Postal Code^{OM} Conversion File, Reference Guide

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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 2021 Census geographic areas). This process is performed by using data provided by Canada Post Corporation and linking 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 also the Postal Codes by 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 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 are no longer distributed by Statistics Canada but continue to be distributed to our partners. The Canada Post Corporation (CPC) distributes to other individuals and organizations.

Licenses

The PCCF and the PCFRF data products are available for license by Statistics Canada and CPC.

Both organizations agree that Statistics Canada manages licensing with Focal Points, Federal Government Agencies, Crown Corporations, and Cancer Registry end-users, while CPC manages licenses for value-added distributors/commercial, provincial or municipal government and non-government users.

Statistics Canada will process licensing for and distributes the Postal Code Data Products to the share partners permitted under the new revised licensing governance between Statistics Canada and CPC.

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

For external users, based on the agreement reached between Statistics Canada and CPC, you have to obtain the Postal Code End-use license agreement to continue to use and receive the Postal Code Data Products files directly from CPC.

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

Postal Code Conversion File, Reference Guide

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.

What's new?

- The postal code reference date for this PCCF is September 2024.
- Table 3.1 provides the number of unique postal codes, total records, and newly added postal codes.

Table 3.1

Province and territory postal code counts

Province or territory	Unique Postal Codes	Number Of Records	Newly added postal codes
Newfoundland and Labrador	11,832	16,059	14
Prince Edward Island	4,272	9,935	23
Nova Scotia	29,312	49,457	36
New Brunswick	59,105	74,198	63
Quebec	223,175	416,973	173
Ontario	295,542	438,363	238
Manitoba	26,942	35,662	50
Saskatchewan	23,707	30,076	24
Alberta	92,609	130,311	342
British Columbia	121,495	166,014	463
Yukon	1,046	1,418	3
Northwest Territories	550	861	0
Nunavut	57	235	0
Total	**889,644**	**1,369,562**	**1,429**

1. About this guide

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.

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 PCCF is a digital file which provides a correspondence between the CPC six-character postal code and Statistics Canada's standard geographic areas for which census data and other statistics are produced. Through the link between postal codes 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 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 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 postal codes are directly geocoded to 2021 Census geographic areas. 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 PCCF is to provide a link between six-character postal codes and standard 2021 Census geographic areas (e.g., dissemination areas, census subdivisions, census tracts). The purpose of the file is not to validate postal codes.

Definitions and concepts

Geographic terms and concepts are briefly defined in the *Dictionary, Census of Population, 2021*.
https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/index-eng.cfm

Content

Postal codes 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 may be represented by more than one record. Postal codes can also straddle provincial boundaries. See the technical specifications section for more information on postal codes. The PCCF is available as a national file.

Each record in the file consists of the following:

- six-character postal code
- 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 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: 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 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 is linked to a postal installation.

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 infostats@statcan.gc.ca.

General methodology

The PCCF is updated and released on a regular basis. The regular maintenance of the file takes all postal code changes continually introduced by CPC and determines the corresponding census geographic areas. Every five years, after each census, the postal codes are linked to the new census geographic areas.

Every month, Statistics Canada obtains files from CPC containing all postal codes, address ranges and other attributes such as delivery mode type. Where ever possible, postal code address ranges are linked to a blockface or dissemination block. When the blockface or dissemination block cannot be precisely determined, the postal code is coded to a higher-level geographic area.

All postal code links to higher level geographic areas are derived from the lower level geographic areas.

Limitations

The PCCF contains multiple records for a postal code when the postal code straddles more than one blockface or dissemination block. It should be acknowledged that the CPC source data used to create the PCCF contains some postal codes which have links to multiple address ranges.

Civic addresses are not available for some postal codes such as those associated with rural routes. Many of these postal codes 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.

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

The single link indicator (SLI) was created to assist users in dealing with postal codes having multiple records. The method used to establish the single link indicator identifies the geographic area with the majority of population assigned to a particular geographic area. Users should be aware that only a partial correspondence between the postal code 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. Users will find when working with both active and retired postal codes, multiple SLIs will appear for a postal code that has been retired and reintroduced.

The address associated with a postal code does not always represent the location where those receiving mail

using that postal code 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 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. Consequently, rural postal codes cannot be used in the same manner as most urban postal codes can to precisely geo-reference a physical location.

Similarly, postal codes 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 contained in this product is September 2024.

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 2021 Census is January 1, 2021.

4. Technical specifications

Record layout and data description

Table 4.1

Postal Code Conversion File and Retired Postal Code Conversion File record layout

Position	Size	Type[1]	Attribute 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 record (as indicated in Rep_point variable)
149	13	N	LONG	Longitude of lowest level geographic area for postal code record (as indicated in Rep_point variable)
162	1	C	SLI	Single link indicator
163	1	C	PCtype	Postal code 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, Forward sortation area© (FSA©), Local Delivery Units (LDU)

The postal code is a six-character code defined and maintained by 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 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 ('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 are identifiable by the presence of a zero (0) in the second position of the FSA© code. Urban postal codes are composed of FSAs© with numerals 1 to 9 in the second position of the code.

The last three characters of the postal code ('NAN') identify routes known as local delivery units (LDUs). In population centers, a single postal code 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 services both odd and even sides of the same street, or different streets, within a 200 metre 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 identifies a specific rural community.

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, 2021.

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 linked to dissemination areas (Rep_Pt_Type = 3), census subdivisions (Rep_Pt_Type = 4) and provinces/territories (Rep_Pt_Type = 5).

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 linked to dissemination areas (Rep_Pt_Type = 3), census subdivisions (Rep_Pt_Type = 4) and provinces/territories (Rep_Pt_Type = 5). There is no POP_CNTR_RA_type available for postal codes linked at the dissemination area.

Code	Type
1	Core
2	Fringe
3	Rural area inside of a CMA or CA
4	Population centre outside of a CMA or CA
5	Rural area outside of a CMA or CA
6	Secondary core
9	Unknown

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 linked to dissemination areas (Rep_Pt_Type = 3), census subdivisions (Rep_Pt_Type = 4) and provinces/territories (Rep_Pt_Type = 5).

Representative point type (Rep_Pt_Type)

This identifies whether the record uses a blockface, dissemination block, dissemination area, census subdivision or province/territory. 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 blockface level geographies.

Code	Type
1	Blockface
2	Dissemination block
3	Dissemination area
4	Census subdivision
5	Province/Territory

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 representative point to which the postal code has been geocoded. The decimal point is explicit.

Longitude (LONG)

This is the longitude, in decimal degrees, of the representative point to which the postal code has been geocoded. The decimal point is explicit.

Single link indicator (SLI)

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

Postal code type (PCtype)

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

Table 4.2

Postal code types in the Postal Code Conversion File

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. This attribute may be set as blank for some records. See Table 4.3 for DMT descriptions.

Table 4.3

Delivery mode types in the Postal Code Conversion File

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 (the second digit of the postal code is '0')
X	Delivery via a mobile route
Z	Postal code is retired (no further delivery to this code)

Note: Some postal codes 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 became effective. All postal codes created before December 1992 were given a birth date of '19921220'.

Retired date (Ret_Date)

This is the approximate date when a postal code was retired. Users should note that some postal codes have been retired and reintroduced at a later date. Active postal codes 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.

Postal code type (PCtype) 3 and 5 postal codes 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 and its address information and that of the Statistic Canada's Spatial Data Infrastructure.
The QI is established at the record level and is currently available only for the postal codes 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

a. 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 is linked to the correct census subdivision.

QI is assigned as follows:

A - Good, verifiable geocoding

B - Good, search area based on 2021 Census data

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

N - Unknown

b. 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 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

c. 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

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
5	Geocoded using latitude/longitude coordinates
6	Geocoded using imputation match

Population centre and rural area classification (POP_CNTR_RA_SIZE_CLASS)

This field will be '0' for postal codes linked to dissemination areas (Rep_Pt_Type = 3), census subdivisions (Rep_Pt_Type = 4) and provinces/territories (Rep_Pt_Type = 5). There is no POP_CNTR_RA_SIZE_CLASS available for postal codes linked at the dissemination area.

Table 4.5

POP_CNTR_RA_SIZE_CLASS	Explanation
0	Unknown
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 Conversion File (PCCF) includes two files: the PCCF and the Retired PCCF. Postal codes that are retired are put in the Retired PCCF as 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 PCCF is bilingual and reflects the reference date (V2409; September 2024) of the CPC data used in the release. The file name for this release is "pccf_fccp_V2409_2021.txt". Records representing retired postal codes are available in a separate file called "pccf_retired_fccp_retraite_V2409_2021.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 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 from CPC to census geographic areas. These links are recorded on the Statistical Geomatics Centre's postal code database.

Linking to 2021 Census geographic areas

Sources

- Monthly updates of the Address Lookup File, Postal Code Delivery Mode File, Householder File and a latitude/longitude file from CPC
- Statistic Canada's Spatial Data Infrastructure (SDI)
- 2021 Census of Population
- Blockface information linked to the 2021 Census dissemination block, and representative points data files

Process

The following steps were used to assign 2021 Census geographic areas to the PCCF:

1. Process information from the CPC files
2. Automated geocoding of postal codes to 2021 Census blockface, dissemination block, dissemination area, census subdivision or province/territory
3. Manually geocode postal codes
4. Sample verification of postal code records
5. Assign the single link indicator (SLI)
6. 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, postal code type (PCtype) and related address information. Birth date is the date the postal code became effective. Retired date is the date the postal code 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, the previous DMT becomes the H_DMT. Users should note that some postal codes are retired and reintroduced at a later date, possibly in another location. Every three months a Postal Code latitude-longitude file is received and is used to geocode less than ten percent of postal codes in the PCCF.

Step 2: Automated geocoding of postal codes to 2021 Census blockface, dissemination block, dissemination area, census subdivision or province/territory

All active postal codes 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* 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 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 2021 Census. CPC municipalities are matched to 2021 Census subdivisions

using the province of the municipality and the similarity in name. When the match is not clear, historical CSD files on the SDI are used to determine the match.

Postal codes 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 records in the PCCF were coded in this way. The postal code response in the 2021 Census is used to code rural routes, postal installation/post office boxes and postal codes that service general areas.

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 to the geographic area.

Step 3: Manually geocode postal codes

Postal codes are manually geocoded when they could not be coded at an acceptable degree of precision using the automated process.

In addressable areas covered by the SDI, an attempt is made to link postal codes to one or more blockfaces. The list of new postal codes 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 and related geographic area codes are transferred to the postal code database.

Step 4: Sample verification of postal code records

The relationship between the postal code and geographic 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 5: Assign the single link indicator (SLI)

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

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

When assigning the SLI, priority is given to postal codes 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.

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

Step 6: Assign higher levels of geography

Higher levels of geography are assigned based on the blockface, dissemination block, dissemination area or census subdivision.

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 are either blockface, dissemination block, dissemination area, census subdivision, or province/territory representative points calculated for census purposes. Therefore, the positional accuracy of the postal code is dependent on:

- the accuracy of the links established between the postal code and the geographic area

- the positional accuracy of the representative point with respect to the blockface, dissemination block, dissemination area, census subdivision, or province/territory

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

The QI illustrates the confidence of the link established between the postal code 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 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 and for those geographic areas linked to the postal code. 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, dissemination area, census subdivision, or province/territory is located are extracted from the Spatial Data Infrastructure.

The information relevant to each postal code – birth date, retirement date, delivery mode type, type of postal code and CPC community name – is carried forward from the CPC address look-up file and auxiliary files. In some cases, the postal code 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 service areas do not respect geographic area boundaries. When this occurs, the same postal code is repeated with different geographical information (i.e., different coordinates or geographic area codes). These multiple records for a postal code reflect the relationship between the postal code and census geographic areas. Also, a postal code can be linked to more than one blockface or dissemination block within the same dissemination area.

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

Every set of active records for a postal code has one SLI equal to '1.' Every set of retired records for a postal code, 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 2021 Census related geographic products, except for the 2021 Census Forward Sortation Area Boundary File. The 2021 Census Forward Sortation Area Boundary File represents only the forward sortation areas© as reported in the 2021 Census responses, whereas the PCCF is regularly updated to include recent postal codes 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 are accounted for on the PCCF and all geographic codes from the 2021 Census are linked to a postal code. Almost all postal codes have been linked to census geography.

Appendices

See definitions of the Geography universe from the *Dictionary, Census of Population, 2021*. https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/index-eng.cfm

See Figure 1.1 Hierarchy of standard geographic areas for dissemination, 2021 Census from the *Dictionary, Census of Population, 2021*. https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/fig/index-eng.cfm?ID=F1_1

See Table 1.1 Geographic areas by province and territory, 2021 Census from the *Dictionary, Census of Population, 2021*. https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/tab/index-eng.cfm?ID=T1_1

See Table 1.5 Census subdivision types by province and territory, 2021 Census from the *Dictionary, Census of Population, 2021*. https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/tab/index-eng.cfm?ID=T1_5