The Postal Code Conversion File (PCCF)
User Guide

Updated File Including
July, 1996 Postal Codes

Produced by the Geography Division
Statistics Canada
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La version française de ce guide est disponible sur demande

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1 PCCF OVERVIEW

1.1 Introduction

The Postal Code Conversion File (PCCF) is a digital file which provides the correspondence between the six character code and Statistics Canada's standard geographical areas (e.g. Census divisions, Census subdivisions, Federal Electoral Districts) for which census data and other statistics are produced.

The current version of the PCCF links over 787,000 postal code records, created up to the end of July 1996, to the geographical areas used in the 1991 Census and to Universal Transverse Mercator System (UTM) coordinates and latitude/longitude coordinates. This new version contains a new field called the single postal code indicator. This field will be useful in cases where a given postal code is assigned to multiple standard geographic areas. It indicates which of the standard geographic units is the most representative of the postal code.

1.2 Purpose of the PCCF

The purpose of the PCCF is to provide linkage capabilities that can be used for numerous applications, such as market research, demographic studies and geocoding applications. The file allows users to cross-reference geographic coordinates, census areas, and user-defined areas. For example, one of its key strengths lies in its capacity to integrate census data with user data. For more information on this product or some of its applications, please refer to the "Products and Services Manual" or contact the Regional Geographer at one of our Regional Reference Centres across Canada.

1.3 History of the PCCF

During the 1970s, there was an increasing demand for a large variety of statistics for small areas. To aggregate data by geographic areas, different types of address elements were examined manually, or by computer, in order to properly assign a geographical code. This assignment was complicated by the great variety of address formats on data files and spelling variations in street names.

The introduction of the postal code in the mid-1970s has led to an entirely new approach. The postal code could be used as a structured representation of a range of mailing addresses. If the postal codes were matched to a standard geographic unit once, and the results retained in a lookup table, then the complex task of structuring and matching addresses could be avoided.

1.3 History of the PCCF - Cont'd

In the mid-1980s, under the Small Area Data Program, the first conversion file was released. This file linked postal codes to Enumeration Areas (EA's). The EA became the basic building block from which all higher Census geographic units were linked to the postal code. Some postal codes were repeated on the file if it was determined that they served more than one EA. All populated CSD's and EA's were assigned to at least one postal code. A second feature of the file was the assignment of one or more point locations (in UTM coordinates) to each postal code. The first version of this file was created in April 1983 and since, has been updated on a regular basis. This user guide describes the latest version of this file.

1.4 Overview of the PCCF Content

Each record on the PCCF consists of three key components of information: **the postal code, the 1991 Enumeration Area code (PROV/FED/EA), and the postal code coordinate**. All other variables on the PCCF are based on these three items. A postal code may be linked to more than one EA code or have more than one set of coordinates assigned to it, and therefore be represented by more than one record.

Postal Code Information

Each PCCF record contains a postal code along with its birth date, retirement date (if relevant), a postal code for the method of mail delivery, and the Canada Post municipality name (which may differ from the Statistics Canada Census Subdivision name). The following table provides a distribution of the postal code records by province and by territory:

Province/Territory	Number of Records
Newfoundland	8,700
Prince Edward Island	3,154
Nova Scotia	21,824
New Brunswick	19,434
Quebec	196,533
Ontario	283,219
Manitoba	27,236
Saskatchewan	25,277
Alberta	75,054
British Columbia	124,916
Yukon Territory	1,046
Northwest Territories	678
Canada Total	**787,071**

1.4 Overview of the PCCF Content - Cont'd

Geographic areas

The basic link between the postal code and other geographic areas is performed through one or more 1991 EA's. The following array of higher level of geographic codes (and names, where indicated) is contained on the PCCF:

- Census Subdivision (CSD) code and name;
- Census Consolidated Subdivision (CCS) code;
- Census Division (CD) code;
- Subprovincial Region (SPR) code;
- Province code;

- Census Metropolitan Area (CMA)/Census Agglomeration (CA) code;
- Primary Census Metropolitan Area (PCMA) /Primary Census Agglomeration (PCA) code;
- Census Tract (CT)/Provincial Census Tract (PCT) code and name;

- Federal Electoral District (FED) code;

- Statistics Canada Regional Office code.

Postal Code Coordinates

A coordinate has been assigned to each postal code record. This coordinate is given in both UTM coordinates and in latitude/longitude.

1.5 Structure of the Postal Code

The Canadian postal code is an alphanumeric combination of six characters describing the destination of each item of mail addressed in Canada. The alphanumeric characters are arranged in the form "ANA NAN" where "A" represents an alphabetic character and "N" represents a numeric character (e.g. K1A 0T6). The postal code uses 20 alphabetic characters and 10 numeric characters. Six alphabetic characters (D, F, I, O, Q and U) are not in use at the present time.

The first character of a postal code, allocated in alphabetic sequence from east to west across Canada, denotes a province or territory or a major sector found entirely within the boundaries of a province.

The first three characters of the postal code ("ANA") represent a set of well-defined and stable areas known as Forward Sortation Areas (FSAs). The FSA represents a specific area within a major geographical region or province. As of July 1996, there were 1,493 FSA codes in use across Canada. Forward Sortation Areas with urban mail delivery numbered 1,298, compared to 195 with rural mail delivery services. Rural FSAs are identifiable by the presence of a "0" in the second position of the FSA code.

The last three characters of the postal code ("NAN") designate areas known as the Local Delivery Unit (LDU).

In urban areas, a single postal code can correspond to the following types of LDUs:

- one block-face (one side of a city street between consecutive intersections with other streets);
- a Community Mail Box (commonly called super mailboxes);
- an apartment building;
- a business building;
- a large firm/organization which does considerable business with Canada Post;
- a federal government department, agency or branch;
- a mail delivery route (rural, suburban or mobile);
- general delivery at a specific post office;
- one or more post office boxes.

In new urban growth areas, postal codes are now linked to community mail boxes. A community mail box postal code can service both odd and even sides of the same street, and even different streets, within a 300 metre radius of the community mail box.

In rural areas a postal code refers to all services which originate from a post office or postal station (e.g.: rural routes, general delivery, post office box and suburban services).

1.6 The Census Geography Hierarchies

The Enumeration Area (EA), which is a geographic area canvassed by one census representative, is the basic unit for all geographic units fo und in the PCCF. The various geographic units (or areas) [1] are part of standard hierarchies developed by Statistics Can ada. The following briefly shows these relationships.

EA -> CSD -> CCS -> CD -> SPR -> PROV -> CANADA

EA -> CSD -> PCMA/PCA -> CANADA

EA -> CT -> PCMA/PCA -> CANADA

EA -> PCT -> PROV -> CANADA

EA -> FED -> PROV -> CANADA

Please note that the addition o f all the CT's (delineated in all CMA's and some CA's) plus PCT's which are delineated outside the Census tract coverage, cover the entire land area of Canada.

A detailed representation of the hi erarchy of Standard Geographic Areas is provided on Figure 1 which appears on the following page.

[1] The geographical units that appear in the hierarchy that follows are described in more detail in section 5 "PCCF GLOSSARY OF TERMS"

Figure 1 - Hierarchy of Geographic Areas

1.7 Postal Code Coordinates

The assignment of coordinates to postal codes is carried out in the same manner as the one used for Census geocoding: that is, a block-face representative point (formerly called block-face centroid) is used where available, otherwise an EA representative point (formerly called EA centroid) is substituted. Users should be aware that these coordinates are **"proxies"** for the postal code locations, and are essentially an alternative for digitizing a representative point for each postal code. Multiple representative points may be assigned to a postal code in cases where the postal code appears in more than one block-face or more than one EA.

Representative points are assigned using the following methods:

1. Enumeration area (EA) representative point. For EAs within the coverage of Street Network Files (SNF) -- by an automated method using ARC/INFO [R] GIS software, which locates the point in the middle of each polygon (an approximation of the visual centre).

All EA representative points are guaranteed (by an ARC/INFO [R] topology check) to fall within the appropriate EA. However, since the official EA boundaries do not account for shorelines, some EAs near large lakes or rivers may have representative points in the water. At least 1,400 EA representative points have been determined to fall in water. This affects 7,000 postal code records.

For EAs outside SNF coverage -- by a manual, judgemental procedure based on the visual inspection of building and/or street patterns on EA census collection maps (some of which have topographic base map information). The representative point is located, when possible, at or beside a predominant cluster of buildings and/or streets. If there is no predominant cluster, then the point is located in between two or more clusters. In the absence of any cluster, the point is placed at or near an Unincorporated Place or at the visual centre of the EA.

2. Block-face representative point. Block-face representative points are computed within all Street Network Files along addressable streets (and addressable sections of highways), between two consecutive intersecting features or between the end of a street and the next intersection, whenever the intersecting feature is not a property boundary (such as a park or airport). The representative point is located at the mid-point of the block-face, set back a perpendicular distance of 22 metres from the street centre line.

Block-face representative points are provided in SNF areas where the required street information was available on the SNF at the time the specific record on the PCCF was created. EA representative points are provided in all other cases.

ARC/INFO[R] is a registered trademark of the Environmental Systems Research Institute.

2 DATA QUALITY STATEMENT

2.1 Introduction

The data quality of the PCCF is discussed under five topics: lineage, positional accuracy, logical consistency, completeness, and attribute accuracy.

2.2 Lineage

This version of the PCCF was created in two steps. The first step consisted in linking the postal codes for the 1991 calendar year to 1986 Census geographic areas and adding these codes to the file. This updated file was then converted to 1991 Census geography.

2.2.1 Source Material Used for PCCF Updating

Canada Post Files

Postal codes and their associated attributes are received monthly from Canada Post Corporation on a machine-readable Postal Code Address Master File (PCAMF). The postal code attributes include address information and the delivery mode type.
Documentation on the monthly file is available from Canada Post.

Street Network Files

The Street Network Files (SNFs) are digital data files stored in computer readable format, which define the street network for large urban centres in Canada. The files also show physical and cultural features within a specific geographic area, usually a census subdivision (CSD). An SNF references streets, address ranges, block-face representative point coordinates, and includes such features as rivers, railroad tracks and municipal boundaries, which are the basic elements found on a user reference map.

The SNFs have been used for geocoding services, for Census data collection, specifically in the delineation of Enumeration Areas and the automated production of collection maps. Lists of address ranges are also printed from the SNFs for updating the PCCF.

Geography Attribute File

The Geography Attribute File is a computer file which contains one record for each 1991 EA. The EAs are listed with the codes and names of all the higher geographical areas (e.g. CSDs, CDs, CMAs, etc.). The file also includes the EA representative point (formerly called EA centroid) coordinates, the National Topographical System (NTS) map number, and the population and dwelling counts. The Geography Attribute File is used for linking EA's to all other geographic areas in the hierarchy.

2.2.1 Source Material Used for PCCF Updating - Cont'd

Maps

Current maps from local government and commercial sources are acquired as needed. Census collection and reference maps are also used to locate postal codes within EA's.

2.2.2 Update to December, 1991

The PCCF links postal codes to census geographic areas using a number of sources in a specific order. In areas covered by the SNFs, an extra first step using the Street Indexes is performed.

Street Addresses

The street listing from the SNF and the list of new postal code records are manually matched by those elements common to both files - the province identifier, municipality name, street name, street type, street direction and address range. Once matched, the province identifier, postal code, EA code and block-face representative point are transferred to the PCCF.

For those postal codes in SNF areas which cannot be coded by the above step and for all other urban postal codes in non-SNF areas, the next step was to locate the street on a municipal map. If the street was found, the same street was located using a Census collection map to determine the EA code for that street.

If the street cannot be found on municipal maps, local authorities are contacted to assist in the location of the street. The local authorities notified include planning and engineering departments and local post offices. In growth areas, new maps are requested. After the street is located, Census collection maps are used to determine the EA code.

Rural Areas

A rural postal code denotes a service area, namely an area serviced by rural route delivery from a post office or postal station. The service area can cross several geographic boundaries (EAs, CSDs). The 1981 and 1986 census collection documents were used to help determine these service areas.

To meet the needs of some users, a flag (Single Postal Code Indicator) designates the EA where the distribution centre (post office, postal station) is located. Statistics Canada has worked closely with Canada Post Corporation in the area of verifying the physical location of the rural postal offices.

Users should be aware that there are very few new rural postal codes.

2.2.2 Update to December, 1991 - Cont'd

Post Office Addresses

Geographic codes are linked to postal codes based on the mailing address information, as supplied by Canada Post.

Consequently, the ultimate destination of mail delivery may not be the same as the pick-up point. For example, in urban areas postal codes may be associated with post office boxes at a postal station. The physical location of the post office is geocoded, rather than the residential, industrial or commercial location of the client renting a post office box.

2.2.3 Conversion to 1991 Census Geography

Linkage Procedures

This release of the PCCF links postal codes to 1991 Census geographic areas. This conversion has required that each record in the PCCF be linked to a 1991 EA. The sources used to accomplish this conversion included the 1986-1991 EA Concordance File and the 1991 EA Digital Boundary Files.

1986-1991 EA Concordance File

The concordance file shows the relationship between 1986 EAs and 1991 EAs. For all 1986 EAs that were contained in one 1991 EA, the PCCF records were recoded to the 1991 EA. The remaining records were transferred to the "overlay step" which is described below.

EA Boundary Overlay

The digital boundary file for the 1991 EAs was overlaid on the coordinates from the PCCF records. Using a point-in-polygon technique, a 1991 EA was assigned to each record. This was acceptable in cases where the postal code coordinate on the record was a block-face representative point. For the other records (coordinates at the EA level), this method may or may not have given the correct 1991 EA, especially in cases where 1986 EAs were split or significantly changed in forming 1991 EAs. These records were subject to further processing.

Conversion Validation

Once this linkage was completed, the resulting files were verified using the 1991 Census Postal Code File (captured from Census documents) and by a manual validation process, conducted in two stages, namely through the use of Census collection documents and manual recoding.

2.2.3 Conversion to 1991 Census Geography - Cont'd

1991 Census Postal Code File

For the twenty percent sample of Census forms (2B), the postal code, as reported by the respondent (household) was keyed (captured). This file provides the relationship between the reported postal code and EAs. This file was used to confirm or change EA codes assigned by the overlay process. It is not complete because the information was based on a sample, with the result that approximately one-third of all postal codes are not represented on the Census file. Consequently, a further step was required, which consisted in verifying the remaining cases against Census collection material.

Manual Recoding

Multiple EAs were assigned to each postal code record based on the EA concordance file. The records were grouped by EA and compared to address lists compiled for the Census. Only those address-EA combinations found in the Census documents were retained.

The remaining records were verified manually using techniques similar to those outlined above for regular updating. This was carried out primarily for non-residential addresses.

2.3 Positional Accuracy of Postal Code Coordinates

The coordinates assigned to postal codes are those of either block-face or EA representative points calculated for Census purposes. To the extent that these are not precise locators for postal codes, the question of positional accuracy arises.

In the case of a block-face representative point, if the block-face, as defined for Census purposes, is not identical to the block-face used by Canada Post in defining the postal code, the representative point may not exactly reflect the position of the postal code. The differences could arise from different address ranges because of recent growth, or because the addresses ranges are split at different places.

2.3 Positional Accuracy of Postal Code Coordinates - Cont'd

If the postal code is represented by a range of civic addresses, it is theoretically possible to derive a block-face representative point. However, in some situations, Statistics Canada has not derived block-face representative points because the location was outside the areas covered by the Street Network File, or the location was in an area covered by the SNF, but in a location that had not yet been updated. In these cases, an EA representative point was used as the postal code coordinate. While this is much less precise, it is readily available, and although it may not be suitable for very small area market studies, it may give an acceptable level of precision for larger scale studies (e.g. environmental impact).

2.4 Logical Consistency

In some cases, especially in rural areas, the postal code service areas do not respect EA boundaries. When this occurs, the same postal code will be repeated two or more times with different geographical information (i.e., different coordinates or EA codes). These multiple records for a postal code reflect the true relationship between the postal code and Census geographic areas.

Conversely, many different codes could have the same coordinate. This happens if the postal code is in an area without block-face representative points, or if postal codes split a block-face as defined by Statistics Canada.

The number of multiple urban postal code records on the file is increasing as a result of the introduction of community mail boxes by Canada Post. One urban postal code can now service partial block-faces, both sides of a street, and different streets within a 300 metre radius of a community mail box. For each different block-face representative point, and each EA covered, the postal code is repeated on the file to show all these different geographic linkages.

2.5 Completeness

Completeness in the context of the PCCF is the degree to which:

a) all postal codes on the July 1996 Postal Code Address Master File (PCAMF) are accounted for; and

b) all geographic codes from the 1991 Census are linked to a postal code.

The July 1996 version of the Canada Post Corporation PCAMF contained 905,042 records. The PCCF links all but 237 of these valid postal codes, and also maintains a cumulative inventory of retired postal codes that were linked on past versions of the file.

A total of 426 populated EAs are not linked to a postal code. This represents a total population of 32,036.

2.6 Attribute Accuracy

Attribute accuracy refers to the quality of the information attached to each postal code. Since the PCCF is essentially a file giving attributes for postal codes, this is the most important aspect of the quality of the file.

A data quality study measuring the attribute accuracy was performed for this version of the PCCF, and the results are presented here. A sample of postal code records was selected from the Canada Post monthly file, and recoded manually using the normal coding procedures. These records were compared to the records from the PCCF for the same postal codes, and the differences analyzed.

2.6.1 Sample Selection

The sampling methodology used a systematic sample of 1 in 1000. A sample of 683 urban postal code records was randomly drawn from the December 1991 version of the Canada Post address file.

2.6.2 Error Analysis

A postal code record was deemed to have a linkage error if a different geographic code was assigned and verified to be correct, from the initial linkage on the file.

Partial linkage errors are counted as full errors. If a postal code straddles several adjacent geographical areas, the linkage is considered to be correct only if the postal code is:

a) linked to all the geographical areas it straddles;

b) not linked to any other geographical area.

Thus our error counts include cases where a postal code is linked to all the geographical areas it straddles, plus one other geographical area. Similarly, our error counts include cases where a postal code is linked to all but one geographical area it straddles.

2.6.2 Error Analysis - Cont'd

The table that follows shows that the error rate is, in fact, reduced considerably for higher levels of geography. The selected geographic areas of the Enumeration Areas EAs, Federal Electoral Districts (FEDs), Census Tracts (CTs) and Census Subdivisions (CSDs) are shown.

683 Postal Codes Linked to:	Incorrectly linked Postal Codes		Standard Error of Estimate
	#	rate	
Enumeration Areas	46	6.7	1.0
Federal Electoral Districts	1	0.1	0.1
Census Subdivisions	4	0.6	0.3
Census Tracts	19	2.8	0.6

2.7 Limitations

Multiple Records

When linking the PCCF against other files (e.g. client files) users should be aware that multiple records can pose a problem with matching techniques.

The community mail box has introduced an expanded territory covered by an individual postal code. Previously the postal code represented one side of a city street. In new urban delivery areas, a community mail box postal code can now represent partial blocks, both sides of a street and different streets within a 300 metre radius of the community mail box. This is a growing source of multiple records on the file.

To assist users in dealing with multiple records, each postal code has one record bearing the "Single Postal Code Indicator (set to one). The indicator can be used to select one record for each postal code to facilitate the matching process. While this indicates the "best" record, the information on the other records for that postal code is lost.

Mailing address vs. physical location

Users should note that rural route deliveries and mail pick-up all have an effect on interpreting the relationship of where the person or business is located versus where their rural postal code is located. It is difficult, if not impossible, to identify a physical location to the EA level based on a rural postal code, because the rural service area straddles (overlaps) many geographic boundaries. Rural postal codes cannot be used in the same manner as most urban postal codes can to precisely georeference a physical location.

2.7 Limitations - Cont'd

Urban postal codes with a delivery mode type of "K" (group of post office boxes) or "M" (one post office box) cannot be used to georeference a street location because the postal code is within a post office. Customers who rent a post office box usually are not located in the same EA as the post office.

Use with SNFs

Very few coordinates in the PCCF are based on the latest (1991) SNF block-face representative points. Most coordinates were assigned using 1981 and 1986 block-face representative points, and have not been modified. In stable areas, the differences are insignificant.

However, with this inconsistency between SNF and PCCF representative points, users should exercise caution for large scale digital mapping applications when using the PCCF in conjunction with an SNF base.

All postal code coordinates based on EA representative points have been updated to 1991 representative points during the conversion to 1991 Census geography.

3 TECHNICAL SPECIFICATIONS

3.1 Physical Medium Description

THE PHYSICAL FORMAT OF THIS PRODUCT IS DESCRIBED IN A SEPARATELY ENCLOSED DOCUMENT.

3.2 Structure of the PCCF

Most urban postal codes are represented by a single record; however, multiple records occur when a postal code straddles two or more block-faces or EAs. As a result, the same postal code will be repeated two or more times with different geographical information (i.e. different coordinates or EA postal codes). There are currently 96,917 multiple postal codes on the file, of which 73,253 records or 76% are urban postal codes and 23,664 records or 24% are rural postal codes.

The PCCF is sorted by postal code, followed by the combination of the Province/FED/EA (to give a unique EA code in the case of multiple records for a postal code). Some postal codes will have records with the same EA that can only be distinguished by different postal code coordinates. This would occur if a postal code serves two block-faces within the same EA.

Multiple rural records are common on the file (23,664 of 25,549 rural postal code records are multiples). The service area of a rural postal code often crosses many enumeration area boundaries. A "1" in the Single Postal Code Indicator highlights the record containing the probable EA in which a rural post office is located.

3.3 Record Layouts

The current version of the PCCF includes two file layouts: the "PCCF" file layout and the "Names" file layout. In the previous release of the PCCF, the "Names" files were included within the PCCF itself; however, due to the size of the name fields, and because of their repetition, the names have been provided on separate files for this release. The only names that have been retained on the PCCF are the CSD name and the Census Tract names.

3.3 Record Layouts - Cont'd

1991 PCCF

Field	Size	Position	Type	Description
1	6	1-6	AN	Postal code
2	2	7-8	N	Province/Territory Code
3	3	9-11	N	1991 Federal Electoral District Code (1987 Rep. Order)
4	3	12-14	N	1991 Enumeration Area Code
5	2	15-16	N	UTM Zone
6	6	17-22	N	X UTM Coordinate
7	7	23-29	N	Y UTM Coordinate
8	6	30-35	N	Latitude
9	7	36-42	N	Longitude
10	2	43-44	N	1991 Census Division Code
11	3	45-47	N	1991 Census Subdivision Code
12	3	48-50	N	1991 Census Consolidated Subdivision Code
13	3	51-53	N	1991 Census Metropolitan Area/Census Agglomeration Code
14	3	54-56	N	1991 Primary Census Metro. Area/Primary Census Aggl. Code
15	4	57-60	N	1991 Census Tract/Provincial Census Tract Code
16	7	61-67	AN	1991 Census Tract / Provincial Census Tract Name
17	50	68-117	AN	1991 Census Subdivision Name
18	3	118-120	AN	1991 Census Subdivision Type
19	1	121	N	EA Urban/Rural Indicator
20	1	122	A	CMA/CA Record Indicator
21	1	123	N	PCMA/PCA Record Indicator
22	1	124	N	Statistics Canada Regional Reference Centre
23	2	125-126	N	Subprovincial Region Code
24	1	127	N	Representative Point Flag (Formerly Centroid)
25	1	128	A	Record Type
26	30	129-158	AN	Community Name (Canada Post Definition)
27	1	159	N	Single Postal Code Indicator
28	1	160	AN	Delivery Mode Type Code
29	6	161-166	N	Birth Date
30	6	167-172	N	Retired Date

NOTE: The "N" symbol which is found under field "type" refers to numeric values while "AN" refers to both numeric and alphabetic characters.

A DESCRIPTION OF THE FIELDS FOUND IN THE ABOVE FILE LAYOUT CAN BE FOUND ON THE FOLLOWING PAGES

3.3 Record Layouts - Cont'd

FIELD DESCRIPTIONS

1 Postal Code*

The Canadian postal code offers a unique reference system which provides a convenient means of identifying a mail delivery location. It is composed of six characters, in the form of "ANA NAN", where "A" represents a letter of the alphabet and "N" a number.

The number of postal code records on the PCCF is as follows:

Postal code Type	Unique	Multiple	Total
Urban postal code records	688,269	73,253	761,522
Rural postal code records	1,885	23,664	25,549
Total records	690,154	96,917	787,071

2 Province/Territory

3 1991 Federal Electoral District (1987 Rep. Order)*

There are 295 FEDs in Canada based on the 1987 Representation Order.

The federal electoral districts were linked to postal codes by passing the postal code coordinates through a point in polygon algorithm, which assigned the correct FED to a postal code. If the coordinate fell on a FED boundary, an arbitrary decision was made to assign the FED .

4 1991 Enumeration Area*

5 UTM Zone
6 UTM X-coordinate
7 UTM Y-coordinate

Statistics Canada uses the Universal Transverse Mercator (UTM) system which is an established international system of specifying point locations on the globe.

The system divides the globe into 60 vertical zones. Altogether, 16 zones bearing numbers 7 to 22 from west to east, cover the land mass of Canada. Each zone has a width of 6 degrees longitude. In UTM, point-locations within a zone are based on two distances, in metres (X and Y), from the zone axes. The two values are combined with a zone number to arrive at a unique coordinate value for every point on the land mass of Canada.

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* The definition of the terms bearing an asterisk is provided in the PCCF "Glossary of Terms" which begins on page 26 of this guide.

3.3 Record Layouts - Cont'd

8 Latitude

Latitude is an angular distance north or south from the earth 's equator measured in degrees. In the usual system of angular measurement, a circle contains 360 ^{0}, a half circle, 180 ^{0}. Consequently, there are 180^0 of latitude from pole to pole. The quadrant of th e circle from the equator to each pole is divided into 90^0 and the numbering starts from 0 ^{0} at the equator and goes by degrees, minutes and seconds to 90^0 at each pole.

Note that the Postal Code Conversion File divides latitude degrees by decimals, rather that by minutes and seconds. Appendix "A" shows how to convert between these two units of measurement.

There is no explicit decimal point in the field; divide the field by 10,000 to show the four decima l places.

9 Longitude

Longitude is the angular distance due east or west from the prime meridian measured in degrees. For a given meridian, east - west position is designated by the angular distance along the parallel circle in the latitude system. Each degree of longitude becomes shorter with increasing latitude and is finall y reduced to nil at the poles.

Note that the Conversion File divides longitude degrees by decimals, rather than by minutes an d seconds. Appendix "A" shows how to convert between these two units of measurement.

There is no explicit decimal point in the field; divide the field by 10,000 to show the four decima l places.

10 1991 Census Division*

11 1991 Census Subdivision*

12 1991 Census Consolidated Subdivision*

13 1991 Census Metropolitan Area / Census Agglomeration*

14 1991 Primary Census Metropolitan Area / Primary Census Agglomeration*

15 1991 Census Tract / Provincial Census Tract*

16 1991 Census Tract / Provincial Census Tract Name

17 1991 Census Subdivision Name

This field contains the name of the census subdivision in which the postal code is located.

3.3 Record Layouts - Cont'd

18 1991 Census Subdivision Type

Census subdivisions are classified into various types, according to official designation adopted by provincial or federal authorities. With the exception of unorganized territories, Indian reserves and Indian settlements, hamlets in the Northwest Territories and settlements in the Yukon Territory, the type indicates the municipal status of a CSD.

19 EA Urban/Rural Indicator

This field permits the identification of "urban" areas, or indicates that the EA is in a rural area. Urban areas are those continuously built-up areas having a population concentration of 1,000 or more and a population density of 400 or more per square kilometre based on the previous census. To be considered as continuous, the built-up area must not have a discontinuity exceeding two kilometres.

This definition of urban/rural may not correspond to the areas which Canada Post identifies as urban or rural postal codes. A "1" denotes an urban EA, while a "0" pertains to a rural EA.

20 CMA/CA Record Indicator

This field identifies the type of CMA or CA in which the EA is located. For example:

Code	CMA/CA Type
A	Consolidated CMA
B	Regular CMA
C	Consolidated CA
D	Regular CA

NOTE: This field will be left blank in cases where the EA is not inside the boundaries of CMAs/CAs.

21 PCMA/PCA Record Indicator

This field identifies the type of PCMA or PCA in which the EA is located. For example:

Code	Type
A	PCMA
C	PCA

NOTE: This field will be left blank in cases where the EA is not inside the boundaries of a PCMA/PCA.

22 Statistics Canada Regional Reference Centre

This field refers to the area served by each Statistics Canada regional reference centre. It contains the code of the regional reference centre in which the postal code is located.

3.3 Record Layouts - Cont'd

23 Subprovincial Region*

24 Representative point flag (formerly called Centroid Flag)

This field identifies whether the record uses a block-face or an EA representative point as the coordinate. Block-face representative points are used in SNF a reas where the required street information was available on the SNF at the time the record was created. EA representative points are used in SNF areas where the required street information was not available on the SNF at the time the record wa s created. In non-SNF areas, only EA representative points are used. There are three different types of representative point flags:

- a "1" denotes an SNF block-face representative point;
- a "2" denotes an SNF EA representative point; and
- a "3" denotes EA representaive points outside the SNF area coverage.

The following coverage report provides a further breakdown of this record count by SNF and non-SNF coverage.

Type of Rep. Point	Count	Pct
Flag 1	466,846	59.3
Flag 2	109,079	13.9
Flag 3	211,146	26.8

A list of CSDs covered by the SNF program for the 1991 Census is available upon request.

3.3 Record Layouts - Cont'd

25 Record Type

This field indicates the type of addresses used to identify the points of call served by the postal code:

1 Street address with letter carrier service;
2 Street address with route service;
3 Post office box;
4 Route service;
5 General delivery.

This field was recently introduced by Canada Post. A value was imputed by Geography Division for retired postal codes using historical address information and delivery mode type. 269 records have a blank record type.

26 Community Name (Canada Post Definition)

The community name, as defined by Canada Post, denotes any city, town or village in Canada that is recognized as a valid mailing address.

27 Single Postal Code Indicator (SPCIND)

For postal codes represented by multiple records on the PCCF, this field indicates which of the record to use if only one record per postal code is required for operational reasons (e.g. Matching to another file).

The indicator has the following values:

"1" indicates the best record for the postal code;

"0" indicates an additional record for the postal code.

Users should be cautioned that by using the SPCIND, only a partial correspondance between the postal code and other geographical areas is achieved.

In urban areas, the indicator is assigned based on address ranges. For each address range associated to a postal code, the low address is subtracted from the high address. The address range with the highest difference is determined and the postal code record based on that address range is assigned to the SPCIND = "1".

In cases where the postal code spans more than one EA, the differences are totalled for each EA and the EA with the total highest difference is determined. Within that EA, the process described above is applied.

For rural postal codes, the SPCIND indicates the EA of the location of the post office.

3.3 Record Layouts - Cont'd

28 Delivery Mode Type

The postal code delivery mode types that follow pertain to the type of mail delivery:

- Delivery mode type "A"

Represents areas served by a letter carrier service, including delivery to private households and Community Mail Boxes;

- Delivery mode type "B"

Pertains to large apartment buildings served by letter carrier;

- Delivery mode type "E"

Pertains to business buildings served by letter carrier;

- Delivery mode type "G"

This type of delivery mode relates to large volume receivers served by letter carrier. They are linked to the address location of the physical structure;

- Delivery mode type "H"

This delivery mode pertain to postal codes with rural route delivery;

- Delivery mode type "J"

This delivery mode corresponds to General delivery services;

- Delivery mode type "K"

Pertains to a group of post office boxes. They are linked to the physical location of the post office which distributes the mail;

- Delivery mode type "M"

Denotes a delivery mode relating to one post office box. They are linked to the physical location of the post office which distributes the mail;

- Delivery mode type "R"

Delivery mode type "R" denotes miscellaneous delivery services. This postal code is not used frequently by Canada Post;

3.3 Record Layouts - Cont'd

- Delivery mode type "T"

Pertains to suburban service delivery. This postal code is not used frequently by Canada Post;

- Delivery mode type "X"

Is a mobile route delivery mode which is a method of delivery used in urban industrial areas. This postal code is not used frequently by Canada Post;

- Delivery mode type "Z"

This delivery mode is used for retired postal codes, replacing the delivery mode when the postal code was active.

Rural postal codes (which bear a zero in the second digit of the postal code) have a blank delivery mode type, unless the postal code has been retired. In that case the DMT could be Z.

The following table shows the distribution of postal codes by delivery mode type.

Distribution of Postal codes by Delivery Mode Type

DM Type	No. of PC Records
A	664,120
B	15,867
E	8,301
G	8,642
H	7,217
J	704
K	6,876
M	5,725
R	0
T	281
X	25
Z	46,112
b (denotes blank field)	23,201
TOTAL	787,071

3.3 Record Layouts - Cont'd

29 Birth Date

This is the date when the postal code record was added to the PCCF. It is shown as the year followed by the month and the date (e.g. January 3, 1988 is shown as 880103). All postal codes created before April, 1983 were given a birth date of 830401.

30 Retired Date

This is the date when a postal code is retired, or in other words, it is no longer in use by Canada Post. All retired postal codes are retained on the PCCF. The date is shown as the year followed by the month and the date (eg. January 3, 1988 is shown as 880103). All postal codes retired before April 1983 have 830401 as the retirement date.

NAMES FILES

Field	Size	Position	Type	Description
FED Name File				
1	5	1-5 (Prov+FED)	N	FED Code
2	50	6-55	AN	FED Name
CD Name File				
1	4	1-4 (Prov+CD)	N	CD Code
2	50	5-54	AN	CD Name
CMA/CA Name File				
1	3	1-3	N	CMA/CA Code
2	50	4-53	AN	CMA/CA Name
PCMA/PCA Name File				
1	3	1-3	N	PCMA/PCA Code
2	50	4-53	AN	PCMA/PCA Name

4 PCCF GLOSSARY OF TERMS

The PCCF Glossary of Terms * is designed to provide information on the records or fields that are found in the various file layouts which are supplied with this product.

Block-face

The general concept of a block-face is one of a small recognizable geographical unit to which census data can be associated. The goal is to approximate, through aggregation, user-defined query areas for census data extraction and tabulation.

The block-face refers to one side of a city street, normally between consecutive intersections with streets or other physical features (such as creeks or railways).

Census Agglomeration (CA)

The general concept of a census agglomeration (CA) is one of 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. Once 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 Division (CD)

Refers to the general term applying to geographic areas established by provincial law, which are intermediate geographic areas between the census subdivision and the province (e.g., divisions, counties, regional districts, regional municipalities and seven other types of geographic areas made up of groups of census subdivisions).

In Newfoundland, Manitoba, Saskatchewan and Alberta, provincial law does not provide for these administrative geographic areas. Therefore, census divisions have been created by Statistics Canada in co-operation with these provinces.

Census Metropolitan Area (CMA)

The general concept of a census metropolitan area (CMA) is one of 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)

Refers to the general term applying to municipalities (as determined by provincial legislation) or their equivalent, e.g.: indian reserves, indian settlements and unorganized territories.

In Newfoundland, Nova Scotia and British Columbia, the term also describes geographic areas that have been created by Statistics Canada in co-operation with the provinces as equivalents for municipalities.

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* NOTE: For the full definitions and additional remarks related to this term, users should refer to the **1991 Census Dictionary** (Cat. No. 92-301E).

Enumeration Area (EA)

An enumeration area (EA) is the geographic area canvassed by one census representative.

Federal Electoral District (FED)

A federal electoral district refers to any place or territorial area entitled to return a member to serve in the House of Commons (Source: Canada Elections Act, 1990). There are 295 FEDs in Canada according to the 1987 Representation Order.*

Postal code

The postal code is a six-character alpha-numeric code defined and maintained by Canada Post Corporation for the processing (sortation and delivery) of mail.

The alpha-numeric characters are arranged in the form ANA NAN, where "A" represents a letter of the alphabet and "N" a numeric digit. The first character of a postal code (allocated in alphabetic sequence from east to west across Canada) represents a province or territory, or a major sector entirely within a province.

The first three characters represent a set of well defined and stable areas known as the Forward Sortation Area (FSA). Rural FSAs are identifiable by the presence of a "0" in the second position of the FSA code.

The last three characters identify the Local Delivery Unit (LDU). In established urban areas, the LDU can specify a small and easily defined area within an FSA such as a block-face (one side of a city street between consecutive intersections with streets or similar physical features), an apartment building, an office building, or a large firm or organization which does large volume business with the post office.

In rural areas, the LDU denotes a service area - the area serviced by rural route delivery from a post office or station, e.g., a rural route, general delivery or post office box.

Primary Census Metropolitan Area (PCMA) - Primary Census Agglomeration (PCA)

The primary census metropolitan area (PCMA) or primary census agglomeration (PCA) concept recognizes the fact that adjacent census metropolitan areas (CMAs) and census agglomerations (CAs) are socially and economically integrated within a larger consolidated CMA or CA.

Adjacent CMAs and CAs are consolidated into a single CMA or CA if 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. The original CMAs or CAs are known as PCMA or PCA subregions of the CMA or CA.

Representative Point (formerly called Centroid)

The general concept of a representative point (formerly called centroid) refers to a geographic coordinate that is a representative central location for a geographic area. Representative points are geographic reference points to facilitate data retrieval, mapping and/or data analysis.

Subprovincial Region (SPR)

Refers to a subprovincial geographical unit smaller than a province (with the exception of Prince Edward Island and the Territories) made up of groupings of complete census divisions. The subprovincial regions were created in response to the requirement for a geographical unit suitable for the analysis of regional economic activity.

Subprovincial regions may be economic, administrative or planning regions. In some provinces, these regions are designated by law. In other provinces, the regions were created by agreement between Statistics Canada and the province or territories concerned.

5 FOR FURTHER INFORMATION

5.1 For Further Information

For further information on the Postal Code Conversion File or other products and services available from th e Geography division, contact your nearest Regional R eference Centre. If you live outside the local dialing area, call one of the toll free numbers provided in the list that follows:

ATLANTIC REGION

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

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

Toll free service: 1-800-565-7192
Local calls: (204) 983-4020
Local calls: (902) 426-5331
Fax Number: (902) 426-9538

QUÉBEC REGION

Statistics Canada
REGINA, Saskatchewan
Advisory Services
200 René Lévesque Blvd. W.
Guy Favreau Complex
4th Floor, East Tower
MONTRÉAL, Québec
H2Z 1X4

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

NATIONAL CAPITAL REGION

Statistics Canada
Statistical Reference Centre (NCR)
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

Statistics Canada
Advisory Services
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

Serving the province of British Columbia and the Yukon Territory

Statistics Canada
Advisory Services
Library Square Tower,
600-300 West Georgia St.
VANCOUVER, B.C.
V6B 6C7

Toll free service: 1-800-236-1136
Local calls: (604) 666-2574
Fax number: (604) 666-4863

PRAIRIE REGION

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

Statistics Canada

MacDonald Building, Suite 300
344 Edmonton Street
WINNIPEG, Manitoba
R3B 3L9

Toll free service: 1-800-661-7828

Fax number: (204) 983-7543

Statistics Canada
Advisory Services
Avord Tower, 9th Floor
2002 Victoria Avenue

S4P 0R7

Toll free service: 1-800-667-7164
Local calls: (306) 780-5405
Fax number: (306) 780-5403

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

Toll free service: 1-800-882-5616
Local calls: (403) 292-6717
Fax number: (403) 292-4958

Statistics Canada
Advisory Services
Park Square, 9th 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
National Toll Free Order Line Service: 1-800-267-6677

5.2 Additional References and Services

In addition to the 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 referenced 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.

The Dissemination Division is responsible for CANSIM, Statistics Canada's computerized database network and information retrieval service. Users are provided 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 any Regional Reference Centre.

APPENDIX "A" DECIMAL DEGREES AND DEGREES, MINUTES, SECONDS

Latitude and longitude on maps is normally shown in degrees, minutes and seconds (DMS) for historical reasons . However, machine-readable geographic coordinates are normally stored as decimal degrees (D.dd), since trigonometric functions on computers operate on angles in decimal degrees (or sometimes radians).

The Geography Division disseminates geographic coordinate data in decimal degrees format, unless otherwis e specified. Conversions between the two units of measurement are illustrated below.

Conversion from Decimal Degrees to Degrees, Minutes, Seconds

To convert from D.dd format to DMS requires that the decimal minutes and seconds be determined separately from the decimal(.dd) portion of the decimal degrees.

D = int (D.dd)
M = int (60 * frac (D.dd))
S = frac (60 * frac (D.dd)) * 60

where int = integer portion, and
frac = decimal portion of the number.

for example: 60.5125 (D.dd format) equals

D = int (60.5125) = 60
M = int (60 * 0.5125) = int (30.75)
S = frac (60 * 0.5125) * 60 = frac (30.75) * 60 = 0.75 * 60

Conversion from Degrees, Minutes, Seconds to Decimal Degrees

To convert from DMS to D.dd format requires that the minutes and seconds be converted to decimal degrees, and added to the whole degrees portion of the coordinate.

D = D + M/60 + S/3600

where

D = D dd (mm) = N/60 dd (ss) = S/3600

for example: 60 30' 45" equals

D = 60 + 30/60 + 45/3600 = 60 + 0.5 + 0.0125 = 60.5125