Postal Code^{OM} Conversion File (PCCF), Reference Guide

Release date: December 15, 2020

Canada

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Introduction

The Postal Code Project is responsible for linking the approximately 900,000 single postal codes in Canada to Statistics Canada's Census dissemination geography, (presently 2016 Census geography). This process is performed by using data provided by Canada Post Corporation and linked to Census Dissemination geography via the process of geocoding. The result is the creation of the Postal Code Conversion File (PCCF) which provides a correspondence between the six character postal code and Statistics Canada's standard geographical areas and the Postal Code Federal Ridings File (PCFRF) which provides a link between the six character postal code and Canada's federal electoral districts.

Roles and Responsibilities

This reference guide is intended for users of the Postal Code Conversion File (PCCF). The guide provides an overview of the file, the general methodology used in its creation and important technical information. On the Statistics Canada Web site, it is reported that the product was discontinued as an official release product. Therefore, officially, the Reference Guides, product 92-178-X (Postal code file by federal electoral district (PCFRF)) and product 92-154-G (Postal Code Conversion File (PCCF)), are no longer distributed by Statistics Canada but continues to be distributed to our partners. Canada Post distributes to other individuals and organizations.

Licenses

The Postal Code Conversion File (PCCF) and the Postal code file by federal electoral district (PCFRF) data products are available for license by Statistics Canada and Canada Post.

Both organizations agreed that Statistics Canada would manage licensing with Focal Points, Federal Government Agencies, Crown Corporations, Funding FEDS and Cancer Registry end-users, while Canada Post Corporation would manage licences for value-added distributors/commercial, provincial or municipal government and non-government users.

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For internal users, to contact statistics Canada about the distribution of PCCF and PCFRF please use the following email address: statcan.pccf-fccp.statcan@canada.ca

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For external users, the distribution of PCCF and PCFRF please use the following email address: data.targetingsolutions@canadapost.ca

Postal Code^{OM} Conversion File (PCCF), Reference Guide

This reference guide is intended for users of the Postal Code^{OM} Conversion File (PCCF). The guide provides an overview of the file, the general methodology used in its creation and important technical information.

What's new?

- The postal code^{OM} reference date for this Postal Code^{OM} Conversion File (PCCF) is November 2020.

- The postal codes^{OM} are linked to the geographic areas used in the 2016 Census, which include latitude and longitude coordinates. This file contains postal code^{OM} data under license from Canada Post Corporation (CPC). The CPC file from which the active postal code^{OM} data were obtained is dated November 2020. The PCCF includes all valid postal codes^{OM} where it was possible to link to Statistics Canada's geographic frame and therefore determine a link to one or more standard geostatistical areas as of June 2016 according to CPC.

- Records representing postal codes^{OM} retired prior to January 1, 2016 are available in a separate file called Retired 2015 (R2015.txt). This file follows the same record layout as the PCCF.

- The 2016 Census PCCF record layout has changed from the previous 2011 Census PCCF in order to allow for a 3-digit Dissemination Block code from the previous length of 2-digits. The record layout can be found in the technical specification section.

- The Census Division names and the Statistical Area Classification names can be found within the Census subdivision definition in the *Dictionary, Census of Population, 2016.* http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/geo012-eng.cfm .

- The Federal Electoral District names can be found within Table 1.1 Geographic areas by province and territory, 2016 Census from the *Dictionary, Census of Population, 2016.* http://www12.statcan.gc.ca/census-recensement/2016/ref/dict/tab/t1_1-eng.cfm .

- 8633 postal codes were manual added to the December 15 release of the PCCF. The CPC Longitude and Latitude file provided from Canada Post was used to associate these postal codes to the Census Sub-Division (CSD) level only.

- Normally, to create the PCCF and the PCFRF, the CPC data were downloaded from Canada Post FTP site. Since the COVID-19 epidemic led us to work from home, the access of the Canada Post FTP site became no longer available to access the data. In collaboration with Canada Post, we were able to download the data through Canada Post E-POST.

Table 3.1 provides the number of unique postal codes^{OM}, total records, newly added postal codes^{OM}, retired postal codes^{OM} and newly retired postal codes^{OM} by province and territory.

Table 3.1

Province and territory postal code^{OM} counts

Province or territory	Unique Postal Code	Number Of Records	Newly added postal codes	Retired postal codes	Newly retired postal codes
Newfoundland and	11481	20699	25	113	1

Labrador					
Prince Edward Island	4095	9537	13	22	
Nova Scotia	29060	63661	52	281	12
New Brunswick	59993	89865	88	854	36
Quebec	220125	461081	400	2396	55
Ontario	290361	596352	552	1957	30
Manitoba	25853	40694	249	130	9
Saskatchewan	22950	34572	40	65	2
Alberta	89150	189757	520	774	32
British Columbia	119093	224869	265	540	46
Yukon	1016	1772	2	4	
Northwest Territories	542	1469	1		
Nunavut	28	82			
Total	**873747**	**1734410**	**2207**	**7136**	**223**

1. About this guide

This reference guide is intended for users of the Postal Code^{OM} Conversion File (PCCF). The guide provides an overview of the file, the general methodology used in its creation and important technical information.

This data product is provided 'as-is,' and Statistics Canada makes no warranty, either express or implied, including but not limited to, warranties of merchantability and fitness for a particular purpose. In no event will Statistics Canada be liable for any direct, special, indirect, consequential or other damages, however caused.

2. Overview

The Postal Code^{OM} Conversion File (PCCF) is a digital file which provides a correspondence between the Canada Post Corporation (CPC) six-character postal code^{OM} and Statistics Canada's standard geographic areas for which census data and other statistics are produced. Through the link between postal codes^{OM} and standard geographic areas, the PCCF permits the integration of data from various sources.

The geographic coordinates, which represent the standard geostatistical areas linked to each postal code^{OM} on the PCCF, are commonly used to map the distribution of data for spatial analysis (e.g., clients, activities). The location information is a powerful tool for marketing, planning, or research purposes.

In April 1983, the Statistical Geomatics Centre released the first version of the PCCF, which linked postal codes^{OM} to 1981 Census geographic areas and included geographic coordinates. Since then, the file has been updated on a regular basis to reflect changes.

For this release of the PCCF, the vast majority of the postal codes^{OM} are directly geocoded to 2016 Census geography while others are linked via various conversion processes. A quality indicator for the confidence of this linkage is available in the PCCF.

Acknowledgements

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3. About this product

Purpose of the product

The purpose of the Postal Code^{OM} Conversion File (PCCF) is to provide a link between six-character postal codes^{OM} and standard 2016 Census geographic areas (e.g., dissemination areas, census subdivisions, census tracts). The purpose of the file is not to validate postal codes^{OM}.

Definitions and concepts

Geographic terms and concepts are briefly defined in the *Dictionary, Census of Population, 2016*. www12.statcan. gc.ca/census-recensement/2016/ref/dict/index-eng.cfm

Content

Postal codes^{OM} do not respect census geographic boundaries and so may be linked to more than one standard geographic area, or assigned to more than one set of coordinates. Therefore, one postal code^{OM} may be represented by more than one record. Postal codes^{OM} can also straddle provincial boundaries. See the technical specifications section for more information on postal codes^{OM}. The PCCF is available as a national file.

Each record in the file consists of the following:

- six-character postal code^{OM}

- dissemination area (DA) identifier: made up of the province/territory code, the census division code and the dissemination area code

- dissemination block: a basic geographic area (where possible)

- latitude and longitude representative coordinates of the census geography to which the postal code^{OM} is linked

- census subdivision (CSD) name, code and type

- geographic codes of other higher level standard geographic areas in which the dissemination block/ dissemination area is located

- federal electoral district code – 2013 Representation Order

- CPC information relevant to each postal code^{OM}: its birth date, retirement date, type of mail delivery, CPC community name, and various flags: single link indicator, type of representation point, and postal code^{OM} type.

- Record level metadata related to the quality such as the quality indicator and the source of geocoding. There is also an indicator showing whether the postal code^{OM} is linked to a postal installation.

  The PCCF also includes a file for Retired postal codes^{OM} that were retired prior to 2016.

- Retired 2015 (2015.txt)

The PCCF is available as a standard package for Canada. Custom orders are available on request. Please contact us at 1-800-263-1136 or STATCAN.infostats-infostats.STATCAN@canada.ca

General methodology

The Postal Code^{OM} Conversion File (PCCF) is updated and released on a regular basis. The regular maintenance of the file takes all postal code^{OM} changes continually introduced by Canada Post Corporation (CPC) and determines the corresponding census geographic areas. Every five years, after each census, the PCCF is aligned with the new census geographic areas.

Every month, Statistics Canada obtains files from CPC containing the latest postal codes^{OM}, address ranges and other attributes such as delivery mode type. Whenever possible, postal code^{OM} address ranges are linked to a blockface, dissemination block or dissemination area. When the blockface or dissemination block cannot be precisely determined, the postal code^{OM} is coded to a dissemination area(s).

All other postal code^{OM} links to higher level geographic areas are derived from the blockface, dissemination block or dissemination area.

Limitations

The PCCF contains multiple records for a postal code^{OM} when the postal code^{OM} straddles more than one blockface, dissemination block, or dissemination area. It should be acknowledged that the Canada Post Corporation source data used to create the PCCF contains some postal codes^{OM} which have links to multiple address ranges.

Civic addresses are not available for some postal codes^{OM} such as those associated with rural routes. Many of these postal codes^{OM} tend to straddle several dissemination areas and often cross boundaries of standard geographic areas such as census tracts or census subdivisions. It is difficult, if not impossible, to identify the precise physical location of a rural postal code^{OM}.

Community mailboxes are also a source for multiple records per postal code^{OM} on the PCCF. In newer urban delivery areas, postal codes^{OM} are assigned to a community mailbox that may cover partial dissemination blocks, both sides of a street, and different streets within 200 meters of the community mailbox. These situations often result in multiple links being established between a postal code^{OM} and blockfaces, unlike the more traditional urban postal codes^{OM}, which correspond generally to a blockface.

The single link indicator (SLI) was created to assist users in dealing with postal codes^{OM} with multiple records. The method used to establish the single link indicator identifies the geographic area with the majority of dwellings assigned to a particular postal code^{OM}. Users should be aware that only a partial correspondence between the postal code^{OM} and other geographic areas is achieved when using the single link indicator. It should also be noted

that the single link indicator is identified on both active and retired postal codes^{OM}. Users will find when working with both active and retired postal codes^{OM}, multiple SLIs will appear for a postal code^{OM} that has been retired and reintroduced.

The address associated with a postal code^{OM} does not always represent the location where those receiving mail using that postal code^{OM} actually reside. This is particularly the case in rural areas, where rural route service and post office pick-up are commonly used to deliver mail. The delivery mode type of 'W' (rural) and 'H' (rural route) on the PCCF identify postal codes^{OM} that are usually considered rural.

A typical rural route address, such as 'RR#6, GEORGEVILLE, QC', does not provide sufficient address information to identify a precise physical location. A rural post office address such as 'PO BOX 4001 STN A VICTORIA BC' is also imprecise and not explicitly attached to the dwellings served by that postal code^{OM}. Consequently, rural postal codes^{OM} cannot be used in the same manner as most urban postal codes^{OM} can to precisely geo-reference a physical location.

Similarly, postal codes^{OM} with a delivery mode type of 'K' (group of post office boxes) or 'M' (one post office box) may be linked to the location of the postal installation on the PCCF, as opposed to the physical location of customers who rent a post office box.

Using with other products

Not applicable

Reference date

The reference date for postal codes^{OM} contained in this product is November 2020.

The geographic reference date is a date determined by Statistics Canada to finalize the geographic framework for which the census data are collected, tabulated and reported. The geographic reference date for the 2016 Census is January 1, 2016.

4. Technical specifications

Record layouts and data descriptions

Table 4.1

Postal Code^{OM} Conversion File (PCCF) and Retired 2015 (R2015.txt) record layouts

Position	Size	Type[1]	Field name	Description
1	6	C	Postal code^{OM}	Postal code^{OM}
7	3	C	FSA©	Forward sortation area©
10	2	C	PR	Province or territory code
12	4	C	CDuid	Census division unique identifier
16	7	C	CSDuid	Census subdivision unique identifier
23	70	C	CSDname	Census subdivision name
93	3	C	CSDtype	Census subdivision type
96	3	C	CCScode	Census consolidated subdivision code
99	3	C	SAC	Statistical Area Classification code (includes CMA/CA)
102	1	C	SACtype	Statistical Area Classification type (includes CMA/CA)
103	7	C	CTname	Census tract name
110	2	C	ER	Economic region code
112	4	C	DPL	Designated place code
116	5	C	FED13uid	Federal electoral district − 2013 Representation Order unique identifier
121	4	C	POP_CNTR_RA	Population centre/rural area code

125	1	C	POP_CNTR_RA_type	Population centre/rural area type
126	8	C	DAuid	Dissemination area unique identifier
134	3	C	Dissemination block	Dissemination block code
137	1	C	Rep_Pt_Type	Representative point type
138	11	N	LAT	Latitude of lowest level geographic area for postal code^{OM} record (as indicated in Rep_point variable)
149	13	N	LONG	Longitude of lowest level geographic area for postal code^{OM} record (as indicated in Rep_point variable)
162	1	C	SLI	Single link indicator
163	1	C	PCtype	Postal code^{OM} type
164	30	C	Comm_Name	Community name
194	1	C	DMT	Delivery mode type
195	1	C	H_DMT	Historic delivery mode type
196	8	C	Birth_Date	Birth date (yyyymmdd)
204	8	C	Ret_Date	Retired date (yyyymmdd)
212	1	C	PO	Delivery installation
213	3	C	QI	Quality indicator
216	1	C	Source	Source of geocoding
217	1	C	POP_CNTR_RA_SIZE_CLASS	Population centre and rural area classification

1. The type 'N' refers to numeric values while 'C' refers to both alphabetic and numeric characters.

Postal code^{OM}

The postal code^{OM} is a six-character code defined and maintained by Canada Post Corporation (CPC) for the purpose of sorting and delivering mail. The 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^{OM} uses 18 alphabetic characters and 10 numeric characters. Postal codes do not include the letters D, F, I, O, Q or U, and the first position also does not make use of the letters W or Z.

The first three characters of the postal code^{OM} ('ANA') represent a set of defined and mostly stable areas known as forward sortation areas© (FSAs©). The FSA© represents a specific postal delivery area within a major geographical region, a province or a territory. Rural postal codes^{OM} are identifiable by the presence of a zero (0) in the second position of the FSA© code. Urban postal codes^{OM} are composed of FSAs© with numerals 1 to 9 in the second position of the code.

The last three characters of the postal code^{OM} ('NAN') identify routes known as local delivery units (LDUs). In population centers, a single postal code^{OM} may correspond to the following types of LDU:

- a blockface (one side of a city street between consecutive intersections)
- a community mailbox (commonly called super mailboxes)
- an apartment building
- a business building
- a large firm or organization that does considerable business with CPC
- 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.

A community mailbox postal code^{OM} services both odd and even sides of the same street, or different streets, within a 200 meter radius of the community mailbox.

In rural FSAs©, the LDU generally refers to services which originate from a post office or postal station. These include rural routes, general deliveries, post office boxes, and suburban services. Often, in rural FSAs©, the postal code^{OM} identifies a specific rural community.

Forward sortation area© (FSA©)

The forward sortation area© is the first three characters of the postal code^{OM}, designating a postal delivery area within Canada.

Province or territory code (PR)

The PR uniquely identifies provinces and territories.

- 10 Newfoundland and Labrador
- 11 Prince Edward Island
- 12 Nova Scotia
- 13 New Brunswick
- 24 Quebec
- 35 Ontario
- 46 Manitoba
- 47 Saskatchewan
- 48 Alberta
- 59 British Columbia
- 60 Yukon
- 61 Northwest Territories
- 62 Nunavut

Census division unique identifier (CDuid)

This uniquely identifies a census division. The first two digits of the CDuid identify the province or territory (PR).

Census subdivision unique identifier (CSDuid)

This uniquely identifies a census subdivision in the country. The province/territory, census division, and census subdivision (municipality) codes combine to represent the Standard Geographical Classification (SGC).

Census subdivision name (CSDname)

This contains the name of the census subdivision (municipality) in effect as of January 1, 2016.

Census subdivision type (CSDtype)

This field provides abbreviations used to identify the census subdivision (municipality) type.

Census consolidated subdivision code (CCScode)

This identifies a census consolidated subdivision within a census division. It should be combined with the CDuid to uniquely identify a census consolidated subdivision in the country.

Statistical Area Classification code (SAC)

The Statistical Area Classification groups census subdivisions according to whether they are a component of a census metropolitan area (CMA), a census agglomeration (CA), a census metropolitan influenced zone (strong metropolitan influenced zone, moderate metropolitan influenced zone, weak metropolitan influenced zone or no metropolitan influenced zone), or the territories (Yukon, Northwest Territories and Nunavut).

000	Territories
001-995	CMA/CA unique identifier
996	Strongly influenced zone
997	Moderately influenced zone
998	Weakly influenced zone
999	No influenced zone

Statistical Area Classification type (SACtype)

This identifies the type of Statistical Area Classification in which the census subdivision is located.

1	Census metropolitan area
2	Tracted census agglomeration
3	Non-tracted census agglomeration
4	Strongly influenced zone
5	Moderately influenced zone
6	Weakly influenced zone
7	No influenced zone
8	Territories

Census tract name (CTname)

This identifies a census tract within a CMA/CA. To uniquely identify each census tract in its corresponding census metropolitan area or tracted census agglomeration, the three-digit CMA/CA code must precede the census tract 'name.' If a census tract is split into two or more parts due to a population increase, the number after the decimal point identifies the splits. For example, CT 0042.00 becomes CT 0042.01 and CT 0042.02. If CT 0042.01 is subsequently split, it becomes CT 0042.03 and CT 0042.04.

Non-tracted areas outside a CMA/CA are assigned a code that is a concatenation of '99' plus the two-digit province or territory code. For example, records in areas outside of a CMA/CA in Nova Scotia are assigned a CT name of '9912.00.'

Economic region code (ER)

This identifies an economic region within a province or territory. This field must be combined with the province or territory code to uniquely identify an economic region.

Designated place code (DPL)

This identifies a designated place within a province or territory. This field must be combined with the province or territory code to uniquely identify a designated place.

Areas which are not a designated place are assigned a four-digit code that is a concatenation of '99' plus the two-digit province or territory code. For example, records in areas outside of a DPL in New Brunswick are assigned a DPL of '9913**.**

Federal electoral district – 2013 Representation Order unique identifier (FED13uid)

This uniquely identifies a federal electoral district – 2013 Representation Order. The first two digits of the FED13uid identify the province or territory (PR).

Population centre/rural area code (POP_CNTR_RA)

Population centre codes are unique four-digit codes that are assigned sequentially upon the POP_CNTR_RA creation. These codes remain constant between censuses. If a population centre is retired due to amalgamation or failure to meet the population or density thresholds, then its code is retired.

Rural area codes are unique four-digit codes which are a concatenation of '99' plus the two-digit province or territory code. For example, records in rural areas in Manitoba are assigned '9946.' This field will be '0000' for postal codes^{OM} linked to dissemination areas (Rep_Pt_Type = 3) and census subdivisions (Rep_Pt_Type = 4).

Population centre/rural area type (POP_CNTR_RA_type)

For population centres, the type code indicates the relationship of the population centre to the census metropolitan area and census agglomeration structure.

This field will be '9' for postal codes^{OM} linked to dissemination areas (Rep_Pt_Type = 3) and census subdivisions (Rep_Pt_Type = 4). There is no POP_CNTR_RA_type available for postal codes^{OM} linked at the dissemination area.

Dissemination area unique identifier (DAuid)

The DAuid uniquely identifies a dissemination area. It is composed of the two-digit province or territory code, the two-digit census division code and the four-digit dissemination area code.

Dissemination block

A dissemination block (DB) is an area bounded on all sides by roads and/or boundaries of standard geographic areas. Dissemination blocks cover all the territory of Canada. This code should be combined with the dissemination area unique identifier to uniquely identify the dissemination block within the country. This field will be '000' for postal codes^{OM} linked to dissemination areas (Rep_Pt_Type = 3) or census subdivisions (Rep_Pt_Type = 4).

Representative point type (Rep_Pt_Type)

This identifies whether the record uses a blockface, dissemination block or dissemination area. A representative point is a point that represents a line or a polygon. The point is centrally located along the line, and centrally located or population weighted in the polygon.

The vast majority of these linkages were created in an automated fashion (Geocoding process) at the dissemination area, dissemination block or block face level geographies. Records that do not link using our geocoding process are outputted for manual geocoding and linked to the census subdivision geography only.

Code	Type
1	Block-face
2	Dissemination block
3	Dissemination area
4	Census subdivision

Blockface representative points

The blockface representative points are computed along addressable and non-addressable streets, midway (or approximately midway) between two consecutive features intersecting a street. The features can be other streets or boundaries of standard geographic areas.

Geographic area representative points

The representative points for Dissemination Blocks and Dissemination Areas are generated in conjunction with their respective boundaries.

Latitude (LAT)

This is the latitude, in decimal degrees, of the dissemination area, dissemination block, or blockface representative point. The decimal point is explicit.

Longitude (LONG)

This is the longitude, in decimal degrees, of the dissemination area, dissemination block, or blockface representative point. The decimal point is explicit.

Single link indicator (SLI)

The single link indicator (SLI) provides a geographic record for mapping a postal code^OM representative point. It can be used to establish a one-to-one relationship between postal codes^OM and dissemination areas, dissemination blocks, or blockfaces. The SLI has the value of '1' to flag one record of an active postal code^OM.

Postal code^OM type (PCtype)

This indicates the type of addresses used to identify the points of call served by the postal code^OM. This field was introduced by Canada Post Corporation (CPC) after the creation of the original PCCF. Where possible, a value has been imputed by Statistics Canada for retired postal codes^OM using historical address information and delivery mode type.

Table 4.2

Postal code^OM types in the Postal Code^OM Conversion File (PCCF)

PCtype	Description
1	Street address with letter carrier service
2	Street address with route service
3	Post office box
4	Route service
5	General delivery
0	Unknown

Community name (Comm_Name)

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

Delivery mode type (DMT)

This is the delivery mode type as defined by CPC. Note that Statistics Canada assigns a DMT of 'W' to rural postal codes^OM, which are left blank by CPC. See Table 4.3 for DMT descriptions.

Table 4.3

Delivery mode types in the Postal Code^OM Conversion File (PCCF)

DMT	Description
A	Delivery to blockface address
B	Delivery to an apartment building
E	Delivery to a business building
G	Delivery to a large volume receiver
H	Delivery via a rural route
J	General delivery
K	Delivery to a post office box (not a Community Mail Box)
M	Delivery to a large volume receiver (post office box)
T	Delivery via a suburban service
W	Rural postal codes^OM (the second digit of the postal code^OM is '0')

X	Delivery via a mobile route
Z	Postal code^{OM} is retired (no further delivery to this code)

Note: Some postal codes^{OM} may have more than one delivery mode type.

Historic delivery mode type (H_DMT)

The historic delivery mode retains the previous delivery mode type value, if known. If the previous DMT is not known, it contains the current DMT.

Birth date (Birth_Date)

This is the approximate date when the postal code^{OM} became effective. All postal codes^{OM} created before April 1983 were given a birth date of '19830401.'

Retired date (Ret_Date)

This is the approximate date when a postal code^{OM} was retired. All postal codes^{OM} retired before April 1983 have '19830401' as the retirement date. Users should note that some postal codes^{OM} have been retired and reintroduced at a later date. Active postal codes^{OM} have a retirement date of '19000001.'

Delivery installation (PO)

This indicates whether the record represents coding to a post office where the mail can be accessed. The value '1' indicates this record was coded to a post office or other postal installation and the value '2' indicates 'unknown.' The value '0' indicates this record was coded to the area serviced by the postal code^{OM}.

Postal code^{OM} type (PCtype) 3 and 5 postal codes^{OM} represent mail service that can be accessed at the post office or other postal installation. Where possible, these records are coded to the appropriate post office or other postal installation.

Quality indicator (QI)

The quality indicator provides an indicator of the quality of the geocoding that links the postal code^{OM} and its address information and that of the Statistical Geomatics Centre Spatial Data Infrastructure.
The QI is established at the record level and is currently available only for the postal codes^{OM} that were geocoded using the automated geocoding system. A QI of 'AAA' indicates the highest quality and a QI of 'CCC' indicates the lowest quality.

The final quality indicator output after geocoding is complete is a concatenation such that:

QI = QI_1 | QI_2 | QI_3

i. The quality indicator (QI_1)

QI_1 indicates the quality of the general area where geocoding occurred. It is an indicator of our certainty that the postal code^{OM} is linked to the correct census subdivision.

QI is assigned as follows:

A - Good, verifiable geocoding

B - Good, search area based on 2016 Census data

C - Satisfactory approximation based on place name match to CSD alone

N - Unknown

ii. The quality indicator (QI_2)

QI_2 indicates the level of confidence of the match to the correct street. This is not available for postal code^{OM} type (PCtype) 3, 4 and 5 records, when delivery installation (PO) = 0 or 2, since they do not represent service to a particular civic address; when PO = 1 QI_2 represents the confidence of the match to a delivery installation address.

QI is assigned as follows:

        A - Good, match on street name, type, and direction

        B - Good, but match only on street name and type

        C - Satisfactory match on street name only or street name and direction

        N - Unknown

iii. The quality indicator (QI_3)

QI_3 indicates the level of confidence of the match to the correct address range. This is not available for PCtype 3, 4 and 5 records, when PO = 0 or 2, since they do not represent service to a particular civic address; when PO = 1 QI_3 represents the confidence of the match to a delivery installation address.

QI is assigned as follows:

        A - Good, if the parity was matched on both addresses on the Spatial Data Infrastructure

        B - Good, but the parity was matched on one address only on the Spatial Data Infrastructure

        C - Satisfactory, if the parity was not matched but the ranges overlap

        N - Unknown

Source

The source indicates the primary source of the geocoding. The values of the source are given in Table 4.4.

Table 4.4

Explanations of geocoding sources codes used in the Postal Code^{OM} Conversion File (PCCF)

Source	Explanation
1	Automated geocoding directly to Census geographic areas
2	Geocoded using Census response
3	Converted from geocoding done to previous Census geographic areas
4	Manually geocoded

Population centre and rural area classification (POP_CNTR_RA_SIZE_CLASS)

Population centre and rural area classification:

1. rural area
2. small population centre (1,000 to 29,999)
3. medium population centre (30,000 to 99,999)
4. large urban population centre (100,000 or greater)

File specifications

The current version of the Postal Code^{OM} Conversion File (PCCF) includes two files: the PCCF and a special file, Retired 2015 (R2015.txt). Postal codes^{OM} retired before January 1, 2016 are included in the Retired 2015 file. This reduces the size of the PCCF. These are ASCII files and do not include any software nor instructions on how to use the product within specific Geographical Information Systems (GIS) or mapping packages.

Software formats

Not applicable

System requirements

Not applicable

Installation instructions

Not applicable

Geographic representation

Not applicable

File naming convention

The naming convention for Postal Code^OM Conversion Files (PCCF) is bilingual and reflects the reference date (November 2020) of the Canada Post Corporation (CPC) data used in the release. The file name for this release is pccfNat_fccpNat_112020.txt.

5. Data quality

Linkage data quality elements provide information on the fitness-for-use of a linkage database by describing why, when, and how the data are created, and how accurate the data are. The quality elements include an overview reporting on lineage, positional accuracy, attribute accuracy, logical consistency and completeness. This information is provided to users for all linkage data products.

Lineage

Lineage describes the history of the linkage data, including descriptions of the source material from which the data were derived and the methods of derivation. It also contains the dates of the source material, and all transformations involved in producing the final digital files.

The Postal Code^OM Conversion File (PCCF) is the result of two updating activities. The first is done every five years, after each census, to align the database to the latest census geographic areas. The other is the ongoing maintenance activity that links the latest postal codes^OM from Canada Post Corporation (CPC) to census geographic areas. These links are recorded on the Statistical Geomatics Centre's postal code^OM database.

Linking to 2016 Census geographic areas

Sources

- Monthly updates of the Address Lookup File, Postal Code^OM Delivery Mode File, and Householder File from CPC
- Statistical Geomatics Centre's Spatial Data Infrastructure (SDI)
- 2016 Census of Population and Dwellings
- Blockface information linked to the 2016 Census dissemination block, and representative points data files
- 2016 Census Dissemination area correspondence file

Process

The following steps were used to assign 2016 Census geographic areas to the PCCF:

1. Process information from the CPC files
2. Automated geocoding of postal codes^OM to blockface or 2016 Census dissemination block or dissemination area
3. Assign 2016 Census dissemination blocks or dissemination areas for postal codes^OM using the correspondence between 2011 Census and 2016 Census geographic areas
4. Manually geocode postal codes^OM
5. Sample verification of postal code^OM records
6. Assign the single link indicator (SLI)

7. Assign higher levels of geography.

Step 1: Process information from the CPC files

The monthly files received from CPC are processed to assign birth date, retired date, historic delivery mode type (H_DMT) and delivery mode type (DMT). Records are extracted from the CPC Address Lookup File with the postal code^{OM}, postal code^{OM} type (PCtype) and related address information. Birth date is the date the postal code^{OM} became effective. Retired date is the date the postal code^{OM} is no longer found in the CPC monthly files. The delivery mode type is assigned using the Delivery Mode Type File. When a DMT is updated for a postal code^{OM}, the previous DMT becomes the H_DMT. Users should note that some postal codes^{OM} are retired and reintroduced at a later date, possibly in another location.

Step 2: Automated geocoding of postal codes^{OM} to 2016 Census blockface, dissemination block or dissemination area

All active postal codes^{OM} are geocoded using an automated geocoding system. A detailed discussion of the approach to geocoding is found in the working paper entitled *How Postal Codes Map to Geographic Areas* (Catalogue no. 92F0138MIE2007001), which is available on the Statistics Canada website (www.statcan.gc.ca).

The system uses the forward sortation area$^{©}$ (FSA$^{©}$) search area file and a match between CPC municipality and census subdivision (CSD) to determine the general area where the postal code^{OM} would be found. Census responses are used to create FSA$^{©}$ search areas. These FSA$^{©}$ areas are composed of dissemination areas where a particular FSA$^{©}$ was reported in the 2016 Census. Canada Post municipalities are matched to 2016 Census subdivisions using the province of the municipality and the similarity in name. When the match is not clear, historical CSD files on the Spatial Data Infrastructure (SDI) are used to determine the match.

Postal codes^{OM} with civic address ranges associated with them (PCtype 1 and 2) are coded to the appropriate dissemination area, dissemination block or blockface in the SDI. The vast majority of the PCtype 1 and 2 postal code^{OM} records in the PCCF were coded in this way.

The postal code^{OM} response in the 2016 Census is used to code rural routes, postal installation/post office boxes and postal codes^{OM} that service general areas. These postal codes^{OM} are geocoded to the dissemination area (DA) level. The number of DAs coded to is reduced in a post process to remove duplication in DA assignment. However, not all active postal codes^{OM} are geocoded in this way, either because the address information is not found or the census response is not significant (at least four responses of that postal code^{OM} per dissemination block) to determine the appropriate area for geocoding.

A quality indicator (QI) is assigned in the automated geocoding process. The indicator is based on the confidence of the link of the postal code^{OM} to the geographic area.

Step 3: Assign 2016 Census dissemination areas for postal codes^{OM} using the correspondence between 2011 Census and 2016 Census geographic areas for postal codes^{OM} that had been previous assigned to a dissemination area

When a match could not be found through the automated address matching system, postal codes^{OM} that had been previously coded to a 2011 Census geographic area are linked to a 2016 Census geographic area using the correspondence between 2011 Census and 2016 Census geographic areas

Step 4: Manually geocode postal codes^{OM}

Postal codes^{OM} are manually geocoded when they could not be coded at an acceptable degree of precision using the automated process or when they could not be converted using the correspondence between the 2011 Census and 2016 Census geographic areas.

In addressable areas covered by the Spatial Data Infrastructure (SDI), an attempt is made to link postal codes^{OM} to one or more blockfaces. The list of new postal codes^{OM} and address range records from CPC was matched to the SDI street listings according to elements common to both files (e.g., province, municipality, street name, type, direction, and address range). Once matched, the postal code^{OM} and related geographic area codes are transferred to the postal code^{OM} database.

Step 5: Sample verification of postal code^{OM} records

The relationship between the postal code^{OM}, dissemination blocks and dissemination areas is verified by sampling records from the geocoding completed in each of the processes above. These records are independently manually geocoded. The two sets of geocodes are compared as part of the verification.

Step 6: Assign the single link indicator (SLI)

Many postal codes^{OM} are represented by multiple records on the PCCF. The single link indicator (SLI) is created to assist users dealing with postal codes^{OM} having multiple records. The SLI provides a geographic record for mapping a postal code^{OM} representative point. The SLI has a value of '1' to flag the best (or only) link for a given postal code^{OM}. The value '0' indicates an additional record.

Please note that the SLI is identified on both active and retired postal codes^{OM}. Users will find when working with both active and retired postal codes^{OM} that multiple SLIs will appear for a postal code^{OM} that was retired and reintroduced. However, there will only be one SLI for a set of active records for a postal code^{OM}.

When assigning the SLI, priority is given to postal codes^{OM} associated with civic addresses or dwellings (based on the PCtype). The confidence of coding to the geographic area (the quality indicator) and the precision of the geocoding (the blockface, dissemination area or dissemination block), as well as the population, are considered. When the postal code^{OM} was linked to a DA associated with multiple federal electoral district (FED), population centre (POPCTR), or designated place (DPL), the SLI is linked to the record represented by the greatest proportion of the FED, POPCTR, or DPL population.

Users are cautioned that the SLI provides only a partial correspondence between the postal code^{OM} and other geographic areas.

Step 7: Assign higher levels of geography

Higher levels of geography are assigned based on the blockface, dissemination block, or dissemination area. When a dissemination area is related to more than one FED, POPCTR or DPL, more than one record appears in the PCCF for that postal code^{OM} to dissemination areas linkage.

Positional accuracy

Positional accuracy refers to the absolute and relative accuracy of the positions of geographic features. Absolute accuracy is the closeness of the coordinate values in a dataset to values accepted as being true. Relative accuracy is the closeness of the relative positions of features to their respective relative positions accepted as or being true. Descriptions of positional accuracy include the quality of the final file or product after all transformations.

The geographic coordinates assigned to postal codes^{OM} are either blockface, dissemination block or dissemination area representative points calculated for census purposes. Therefore, the positional accuracy of the postal code^{OM} is dependent on:

- the accuracy of the links established between the postal code^{OM} and the blockface, dissemination block, or dissemination area
- the positional accuracy of the blockface, dissemination block, or dissemination area representative point with respect to the blockface, dissemination block, or dissemination area.

Using different methods to create links in the PCCF results in varying degrees of accuracy for those links. Postal codes^{OM} linked to blockfaces are considered to be the more precise, as they are linked as closely as possible to address ranges representing the location of the postal code^{OM} according to CPC. When the blockface link cannot be produced, postal codes^{OM} are linked to a dissemination block or dissemination area.

The quality indicator (QI) illustrates the confidence of the link established between the postal code^{OM} and the more precise geographic area for each record geocoded using the automated system.

The geographic coordinates included on the PCCF are derived from Statistics Canada's Spatial Data Infrastructure (SDI). Users should be aware that absolute positional accuracy is not an intended feature of the SDI. Consequently, these files and any by-product are not recommended for engineering or legal applications or for emergency dispatching services.

Attribute accuracy

Attribute accuracy refers to the accuracy of the quantitative and qualitative information attached to each feature (such as population for a population centre, street name, census subdivision name and code).

The PCCF is a flat file providing attributes for postal codes^{OM} and for those dissemination area(s), dissemination block(s), etc. linked to the postal code^{OM}. Most of these attributes are taken from two independent sources. Some attributes are also created for the PCCF.

The geographic code, type, and name of all higher level standard geographic areas in which a blockface, dissemination block or dissemination area is located are extracted from the Spatial Data Infrastructure.

The information relevant to each postal code^{OM} – birth date, retirement date, delivery mode type, type of postal code^{OM} and CPC community name – is carried forward from the CPC address look-up file and auxiliary files. In some cases, the postal code^{OM} type was imputed by Statistics Canada.

The single link indicator and the type of representative point are assigned by Statistics Canada.

Tests are run to ensure that certain basic data relationships were consistent within the set of records in the PCCF.

Logical consistency

Logical consistency describes the fidelity of relationships encoded in the data structure of the digital linkage data.

In some cases, especially in rural areas, the postal code^{OM} service areas do not respect dissemination area boundaries. When this occurs, the same postal code^{OM} is repeated with different geographical information (i.e., different coordinates or dissemination area codes). These multiple records for a postal code^{OM} reflect the relationship between the postal code^{OM} and census geographic areas. Also, a postal code^{OM} can be linked to more than one blockface or dissemination block within the same dissemination area.

Conversely, different postal codes^{OM} could have the same coordinates. This happens when more than one postal code^{OM} has been linked to the same dissemination area. Also, more than one postal code^{OM} can be linked to a single blockface or dissemination block.

Every set of active records for a postal code^{OM} has one SLI equal to '1.' Every set of retired records for a postal code^{OM}, for a given retirement date, has one SLI equal to '1.'

Consistency with other products

Geographic areas contained in the PCCF are consistent with all 2016 Census related geographic products, except for the 2016 Census Forward Sortation Area Boundary File .The 2016 Census Forward Sortation Area Boundary File represents only the forward sortation areas© as reported in the 2016 Census responses, whereas the PCCF is updated annually to include recent postal codes^{OM} and also includes retired postal codes^{OM} and uses geocoding methods to assigned relationships.

Completeness

Completeness refers to the degree to which geographic features, their attributes and their relationships are included or omitted in a dataset. It also includes information on selection criteria, definitions used, and other relevant mapping rules.

Completeness in the context of the PCCF is the degree to which all valid postal codes^{OM} are accounted for on the PCCF and all geographic codes from the 2016 Census are linked to a postal code^{OM}. Almost all postal codes^{OM} have been linked to census geography.

There are also retired postal codes^{OM} included in the PCCF. Postal codes^{OM} retired before January 1, 2016 are included in the Retired 2015 text file, R2015.txt.

The quality indicator (QI) is currently available only for the records using the automated geocoding process. When postal codes^{OM} were geocoded using address information, each of the three characters of the QI contains an 'A', 'B' or 'C' indicating the confidence of geocoding. When the QI could not be determined, an 'N' is used to represent 'unknown.' The QI for the records that are manually geocoded or were directly converted from the 2011

Census geocodes contain an 'NNN' for the QI.

Every attempt was made to ensure that the delivery installation (PO) value indicated whether a postal code^{OM} of PCtype 3 or 5 was coded to a postal installation or to the area serviced by the postal code^{OM}. Occasionally a PCtype 3 or 5 record may be coded to a postal installation (indicated in a record with PO='1') and to a service area (indicated by a record with PO='0'). In some cases, including where the geographic area linkages were directly based on conversion from the 2011 Census geocodes, the PO is unknown (this is indicated by a PO='2').

Appendices

See definitions of the Geography universe from the *Dictionary, Census of Population, 201*6. www12.statcan.gc.ca/census-recensement/2016/ref/dict/index-eng.cfm

See Figure 1.1 Hierarchy of standard geographic areas for dissemination, 2016 Census from the *Dictionary, Census of Population, 2016*. www12.statcan.gc.ca/census-recensement/2016/ref/dict/figures/f1_1-eng.cfm

See Table 1.1 Geographic areas by province and territory, 2016 Census from the *Dictionary, Census of Population, 2016*. www12.statcan.gc.ca/census-recensement/2016/ref/dict/tab/t1_1-eng.cfm

See Table 1.5 Census subdivision types by province and territory, 2016 Census from the *Dictionary, Census of Population, 2016*. www12.statcan.gc.ca/census-recensement/2016/ref/dict/tab/t1_5-eng.cfm