population of less than 40 persons are suppressed. In all cases, suppressed data are included in the appropriate higher aggregate subtotals and totals. [For more information please see: **1991 Census Handbook** (Catalogue 92-305 E), pp. 27-29.]

Daytime versus Night-time Demographics

Another important consideration is the concept of where the activity occurs in relationship to where it is measured. For instance, if a retailer wants to know the market nature of customers in the Portage and Main district of Winnipeg (in the heart of Winnipeg's downtown), he or she would get a very incomplete picture using only the census data for the neighbourhood surrounding the site. This is because the census measures Canadians according to where they live. Since many shopping areas are located near work areas that draw employees from a wide geographical base, local neighbourhood data would be insufficient. This phenomena is sometimes referred to as "daytime demographics" versus "night-time demographics".

Cottage and Tourist Areas

Another example of population counts reflecting permanent residents is in the cottage and tourist areas. In these areas, the census only includes permanent residents. Therefore, the demographic data for these areas reflect year-round residents.

Commonly Used (but not official) Names of Places

Statistics Canada follows officially established names and boundaries according to each province's and territory's Municipal Act or its equivalent. These names and boundaries often are not the same as many places that are treated as separate entities by historical custom or by organizations such as Canada Post. For instance, in Metropolitan Toronto, such areas as Don Mills, Willowdale, and Mimico no longer exist as official municipalities and, therefore, data for these places are not available as they would be for census subdivisions.

Similarly in many rural areas, a locality might not be an official municipality according to their province or territory. However, many people still use these places as postal addresses. Statistics Canada does publish a listing of such places in rural areas with basic population counts calling them "**Unincorporated Places**". Additional demographic detail for these areas, including those in urban locations, can be calculated either by using EA data or CT data as described in some of the cases later in this publication. Useful reference sources for accessing population counts and geographical reference information on unincorporated places in rural areas are the **Place Name Master File** (PNMF), the **Unincorporated Places** publication (Catalogue 92-306) and the **Place Names Lists** (Catalogues 92-307 to 92-309) available from Statistics Canada's Regional Reference Centres.

There are a number of other general guidelines to follow when using data divided into geographical areas:

1. Be careful not to double count if mixing different geographical units. For instance, if adding CMAs and CDs (counties) together from the same province, ensure that there is no overlap between the geographical coverage of the two. It is impossible to double-count when using the same type of geographical units (except when mixing PCMAs and PCAs with the full CMA or CA).
2. Beware that many geographical areas may have the same or a very similar name. For instance, Peterborough is the name of a city, county, census agglomeration (CA) and an urban area in Ontario. Whenever Statistics Canada products use a place name, they indicate what type of place it is, and in which province it is located.
3. Beware that some geographical areas cross the limits of other standard geographical units such as provincial borders. For example, Ottawa – Hull CMA crosses the provincial limits of Ontario and Quebec. Therefore, if you wanted to calculate the proportion of Ontario's population living within CMAs, you would not take the total for the Ottawa – Hull CMA into account, but only the Ontario part.

Two municipalities straddle provincial boundaries: Flin Flon and Lloydminster. However, these CSDs have a standard geographical classification code for each provincial part. Consequently, the two parts must be aggregated for the total population.

4. When using data from different statistical programs of Statistics Canada, or from other data producers, ensure that the geographical definitions are consistent, even if the data are for the same time periods. For instance, the Labour Force Survey may use CMAs delineated from different censuses.
5. There are special situations where an EA will appear to have a relatively large population, but only one household and one dwelling. These are "Collective EAs", which usually apply to an institution such as a retirement home, long-care medical facility or jail. Care should be taken to ensure that collective EAs are identified when using census data that include these areas.
6. The 1991 Census broadened its target population compared to earlier censuses by including some people that are not yet permanent residents of Canada, such as refugee claimants and those with student or employment visas. Since these persons concentrate in the larger urban centres of British Columbia, Alberta, Ontario and Quebec, growth rates for these centres will be particularly affected by this "extended target population".
7. From whom have the census data been obtained, may have some geographical implications. Authorized secondary distributors (see Box) provide a number of products and services based on tabulating randomly rounded EA data. Only Statistics Canada has access to the full range of census data by block-face and to unrounded, unsuppressed data. When dealing with non-standard areas that divide many urban EAs, but are about the same size as an EA or two, a special tabulation from Statistics Canada will yield more accurate data than a special tabulation from a secondary distributor, due to Statistics Canada's access to unrounded, unsuppressed data. The problem diminishes in relative severity as the number of enumeration areas aggregated increases.

The Role Of Secondary Distributors

Statistics Canada has licensing agreements with a number of organizations to distribute 1991 Census data, including geographical information. This is an important component of the marketing and dissemination of 1991 Census data. In fact, only authorized distributors may redisseminate census data since all data (including boundary files) are purchased on an end-use basis, unless otherwise approved by Statistics Canada. In some cases, these distributors simply resell standard products made available by Statistics Canada and, in other cases, they sell products and services that include added services or information. A list of approved secondary distributors is available from your nearest Statistics Canada Regional Reference Centre upon request.

Empty Places?

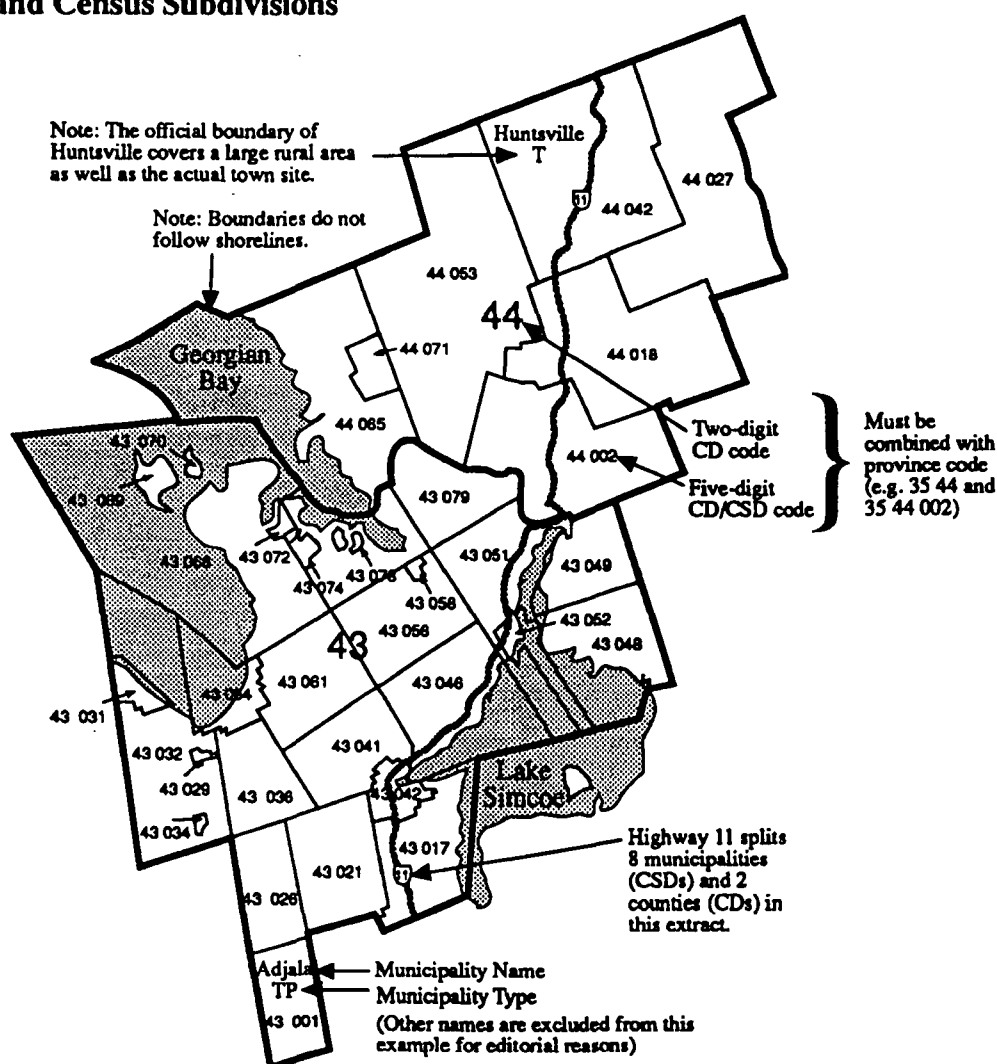
There are a number of EAs, block-faces, and some CTs and CSDs that do not contain any population. This reflects the distribution of population and the fact that many areas such as airports, industrial parks and remote areas do not have residents. For a variety of reasons, non-populated areas are sometimes designated with their own boundaries even though they have no population. "Empty" geographical units can sometimes cause surprises on computer drawn maps when "holes" appear in the shading.

3. Case A: Devising National and Local Sales Territories

John Cooper has just been appointed the first national sales manager for a new line of automotive parts being introduced into Canada. These parts will be sold through an extensive network of in-house field agents calling on retail outlets. His start-up duties include creating areas of responsibility for his regional managers, helping to define districts for the local managers, as well as assisting in determining the territories for the field agents.

Since John's company is very committed to market research and to evaluating sales effectiveness by closely monitoring market share changes, he must ensure that the territorial boundaries match readily available market information sources. Also, because the compensation package his company offers is quite challenging, John wants to ensure that the territorial boundaries are fair and clear. His company has a three-tier system of territories: large regions (under the direction of a regional sales manager), sales districts (managed by a sales manager) and individual sales territories (for each field agent).

Using Census Divisions and Census Subdivisions



Dividing Canada into Sales Regions

Based on experience in the United States, John believes that a market the size of Canada should have about six regional managers. In the U.S., his company often uses states to define the regional managers' territories. John, therefore, decides to use provinces in Canada.

John's first problem arises when he discovers that Ontario has about one third of the population of Canada and probably requires two regions, and that Quebec also might require two regions. Not being familiar with Canada, he asks his assistant to "get the right stuff to decide where to split the two larger provinces".

Provincial road maps indicate where the major cities are, and John's assistant decides to split both provinces in half, north to south. Further, being from Toronto, the assistant decides to split Ontario using Yonge Street because he knows it is Highway 11, and that it stretches all the way through northern Ontario. This split follows his boss' request for a boundary that is well understood.

John then needs to compile some basic profile data for the two Ontario regions. To get the necessary information, he visits the Statistics Canada Reference Centre in Toronto. There, he discovers that his boundaries do not coincide with the boundaries used by Statistics Canada and some other data sources such as compendia and almanacs. These documents mostly use county and municipal boundaries (CDs and CSDs). Highway 11, or Yonge Street, happens to pass through many of these CDs and CSDs. To answer his questions, John asks the data dissemination officer for assistance. The data dissemination officer explains that John can use his boundaries if he wishes to request custom tabulations for his territories. Alternatively, he could redelimit his territories. (See previous page for an example of his dilemma.)

John realizes that it will not be easy or practical to always request custom tabulations. Therefore, he decides to rethink his initial boundary split. Earlier, he had noticed on the road map some territorial markings and wonders what they are. The map legend says that they are county boundaries (CDs), so he asks whether Statistics Canada has a map of them as well. The data dissemination officer shows John a copy of **Census Division and Census Subdivision Reference Maps** (Catalogue 92-319). He purchases copies of the maps for Ontario and then looks up the county populations in **Population and Dwelling Counts – Census Divisions and Census Subdivisions** (Catalogue 93-304). He writes these figures on the map as well. Finally, he picks a split that is roughly equal in total population and is easy for travel.

Dividing Regions into Sales Districts

John's next challenge is to establish sales districts within the regions. Having now completed some research on how data are published, he knows better than to arbitrarily draw lines on a map or to blindly follow major roads.

John quickly decides to use Statistics Canada boundaries to define his districts. The concept of being market-centered appealed, so he decides to start with census metropolitan areas (CMAs) and census agglomerations (CAs). These areas are Statistics Canada's delimitation of the market influence of urban areas and are formed by grouping municipalities. However, since CMAs and CAs do not cover the entire province, he needs to fill in the gaps between urban markets by assigning the remaining municipalities and census divisions. The maps of census divisions and census subdivisions mentioned earlier are very helpful in this exercise because they also show the CMA and CA boundaries as well as all remaining municipalities [the same maps are also published in the **Standard Geographical Classification, Vol II, Reference Maps**, (Catalogue 12-572) or can be obtained separately].

Dividing Sales Districts into Individual Sales Territories

The next step is to subdivide major urban centres into local field agent territories. John has a number of options: census tracts (CTs), his own designations, or postal code forward sortation areas (FSAs). Since he would not be working very much with individual customer list information, he decides not to follow FSAs (see Box at bottom of following page). The choices remaining are to work with established CT boundaries or to create his own boundaries. If he creates his own boundaries, he would need to ask Statistics Canada to compile the census data for them (or an authorized census distributor). John decides on CTs for two very pragmatic reasons: it is cheaper and he could avoid disagreements about why a boundary went where it did, by saying he followed established boundaries.

Each CMA and tracted CA (CAs with a CSD of at least 50,000 in a previous census, have census tracts) have a special set of profile publications that summarize a wide range of census data in each area (colloquially known as the "CT Profiles series"). These publications include maps of the CMA's or CA's census tracts. Additionally, there is a compendium of census tract maps called **Census Metropolitan Areas, Census Agglomerations and Census Tracts Reference Maps** (Catalogue 92-320). John uses the latter because he wants to analyse a number of places. He followed the same process of writing population counts on the maps and then adding census tracts together into groupings of equal populations. In practice, this can be quite a tedious process if large urban areas are being divided into a number of local sales territories. One alternative is to approach a research company with the capability to do this allocation using a computer system. This way, a number of other factors could be weighed, such as income and family status. Another option is to purchase a mapping software package that would be used in-house to do the same thing (See Case E). Finally, the arithmetic of adding up the CTs populations could be simplified by purchasing the data from Statistics Canada on diskette for importing into a standard spreadsheet program.

What if it is too late, boundaries are already drawn up, and they don't follow CTs or other census geographical units? See Case C.

Postal Codes or Census Geography

For most organizations, a key question that arises when defining territories is whether to use postal geography or census geography. If the primary source(s) of information will be address list(s), such as customer files, and census data that will only be used periodically with these data, then it is probably best to use postal geography to set territories; more specifically, to use FSAs. However, if postal sources are not involved, then using census geography will probably make more sense. There are ways of converting data on one basis to the other such as with the help of Statistics Canada's **Postal Code Conversion File**. However, such conversions are not always exact, so the base system chosen should reflect the most important source of information being analyzed. Note also that postal code geography is not available on maps or as digital boundary files from Statistics Canada.

4. Case B: Evaluating the Local Market Around a Site for a Store

A young entrepreneur, Renée St. Jacques, has obtained the rights to open a new franchise in a chain of supply stores serving home-based businesses. She has two sites in mind in Sherbrooke and wants help in evaluating the market around each site. The head office of the franchise has given her a little information on target markets and typical customer travel patterns. With this in mind and no experience in retail site location research, she drops into the Statistics Canada Regional Reference Centre located in Montréal, looking for the required "demographics".

Renée was keen to learn and to do the research herself. In thinking through what she needed and in reviewing some of the material given to her by the franchise head office, she decided she needed to determine the following:

- * what the trading area of a store would be. The trading area is that geographical area around a site from which the majority of customers would come, considering transportation routes, competitor locations and the customers' willingness to travel certain distances.
- * the demographic description of her target group who were or could become home-based businesses (provided by the franchisor).
- * how many potential clients would be in the trading area of the sites (to be calculated), and whether this met the threshold size recommended by the franchisor.

The franchise's head office explained that the normal trading area for her store was a few kilometres, depending on transportation and other physical factors. She bought a street map of Sherbrooke and traced out a rough guess at what the trading area would be. She took into consideration the river and the bridge that squeezed and stretched her trading area. She took the map with her to the Montréal Regional Reference Centre.

In discussions with a data dissemination officer at the Regional Reference Centre, she quickly discovered that the most frequent way to geographically define market areas within larger urban cities in Canada is to use census tracts. These are statistical units of geography intended to divide large cities into smaller neighbourhood-like areas, and for which considerable census data are produced and can be easily obtained.

She was shown a map of census tracts for Sherbrooke and compared it with her own drawings on the street map. Without too much difficulty (see following page for a mapped example) she was able to determine which census tracts most closely resembled her drawing. In some cases, the fit was not very exact, and she had to make a decision on whether or not to include the particular census tract. She did this with both sites and ended up with a list of census tracts for each site that approximated her two likely trading areas. It was then a simple matter to pull out the demographic data for those census tracts from profile publications from both the 1991 Census and the 1986 Census. Since census tract boundaries are generally held constant from census to census, it was easy to compile comparable data from both time periods.

In further discussing her data request with Statistics Canada, she found that she could have attempted to follow more exactly her trading area boundary by retrieving data tabulated at a more detailed level of geography (see Box below). This would normally be a computerized process much along the lines described in the second part of Case C presented next.

Tips in more complicated situations

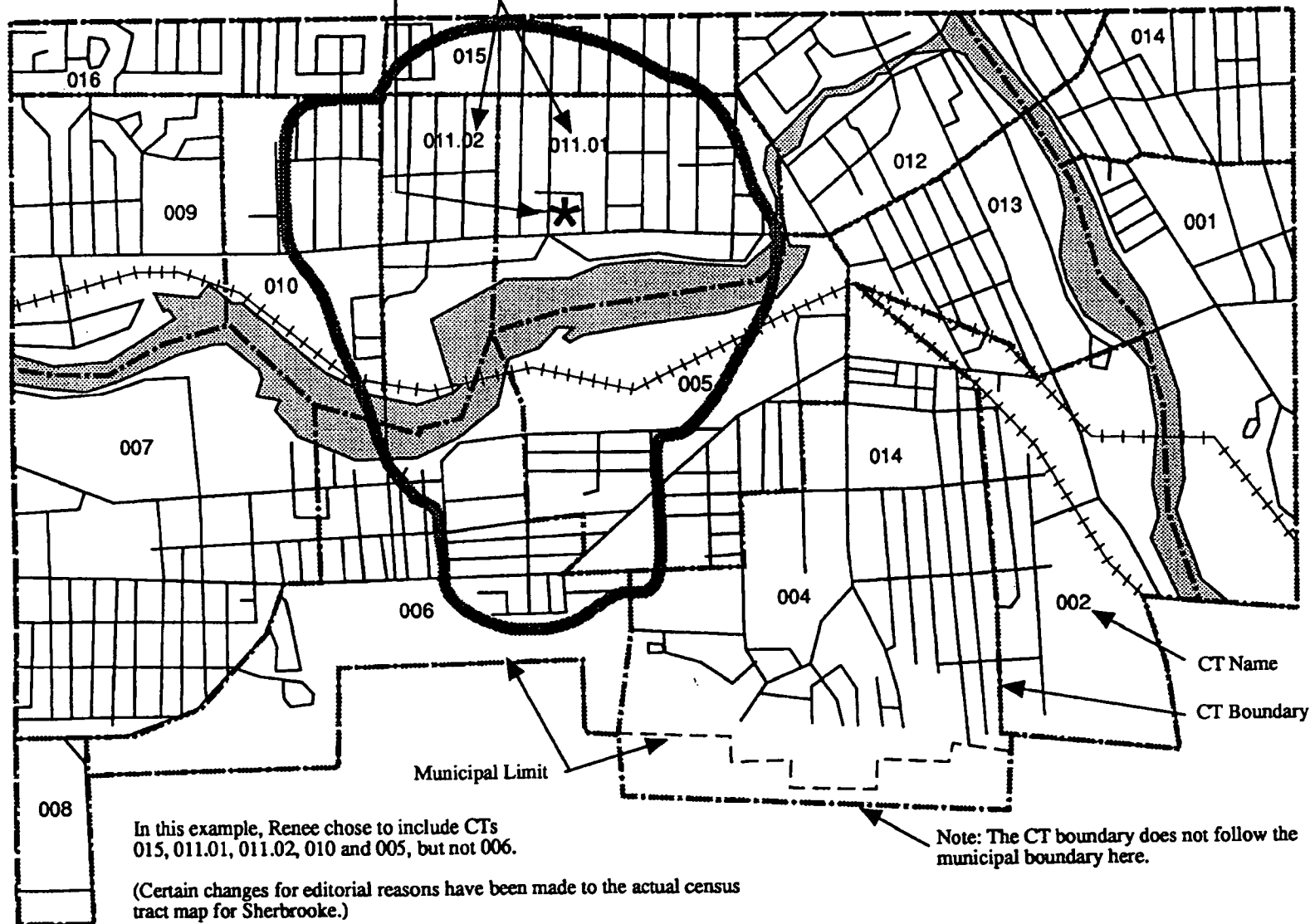
If many census tracts (or many sites) are involved, Statistics Canada provides a service to automatically add the data together. Or, electronic data files could be purchased and the user could do the work in-house.

Closer approximations of exact trading area boundaries can be accomplished using data tabulated at the enumeration area, or even block-face level of detail in the larger urban centres. This is warranted if trading areas are small – less than a kilometre or two in radius.

Using Census Tracts

Store site

CTs 011.01 and 011.02 used to be one CT, but were split due to significant population growth. The original CT 011 boundaries can be recreated by adding CTs 011.01 and 011.02 for historical analysis.



5. Case C: Custom Designing Your Own Boundaries

Jill Stasiuk is a planner in a provincial department of municipal affairs. She also sits on an inter-ministerial task force examining a number of regional planning issues. As an accomplished regional analyst, she is very familiar with a wide variety of analytical tools and regional data sources, and often gets asked for help on complex research questions. This week she has two: what is the population of a specific segment of a township that is probably going to be annexed to a neighbouring town; and, what are the population trends in a series of health districts in the southern half of her province.

A. Special Population Compilation Request

Jill dealt with the annexation question first. A map supplied by a colleague outlined the area under consideration for annexation. She had a number of choices for calculating the population of the area. She could ask the group responsible for maintaining assessment roles to tap into their database for the properties included in the study area. In her province, this database also includes a list of inhabitants and their ages. Also, she could commission a survey of her own in which someone would canvass the area and get the information directly. And, the last option was that she could look up the latest census data. All three had their limitations in terms of accuracy (both assessment and census being a couple of years old) and cost (a field survey being expensive). She decided to get assessment data and census data first before recommending a survey.

The census data approach became complicated. A comparison of the map provided by the colleague and census enumeration area (EA) maps for the area (there are 3 series of EA maps – see listing on page 31), revealed that the annexation actually split a number of EAs. In a couple of instances, the boundary followed streets in a built-up area, and although they split EAs, Jill knew that Statistics Canada would also have coded the data to the block-face (one side of a street between two intersections) and could easily retrieve the data. In fact, her ministry had the **Block-face Data File** that was released for the first time by Statistics Canada following the 1991 Census. Therefore, she could do the calculations herself with the appropriate software and geographical reference files for the urban portion of the annexation. However, the annexation also included some rural territory that was not included in the block-face program.

At this point she contacted a Statistics Canada's Regional Reference Centre to request the custom population compilation service. For this service, Statistics Canada staff go through the original 1991 Census visitation records of the census representatives and identify which households are where. This is a manual process and must be done by Statistics Canada staff to protect the confidentiality of respondents.

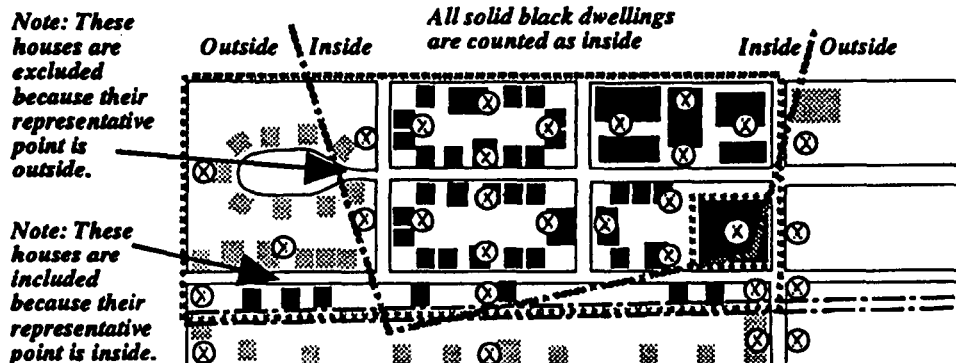
Drawing Your Own District Boundaries

The second request about the health districts was somewhat similar because it turned out that the boundaries had been drawn without regard to municipal or census geography, but had been done to minimize distance from hospitals and clinics. Thus, standard published census tabulations were not going to work. Also, because there were quite a number of large districts, it was impractical to manually look up on many maps which EAs were where.

In discussions with Statistics Canada, she found out that she could request custom census data retrievals for geographical areas that did not conform to census geography. The first step was to mark, clearly, the health district boundaries and their names on maps supplied by Statistics Canada. At first, she had supplied a regular provincial road map on which she had drawn the health districts using a magic marker. However, this was too rough since the line was wider than some towns it passed over on the map, leaving it unclear whether or not to include them. To avoid this type of problem, Statistics Canada supplies base maps to their clients.

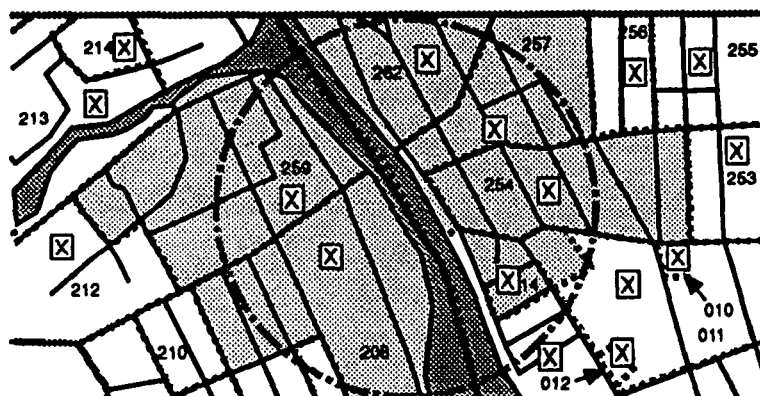
The health district boundaries are then “digitized” (see Box on page 19) from the map to create a “digital” boundary file. Statistics Canada then produces plots of the boundaries and population counts for each health district for Jill to review before the census data are retrieved. Pending her approval of the digitized boundaries, the required data are then extracted.

Data Retrieval Using Custom Boundaries



Data retrieved in an area covered by the Street Network File using block-face representative points.

Note: Retrieved data would actually be for the shaded area and not the exact circle due to inclusion/exclusion of representative points.



Data retrieved in an area using enumeration area representative points.

- Digitized boundary
- Enumeration area boundary
- ⊗ Enumeration area representative point
- ⊗ Block-face representative point

"Geocoding and Digitizing"

"Geocoding" is the technique used to geographically code and link households to small geographical units in support of data retrieval. For instance, customer addresses can be geocoded by matching their postal code to Statistics Canada geography using the **Postal Code Conversion File**. Thus, customer address files can be tabulated according to the census geography, and the corresponding census data examined for the demographics of those areas in which the customers live.

Statistics Canada geocodes households to a block-face representative point in large urban areas (where Statistics Canada maintains computer files of the streets and other network features – see **Street Network Files** in the Glossary), or an enumeration area (EA) representative point in small urban and rural areas. This links all the census data for the households to a particular EA or block-face representative point.

"Digitizing" is the process of converting map data from their original paper form to a digital format. This is the first step in a retrieval of statistical data for non-standard areas. Then computer processing is used to retrieve data for that area. This is done by calculating whether the representative point is inside or outside the digitized boundary (see illustration on page 18). If the representative point(s) is inside, then all data for the EA or block-face are included. Note: To each block-face (within **Street Network File** coverage) and enumeration area, the census data for that area are linked. It is this complex linking process that permits the extraction of data for non-standard as well as standard areas.

6. Case D: Using Direct Marketing to Promote a Retail Operation

Kim and Carol Lee own an upscale children's toy store in a Vancouver area shopping mall. Over the years, they have built up a loyal customer base from the neighbourhood surrounding the mall. They would like to expand their operations by adding a mail-order service. They are strong believers in promotion and would like to use direct mail to promote their store in the areas nearby. Carol decides to take charge of the planning.

After a strategic review with an advertising agency, Carol opts for a flyer drop in the surrounding area to promote her store.

Planning a Flyer Drop Around a Store

Carol decides to do a flyer drop around her store to take advantage of the low cost per advertising piece of unaddressed mail, even though such mail is less likely to capture the attention of the resident than is addressed mail. Carol's first call is to the post office to find out what their guidelines are for flyer distribution. Her second call is to the mall to find out if other stores at the mall have done similar flyer campaigns. She finds that the gift store has done a Christmas campaign, but that they used a flyer distribution company and not the post office. After comparing prices and other considerations, Carol elects to use the post office because there are a lot of apartment buildings in her area and she feels the post office will do a better job of delivering the flyers to each apartment mailbox.

In her discussions with Canada Post's Admail representative, Carol is asked to decide what neighbourhoods she wants to cover. She is shown a map of FSAs (Forward Sortation Areas are mail districts identified by the first three digits of the postal code). FSAs are postal delivery territories.

Carol was then asked to specify which FSAs she would like to include. Distance is one criteria she uses that she combines with the idea of demographically targetting certain areas. She knows through experience that her store appeals to grandparents as much as parents and children. Given the upscale nature of her products, she decides that some local neighbourhoods will be better than others based on age, income and family status. In order to pick the best FSAs, she consults a map to pick the closest geographical alternatives. Since she has some choices to make as to whether to include some FSAs or not, she then decides to take a look at their demographic profiles using the **Urban FSA Profile Series** from the 1991 Census. The choice became a tradeoff between costs per piece, likely success rates and her budget. Over time, Carol was able to refine the list of FSAs she included based on experience.

One basis for the refinement to the planning, was to research the true extent of the store's trading area. This is the area that a majority of their customers come from. While Carol and Kim had a rough idea, they decided to test their belief with a simple in-store research test. To do this, they put a map of their part of town up on a wall and asked each customer that came in over the next month to put in a pin indicating where they lived. At the end of the process, it was easy to then draw a boundary around the areas of highest customer concentration and refine the choice of FSAs accordingly.

What's The Alternative To "Pins Maps"?

While a "pin map" for one neighbourhood store is easy to organize, there are many situations in which it becomes impractical. More computer literate marketers can do the "pin map" approach using a computer mapping program and Statistics Canada's **Postal Code Conversion File (PCCF)**. This file contains a set of geographical co-ordinates for six-character postal codes in Canada. Therefore, after matching to the PCCF, a list of customers by postal code can be fed into a computer mapping program and it will plot customer locations based on postal codes. Alternatively, a number of secondary distributors will provide this custom service upon request.

7. Case E: Setting Up Your Own Computer Mapping System

Jim Thompson has just started a new job with a large retail chain in their real estate department. The company recently purchased some mapping software to help plan delivery routes and he wondered whether he could use it to plan store location and store marketing campaigns. He had previously worked for a market research company that had used a variety of systems and thus, knew a fair deal about the applications, but never had “built” a system from the ground up.

In reading the documentation for the software purchased by his new employer, Jim found that it had many mapping and analysis capabilities. From the literature and his previous experience, he knew that mapping software was great for displaying information and for analyzing many different locational questions. His new package seemed to have all the features he wanted and he was keen to get started with it.

Because the original purpose of the purchase was to determine the best routes for delivery, the only geographical information stored in the system was a set of street files that had been obtained from Statistics Canada: the **Street Network File (SNF)** (formerly called the Area Master File). This is a very comprehensive computer file covering the streets and key physical features of most larger Canadian cities, including the urbanized portions of CMAs and larger CAs (a reference publication, **Geocoding Coverage for the 1991 Census**, details the exact extent of the SNF). Since SNFs are updated at different times, they have differing vintages.

However, Jim needed to be able to portray areas for which census data are published, such as municipalities and census tracts. He found that while he could draw his own boundaries, he could not produce a map of Canada showing counties (census divisions) since he did not already have the boundary files and he did not wish to draw all 290 boundaries himself.

In order to plot anything geographically, digital boundary files are needed. These are computer encoded coordinates that allow dots and lines to be traced out and for information relating to them to be also displayed. Each software package has its own computer format that these instructions must have. Thus, Jim knew that he would have to make certain any boundary files he purchased could be transformed by his system if they did not already automatically conform to his software.

Jim’s first decision is which boundary files to purchase. Since he knew he would be doing extensive analyses with census data, he realized he would need to display much of the census geography.

What Computer Mapping and Geographical Analysis Systems Can Do for Demographic Research

There are a wide number of capabilities now available including:

- * distribution maps of census data and customers using dot maps, thematic/shaded maps (choropleth maps), pillar maps, 3-D maps, etc.;
- * determining the extent of trading areas covering x% of customers;
- * calculating and drawing the most efficient territory alignments taking into consideration the locations of outlets, competitors and customers;
- * overlaying different distributions and geographical features;
- * combining demographic models such as population projection equations with visual presentations of output;
- * combining statistical analyses with graphical output such as pie charts and scatterplots;
- * retrieving and computing demographic data for custom-drawn areas (either based on digitized boundaries or drawn right on the screen); and
- * computing distances, drawing routes and calculate densities.

You should research the capabilities of your own mapping or Geographical Information System (GIS) software package since they vary greatly.

A quick call to his original software vendor (or he could have called Statistics Canada) told him that Statistics Canada produces **Digital Boundary Files** (DBF) for almost all geographical units for which it releases data. The boundaries include provinces, census divisions, federal electoral districts, census subdivisions, census consolidated subdivisions, urban areas, census tracts and enumeration areas [enumeration area (EA) digital boundary files are available for the first time ever for 1991]. In fact, since all higher levels of geography are combinations of EAs, all other census geographical units boundary files are provided when users purchase a standard **EA Digital Boundary File**.

After reviewing what historically had been analyzed, Jim opted to begin with the census tract, census subdivision and census division boundaries. He also took note that some of these boundaries did not render shorelines very realistically. Shorelines and coastlines are drawn and represented in the **Digital Boundary Files** as the legal limits of municipalities. For this reason they extend into the water, thus ensuring complete coverage of the land areas, including islands, that fall within the municipal limits.

Jim also realized that he needed other types of geographical files. For instance, he wanted to be able to plot customer locations. For this he needed to be able to plot the location of a street address. One tool is Statistics Canada's **Postal Code Conversion File** (PCCF) that includes an "x-y" coordinate for six-character postal codes that mapping software can use to plot location. In urban areas, this usually represents one side of a street between two consecutive intersections. In effect, with the PCCF, a list of postal codes can be plotted on a map automatically as a series of points showing approximate location.

Jim already had the capacity to work at a very detailed level of geography due to the use of the **Street Network File**; he, therefore, decided to work with the block-face capabilities of the PCCF in urban areas. In other words, he wanted to be able to plot customer locations to the block where they were located.

If Jim had started from scratch with his foray into computer mapping, he would have had to make a number of key decisions. Some mapping software comes only as a stand-alone software system and the user must acquire boundary files and data files as well. Some companies who primarily market the mapping software also assist clients with this data and boundary file process. Finally, there are companies that package the software, data and boundary files together. Other mapping and analysis systems are offered for sale as fully integrated packages of analysis, data, mapping and graphing capabilities. Only organizations that have made licensing arrangements with Statistics Canada can sell or otherwise provide census data or boundary files developed by Statistics Canada.

The World of GIS

The world of computer mapping of demographic and business data has evolved from a major set of developments in the Geographical Information System (GIS) fields (including Land Information Systems – LIS). The power and precision of computer plotting developed from applications in natural resources (oil and gas, forestry, soils, etc) and in urban planning (road systems, utility systems, etc). These applications of computer mapping and plotting are still the biggest part of geographical electronic data storage and mapping systems.

8. Glossary of Geographical Terms

The geographical terms are presented here in summary form only. Please refer to the **1991 Census Dictionary** (Catalogue 92-301E) for the full definitions.

Block-face (BF). One side of a city street, normally between two consecutive intersections with streets or other features such as rivers and railways. A block-face is generally used for census data aggregation in large urban centres within Street Network File coverage.

Census Agglomeration (CA). A large urban area, together with adjacent urban and rural areas which have a high degree of economic and social integration with that urban area.

A CA is delineated around an urban area (called the urbanized core and having a population of at least 10,000, based on the previous census). If a CA's urbanized core population falls below 10,000, it is deleted from the CA program. However, if a CA attains an **urbanized core** population of at least 100,000, based on the previous census, it becomes a census metropolitan area (CMA).

Census Consolidated Subdivision (CCS). A grouping of contiguous census subdivisions (CSD). In some cases, a large CSD can form a CCS on its own.

CCSs are used primarily for disseminating Census of Agriculture data.

Census Division (CD). A geographical area established by provincial law which is an intermediate area between the census subdivision and the province (e.g. division, county, regional district, regional municipality).

In Newfoundland, Manitoba, Saskatchewan and Alberta, provincial law does not provide for this administrative area. Therefore, CDs have been created by Statistics Canada in cooperation with these provinces.

Census Metropolitan Area (CMA). A very large urban area, together with adjacent urban and rural areas which have a high degree of economic and social integration with that urban area.

A CMA is delineated around an urban area (called the urbanized core and having a population of at least 100,000, based on the previous census). Once an area becomes a CMA, it is retained in the program even if its population subsequently declines.

Census Subdivision (CSD). A municipality as determined by provincial legislation (such as city, town, village), or its equivalent (e.g. Indian reserve, Indian settlement and unorganized territory).

In Newfoundland, Nova Scotia and British Columbia, other types of CSDs have been created by Statistics Canada in cooperation with the provinces as equivalents for municipalities.

Census Subdivision Type. The type indicates the municipal status of a census subdivision. CSDs are classified into various types, according to official designations adopted by provincial or federal authorities.

Census Tract (CT). A permanent, small urban neighbourhood-like or rural community-like area established in large urban centres with the help of local specialists interested in urban and social science research.

Census tracts are delineated jointly by a local committee and Statistics Canada. The population must be between 2,500 and 8,000, with a preferred average of 4,000 persons (except for those CTs in central business districts, in other major commercial and industrial zones, or in peripheral rural or urban areas that may have either a lower or higher population). Also, when first delineated or subsequently subdivided, CTs must be as socio-economically homogeneous and compact in shape as possible.

All CMAs and CAs in Canada containing a CSD having a population of 50,000 or more at the previous census are eligible for a census tract program.

CMA/CA Component. Refers to the census subdivisions (CSDs) which form the building blocks of a census metropolitan area (CMA), census agglomeration (CA), primary census metropolitan area (PCMA) or primary census agglomeration (PCA).

CMA/CA Parts. The parts distinguish between central and peripheral urban and rural areas within a CMA or CA. There are three CMA/CA parts: urbanized core, urban fringe and rural fringe. (See separate definitions.)

Digitizing. The process of transforming spatial elements of a map or other two-dimensional images into x,y coordinates of cartesian space.

Economic Region (ER). See definition for subprovincial region.

Ecumene. Used by geographers to mean inhabited land; derived from the Greek root "oixos" meaning inhabited and "nenon" meaning space. Generally refers to land where people have made their permanent home and to all work areas that are considered occupied and utilized for agricultural or any other economic purposes. Thus, there can be various types of ecumenes, each having their own unique characteristics (such as a population ecumene, agriculture ecumene, industrial ecumene, etc.).

Enumeration Area (EA). The geographical area canvassed by one census representative. The number of dwellings in an EA generally varies between a maximum of 375 in large urban areas to a minimum of 125 in rural areas. An EA always respects higher level geographical areas recognized by the census, and is the smallest unit for which census data are usually available.

Federal Electoral District (FED). Any place or territorial area entitled to return a member to serve in the House of Commons. FED legal limits and descriptions are the responsibility of the Chief Electoral Officer, and are usually revised every 10 years after the results of the decennial census.

The 1987 Representation Order is the most current one, and is based on 1981 Census population data.

Forward Sortation Area (FSA). An area represented by the first three characters of the Postal Code. An urban FSA is served by approximately 25 postal walks; a rural FSA encompasses not more than 199 rural postal offices. Rural FSAs are identified by the presence of a "0" in the second position of the FSA code.

Geocoding. The process of assigning explicit and/or implicit geographical identifiers to records or map features stored in a data file. Explicit geocodes involve coordinates (e.g. latitude/longitude, UTM) defining the absolute positions of points, lines or areas. Implicit geocodes include addresses, census subdivision codes, postal codes, etc. which are linked to these points, lines or areas.

Geographical Area. An area (or unit) delineated or employed for the collection, compilation, analysis and dissemination of data (such as census data).

Map Projection. The systematic arrangement of meridians (latitude) and parallels (longitude) portraying the spherical surface of the earth onto a plane (flat) surface.

Postal Code. A six-character alpha-numerical code assigned to one or more postal addresses in a specific delivery area. The code is defined and maintained by Canada Post Corporation for the sortation and delivery of mail.

Postal Walk. The route covered by one letter carrier.

Primary Census Metropolitan Area (PCMA). A subregion within a larger consolidated CMA. Consolidation occurs when adjacent CMAs or CAs are socially and economically integrated, specifically when the total commuting interchange between the two is equal to at least 35% of the employed labour force living in the smaller CMA or CA, based on the previous census. After consolidation, the original CMA becomes a PCMA within the consolidated CMA.

A regular CMA is free-standing; it is either not adjacent to or not sufficiently related to another CMA or CA to be consolidated.

Primary Census Agglomeration (PCA). A subregion within a larger consolidated CMA or CA. Consolidation occurs when adjacent CMAs or CAs are socially and economically integrated, specifically when the total commuting interchange between the two is equal to at least 35% of the employed labour force living in the smaller CMA or CA, based on the previous census. After consolidation, the original CA becomes a PCA within the consolidated CMA or CA.

A regular CA is free-standing; it is either not adjacent to or not sufficiently related to another CMA or CA to be consolidated.

Province. The major political division of Canada. From a statistical point of view, it is a basic unit for which data are tabulated and cross-classified.

Provincial Census Tract (PCT). A permanent, small urban neighbourhood-like or rural community-like area established outside those CMAs and CAs having a census tract (CT) program. PCTs encompass populations between 3,000 and 8,000, with a preferred average of 5,000 persons.

Random Rounding. A confidentiality procedure whereby data (including totals) are randomly rounded either up or down to a multiple of "5", and in some cases "10". Since totals are independently rounded, they do not necessarily equal the sum of the individual data values.

This procedure is used to prevent the possibility of associating statistical data with any identifiable individual.

Reference Map. A map which shows the locations and boundaries of the geographical areas for which census data are tabulated and published. The main information depicted on reference maps includes the boundaries, names and codes of census geographical areas, and major cultural and physical features such as roads, railways, rivers and lakes.

Representative Point. Formerly called a centroid, it is a pair of coordinate values (x,y) that represents a geographical entity for the purpose of assigning aggregate data to that entity.

Rural Area. Sparsely populated areas outside urban areas. It is the area remaining after defining urban areas.

Rural fringe. All territory within a CMA or CA lying outside urban areas.

Standard Geographical Classification (SGC). Statistics Canada's official classification of geographical areas in Canada. The SGC provides unique numeric identification for three types of geographical areas: provinces/territories; census divisions; and census subdivisions.

The three geographical areas are hierarchically related. CSDs aggregate to CDs, which in turn aggregate to a province or territory. This relationship is reflected in the 7-digit code (2 digits for provinces/territories, 2 digits for census divisions and 3 digits for census subdivisions).

Street Network File (SNF). Formerly known as the Area Master File (AMF), the Street Network File is a computer-readable file that geographically references the street network and selected other non-street features (such as rivers, lakes, railroad tracks and municipal limits). SNFs are generally created for urban centres containing at least one municipality with a population of 50,000 or more at the previous census. These centres are normally in the census tract program.

The SNF contains the names for all street and non-street features. In addition, the intersection (corner) civic address ranges and block-face representative points are available for addressable streets.

Subprovincial Region (SPR). A grouping of complete census divisions. Prince Edward Island and the Territories consist of one SPR each. SPRs coincide with the current Labour Force Survey (LFS) economic regions, except in British Columbia.

SPRs are designated by law in Quebec and British Columbia. In the other provinces, the regions were created by agreement between Statistics Canada and the province/territory. SPRs are used primarily for disseminating economic data.

Territory. Two major political divisions of Canada, namely Yukon Territory and Northwest Territories. From a statistical point of view, these territories are equivalent to province (i.e. a basic unit for which data are tabulated and cross-classified).

Township, Range and Meridian (TRM). A legal, grid-like system of land partitioning and location in the Prairie provinces. The meridians follow every 5th degree of longitude. Each township/range, which is 6 x 6 miles in size, is divided into 36 sections. Each section, which is 1 x 1 mile in size, is further subdivided into four quarter sections.

Unincorporated Place (UP). A cluster of five or more occupied dwellings in rural areas, locally known by a specific name, but not having a local government or legal limits.

Urban Area (UA). An area containing a dense concentration of population. It must have a population of at least 1,000 and a density of at least 400 persons per square kilometre, based on the previous census. Urban areas separated by gaps of less than two kilometres are combined to form a single urban area.

All territory lying outside urban areas is considered rural. Taken together, urban and rural areas cover all of Canada.

Urban Fringe. An urban area within a CMA or CA, but outside the urbanized core.

Urbanized Core. A large urban area around which a CMA or a CA is delineated. The urbanized core must have a population (based on the previous census) of at least 100,000 in the case of a CMA, or between 10,000 and 99,999 in the case of a CA.

9. Subprovincial Geographical Units

Number of Geographic Units by Province and Territory

Geographic Unit	Canada	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	NW.T.
Federal Electoral District	295	7	4	11	10	75	99	14	14	26	32	1	2
Subprovincial Region	68	4	1	5	5	16	5	8	6	8	8	1	1
Agricultural Region	77	3	-	5	4	12	5	12	20	8	8	-	-
Census Division	290	10	3	18	15	99	49	23	18	19	30	1	5
Census Consolidated Subdivision	2,630	87	69	54	150	1,153	526	127	302	73	83	1	5
Census Subdivision	6,006	404	126	118	287	1,637	951	293	953	438	691	36	72
Census Metropolitan Area	25	1	-	1	1	6*	10*	1	2	2	2	-	-
Census Agglomeration	115	4	2	4	5*	28*	32*	4	8*	9*	21	1	1
Primary Census Metropolitan Area	12	1	-	-	-	3*	6*	-	-	2	1	-	-
Primary Census Agglomeration	21	1	-	2	-	4	8	-	-	3	3	-	-
Census Tract	4,068	40	-	75	67	1,052	1,731	156	98	385	464	-	-
Provincial Census Tract	1,815	84	26	117	98	491	410	91	146	161	179	5	7
Urban Area	893	42	7	38	36*	222*	246*	42*	69*	99*	92	1	4
Enumeration Area	45,995	1,155	249	1,442	1,266	10,912	15,119	2,030	2,799	4,602	6,162	97	162
Street Network File	342	2	-	3	16	116	113	9	5	4	74	-	-
Block-face	763,626	4,345	-	9,096	15,353	175,929	312,280	32,766	21,003	73,085	119,769	-	-
Forward Sortation Area	1,384	28	7	51	34	363	503	55	44	118	173	3	5
Postal Code**	640,963	6,826	2,666	17,871	13,172	163,971	235,949	22,007	20,487	58,616	98,091	781	526

* CMAs, CAs and urban areas crossing provincial limits are counted in both provinces.

** As of June 1991.

10. List of Geographical Reference Products and Services

(Comprehensive information on the products and services is included in the **1991 Census Catalogue** and the **1991 Geography Catalogue**. Prices quoted are for purchases within Canada; prices for U.S. and other locations are higher.)

Reference Products

- Standard Geographical Classification: SGC, 1991**
 - Vol I, **Classification** (Catalogue 12-571) \$75.00
 - Vol II, **Reference Maps** (Catalogue 12-572) \$75.00
 - Vol III, **Changes – 1986 to 1991** (Catalogue 12-573) \$66.00
- 1991 Census Geography: A Historical Comparison** (Catalogue 92-311E) \$20.00
- Geocoding Coverage for the 1991 Census** (Service 627-002) \$25.00
- 1991 Census Dictionary** (Catalogue 92-301E and on diskette 92-301E D) \$40.00
- 1991 Census Catalogue** (Catalogue 92-302E) \$15.00
- 1991 Census Tabulation Guide** (92-304 D – diskette product) \$15.00
- 1991 Census Handbook** (92-305E) \$25.00

Enumeration Area Reference Lists

- Census Tracts** (Catalogue 92-312) \$35.00
- Census Metropolitan Areas and Census Agglomerations** (Catalogue 92-313) \$30.00
- Census Divisions and Census Subdivisions:**
 - Atlantic** (Catalogue 92-314) \$25.00
 - Quebec** (Catalogue 92-315) \$25.00
 - Ontario** (Catalogue 92-316) \$25.00
 - Western Provinces and the Territories** (Catalogue 92-317) \$30.00
- Equivalent Enumeration Areas, 1991 and 1986** (Catalogue 92-318) \$55.00

GEOREF (*Geographic Information Reference System* – diskette product)

- Canada** (Catalogue 92-345 D) \$500.00
- Region(s) come as subsets. Prices: one region – \$250.00, two regions– \$350.00, three regions – \$450.00
 - Atlantic** (Catalogue 92-321 D)
 - Quebec** (Catalogue 92-322 D)
 - Ontario** (Catalogue 92-323 D)
 - Western Provinces and the Territories** (Catalogue 92-324 D)

Digital Geography Products

Digital Boundary Files (DBF). A library of boundary files in digital form. These boundaries are available for most levels of geography [from the enumeration area (EA) up to the province and territory]. These digital boundary files provide the user with digital products for designing geographical areas, for mapping and for data manipulation operations offered by the user's software. All boundaries reflect legal limits and, therefore, are not appropriate for land area calculations or for producing maps requiring realistic shorelines and water bodies.

Standard files are packaged by level of geography and geographical coverage. Prices vary according to the following formula. A \$100.00 service fee per order plus \$1.00 per geographical area (polygon). When purchasing EA boundaries, all higher level boundaries are provided at no extra charge. Custom packages can also be compiled at a price of \$1.00 a unit plus a \$350.00 service fee.

Postal Code Conversion File (PCCF). This file links the six-character postal code with standard 1991 Census geographical areas such as enumeration areas (EAs), census tracts (CTs) and census subdivisions (CSDs). It also provides the x,y coordinates for a point representing the location of the postal code to support mapping applications. Prices vary by coverage. Canada - \$19,000. Separate prices for each province and territory.

Block-face Data File (BFDF). Provides 1991 Census population and dwelling counts for each block-face in large urban centres covered by the Street Network Files. It also links the block-face to higher standard geographical levels through geographical codes. The block-face representative point coordinates and address ranges are also provided. Prices vary by coverage requested.

Street Network Files (SNF). Computer files that provide digital coordinates for major network features (roads, railway tracks, etc) in most large urban centres in Canada. It also includes street names and address ranges. Date of information reflected in the file will vary from place to place.

Standard files are packaged by census metropolitan area (CMA) and census agglomeration (CA). Prices vary according to the centre between \$110.00 and \$13,748.00. Custom packages are available at \$350.00 service fee per order plus \$0.45 per polygon.

Place Name Master File (PNMF). This file contains the names and population counts of all census divisions (CDs), census consolidated subdivisions (CCSs), census subdivisions (CSDs) and unincorporated places (UPs) for which a population was reported in 1991. Information includes Standard Geographical Classification (SGC) code, type of place and representative point for each geographical area. The file is available for Canada (\$500) or by region (\$250).

Geocoding Service. This custom service allows users to define their own boundaries to be used to retrieve Census data. Minimum price of \$40.00 per polygon plus a \$350.00 service fee per boundary created.

Other Custom Services. These services can include customizing any of the above digital products as well special population compilations from original census records (areas that are smaller than enumerations areas (EAs) when block-face data are not available or smaller than a block-face when they are) and digitizing (establishing computerized coordinates) user defined boundaries or locations and some custom mapping. Cost estimates will be provided in advance. The minimum cost will be \$350.00.

Map Series

Enumeration Area Maps. These maps portray the boundaries and codes of each enumeration area. They are printed on demand.

Series 1: Large Urban Centres (Formerly the G-13 and G-13A series). Available for urban centres with a population of 50,000 and over that are part of the census tract program. Boundaries for census tracts, census subdivisions, federal electoral districts, census metropolitan areas and census agglomerations are shown as well as roads, railway tracks and hydrography. Price is \$10.00 a map or \$7.50 a map when ordering 10 or more.

Series 2: Small Urban Centres (Formerly G-14 and G-16 series). Available for census subdivisions that are not part of the census tract program, and for unincorporated places. Also shows federal electoral district boundaries where applicable. Price is \$10.00 a map.

Series 3: Rural Areas (Formerly G-12 series). Available for all rural areas. Also shows census subdivision, census division, federal electoral district, census metropolitan area and census agglomeration boundaries where applicable. Price is \$10.00 a map.

Census Divisions and Census Subdivisions Reference Maps. These are three-colour provincial maps which show census subdivision, census division, census metropolitan area and census agglomeration boundaries. Each province and territory has one to four maps. Base maps were produced by Energy, Mines and Resources Canada and show water bodies, major roads and railway tracks. A full set of maps is published as Catalogue 92-319. Price is \$75.00. Individual maps can be ordered for \$5.00 each.

Census Metropolitan Areas, Census Agglomerations and Census Tracts Reference Maps. These are three-colour maps that show census subdivision, urbanized core, urban fringe, rural fringe, census tract, primary census metropolitan area and primary census agglomeration boundaries where applicable. Also shown are rivers, lakes, railway tracks and other significant features. These are published as a set in Catalogue 92-320, price \$75.00. Each **Census Tract Profile** publication includes its respective map(s) from this series. Individual maps can also be purchased for \$5.00.

Federal Electoral District Map. This colour map (78.8 cm x 27.8 cm) shows the federal electoral districts boundaries for Canada based on the 1987 Representation Order. Basic land and water features are also shown. It was produced by Energy, Mines and Resources Canada on behalf of the Chief Electoral Officer. Available in the data publications featuring federal electoral districts and separately for \$5.00.

11. How To Access Geographical Information

Depository Libraries

The Statistics Canada library in Ottawa maintains complete current and historical records of all Statistics Canada publications, both catalogued and non-catalogued. The library staff is available to help users find the required information.

Statistics Canada's Regional Reference Centres

Statistics Canada's Regional Reference Centres provide a full range of census products and services. Each reference centre is equipped with a library and sales counter where users can consult or purchase publications, microcomputer diskettes, microfiche, maps and more.

The staff of the Regional Reference Centres provide consultative and research services in addition to providing after-sales service and support, including seminars and workshops on the use of Statistics Canada information.

Each centre has facilities to retrieve information from Statistics Canada's computerized data retrieval systems CANSIM and TELICHART. A telephone inquiries service is also available with toll-free numbers for regional users outside local calling areas. Call, write, fax or visit the nearest Regional Reference Centre for more information.

Secondary Distributors

Secondary distributors offer data access and analytical support through a variety of consulting and computer-based services not available at Statistics Canada. The names and addresses of licensed distributors may be obtained from any Regional Reference Centre.

Notes, Footnotes and Abbreviations

Abbreviation(s)

Nfld.	=	Newfoundland
P.E.I.	=	Prince Edward Island
N.S.	=	Nova Scotia
N.B.	=	New Brunswick
Que.	=	Quebec
Ont.	=	Ontario
Man.	=	Manitoba
Sask.	=	Saskatchewan
Alta.	=	Alberta
B.C.	=	British Columbia
Y.T.	=	Yukon Territory
N.W.T.	=	Northwest Territories

Regional Reference Centres

Statistics Canada's regional reference centres provide a full range of census products and services. Each reference centre is equipped with a library and a sales counter where users can consult or purchase publications, microcomputer diskettes, microfiche, maps and more.

The staff of the regional reference centres provides consultative and research services in addition to providing after-sales service and support, including seminars and workshops on the use of Statistics Canada information.

Each centre has facilities to retrieve information from Statistics Canada's computerized data retrieval systems CANSIM and E-STAT. A telephone inquiry service is also available with toll-free numbers for regional users outside local calling areas. Call, write, fax or visit the nearest regional reference centre for more information.

Atlantic Region

Serving the provinces of Newfoundland and Labrador, Nova Scotia, Prince Edward Island and New Brunswick.

Advisory Services
Statistics Canada
Viking Building, 3rd Floor
Crosbie Road
St. John's, Newfoundland
A1B 3P2

Toll-free service: 1-800-565-7192
Fax number: (709) 772-6433

Advisory Services
Statistics Canada
North American Life Centre
1770 Market Street
Halifax, Nova Scotia
B3J 3M3

Toll-free service: 1-800-565-7192
Local calls: (902) 426-5331
Fax number: (902) 426-9538

Quebec Region

Advisory Services
Statistics Canada
200 René Lévesque Blvd. W.
Guy Favreau Complex
Suite 412, East Tower
Montréal, Quebec
H2Z 1X4

Toll-free service: 1-800-361-2831
Local calls: (514) 283-5725
Fax number: (514) 283-9350

National Capital Region

Statistical Reference Centre (NCR)
Statistics Canada
R.H. Coats Building Lobby
Holland Avenue
Ottawa, Ontario
K1A 0T6

If outside the local calling area, please dial the toll-free number for your region.

Local calls: (613) 951-8116
Fax number: (613) 951-0581

Ontario Region

Advisory Services
Statistics Canada
Arthur Meighen Building, 10th Floor
25 St. Clair Avenue East
Toronto, Ontario
M4T 1M4

Toll-free service: 1-800-263-1136
Local calls: (416) 973-6586
Fax number: (416) 973-7475

Pacific Region

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Statistics Canada
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Vancouver, British Columbia
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Fax number: (604) 666-4863

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Serving the provinces of Manitoba, Saskatchewan, Alberta and the Northwest Territories.

Advisory Services
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Winnipeg, Manitoba
R3B 3L9

Toll-free service: 1-800-563-7828
Local calls: (204) 983-4020
Fax number: (204) 983-7543

Advisory Services
Statistics Canada
Avord Tower, 9th Floor
2002 Victoria Avenue
Regina, Saskatchewan
S4P 0R7

Toll-free service: 1-800-563-7828
Local calls: (306) 780-5405
Fax number: (306) 780-5403

Advisory Services
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First Street Plaza, Room 401
138 - 4th Avenue South-East
Calgary, Alberta
T2G 4Z6

Toll-free service: 1-800-563-7828
Local calls: (403) 292-6717
Fax number: (403) 292-4958

Advisory Services
Statistics Canada
Park Square, 8th Floor
10001 Bellamy Hill
Edmonton, Alberta
T5J 3B6

Toll-free service: 1-800-563-7828
Local calls: (403) 495-3027
Fax number: (403) 495-5318

Telecommunications Device for the Hearing Impaired: 1-800-363-7629

Toll Free Order Only Line (Canada and United States): 1-800-267-6677

Depository Libraries

The Statistics Canada Library in Ottawa maintains complete current and historical records of all Statistics Canada publications, both catalogued and non-catalogued. The library staff is available to help users find the required information.

Statistics Canada Library
R.H. Coats Building, 2nd Floor
Tunney's Pasture
Ottawa, Ontario
K1A 0T6
Local calls: 613-951-8219/20
Fax: 1-613-951-0939

The following is a list of full depository libraries that receive all Statistics Canada publications and all other federal government publications.

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Queen Elizabeth II Library
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Prince Edward Island

Charlottetown

Government Services Library
Charlottetown, Prince Edward Island
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Nova Scotia

Halifax

Dalhousie University
Killam Memorial Library
Halifax, Nova Scotia
B3H 4H8

Wolfville

Acadia University
Vaughan Memorial Library
Wolfville, Nova Scotia
B0P 1X0

New Brunswick

Fredericton

Legislative Library
Fredericton, New Brunswick
E3B 5H1

University of New Brunswick
Harriet Irving Library
Fredericton, New Brunswick
E3B 5H5

Moncton

Université de Moncton
Bibliothèque Champlain
Moncton, New Brunswick
E1A 3E9

Sackville

Mount Allison University
Ralph Pickard Bell Library
Sackville, New Brunswick
E0A 3C0

Quebec

Montréal

Municipal Library of Montréal
Montréal, Quebec
H2L 1L9

Services documentaires multimédia
Montréal, Quebec
H2C 1T1

Concordia University Library
Montréal, Quebec
H3G 1M8

McGill University
McLennan Library
Montréal, Quebec
H3A 1Y1

Université de Montréal
Bibliothèque des sciences humaines
et sociales
Montréal, Quebec
H3C 3T2

Université du Québec à Montréal
Bibliothèque
Montréal, Quebec
H2L 4S6

Québec

National Assembly Library
Québec, Quebec
G1A 1A5

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Cité universitaire
Sherbrooke, Quebec
J1K 2R1

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Université Laval
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Sainte-Foy, Quebec
G1K 7P4

Ontario

Downsview

York University
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M3J 2R6

Guelph

University of Guelph
Library
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Kingston

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London

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Ottawa

Library of Parliament
Canadian Government Information
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Ottawa, Ontario
K1A 0A9

National Library of Canada
Ottawa, Ontario
K1A 0N4

University of Ottawa
Morisset Library
Ottawa, Ontario
K1N 9A5

Sudbury

Laurentian University of Sudbury
Library
Sudbury, Ontario
P3C 2C6

Thunder Bay

Lakehead University
Chancellor Paterson Library
Thunder Bay, Ontario
P7B 5E1

Thunder Bay Public Library
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Toronto

Legislative Library
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Metropolitan Toronto Reference Library
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M4W 2G8

University of Toronto
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M5S 1A5

Waterloo

University of Waterloo
Dana Porter Arts Library
Waterloo, Ontario
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Windsor

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Manitoba

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Legislative Library
Winnipeg, Manitoba
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The University of Calgary
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Edmonton Public Library
Edmonton, Alberta
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Legislative Library
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The University of Alberta
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Edmonton, Alberta
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British Columbia

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The University of British Columbia
Library
Vancouver, British Columbia
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Vancouver Public Library
Vancouver, British Columbia
V6Z 1X5

Victoria

Legislative Library
Victoria, British Columbia
V8V 1X4

University of Victoria
McPherson Library
Victoria, British Columbia
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Northwest Territories

Yellowknife

Northwest Territories
Government Library
Yellowknife, Northwest Territories
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Other Countries

Federal Republic of Germany

Preussischer Kulturbesitz
Staatsbibliothek
Abt. Amtsdruckchriften U. Tausch
Postfach 1407
1000 Berlin 30
Germany

United Kingdom

The British Library
London, WC1B 3DG
England, United Kingdom

Japan

National Diet Library
Tokyo, Japan

United States of America

Library of Congress
Washington, D.C. 20540
United States of America

Additional References and Services

In addition to being available through Regional Reference Centres and depository libraries, Statistics Canada publications may be ordered through your **local bookstore** or **subscription agent**. Contact the nearest Regional Reference Centre for a list of Canadian outlets available, or consult the 1991 Census Catalogue (Catalogue No. 92-302E).

Secondary distributors offer data access and analytical support through a variety of consulting and computer-based services not available at Statistics Canada. The names and addresses of licensed distributors may be obtained from any Regional Reference Centre.

Statistics Canada provides **digital geographic products** which allow computer manipulation of geographic data. A customized retrieval service is available for users who wish to define their own geographic area of study. A variety of data retrieval files and services provide flexibility in selecting a geographic base.

A complete description of available digital files and services is documented in the 1991 Census Catalogue (Catalogue No. 92-302E).

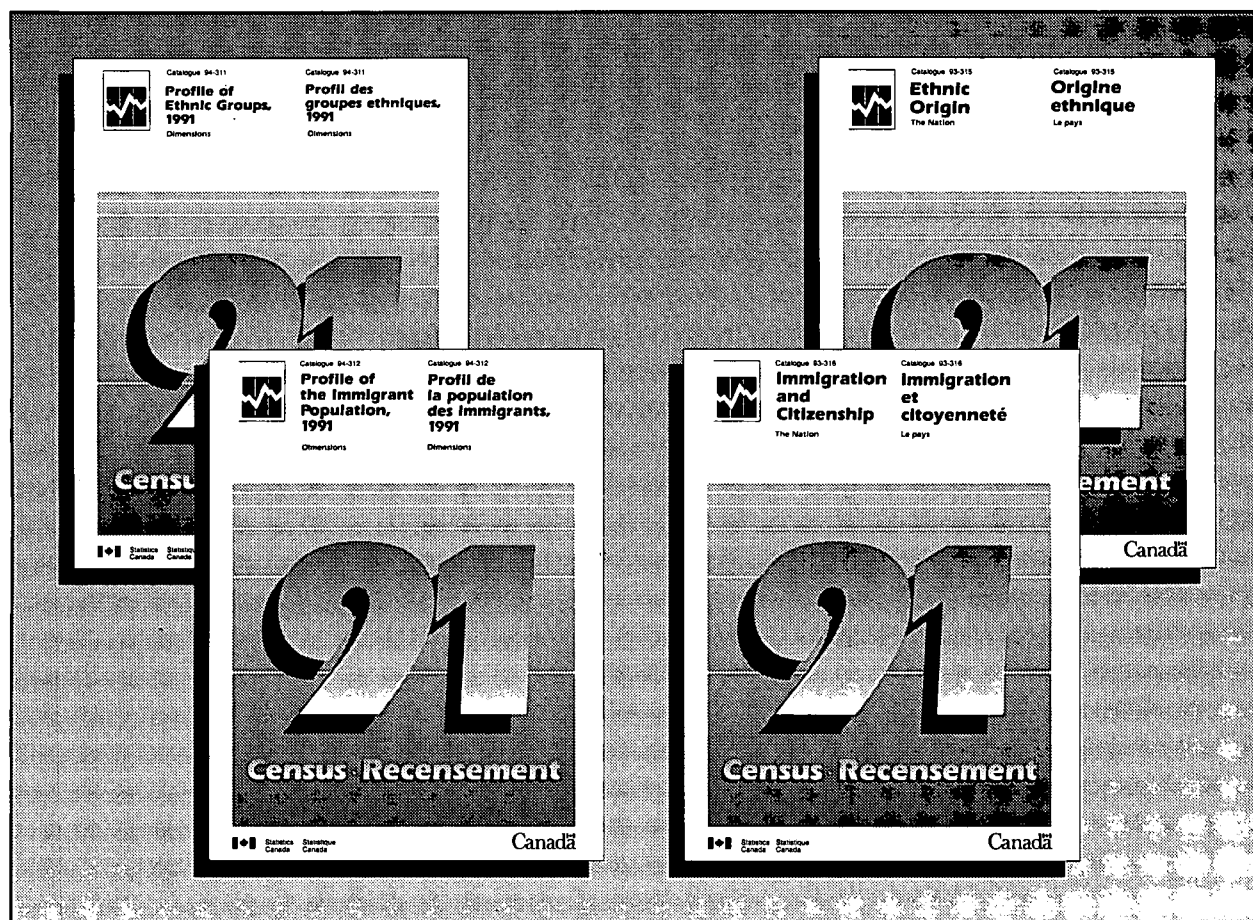
Information concerning **census of agriculture products and services** may be found in the 1991 Census of Agriculture Products and Services publication, Catalogue No. 92-303, or by calling toll free 1-800-465-1991.

Users with special data requirements may request **post-census survey services**. Data are made available on microcomputer diskettes for use with spreadsheet software, or on paper output. For additional information, please contact the nearest Regional Reference Centre.

CANSIM, Statistics Canada's computerized database network and information retrieval service provides users with access to current and historical statistics in various forms including specialized data manipulation and analysis packages, graphics facilities and a bibliographic search service. For more information about CANSIM, contact the Marketing Division or any Regional Reference Centre.

From the four corners of the world...

...to a home in Canada, our population is made up of diverse ethnic groups. The latest data on ethnic origin and immigration are now available from the 1991 Census of Population.

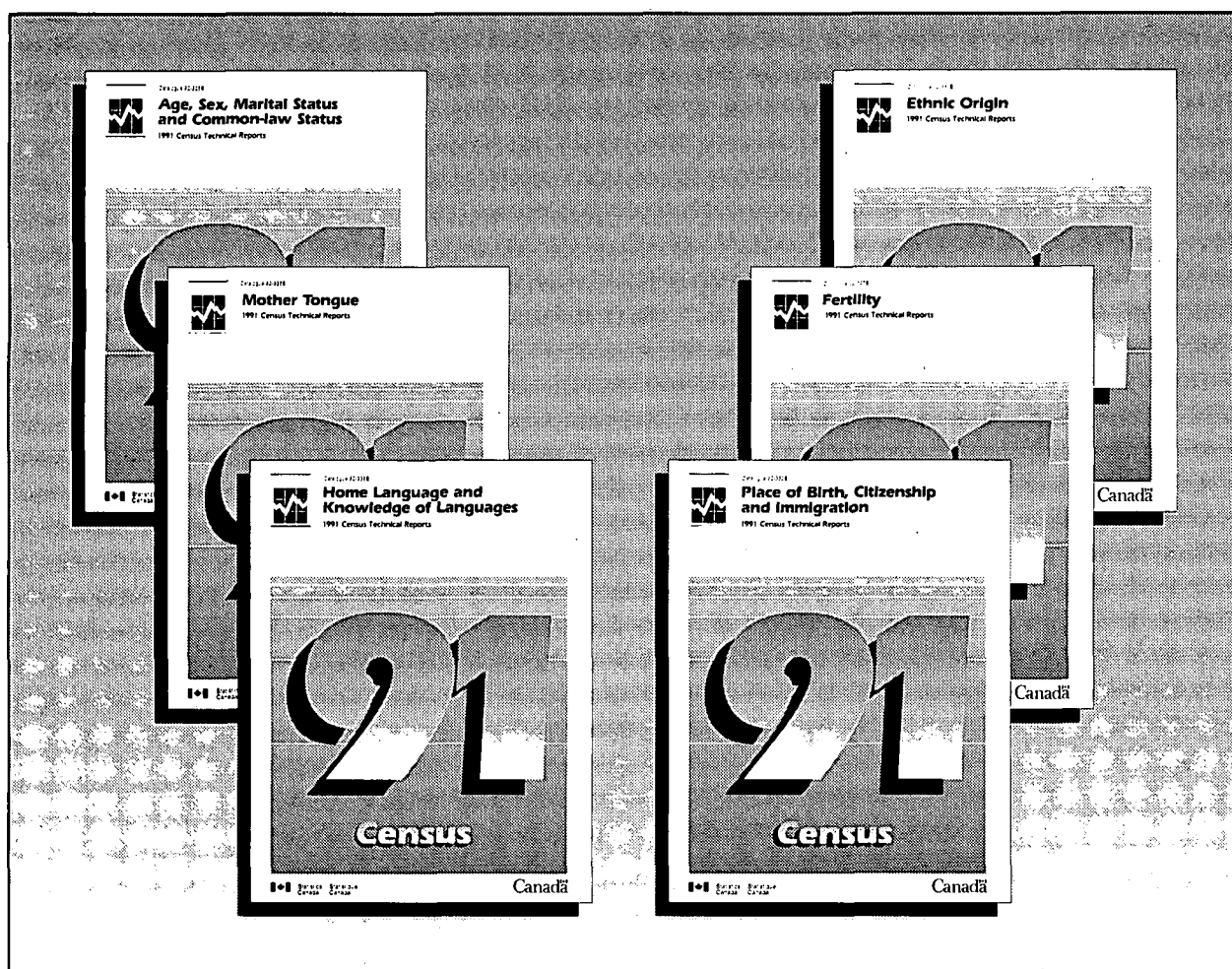


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Nuts and Bolts of Census Data

1991 Census Technical Reports provide users with data quality information. Census concepts, variables and their components, definitions, coverage, processing, data evaluation and limitations and much more are explained in detail in each report.



For a complete list of *Technical Reports* available, call
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Census Information...

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The advertisement displays two categories of 1991 Census products: Print and Diskette. On the left, under the 'Print' heading, three publications are shown stacked. The top one is 'Age, Sex and Marital Status' (The Nation) in English and French. The middle one is 'Dwellings and Households' (The Nation) in English and French. The bottom one is 'Families: Number, Type and Structure' (The Nation) in English and French, featuring a large '91' graphic. On the right, under the 'Diskette' heading, three 5.25-inch floppy diskettes are shown stacked. Each diskette label features the 'Census Recensement 91' logo and a table of contents in English and French. The top diskette contains 'Age, Sex and Marital Status', the middle one contains 'Dwellings and Households', and the bottom one contains 'Families: Number, Type and Structure'. Each diskette also has an upward-pointing arrow icon.

Print

Diskette

The 1991 Census database gives you more product choices than ever before. For the first time, selected Census publications are available on diskette. With the touch of a keystroke, you can access and manipulate census data in the comfort of your office.

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Statistics Canada
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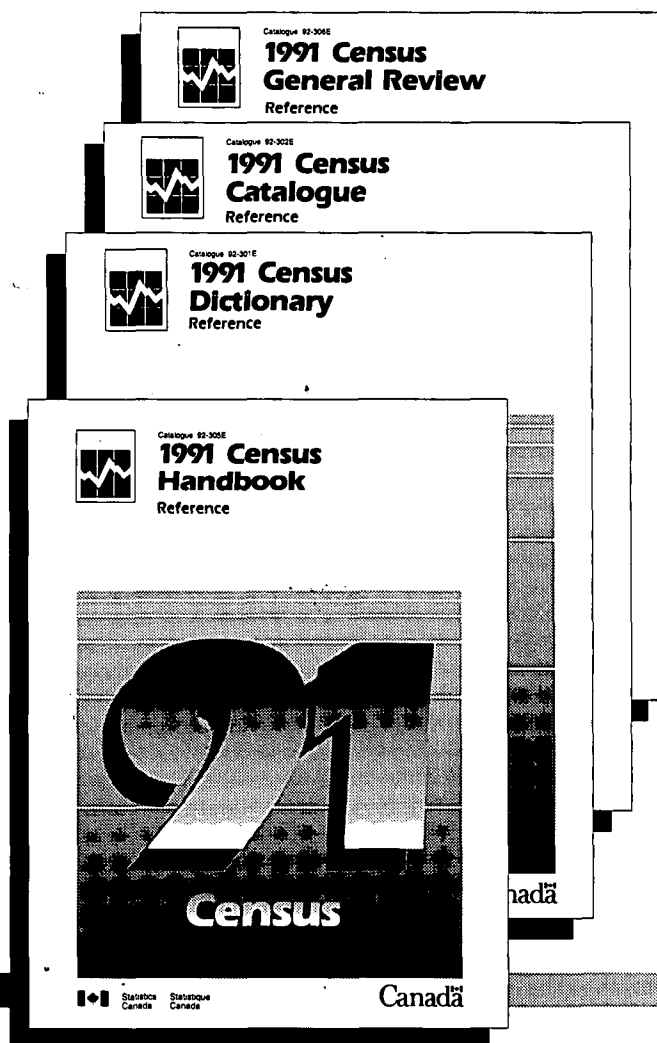


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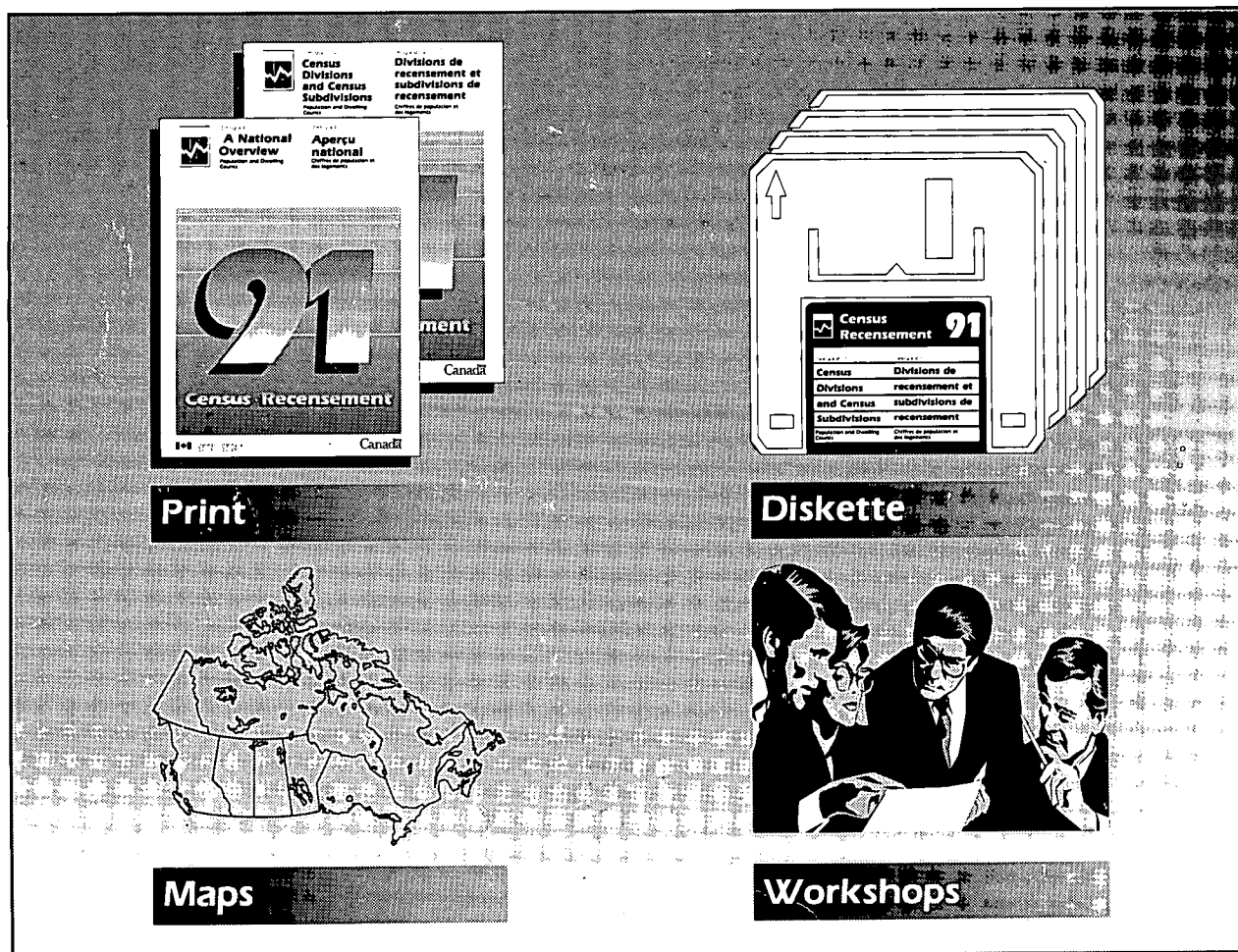
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