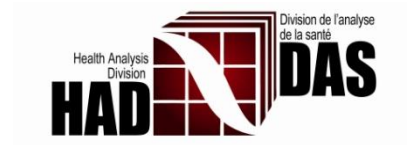


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# Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) Version 7A, Reference Guide



June 2017 Postal codes<sup>OM</sup>



Statistics  
Canada    Statistique  
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**What's new?**

The postal code<sup>OM</sup> reference date for the Postal Code<sup>OM</sup> Conversion File (PCCF) and the Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) is June 2017.

The Postal Codes<sup>OM</sup> are linked to the geographic areas used in the 2016 Census of Population. The reference date for these geographic areas is January 1, 2016. The previous version linked to the 2011 Census of Population geographic areas.

The PCCF+ Version 7A includes a population-weighting file calculated from 2016 Census population counts.

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.

Neighbourhood income quintiles and deciles have been calculated from 2016 Census population data.

An error in the routine that allows the geocoding of historical postal codes<sup>OM</sup> in British Columbia (V1H, V9G prior to 1998) has been corrected.

A new methodology was used for the geocoding of three digit postal codes<sup>OM</sup> (or FSAs<sup>®</sup>). Only a partial correspondence is now imputed to these postal codes<sup>OM</sup>, instead of the full geography. As such, only PR, CMA, ER, CD (& CSD in urban areas) is imputed to a three-digit postal code<sup>OM</sup> using FSA level census population weights.

<sup>OM</sup> Postal Code is an official mark of Canada Post Corporation.

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**1. About this guide**

This reference guide is intended for users of the Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) Version 7A, a companion tool to the Postal Code<sup>OM</sup> Conversion File (PCCF). The guide provides an overview of the files and software, the general methodology used in the creation, important technical information, and instruction on how to use the included SAS<sup>®</sup> programs.<sup>1</sup>

This data and software tool 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.

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## 2. Overview

The Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) is a SAS<sup>®</sup> control program and set of associated datasets derived from the Postal Code<sup>OM</sup> Conversion File (PCCF), a 2016 postal code<sup>OM</sup> population weight file, the Geographic Attribute File, Health Region boundary files, and other supplementary data. PCCF+ automatically assigns a range of Statistics Canada standard geographic areas and other geographic identifiers based on postal codes<sup>OM</sup>. PCCF+ differs from the PCCF in that it uses population-weighted random allocation for many postal codes<sup>OM</sup> that link to more than one geographic area. Options are available for institutional postal codes<sup>OM</sup> and for postal codes<sup>OM</sup> in British Columbia moved by Canada Post Corporation. Procedures are included to link partial postal codes<sup>OM</sup> to geographic identifiers to the extent possible. Problem records and diagnostics are provided in the program output along with reference information for possible solutions.

The geographic coordinates, which represent the standard geostatistical areas linked to each postal code<sup>OM</sup> 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, and research purposes.

In April 1983, the Geography Division released the first version of the PCCF, which linked postal codes to 1981 census geographic areas and included geographic coordinates. PCCF+ was first created using the 1986 census and has been updated regularly with population weight files calculated for each census from 1991 through 2016.

## Acknowledgements

<sup>OM</sup> Postal code is an official mark of Canada Post Corporation.

### 3. About this tool

#### Purpose of PCCF+

The purpose of the Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) is to provide a link between six-character postal codes<sup>OM</sup>, standard 2016 census geographic areas (such as dissemination areas, census subdivisions, and census tracts), supplementary administrative areas, and neighbourhood income quintiles.

Postal codes<sup>OM</sup> 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<sup>OM</sup> may be represented by more than one record.

PCCF+ differs from the PCCF in that it uses a population-weighted matching process for some residential postal codes<sup>OM</sup> where more than one geographic code is possible. PCCF+ also provides routines for institutional postal codes<sup>OM</sup> and for historic postal codes<sup>OM</sup>.

The purpose of this product is *not* to validate postal code<sup>OM</sup>.

#### Definitions and concepts

Selected geographic terms and concepts are briefly defined in the glossary (*Appendix A*). More detail can be found in the *2016 Census Dictionary* (Catalogue no. 98-301-X) and the *2016 Illustrated Glossary* (Catalogue no. 92-195-X).

Additional reference guides include the *Postal Code<sup>OM</sup> Conversion File (PCCF) Reference Guide*, (Catalogue no. 92-154-G), the *Geographic Attribute File, Reference Guide, Census year 2016* (Catalogue no. 92-151-G), the *Correspondence Files, 2016 Census* (Catalogue no. 92-156-X), the working paper *How Postal Codes<sup>OM</sup> Map to Geographic Areas* (Catalogue no. 92F0138M – No. 001), and *Health Regions: Boundaries and Correspondence with Census Geography* (Catalogue no. 82-402-X).

#### Content

This version (7A) of PCCF+ contains a SAS<sup>®</sup> control program, data files for operation of the geocoding process, and several supplementary SAS<sup>®</sup> programs. Table 3.1 provides a list of these files with descriptions.

**Table 3.1: List of files included with PCCF+**

File name	Description
PCCFplus_7A.sas (FCCPplus_7A.sas)	Primary PCCF+ SAS <sup>®</sup> control program for geocoding for residential and institutional (French version)
input_georef.sas	SAS <sup>®</sup> input file for geographic data files
input_pccf.sas	SAS <sup>®</sup> input file for PCCF data files
dist.sas	SAS <sup>®</sup> control program for calculating distance between points
explode.sas	SAS <sup>®</sup> control program to explode records with single postal codes <sup>OM</sup>
fix_pcodes.sas	SAS <sup>®</sup> control program to fix common postal code <sup>OM</sup> errors
histSESref.sas	SAS <sup>®</sup> control program to assign historic QAIPPE from 1981-2006
cpcref.airstage.v1706.txt	Canada Post air stage delivery list (6+ months per year)
cpcref.bldgnam.v1706.txt	Building names and addresses (mostly non-residential) for manual resolution
cpcref.emgres.v1706.txt	Flag for possible non-residential postal codes <sup>OM</sup> (DMT = E, G, M)
cpcref.instflg.v1706.txt	Flag for potential institutional postal codes <sup>OM</sup>
cpcref.nadr.v1706.txt	Number of address records for each postal code <sup>OM</sup>
georef16.dablkpnt16.txt	Pointer file for dissemination area and dissemination block

File name	Description
georef16.gaf16.txt	Subset of geographic attribute file
georef16.hrdef.txt	Health Region definitions, plus additional variables for PCCF+
georef16.ses16.txt	Neighbourhood income quantiles
pccf1706.pccf.bcvuniq.txt	British Columbia postal codes <sup>OM</sup> moved by Canada Post in 1990s
pccf1706.pccf.dups.txt	Duplicate postal codes <sup>OM</sup> from PCCF
pccf1706.pccf.pointdup.txt	Pointer file for duplicate postal codes <sup>OM</sup>
pccf1706.pccf.rpo.txt	Rural post office codes
pccf1706.pccf.uniq.txt	Unique postal codes <sup>OM</sup> from PCCF
pccf1706.wc2dups.txt	Weighting for first 2 characters of postal code <sup>OM</sup>
pccf1706.wc2point.txt	Pointer for 2-character weighting file
pccf1706.wc3dups.txt	Weighting for first 3 characters of Postal Code <sup>OM</sup> ( FSA <sup>®</sup> )
pccf1706.wc3point.txt	Pointer for 3-character weighting file (FSA <sup>®</sup> )
pccf1706.wc4dups.txt	Weighting for first 4 characters of postal code <sup>OM</sup>
pccf1706.wc4point.txt	Pointer for 4-character weighting file
pccf1706.wc5dups.txt	Weighting for first 5 characters of postal code <sup>OM</sup>
pccf1706.wc5point.txt	Pointer for 5-character weighting file
pccf1706.wc6dups.txt	Weighting for postal code <sup>OM</sup>
pccf1706.wc6point.txt	Pointer for postal code <sup>OM</sup> weighting file

## Methodology

The Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) is updated on an annual basis. The regular maintenance includes taking all postal code<sup>OM</sup> changes continually introduced by Canada Post Corporation as updated in the PCCF, as well as any updates to health regions or other administrative files. Every five years, after each census, PCCF+ and the underlying population weight files are recalculated and aligned with the new vintage of census geographic areas.

PCCF+ consists of a SAS<sup>®</sup> control program and a series of reference files derived from the PCCF, the geographic attribute file, a custom postal code<sup>OM</sup> population weight file, health region boundaries, and other sources. PCCF+ automatically assigns a full range of geographic identifiers based on postal codes<sup>OM</sup>. PCCF+ has been developed over a number of years for research studies at Statistics Canada with considerable input from the broader research community. With the help of user feedback, any incorrect coding due to errors in the underlying reference files or programming can be easily identified and corrected. At their place of residence, 30% of the Canadian population use postal codes<sup>OM</sup> which are ambiguous with respect to geographic location. This is the biggest problem facing geographic coding from Canadian postal codes<sup>OM</sup>. For instance, about 20% of the population uses rural postal codes<sup>OM</sup> (which each serve an average of about 1,100 persons), 1% use rural route services from urban post offices, and 1% use small post office boxes. Within urban postal code<sup>OM</sup>, a few classes are primarily used by businesses and institutions may or may not be valid as a place of residence (based on Delivery Mode Type – DMT). The remaining 70% of Canadian postal codes<sup>OM</sup> present little or no problem with respect to geographic coding and can usually be done with a high degree of precision. It is important to deal with the various sorts of problems identified by the problem file produced by PCCF+.

The primary objectives of PCCF+ are summarised below:

- Deal with community mail boxes and other sources of duplicate records on the PCCF (DMT A,B).
- Identify postal codes<sup>OM</sup> which may be used by businesses or institutions (DMT E,G,M).
- Provide geographically unbiased coding for small PO boxes at urban post offices (DMT K) and for General Delivery at urban post offices (DMT J).
- Provide better geographic coding for institutions using large PO boxes (DMT M).

- Incorporate retired postal codes<sup>OM</sup>, taking into account problems related to previous DMT.
- Provide translation across different vintages of census geography.
- Use the first one, two, three, four, or five characters of the postal code<sup>OM</sup> to impute or partially impute census geographic coding.
- Allow coding to the old location of postal codes<sup>OM</sup> in British Columbia that were moved by Canada Post in the mid-1990s.
- Provide additional information to correct erroneous or problematic postal codes<sup>OM</sup> and find geographic codes by other means.
- For postal codes<sup>OM</sup> which may or may not refer to a place of business (DMT E,G,M), flag records known to serve non-residential addresses and flag those known to serve residential addresses.
- For areas consisting primarily of collective dwellings, indicate the predominant dwelling type (hospital, nursing home, prison, etc.).
- Provide detailed diagnostics indicating how the coding was done, what problems were encountered, and how ambiguous or precise the coding was.

The PCCF+ default routine is for geocoding records corresponding to *usual place of residence*; the optional institutional coding routine can be used to geocode postal codes<sup>OM</sup> corresponding to health facilities (long-term care facilities, nursing homes, hospitals, residential care homes, offices of health professionals) or other institutions. The general methodology for residential coding is outlined below, with procedures that apply only to institutional geocoding shown in italics. Please refer to Appendix F (residential) and G (institutional) for flowcharts depicting these processes.

1. Rural postal codes<sup>OM</sup> and postal codes<sup>OM</sup> served by rural route delivery or suburban services from urban post offices, or which indicate a group of post office boxes or a single post office box, are matched to a subset of the weighted conversion file – consisting of about 30,000 records for 7,000 different postal codes<sup>OM</sup>. As most such codes serve more than one dissemination area (DA), the geographic codes are assigned randomly in proportion to the distribution of population with that postal code<sup>OM</sup>, as seen in the weighting file. *For coding of office locations, etc., the institutional routine omits the rural postal codes<sup>OM</sup> from this step, so that they can all be assigned to the same dissemination area as the rural post office.*
2. Remaining postal codes<sup>OM</sup> which are unique on the PCCF (only linked to a single dissemination area, dissemination block, or block face) are matched to corresponding codes on the incoming file. There are approximately 550,000 of these unique codes for all Canada, including most urban postal codes<sup>OM</sup>. *For institutional geocoding, rural postal codes<sup>OM</sup> together with their corresponding post office geography are added at this point, as those records are also unique.*
3. Postal codes<sup>OM</sup> which are not unique on the PCCF (about 300,000 different postal codes<sup>OM</sup> for which more than 1.2 Million PCCF records exist, including each of the multiple occurrences of the same postal codes<sup>OM</sup>) are matched to the remaining records from the input file. Most urban postal codes<sup>OM</sup> and some rural postal codes<sup>OM</sup> which are not unique on the PCCF (in the sense that they link to more than one dissemination area, dissemination block, or block-face) are nonetheless not ambiguous in terms of higher levels of geography such as census division, census subdivision, census metropolitan area, or census tract. To avoid "many-to-many" matching, the matching in this part of the program is done in two steps:
  - a. Each remaining input record (not already matched to the weighting file or to the PCCF unique file) is matched by postal code<sup>OM</sup> to a pointer file which contains a single record for each postal code<sup>OM</sup> which occurs more than once on the PCCF. The pointer file shows how many times the postal code<sup>OM</sup> occurs and the observation number of the first occurrence of that postal code<sup>OM</sup> on the pointer file.
  - b. The information on the pointer file is used to match successive records with the next occurrence of that postal code<sup>OM</sup> on the pointer file. This has the effect of distributing



- events for such postal codes<sup>OM</sup> across all possible dissemination areas, dissemination blocks, or block-faces which are served by that postal code<sup>OM</sup> – with equal weight assigned to each PCCF record.
4. Missing dissemination block codes are assigned based on population-weighted imputation from the dissemination area code, if available.
  5. Error records are then identified and processed as follows:
    - a. Any record with a postal code<sup>OM</sup> which did not match on all 6 characters to the PCCF is identified as an error record (Link=0).
    - b. Records with postal codes<sup>OM</sup> which partially matched to the PCCF or weighting file (i.e., DA='9999'), and whose DMT is H, J, K, M, T or X are also identified as error records (Link=1), since the PCCF is ambiguous with regards to residential location (e.g., post office location, rural route).
    - c. Using auxiliary files, an attempt is then made to assign highly probable census metropolitan area, census division, and census subdivision codes, plus census tract and dissemination area for urban postal codes<sup>OM</sup>. Coding will be suggested based on the first 5, 4 or 3 characters of the postal code<sup>OM</sup>, or failing that, based on the first 2 characters of the postal code<sup>OM</sup>. The province may also be assigned based on the first character of the postal code<sup>OM</sup>.
  6. All records with their corresponding geography (to the extent found) are output to the specified output file. If some or all geographic codes could not be determined, those fields are set to missing values in the output file.
  7. A problem output file is created containing:
    - a. Records with postal codes<sup>OM</sup> which could not be matched on all 6 characters (Link0: error);
    - b. Records with postal codes<sup>OM</sup> for a DMT which is only linked to post office location on the PCCF (Link 1: error), and for which census location data were not available on the weighted conversion file;
    - c. Records where the DMT frequently indicates a non-residential address (Link 3 and 4: warning);
    - d. Records for postal codes<sup>OM</sup> known to indicate a non-residential address (Link 2: warning);
    - e. Records which could have been assigned more than one census subdivision based on the unweighted PCCF (Link 6: note); and,
    - f. Records which could have been assigned to more than one census subdivision based on the weighted conversion file (Link 7: note).
  8. A summary of the geocoding process, including the number of records in each link type above is printed in the PDF output, together with suggestions as to what to do in each case. The summary also shows the distribution of records by the number of geographic codes which were assigned.
  9. Frequency counts of the occurrence of each value of the main fields are output. This is done for both the geocoded output and for the problem subset.

## Limitations

The PCCF contains multiple records for a postal code<sup>OM</sup> when the postal code<sup>OM</sup> straddles more than one block-face (BF), dissemination block (DB), or dissemination area (DA) (see Table 3.2). Note that the Canada Post Corporation source data used to create the PCCF contains many postal codes<sup>OM</sup> which have links to multiple address ranges. In the June 2017 file received from Canada Post Corporation, 969 postal codes<sup>OM</sup> were linked to between 50 and 100 different address ranges, and 797 postal codes<sup>OM</sup> were linked to 100 or more address ranges. Amongst postal codes<sup>OM</sup> with

matches to multiple records, those with DMT = A, B, E, G or M (i.e., urban) with links to 4 or more dissemination areas (n=7,346) were considered problematic. As a result, these postal codes<sup>OM</sup> were removed from the PCCF duplicate records file. Instead, the PCCF+ processes them using the weighted conversion (WCF) files if the postal code<sup>OM</sup> or partial postal code<sup>OM</sup> was reported on the 2016 Census of Population. Otherwise, the records would be assigned a link=0 indicating no match to PCCF unique, duplicates or weighted conversion files.

**Table 3.2 Postal Codes<sup>OM</sup> with Multiple Matches by Number of Dissemination Areas**

Number of DAs	Number of Postal Codes <sup>OM</sup> with Multiple Matches
1 (multiple BFs and/or DBs)	230,196
2	53,714
3	10,923
4	2,827
5	1,270
6	494
7	360
8	248
9 or more	1,223
Total	298,459

Civic addresses are not available for some postal codes<sup>OM</sup> such as those associated with rural routes. Many of these postal codes<sup>OM</sup> tend to straddle several dissemination areas and often cross boundaries of census geographic areas such as census tracts or census subdivisions. It is difficult to identify the precise service area of a rural postal code<sup>OM</sup>, except by observing where individuals reporting a particular postal code lived at the time of each census.

Community mailboxes are a growing source for multiple records per postal code<sup>OM</sup> on the PCCF. In newer urban delivery areas, postal codes<sup>OM</sup> 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<sup>OM</sup> and block-faces, unlike the more traditional urban postal codes<sup>OM</sup>, which correspond generally to a block-face.

The PCCF single link indicator (SLI) was created to assist users in dealing with postal codes<sup>OM</sup> with multiple records. The method used to establish the single link indicator identifies the dissemination block with the highest number of dwellings using a particular postal code<sup>OM</sup>. *Users should be aware that only a partial correspondence between the postal code<sup>OM</sup> and other geographic areas is achieved when using the single link indicator.* Note that the single link indicator is identified on both active and retired postal codes<sup>OM</sup>. Users will find when working with both active and retired postal codes<sup>OM</sup>, multiple SLIs will appear for a postal code<sup>OM</sup> that has been retired and reintroduced.

The address associated with a postal code<sup>OM</sup> does not always represent the location where those receiving mail using that postal code<sup>OM</sup> 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<sup>OM</sup> that are usually considered rural.

A typical rural route address, such as 'RR#6, Georgeville, Québec', 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<sup>OM</sup>. Consequently, rural postal codes<sup>OM</sup> cannot be used in the same manner as most urban postal codes<sup>OM</sup> can to precisely geo-reference a physical location.

Similarly, postal codes<sup>OM</sup> 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. A new variable indicating whether a postal

code<sup>OM</sup> is linked to a post office location or to where the customers reside is now available in the PCCF.

The health region correspondence to census geography, which is coded as part of PCCF+, is based on 2016 and 2011 census geographic units. The smallest geographic unit required has been used as the building block to define health regions. In general, the legislated limits respect these units, but not all respect dissemination areas or dissemination blocks once the legislated boundaries are digitized. In most provinces, the dissemination area was used to define health regions. However, in several instances, the actual physical legal limits split dissemination areas. In these cases, the dissemination block was used to improve the accuracy of these boundaries. The limits that did not respect Statistics Canada geometry (the splits) were digitized by utilizing maps, spatial layers and/or descriptions supplied by and with the cooperation of the authority for each province.

For geographic coding from postal codes<sup>OM</sup>, any geographic coding which requires dissemination block level precision (PopCtrRAuid, PopCtrRAtype, PopCtrRAclass) is meaningless outside of urban cores (where block level precision is usually possible based on urban postal codes<sup>OM</sup>). For most rural postal codes<sup>OM</sup>, a portion of the area served will meet the census criteria for urban, however, most of the surrounding area would be rural; but rural postal codes<sup>OM</sup> are inadequate to distinguish one from the other since the same postal code<sup>OM</sup> serves both urban and rural areas, as defined by the census.

## Comparison to other products/versions

Version 7 of PCCF+ is a major revision of the source data files and user input / output of the SAS<sup>®</sup> program. Version 7 uses 2016 census geography, with the 2016 census population weight file created using rounded 100% population counts. PCCF+ source data files use postal codes<sup>OM</sup> and associated data from Canada Post Corporation through to the end of June 2017.

- Version 1 – 1986 census; equal weight to duplicate records
- Version 2 – 1991 census; 2B (20% sample) household weights for duplicate records (DMT H-Z)
- Version 3 – 1996 census; 2A (100% count) population weights for duplicate records (DMT H-Z)
- Version 4 – 2001 census; 2A (100% count) population weights for duplicate records (DMT H-Z)
- Version 5 – 2006 census; 2A (100% count) population weights for duplicate records (DMT H-Z)
- Version 6 – 2011 census; 2A (100% count) population weights for duplicate records (DMT H-Z)
- Version 7 – 2016 census; 2A (100% count) population weights for duplicate records (DMT H-Z)

## Using with other products

Output from PCCF+ can be linked to the 2016 census geographic attribute file and other 2016 census products using the geographic unique identifiers. For completely geocoded records with a 2016 dissemination block identifier, unique geographic identifiers are provided for other census periods (1981 through 2011) and thus can be linked to other census products from those periods.

Successfully geocoded health region unique identifiers can be linked to 2017 health region boundaries. Using the 2011 or 2016 dissemination block identifiers, geocoded records can be linked to health region boundaries from other periods as well.

## Reference date

The reference date for postal codes<sup>OM</sup> contained in this product is June 2017. See the *Postal Code<sup>OM</sup> Conversion File (PCCF), Reference Guide, 2017*. Statistics Canada Catalogue no. 92-154-G.

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 1 January 2016. See the *Geographic Attribute File, Reference Guide, 2016 Census*. Statistics Canada Catalogue no. 92-151-G.

The reference date for health region boundaries is December 2017, with correspondence to 2016 and 2011 Census geography. See *Health Regions: Boundaries and Correspondence with Census Geography*. Statistics Canada Catalogue no. 82-402-X.

#### 4. Technical specifications

The Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) is provided as a SAS<sup>®</sup> control program, a collection of text-based data files, with additional SAS<sup>®</sup> programs for tasks outlined in *Appendix C*. The use of PCCF+ for geocoding postal codes<sup>OM</sup> requires an input file, in SAS<sup>®</sup> data format (\*.sas7bdat) that contains postal codes<sup>OM</sup> and a unique identifier for each record. Operation of PCCF+ results in an output file which contains the postal code<sup>OM</sup>, the user-supplied unique identifier, and additional codes gained from geocoding.

This section provides the record layout for the SAS<sup>®</sup> output file, specifications of the output file, compatible software formats for the SAS<sup>®</sup> program, and detailed instructions for the installation and operation of PCCF+. Record layouts for the data files associated with PCCF+ can be found in *Appendix B*.

#### Output file description

**Table 4.1: Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) output description and sources**

Field Name	Source	Description
<b>Coder</b>	User selection	Residential or institutional run of PCCF+
<b>Version</b>	Fixed	Version of PCCF+, e.g., 7A
<b>ID</b>	User-supplied	User-supplied unique identifier
<b>PCODE</b>	User-supplied postal code <sup>OM</sup>	Postal code <sup>OM</sup>
<b>PR</b>	Geographic attribute file	Province
<b>DAuid</b>	Geographic attribute file	Dissemination area unique identifier
<b>DB</b>	Geographic attribute file	Dissemination block code
<b>DB_ir2016</b>	Geographic attribute file	2016 census Indian reserve refusal flag
<b>CSDuid</b>	Geographic attribute file	Census subdivision unique identifier
<b>CSDname</b>	Geographic attribute file	Census subdivision name
<b>CSDtype</b>	Geographic attribute file	Census subdivision type
<b>CMA</b>	Geographic attribute file	Census metropolitan area / census agglomeration unique identifier
<b>CMAtype</b>	Geographic attribute file	Census metropolitan area type
<b>CMAname</b>	Geographic attribute file	Census metropolitan area / census agglomeration name
<b>CTname</b>	Geographic attribute file	Census tract name
<b>Tracted</b>	Geographic attribute file	Flag for tracted (in census tract) / non-tracted (not in census tract) area
<b>SACcode</b>	Geographic attribute file	Statistical area classification code
<b>SACtype</b>	Geographic attribute file	Statistical area classification type
<b>CCSuid</b>	Geographic attribute file	Census consolidated subdivision code
<b>FEDuid</b>	Geographic attribute file	Federal electoral district – 2013 Representation Order unique identifier
<b>FEDname</b>	Geographic attribute file	Federal electoral district name – 2013 Representation Order unique identifier
<b>DPLuid</b>	Geographic attribute file	Designated place identifier
<b>DPLtype</b>	Geographic attribute file	Designated place type
<b>DPLname</b>	Geographic attribute file	Designated place name
<b>ERuid</b>	Geographic attribute file	Economic region identifier
<b>ERname</b>	Geographic attribute file	Economic region name
<b>CARuid</b>	Standards Division	Census agricultural region identifier
<b>CARname</b>	Standards Division	Census agricultural region name
<b>PopCtrRAPuid*</b>	Geographic attribute file	Population centre/rural area code
<b>PopCtrRAname*</b>	Geographic attribute file	Population centre/rural area name
<b>PopCtrRAtype*</b>	Geographic attribute file	Population centre/rural area type
<b>PopCtrRAclass*</b>	Geographic attribute file	Population centre/rural area classification

Field Name	Source	Description
<b>CSize</b>	PCCF+	Community size code (2016 CMA/CA population)
<b>CSizeMIZ</b>	PCCF+	Urban CMA/CA size and rural MIZ code
<b>HRuid</b>	Health Statistics Division	Health region unique identifier
<b>HRename</b>	Health Statistics Division	Health region name (English)
<b>HRfname</b>	Health Statistics Division	Health region name (French)
<b>AHRuid</b>	Health Statistics Division	Alternate health region unique identifier
<b>AHRename</b>	Health Statistics Division	Alternate health region name (English)
<b>AHRfname</b>	Health Statistics Division	Alternate health region name (French)
<b>SLI</b>	PCCF	Single link indicator
<b>Rep_Pt_type</b>	PCCF	Representative point type (PCCF)
<b>RPF</b>	PCCF/PCCF+	Representative point flag (PCCF+)
<b>PCtype</b>	PCCF	Postal code <sup>OM</sup> type
<b>DMT</b>	PCCF	Delivery mode type
<b>H_DMT</b>	PCCF	Historic delivery mode type
<b>DMTDIFF</b>	PCCF/PCCF+	Previous or alternate DMT (if applicable)
<b>PO</b>	PCCF	PCCF Delivery installation
<b>QI</b>	PCCF	PCCF Quality indicator
<b>Source</b>	PCCF	Source of geographic coding (PCCF)
<b>Lat</b>	PCCF	Latitude of lowest level geographic area
<b>Long</b>	PCCF	Longitude of lowest level geographic area
<b>Link_Source</b>	PCCF+	Source of geographic coding (PCCF+)
<b>Link</b>	PCCF+	Link type (nature of problem)
<b>Prec</b>	PCCF+	Precision of representative point
<b>nCD</b>	Geographic attribute file	Number of census divisions
<b>nCSD</b>	Geographic attribute file	Number of census subdivisions
<b>Comm_Name</b>	Canada Post Corporation	Canada Post community name
<b>AirLift</b>	Canada Post Corporation	Canada Post air stage community
<b>InstFlag</b>	PCCF+	Institutional flag
<b>ResFlag</b>	PCCF+	Residence flag (where DMT=E,G,M)
<b>InuitLands</b>	PCCF+	Inuit Nunangat land claims settlement areas
<b>BTIPPE</b>	Health Analysis Division	Neighbourhood before tax income per single person equivalent (BTIPPE)
<b>ATIPPE</b>	Health Analysis Division	Neighbourhood after tax income per single person equivalent (ATIPPE)
<b>QABTIPPE</b>	Health Analysis Division	Neighbourhood income quintile before tax (in CMA/CA)
<b>QNBTIPPE</b>	Health Analysis Division	Neighbourhood income quintile before tax (national)
<b>DABTIPPE</b>	Health Analysis Division	Neighbourhood income decile before tax (in CMA/CA)
<b>DNBTIPPE</b>	Health Analysis Division	Neighbourhood income decile before tax (national)
<b>QAATIPPE</b>	Health Analysis Division	Neighbourhood income quintile after tax (in CMA/CA)
<b>QNATIPPE</b>	Health Analysis Division	Neighbourhood income quintile after tax (national)
<b>DAATIPPE</b>	Health Analysis Division	Neighbourhood income decile after tax (in CMA/CA)
<b>DNATIPPE</b>	Health Analysis Division	Neighbourhood income decile after tax (national)
<b>IMPFLG</b>	Health Analysis Division	Imputation flag for IPPE (mean household income imputed)

Field Name	Source	Description
DA11uid	PCCF+	2011 dissemination area identifier
DB11uid	PCCF+	2011 dissemination block identifier
DA06uid	PCCF+	2006 dissemination area identifier
DA01uid	PCCF+	2001 dissemination area identifier
EA96uid	PCCF+	1996 enumeration area identifier
EA91uid	PCCF+	1991 enumeration area identifier
EA86uid	PCCF+	1986 enumeration area identifier
EA81uid	PCCF+	1981 enumeration area identifier

\* See Limitations section above.

## Variable descriptions

### Postal Code<sup>OM</sup> (Pcode)

The postal code<sup>OM</sup> is a six-character code defined and maintained by Canada Post Corporation 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 (such as K1A 0T6). The postal code<sup>OM</sup> uses 18 alphabetic characters and 10 numeric characters. Six alphabetic characters (D, F, I, O, Q, and U) are not in use at the present time. In addition the first position does not make use of the letters W or Z.

The first three characters of the postal code<sup>OM</sup> ('ANA') represent a set of defined and mostly stable areas known as Forward Sortation Areas (FSAs<sup>®</sup>). The FSA<sup>®</sup> represents a specific area within a major geographical region, a province or a territory. Rural postal codes<sup>OM</sup> are identifiable by the presence of a zero (0) in the second position of the FSA<sup>®</sup> code. Urban postal codes<sup>OM</sup> are composed of FSAs<sup>®</sup> with numerals 1 to 9 in the second position of the code. PCCF+ also identifies postal codes<sup>OM</sup> with a DMT of H (rural route service) or T (suburban route service), which do not have a zero in the second position.

The last three characters of the postal code<sup>OM</sup> ('NAN') identify routes known as local delivery units (LDUs<sup>®</sup>). In population centres, a single postal code<sup>OM</sup> may correspond to the following types of LDUs<sup>®</sup>:

- a block-face (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 Canada Post Corporation
- 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<sup>OM</sup> 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<sup>®</sup>, the LDU<sup>®</sup> 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<sup>®</sup>, the postal code<sup>OM</sup> usually identifies a specific rural community.

### 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.

In PCCF+, this identifier can take additional forms depending on how much is known about the subfields. The census division missing value is set to '00' as '99' is a valid code.

99009999 Province (2), census division (2), and dissemination area (4) are unknown

nn009999 Census division (2) and dissemination area (4) are unknown

n timer="9999 Dissemination area (4) is unknown

### Dissemination block (DB)

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. DB=nnn; 000=missing.

### Dissemination block Indian Reserve refusal flag (DB\_ir2016)

In 2016, there were a total of 14 Indian reserves and Indian settlements that were 'incompletely enumerated.' For these reserves or settlements, enumeration was either not permitted or was interrupted before it could be completed, or enumeration was not possible because of natural events (forest fires in Alberta). The 2016 Census population and dwelling counts are not available for the 14 incompletely enumerated Indian reserves and Indian settlements.

F=not an IR refusal area; T=IR refusal area; 9=missing.

### 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 2016 CSDuid.

In PCCF+, this identifier can take additional forms depending on how much is known about the subfields. The census division missing value is set to '00' as '99' is a valid code.

9900999 Province (2), census division (2), and census subdivision (3) are unknown

nn00999 Census division (2) and census subdivision (3) are unknown

n timer="999 Census subdivision (3) is unknown

### Census subdivision name (CSDname)

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

### Census subdivision type (CSDtype)

Census subdivisions are classified according to designations adopted by provincial, territorial or federal authorities (see Appendix D, *Geographic Attributes File, Reference Guide*).

### Census metropolitan area / census agglomeration unique identifier (CMA)

3-digit CMA code which uniquely identifies the census metropolitan area or census agglomeration. census metropolitan areas and census agglomerations are not limited by provincial boundaries.

CMA=nnn; 999=CMA unknown; 000=CMA not applicable (not in any CMA or CA)

### Census metropolitan area type (CMAtype)

A one-character field identifying whether the unit is a census metropolitan area, a tracted census agglomeration or a non-tracted census agglomeration.

**Table 4.2: Census metropolitan area type**

CMAtype	Description
<b>B</b>	Census metropolitan area
<b>D</b>	Census agglomeration with no census tracts
<b>G</b>	Strong metropolitan influence zone
<b>H</b>	Moderate metropolitan influence zone
<b>I</b>	Weak metropolitan influence zone
<b>J</b>	No metropolitan influence zone



<b>K</b>	Census agglomeration with census tracts
<b>L</b>	Territories, outside census agglomerations
<b>9</b>	Missing

**Census metropolitan area / census agglomeration name (CMAname)**

This field contains the census metropolitan area or census agglomeration name.

**Census tract name (CTname)**

This 7-character field identifies a census tract within a census metropolitan area or census agglomeration. To uniquely identify each census tract in its corresponding census metropolitan area or tracted census agglomeration, the three-digit census metropolitan area / census agglomeration 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.

For areas within a census metropolitan area or census tracted census agglomeration where the census tract is missing, the CTname is coded to 9999.99. For areas not in any CMA or census tracted census agglomeration, CTname=0000.00 (not applicable).

**Flag for tracted/non-tracted area (Tracted)**

Indicates whether a postal code is within the tracted area (census metropolitan area or census-tracted agglomeration).

0=not tracted; 1=tracted; 9=unknown.

**Statistical Area Classification code (SACcode)**

The statistical area classification, groups census subdivisions according to whether they are a component of a census metropolitan area, a census agglomeration, a census metropolitan influence zone (strong metropolitan influence zone, moderate metropolitan influence zone, weak metropolitan influence zone or no metropolitan influence zone), or the territories (Yukon, Northwest Territories and Nunavut, outside of any census agglomeration).

**Table 4.3: Statistical area classification code**

SACcode	Description
000	Territories, outside of a census agglomeration
001 to 995	Census metropolitan area / census agglomeration unique identifier
996	Strong metropolitan influence zone
997	Moderate metropolitan influence zone
998	Weak metropolitan influence zone
999	No metropolitan influence zone
Blank	Missing

**Statistical Area Classification type (SACtype)**

This identifies the type of statistical area classification in which the census subdivision is located.

**Table 4.4: Statistical area classification type**

SACtype	Description
1	Census subdivision within census metropolitan area
2	Census subdivision within census agglomeration with at least one census tract
3	Census subdivision within census agglomeration having no census tracts
4	Census subdivision outside of census metropolitan area and census agglomeration having strong metropolitan influence
5	Census subdivision outside of census metropolitan area and census agglomeration having moderate metropolitan influence
6	Census subdivision outside of census metropolitan area and census agglomeration having weak metropolitan influence
7	Census subdivision outside of census metropolitan area and census agglomeration having no metropolitan influence
8	Census subdivision within the territories, outside of census agglomerations
9	Missing

**Census consolidated subdivision unique identifier (CCSuid)**

The three-character CCS code identifies a census consolidated subdivision within a census division. The CDuid is combined with the CCS code to uniquely identify a census consolidated subdivision (CCSuid) in the country. 999=CCS unknown.

**Federal electoral district – 2013 Representation Order unique identifier (FEDuid)**

This uniquely identifies a federal electoral district – 2013 representation order. The first two digits of the FEDuid identify the province or territory. nn999=FEDuid unknown.

**Federal electoral district – 2013 Representation Order names (FEDname)**

Names for federal electoral districts. Blank=unknown (FED=999).

**Designated place unique identifier (DPLuid)\***

The 4-digit DPL code identifies a designated place within a province or territory. DPLuid=PR(2) + DPL(4). A missing or not applicable DPL code is left blank, resulting in DPLuid=nn+blank(4).

\* Requires DB precision which is most often not available for these areas.

**Designated place type (DPLtype)**

The following is a list of designated place types:

**Table 4.5: Designated place types**

DPLtype	Description
CFA	Class IV area
DMU	Dissolved municipality
DPL	Designated place
IRI	Indian reserve / Réserve indienne
IST	Island trust
LNC	Localité non constituée
LSB	Local service board
LSD	Local service district
LUD	Local urban district
MDI	Municipalité dissoute
MDP	Municipal defined places
MET	Métis settlement
NM	Northern community
NVL	Nisga'a village
OHM	Organized hamlet
SE	Aboriginal settlement
UNP	Unincorporated place
UUC	Unincorporated urban centre
Blank	Not applicable or missing

**Designated place name (DPLname)**

Designated place name. Blank=not applicable or unknown.

**Economic region unique identifier (ERuid)**

The 2-digit ER code identifies an economic region within a province or territory. Combined with the province or territory code it uniquely identifies an economic region. A missing ERuid=nn99.

**Economic region name (ERname)**

Economic region name.

**Census agricultural region identifier (CARuid)**

Census agricultural regions are used by the Census of Agriculture for disseminating agricultural statistics. Census agricultural regions are composed of groups of adjacent census divisions, except in Saskatchewan, where they are composed of groups of adjacent census consolidated subdivisions not respecting census division boundaries. Census agricultural regions are not defined for the territories (CAR='00'). The two-digit census agricultural region code is unique only when preceded by the province code. CARuid=PR+CAR. nn99=missing; nn00=territories.

**Census agricultural region name (CARname)**

Census agricultural region name. This shows the name of each census agricultural region, including unofficial descriptive names for otherwise unnamed census agricultural regions.

**Population centre/rural area code (POPCTRRAPuid)\***

This 6-digit code uniquely identifies the provincial parts of each population centre and rural area (composed of the 2-digit province or territory unique identifier followed by the 4-digit population centre unique identifier). Rural areas = PR(2) + '99' + PR(2). For example, records in rural areas in Manitoba are assigned '469946.' Missing = PR(2) + '9999'.

\* Note this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

**Population centre/rural area name (POPCTRRAname)\***

Population centre and rural area name.

\* Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

**Population centre/rural area type (POPCTRRAtype)\***

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

**Table 4.6: Population centre / rural area type**

POPCTRRAtype	Description
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	Missing

\* Note this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

**Population centre and rural area classification (POPCTRRAClass)\*****Table 4.7: Population centre and rural area classification**

POPCTRRAClass	Description
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)
9	Missing

\* Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

### Community Size (CSize)

Community Size is defined in terms of the 2016 census population in each census metropolitan area or census agglomeration. Community size 1 consists of Toronto, Montreal and Vancouver census metropolitan areas. Community size 2 consists of Ottawa-Gatineau, Edmonton, Calgary, Québec, Winnipeg and Hamilton census metropolitan areas. Community size 3 includes all 18 other census metropolitan areas plus 7 of the larger census agglomerations. Community size 4 includes all 106 other census agglomerations. Community Size 5—"rural and small town Canada"--includes all places not included in any census metropolitan area or census agglomeration. (i.e., places with an urban area population less than about 10,000, plus rural areas.

Note that almost all records with a valid FSA<sup>®</sup> (whether or not the rest of the postal code is valid) can be assigned to a census metropolitan area or census agglomeration, and thus to a community size category. According to Statistics Canada's recommended definition, rural and small town Canada (*Plessis et al, 2001*) is defined as CSize='5'.

**Table 4.8: Community size classification**

CSize	Description (population)
1	1,500,000 +
2	500,000 – 1,499,999
3	100,000 – 499,999
4	10,000 – 99,999 (any CMACA < 100,000)
5	Less than 10,000 (any non-CMACA)
9	Missing

### Community Size and Metropolitan Influence Zones (CSizeMIZ)

This variable is a combination of the CSize variable for urban areas, and of the SACtype variable for rural areas. See the definitions of each for more information.

**Table 4.9: Community size classification, with MIZ**

CSizeMIZ	Description
1	1,500,000 +
2	500,000 – 1,499,999
3	100,000 – 499,999
4	10,000 – 99,999 (any CMACA < 100,000)
5	Non-CMACA; Strong MIZ
6	Non-CMACA; Moderate MIZ
7	Non-CMACA; Weak / No MIZ, Territories outside of any CA
8	Non-CMACA; unknown MIZ
9	Missing (unknown if CMACA or not)

### Health Region (HRuid)

Health regions are sub-provincial areas defined by provincial departments of health. In some cases, those definitions may split dissemination areas or dissemination blocks between two or more health regions, but to simplify the coding here, each dissemination area and dissemination block has been uniquely assigned to a single health region. Since each health region covers many dissemination areas, most of which are not split, this simplification should have little effect on the number of events coded to each health region. The two-character health region code is only unique within a given province (HRuid=Province (2) + health region (2)). Missing = PR(2) + '99'.

Where a province only uses a single digit to represent a health region, a zero has been added preceding that digit. In Ontario, the HRuid refers to the Local Health Integration Networks (LHINs). Note that the definitions used were generally those in effect as of December 2015, but the definitions

may be changed by provinces at any time, particularly in provinces without a long history of producing data by health region.

#### Health Region Name – English (HRename)

English health region name.

#### Health Region Name – French (HRfname)

French health region name.

#### Alternate Health Region (AHRuid)

Alternate health regions are like health regions. They are for Public Health Units (PHU) defined by the province of Ontario. The alternate health region code is only unique within the province.

'3599' = Missing (but applicable); PR(2) + '99' = Missing (not applicable).

#### Alternate Health Region Name – English (AHRename)

English alternate health region name.

#### Alternate Health Region Name – French (AHRfname)

French alternate health region name.

#### Single link indicator (SLI)

The single link indicator (SLI) provides a geographic record for mapping a postal code<sup>OM</sup> representative point. It can be used to force a one-to-one relationship between postal codes<sup>OM</sup> and dissemination areas, dissemination blocks, or block-faces. The SLI has the value of '1' to flag one record of an active Postal Code<sup>OM</sup>. Every set of retired records for a postal code<sup>OM</sup>, for a given retirement date, has one SLI equal to '1.' The SLI value '0' indicates additional records. '9' = SLI unknown.

#### PCCF representative point type (Rep\_Pt\_Type)

This identifies whether the PCCF record uses a block-face, dissemination block, dissemination area or census subdivision representative point as the coordinate.

'1' = block face; '2' = DB; '3' = DA; '4' = CSD; '9' = unknown (postal code<sup>OM</sup> not found on PCCF).

#### PCCF+ representative point flag (RPF)

This variable expands on the PCCF Rep\_Pt\_Type variable, by including information on geocoding from PCCF+.

**Table 4.11: Representative point flag**

RPF	RPF Description
1	Block-face representative point (Link_Source=F,D)
2	Dissemination block representative point (Link_Source=F,D)
3	Dissemination block representative point imputed within a dissemination area (Link_Source=F,D)
4	Dissemination block representative point imputed within a set of possible DAs (Link_Source=C)
5	Dissemination area representative point imputed within a set of possible DAs (Link_Source=C)
6	Dissemination area representative point imputed from partial postal code <sup>OM</sup> (Link_Source=3,4,5)
8	Representative point imputed from first 1 or 2 characters (Link_Source=2,1)
9	Missing

**Postal Code<sup>OM</sup> type (PCTYPE)**

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

**Table 4.12: Postal Code<sup>OM</sup> types**

PCTYPE	Description
0	Any service from rural postal office (2 <sup>nd</sup> character of postal code <sup>OM</sup> = '0')
1	Street address with letter carrier service from urban post office
2	Street address with route service from urban post office
3	Post office box from urban post office
4	Route service from urban post office
5	General delivery from urban post office
9	Missing

**Note:** Postal code<sup>OM</sup> types (PCTYPE) 3 and 5 represent mail service that can be accessed at the post office or other postal installation. Where possible, these PCCF records are coded to the corresponding post office or other postal installation, which is *not* where the addressee resides or does business.

**Delivery mode type (DMT)**

This is the delivery mode type as defined by Canada Post Corporation. Note that Statistics Canada assigns a DMT of 'W' to rural postal codes, which are left blank by Canada Post Corporation. Note that all DMT except 'W' are delivered from urban post offices.

**Table 4.13: Delivery mode type (June 2013 PCCF)**

DMT	Description	Number of Postal Codes <sup>OM</sup>	Number of Records
A	Letter carrier delivery to street address	792,920	1,465,577
B	Letter carrier delivery to an apartment building	22,867	25,491
E	Delivery to a business building	9,781	12,111
G	Delivery to a large volume receiver	7,382	8,872
H	Delivery via a rural route	522	25,561
J	General delivery	534	916
K	Delivery to a post office box (not a community mail box)	5,657	12,260
M	Delivery to a large volume receiver (post office box)	3,066	7,673
T	Delivery via a suburban service	339	14,105
W	Rural postal code <sup>OM</sup> (the second character of the postal code is '0')	5,286	250,502
X	Delivery via a mobile route	0	0
Z	postal code <sup>OM</sup> is retired (no further delivery to this code)	2,338	6,736
9	Missing	---	---
<b>Total</b>		<b>850,692</b>	<b>1,777,977</b>

**Additional notes for DMT when interpreting PCCF+ results:**

W Rural postal codes<sup>OM</sup> (regardless of type of service) always have a DMT of 'W'. Where more than 1 census subdivision is served by the rural post office, this will result in a note to that

- effect on the problem file. No action is recommended in such cases, since manual coding would defeat the population-weighted allocation.
- A Ordinary household (including community mail boxes) served by letter carrier. The most common DMT; usually no problem.
- B Apartment building (large) served by letter carrier. No problem with this DMT.
- E Business buildings served by letter carrier. This DMT results in a warning message, with the suggestion to check postal code<sup>OM</sup> and address, to see if they refer to a legitimate residence or office location. In most cases, the residential flag field will indicate whether the postal code<sup>OM</sup> is probable or improbable as a place of residence. The building name and brief address are shown on the problem file. The legitimacy of a postal code<sup>OM</sup> with this DMT may also depend on the nature of the records being coded: appropriate codes for offices are not necessarily appropriate for residences.
- G Large Volume Receiver served by letter carrier (includes many institutions). This DMT results in a warning message, with the suggestion to check postal code<sup>OM</sup> and address, to see if they refer to a legitimate residence or office location. In most cases, the residential flag field will indicate whether the postal code<sup>OM</sup> is probable or improbable as a place of residence. The building, company or institution name and brief address will be shown on the problem file. The legitimacy of postal codes<sup>OM</sup> with this DMT may also depend on the nature of the records being coded: appropriate codes for offices are not necessarily appropriate for residences. For example, a postal code<sup>OM</sup> for a nursing home may be reasonable for coding the place of usual residence on a death record, but it would be highly suspicious on a birth record. Even if it is a legitimate place of residence, consider whether an event at such a place is pertinent to your study. For example, if the study uses neighbourhood income as a proxy for individual or family-level socioeconomic position, it may not make sense to include college or university residences.
- H Rural route delivery from urban post office. For most rural routes, the weighted conversion file shows the 2016 census population weights associated with each postal code<sup>OM</sup> and dissemination area combination. If the Link\_Source is not equal to 'C', then only province and census metropolitan area will be imputed from FSA<sup>®</sup>, since the service area of these postal codes<sup>OM</sup> extends out into adjacent rural FSAs<sup>®</sup>.
- J General delivery. Residence location may be available from census data (weighted conversion file, Link\_Source=C). Otherwise, this DMT will result in an error.
- K Group of post office boxes. Residence location may be available from census data (WCF). Otherwise, this DMT will result in an error.
- M Single post office box. If present on the weighted conversion file (Link\_Source =C), will be fully coded. In most cases, the RESFLAG field will indicate whether the postal code<sup>OM</sup> is probable or improbable as a place of residence. The building, company or institution name and brief address will be shown on the problem file. If not present on the weighted conversion file, postal codes with this DMT will result in an error, since the PCCF only links postal codes<sup>OM</sup> with this DMT to post office location.
- R Miscellaneous delivery services. Residence location may be available from census data (weighted conversion file). Otherwise, this DMT will result in an error, as the regular PCCF only links these postal codes<sup>OM</sup> to post office location. *DMT R is no longer used by Canada Post Corporation, but it may appear in the field for previous DMT.*
- T Suburban service delivery (rare). Residence location may be available from the weighted conversion file. Otherwise, this DMT will result in an error, as the regular PCCF only links these to post office location.
- X Mobile route (urban industrial areas; rare). This DMT will result in an error, as the regular PCCF only links these to post office location. *However, since in such cases the first three characters of the postal code<sup>OM</sup> are known to be valid, then a "most likely" province and census metropolitan area may often be imputed.*



- W Rural postal codes<sup>OM</sup>. Usually geography for records with rural postal codes<sup>OM</sup> will be derived from the weighted conversion file (Link\_Source =C).
- Z Retired postal codes<sup>OM</sup>. Usually the DMTDIFF field will show the previous DMT for retired postal codes<sup>OM</sup>. If so, the Link\_Source and other diagnostic codes make use of the DMTDIFF. However, if DMTDIFF is blank, then there is a slight chance that a currently retired postal code<sup>OM</sup> may have formerly had a DMT of E, G, M or X, so this condition will result in output of the record to the problem file with a warning message to that effect.
- 9 Not applicable. No exact match to the PCCF or weighted conversion file, hence DMT is unknown. These will result in an error message as well as output to the problem file. A full or partial set of geographic codes may still be assigned based on the first 1 to 5 characters of the postal code (Link\_Source =1, 2, 3, 4 or 5).

Special note concerning Delivery Mode Types H, J, K, M, R and T: Except on rare occasions, it is not necessary to manually recode records with a DMT of H (for rural route delivery from an urban post office), J (general delivery – pick up from an urban post office counter), K (pick-up from group of urban post office boxes), or T (suburban service delivery from an urban post office). Most postal codes<sup>OM</sup> with those DMTs can now be assigned a full set of geographic codes by reference to the weighted conversion file (Link\_Source =C). That also applies to many postal codes<sup>OM</sup> with DMT of M (pick up from a single large urban post office box) and R (miscellaneous services; no longer used by Canada Post Corporation).

#### **Historic delivery mode type (H\_DMT)**

The historic delivery mode retains the previous delivery mode type value, if known. Blank = Not applicable or unknown.

#### **Historic delivery mode type difference (DMTDIFF)**

This field is for the previous Delivery mode type (DMT) if different from the current DMT. This usually occurs when the current DMT=Z (retired). Blank=Not applicable or unknown.

#### **PCCF delivery installation (PO)**

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

#### **PCCF quality indicator (QI)**

The PCCF quality indicator provides an indicator of the quality of the geocoding that links the postal code<sup>OM</sup> and its address information and that of the Geography Division's Spatial Data Infrastructure. The QI is established at the record level and is currently available only for the postal codes<sup>OM</sup> that were originally geocoded using the automated geocoding system. A QI of 'AAA' indicates the highest quality and a QI of 'CCC' indicates the lowest quality.

For more information, please see the working paper entitled *How Postal Codes<sup>OM</sup> Map to Geographic Areas* (Catalogue no. 92F0138MIE2007001).

#### **Latitude (LAT)**

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

#### **Longitude (LONG)**

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

**Source of PCCF geographic coding (Source)**

The PCCF source variable indicates the primary source of the geocoding used for the PCCF.

**Table 4.14: Source of geocoding (PCCF)**

Source	Description
1	Automated geocoding directly to 2016 census geographic areas
2	Geocoded using 2016 census response
3	Converted from geocoding done to 2011 census geographic areas
4	Manually geocoded
9	Missing

**Source of PCCF+ geographic coding (Link\_Source)**

This field provides additional information on the source of geographic coding related to PCCF+ matching process. The possible values of this field are as follows:

**Table 4.15: Source of geographic coding (PCCF+)**

Link_Source	Description
F	A full set of geographic codes and latitude/longitude were derived from an exact match to a PCCF unique record.
D	A full set of geographic codes and latitude/longitude were derived from an exact match to a PCCF duplicate record.
C	A full set of geographic codes and latitude/longitude were derived from an exact match to a WCF record (for DMT of H, J, K, R, T, W, Z, and some M).
5	Full geography was imputed from the first 5 characters of a postal code <sup>OM</sup> (when DMT=9), using census population weights.
4	Full geography was imputed from the first 4 characters of a postal code <sup>OM</sup> (when DMT=9), using census population weights.
3	Partial geography was imputed from the first 3 characters of a postal code <sup>OM</sup> (when DMT=9 or most M), using census population weights.
2	A partial set of geographic codes were assigned based on only the first 2 characters of this postal code <sup>OM</sup> .
1	A province code was assigned based on only the first character of this postal code <sup>OM</sup> . No other geographic codes or latitude and longitude were assigned.
0	The first character of this postal code <sup>OM</sup> is not in the set used for Canadian postal codes <sup>OM</sup> . No geographic codes assigned.
V	A full set of geographic codes and latitude/longitude were derived from an exact match to a unique record for a postal code <sup>OM</sup> with an FSA <sup>®</sup> of V1H or V9G, including geography from the period prior to the rebirth of those FSA <sup>®</sup> s in their new locations. This Link_Source only occurs where the option is used to recode British Columbia postal codes in FSAs which were moved by Canada Post in the 1990s.
9	Missing / Not Applicable

**PCCF+ link type (Link)**

The link type code identifies the type of problems encountered in coding. The link type codes (LINK) and corresponding messages (MESSAGE) are arranged in hierarchical order, starting with 0 for the most serious problems, and going to 9 for no problem at all (not even a Warning or Note). If more than one type of problem was present, only the most erroneous type is shown.

**Table 4.16: Linkage type code (PCCF+)**

Link	Message
0	Error: No match to PCCF (unique, duplicate, or weighted conversion file).
1	Error: Linked to PO geography
2	Warning: Non-residential. DMT=E, G or M and InstFlag=- (probable non-residential).
3	Warning: Business building (usually not a legitimate residence). DMT=E and InstFlag =blank.
4	Warning: Commercial or institutional (check if legitimate residence, and if pertinent to your study). DMT=G or M and InstFlag =blank.
5	Note: Retired postal code <sup>OM</sup> – expected and normal on administrative files. No further action required (slight chance of DMT problem prior to retirement, only if DMT=Z, and DMTDIFF=blank).
6	Note: Multiple match to dissemination area using unweighted allocation. No further action required.
7	Weighted allocation using census population weights (6-character WCF).
9	Not applicable (no error, warning or note). <i>Such records do not appear on the problem file.</i>

**PCCF+ Precision (Prec)**

Precision of representative point (latitude / longitude). 0 is the least precise coding, 9 is the most precise. For spatial studies it is recommended to review this variable before analysis of all records.

**Table 4.17: Precision of representative point**

Prec	Description
0	No geographic coding
1	Imputed from first 1 or 2 characters
2	Imputed from first 3 characters
3	Imputed from first 4 characters
4	Imputed from first 5 characters
5	1 or more dissemination areas (WC6) (DMT=H-X)
6	2 or more dissemination areas (DMT=A,B,E,G)
7	1 dissemination area (DMT=A,B,E,G)
8	1 dissemination block (DMT=A,B,E,G)
9	1 block-face (DMT=A,B,E,G)

**Canada Post Community name (Comm\_Name)**

The community name, as defined by Canada Post Corporation, denotes any city, town or village in Canada that is recognised as a valid mailing address. The service area of a Canada Post community *never* corresponds exactly to the boundaries of a Statistics Canada census subdivision, even when the names are identical.

**Canada Post air stage community (AirLift)**

An air stage office is a post office to or from which all mail must be airlifted for more than six months of every year as a viable surface transportation alternative is not available. These offices are generally confined to remote or isolated communities. An office designated an air stage office is deemed to be air stage for the whole year. '\*' = air stage office; blank= not an air stage office or missing.

**Institutional Flag (InstFlag)**

This field is used to help identify records likely to be for institutional residents. It is usually blank. The categories should not be expected to correspond to the classification of facilities used by the Health Statistics Division, provincial or territorial authorities. See the problem file for the building name and address of these large volume receivers.

**Table 4.18: Institutional flag**

<b>InstFlag</b>	<b>Description</b>
<b>E</b>	School or university residence
<b>H</b>	Hospitals
<b>M</b>	Military bases
<b>N</b>	Nursing and group homes
<b>S</b>	Seniors residences
<b>P</b>	Prisons, jails
<b>R</b>	Religious
<b>T</b>	Hotels, motels
<b>U</b>	Other
<b>Blank</b>	Not applicable or unknown

**Residential flag (ResFlag)**

If the delivery mode type (DMT) is E, G or M, then ResFlag indicates postal codes<sup>OM</sup> for possible or improbable residence addresses, or postal codes<sup>OM</sup> for which the residential or non-residential nature is undetermined. If the DMT is not in E, G or M, then ResFlag will be blank. See the problem file output for Canada Post building name and address information, if available.

**Table 4.19: Residential flag**

<b>ResFlag</b>	<b>Description</b>
<b>+</b>	Possible residence
<b>-</b>	Improbable residence
<b>?</b>	DMT= E,G or M but residence status is undetermined
<b>Blank</b>	Not in DMT= E,G, or M

**InuitLands**

Inuit Nunangat land claims settlement regions.

**Table 4.20: Land claims settlement regions**

<b>InuitLands</b>	<b>Description</b>
<b>0</b>	Outside of Inuit Nunangat
<b>1</b>	Inuvialuit Settlement Region (Northwest Territories)
<b>2</b>	Nunavut Territory
<b>3</b>	Nunavik (Northern Quebec)
<b>4</b>	Nunatsiavut (Labrador)
<b>9</b>	Unknown

**Neighbourhood before tax income per single person equivalent (BTIPPE)**

Neighbourhood income per single person equivalent is a household size-adjusted measure of household income (before tax), based on 2016 Census Summary profile data at the DA level, and using person-equivalents implied by the 2016 low income cut-offs (LICOs). See Appendix F for more detail on how these measures were created.

**Neighbourhood after tax income per single person equivalent (ATIPPE)**

Neighbourhood after tax income per single person equivalent.

**Neighbourhood income quintile (CMA/CA) Before Tax (QABTIPPE)**

Neighbourhood income quintiles (area-based) were created using BTIPPE. See Appendix F for more detail on how these measures were created.

**4.21: Neighbourhood income per person equivalent (CMA/CA) Before Tax**

QABTIPPE	Description
1	Lowest quintile
2	Medium-low quintile
3	Middle quintile
4	Medium-high quintile
5	Highest quintile
9	Missing

**Neighbourhood income quintile (national) Before Tax (QNBTIPPE)**

This variable is calculated similarly to the QABTIPPE, but where the *national* distribution for income quintiles is considered rather than area-based (census metropolitan area / census agglomeration) distributions.

**Neighbourhood income decile (CMA/CA) Before Tax (DABTIPPE)**

Calculated the same as the QABTIPPE, expressed as deciles instead of quintiles.

**Neighbourhood income decile (national) Before Tax (DNBTIPPE)**

Calculated the same as the QNBTIPPE, expressed as deciles instead of quintiles.

**Neighbourhood income quintile (CMA/CA) After Tax (QAATIPPE)**

This variable is calculated similarly to the QABTIPPE, but where income after-tax is considered rather than before tax.

**Neighbourhood income quintile (national) After Tax (QNATIPPE)**

This variable is calculated similarly to the QAATIPPE, but where the *national* distribution for income quintiles is considered rather than area-based (census metropolitan area / census agglomeration) distributions.

**Neighbourhood income decile (CMA/CA) After Tax (DAATIPPE)**

Calculated the same as the QAATIPPE, expressed as deciles instead of quintiles.

**Neighbourhood income decile (national) After Tax (DNATIPPE)**

Calculated the same as the QNATIPPE, expressed as deciles instead of quintiles.

**Imputation flag for IPPE (IMPFLG)**

Mean household income imputed

**2011 dissemination area (DA11uid)**

This field shows the 2011 dissemination area (PR+CD+DA).

**2011 dissemination block (DB11uid)**

This field shows the 10-digit 2011 dissemination block unique identifier (PR+CD+DA+DB).

**2006 dissemination area (DA06uid)**

This field shows the 2006 dissemination area (PR+CD+DA), based on the 2011 dissemination block to 2006 dissemination area correspondence file.

**2001 dissemination area (DA01uid)**

This field shows the 2001 dissemination area (PR+CD+DA), based on the 2011 dissemination block to 2001 dissemination area correspondence file.

**1996 enumeration area (EA96uid)**

This field shows the 1996 enumeration area (PR+FED+EA), based on the 2011 dissemination block to 1996 enumeration area correspondence file.

**1991 enumeration area (EA91uid)**

This field shows the 1991 enumeration area (PR+FED+EA), based on the 2011 dissemination block to 1991 enumeration area correspondence file.

**1986 enumeration area (EA86uid)**

This field shows the 1986 enumeration area (PR+FED+EA), based on the 2011 dissemination block to 1986 enumeration area correspondence file.

**1981 enumeration area (EA81uid)**

This field shows the 1981 enumeration area (PR+FED+EA), based on the 2011 dissemination block to 1981 enumeration area correspondence file.

**File specifications**

The current version of Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) includes the PCCF+ SAS<sup>®</sup> program (PCCFplus\_7A.sas), data files, and supplementary SAS<sup>®</sup> programs.

PCCF+ geocoding program and supplementary programs requires SAS<sup>®</sup> version 9 or higher. Programs were developed using SAS<sup>®</sup> Version 9.3.1 for Windows 7.

Data files are in ASCII text format and do not include any software nor instructions on how to use the product beyond the provision of record layouts in *Appendix B*. SAS<sup>®</sup> input programs are also included as part of the PCCF+ installation folders.

**System requirements**

Use of PCCF+ requires a Microsoft Windows<sup>®</sup> based system capable of running SAS<sup>®</sup> version 9 or higher, or SAS<sup>®</sup> Enterprise Guide version 4 or higher.

**Installation instructions**

To install PCCF+ and perform automated geocoding based on postal codes<sup>OM</sup> using PCCF+, instructions are provided below.

**Set up PCCF+**

The main component of PCCF+ consists of a single SAS<sup>®</sup> control file as well as 24 reference files primarily derived from the PCCF, the geographic attribute file, and the weighted conversion file. To use PCCF+ all files and folders in must be copied to a directory accessible to SAS<sup>®</sup>. An example is provided in Figure 4.1.

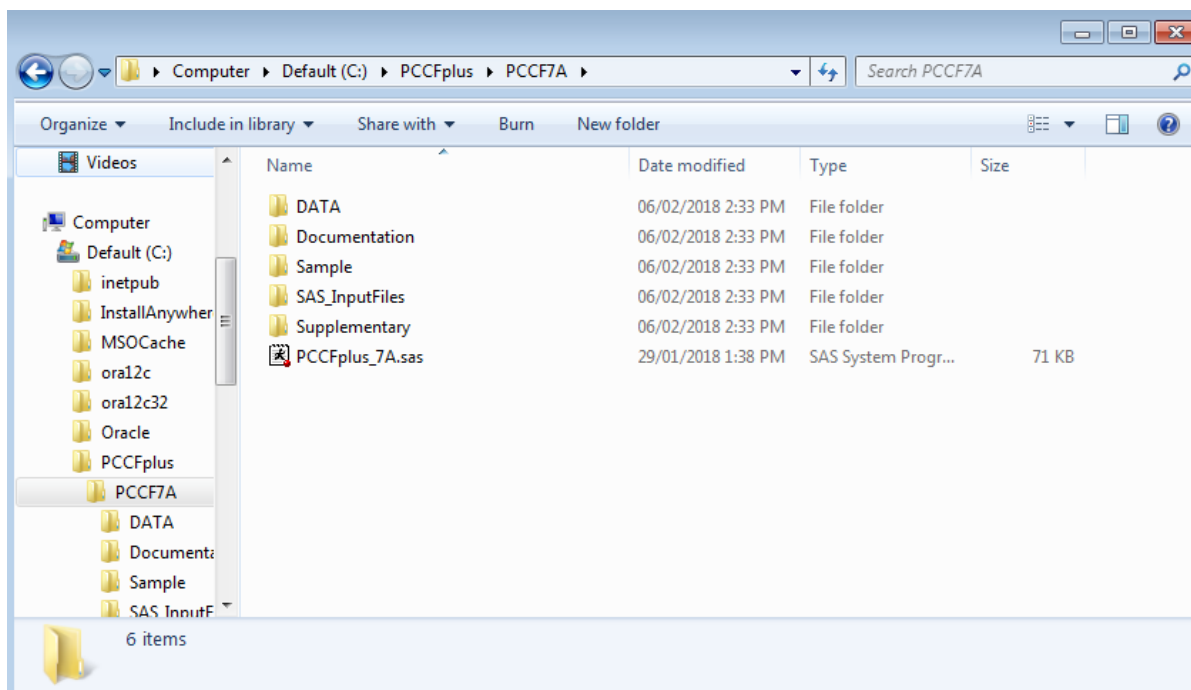


Figure 4.1: Example installation folder for PCCF+ Version 7A.

### 1. Specification of the input file

Input data must be a SAS<sup>®</sup> (or text) data file, sorted or unsorted, with each logical record containing a unique identifier (ID) and a postal code<sup>OM</sup> (PCODE) if available. The postal code<sup>OM</sup> must be formatted to be 6 characters with no spaces or hyphens. A supplementary program (`fix_pcode.sas`) is provided that formats postal codes<sup>OM</sup> and corrects common errors (for example: 0 instead of O and vice-versa). Table 4.23 shows an example layout for the input file.

The ID should be in character format, up to 15 characters in length. Records with the same ID but different PCODEs will each be assigned geographic codes (that may differ). For records with the same ID and PCODE combination, only one example of each will be retained.

Table 4.23: Example record layout for a PCCF+ SAS input file.

Position	Size	Type	Field Name	Description
1	15	C	ID	User-supplied unique identifier
16	6	C	PCODE	User-supplied postal code <sup>OM</sup>

### 2. Specifying macro variables in the PCCF+ SAS program

The PCCF program has 7 macro variables that need to be specified before running. These variables are described in detail at the top of the SAS<sup>®</sup> program, but are also outlined here.

- Installation directory (`installDir`) – The directory where the PCCF+ program and source files are located. PCCF+ can be stored on any local or network directory; however, the directory name must **not** contain any spaces but can contain hyphens or underscores.  
Example: `%let installDir = C:\PCCFplus_FCCPplus\;`
- Input data library (`inData`) – The folder path where the input dataset is located. This can be any directory accessible to SAS<sup>®</sup>.  
Example: `libname inData = "C:\PCCFplus_FCCPplus\input\";`

- Input data file (`inFile`) – The name of the input SAS<sup>®</sup> data file to be coded. This will need to be produced according to the specifications above.  
Example: `%let inFile = inputDataSet;`
- Output file name (`outName`) – The name of the output SAS<sup>®</sup> file (layout provided above). This is the geocoded file and includes *all* records, including those where there was a problem in geocoding. PCCF+ will automatically create an additional SAS<sup>®</sup> file for problem records, which has the same name as the geocoded output with the additional of a `_problem` suffix.  
Example: `%let outName = outputDataSet;`
- PDF listing output (`pdfOutput`) – The path and filename for the coding output summary. This summarises the geocoding process and identifies any potential problems and errors in geocoding.  
Example: `%let pdfOutput = "C:\PCCFplus_FCCPplus\output\output01.pdf";`
- Code version (`codeVersion`) – Whether to run residential (`codeVersion=0`) or institutional (`codeVersion=1`) geocoding. Residential coding is the default version, but if the data contains postal codes<sup>OM</sup> of businesses or institutions (rather than individuals), then an institutional coding option is provided.
- British Columbia coding (`codeBC`) – Whether to use current (`codeBC=0`) or old BC postal codes<sup>OM</sup> locations (`codeBC=1`). If the input data contain any postal codes<sup>OM</sup> beginning with V1H or V9G from 1997 or earlier, this option will need to be used as Canada Post moved these two FSA<sup>®</sup> around this time. PCCF+ will automatically summarise the number of records associated with these FSA<sup>®</sup> and flag them as potential problems.

### 3. Running PCCF+

Once the macro variables listed above have been specified, PCCF+ can be run using the SAS<sup>®</sup> submit command. When submitting for the first time, it is recommended to closely watch the log window for any errors that appear immediately. In this case, the program can be halted and any errors corrected.

Once the geocoding process has completed, the first step is to examine the log for any additional errors or warnings. These are usually indicated in red or green respectively and should be addressed before examining the results.

### 4. Interpreting PCCF+ Results

PCCF+ produces two output datasets, one for all the geocoded data (including problem records), and a subset that contains only the problem records (errors, warnings, and notes). The first of these output files contains the ID, postal code<sup>OM</sup>, the geographic codes that were successfully determined, and additional diagnostic codes that can aid in understanding how the coding proceeded for each case.

The second output file, indicated by the suffix `_problem`, contains a subset of the output records for any cases that had warnings, errors, or notes. To facilitate correction it is sorted by the type of problem (errors, followed by warnings, followed by notes), then by DMT, then by postal code<sup>OM</sup>. In the event that none of the input records were identified as potential problems then the problem file would be empty.

The output problem file includes the following fields:

- ID - Input record identifier
- PCODE - Input postal code<sup>OM</sup>
- MESSAGE - Text message indicating an error, warning, or note
- DMT - Delivery mode type
- DMTDIFF - If a historic delivery mode type differed from the current type
- Link\_Source - Source of geographic coding (PCCF+)
- Link - Link type
- DAuid - Dissemination area code
- DB - Dissemination block
- CSDuid - Census subdivision identifier



- CSDname - census subdivision name
- CSDtype - census subdivision type
- CMA - Census metropolitan area / census agglomeration unique identifier
- CTname - Census tract
- InstFlag - Institutional flag
- ResFlag - Residence flag (for DMT=E,G,M)
- Adr - Building name and address, for business or institutional

Detailed descriptions of these variables are included in the *Variable descriptions* section.

### **File naming convention**

Each PCCF+ primary version number (1 through 7) reflects a major update with geocoding to a different census period. Version 7 was developed using 2016 census geography and version 6 was created using 2011 census geography, and so on. The revision, indicated by a letter indicates the update version. PCCF+ is updated regularly to reflect new postal code<sup>OM</sup> updates, updates to health region boundaries, and other programming updates suggested by users.

The SAS<sup>®</sup> control program file name for this release is PCCFplus\_7A.sas.

## 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<sup>OM</sup> Conversion File Plus (PCCF+) is updated regularly via two processes. The first updates are done every five years, after each census, to align the source files to the latest census geographic areas and calculate new postal code population weights. The second is ongoing maintenance of the source files with updated postal codes<sup>OM</sup> from Canada Post Corporation, updated health regions, and other updated coding as required. Updates to each revision are described in the *Version updates* section of this reference manual.

### 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.

Geographic coordinates included in PCCF+ source files are either from the PCCF, from the Geographic Attribute File, or from FSA<sup>®</sup> centroids. Geographic coordinates (latitude and longitude) assigned to postal codes<sup>OM</sup> are taken from the PCCF flat file. Where postal codes<sup>OM</sup> are incompletely coded, coordinates are taken from dissemination block, dissemination area, or FSA<sup>®</sup> centroids, each calculated from the corresponding geographic product.

For more information on the method used to calculate representative points, see the documentation for the PCCF.

### 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).

PCCF+ produces a flat file that includes data elements from the PCCF, geographic attribute file, health region boundaries, and other correspondence files. For many postal codes<sup>OM</sup> there is not a one-to-one match to geographic attributes. In these cases, possible matches are drawn through population-weighting via a random selection process. For more details see the *Technical specifications* section.

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

### Logical consistency

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

In some cases, including most rural areas, postal code<sup>OM</sup> service areas do not respect dissemination area boundaries. In such cases, multiple records for a postal code<sup>OM</sup> reflect the relationship between the postal code<sup>OM</sup> and census geographic areas. Also, a postal code<sup>OM</sup> can be linked to more than one block-face or dissemination block within the same dissemination area. PCCF+ uses several

methods to geocode postal codes<sup>OM</sup> with multiple matches, using either a population-weighting or a random allocation approach. Details of these methods are outlined in the *Technical specifications* section.

### **Consistency with other products**

The Postal Code<sup>OM</sup> Conversion File Plus (PCCF+) maintains consistency with several other Statistics Canada products. These include:

- Postal Code<sup>OM</sup> Conversion File (PCCF)
- Geographic Attribute File (GAF)
- 2016 census forward sortation area boundary file
- Health region boundaries
- Canada Post air stage offices
- Correspondence files for standard geographical identifiers

PCCF+ is updated annually to reflect changes to these products, with details of updates provided in the *Version updates* section.

### **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 for PCCF+ is the degree to which all potential postal codes<sup>OM</sup> are accounted for and all geographic codes and attributes are linked to a postal code<sup>OM</sup>. PCCF+ includes all active postal codes<sup>OM</sup> as well as all retired postal codes<sup>OM</sup> within the geocoding process.

Indicators are provided on geocoded output for the quality of links, the precision of geographic coordinates, and other flags for errors and warnings. The details of these codes are provided in the *Technical specifications* section.

## Appendix A: Glossary

### Block-face

A block-face is one side of a street between two consecutive features intersecting that street. The features can be other streets or boundaries of standard geographic areas.

Block-faces are used for generating block-face representative points, which in turn are used for geocoding and census data extraction when the street and address information are available.

### Census agricultural region

Census agricultural regions (CARs) are composed of groups of adjacent census divisions. In Saskatchewan, census agricultural regions are made up of groups of adjacent census consolidated subdivisions, but these groups do not necessarily respect census division boundaries.

### Census consolidated subdivision

A census consolidated subdivision (CCS) is a group of adjacent census subdivisions. Generally, the smaller, more densely-populated census subdivisions (towns, villages, etc.) are combined with the surrounding, larger, more rural census subdivisions, in order to create a geographic level between the census subdivision and the census division.

### Census division

Census division is the general term for provincially legislated areas (such as county, *municipalité régionale de comté* and regional district) or their equivalents. Census divisions are intermediate geographic areas between the province/territory and the municipality (census subdivision).

### Census metropolitan area and census agglomeration

A census metropolitan area (CMA) or a census agglomeration (CA) is formed by one or more adjacent municipalities centred on a population centre (known as the core). A CMA must have a total population of at least 100,000 of which 50,000 or more must live in the core. A CA must have a core population of at least 10,000. To be included in the CMA or CA, other adjacent municipalities must have a high degree of integration with the core, as measured by commuting flows derived from previous census place of work data.

If the population of the core of a CA declines below 10,000, the CA is retired. However, once an area becomes a CMA, it is retained as a CMA even if its total population declines below 100,000 or the population of its core falls below 50,000. Small population centres with a population count of less than 10,000 are called fringe. All areas inside the CMA or CA that are not population centres are rural areas.

When a CA has a core of at least 50,000, it is subdivided into census tracts. Census tracts are maintained for the CA even if the population of the core subsequently falls below 50,000. All CMAs are subdivided into census tracts.

### Metropolitan influence zone

The metropolitan influence zone (MIZ) is a concept that geographically differentiates the area of Canada outside census metropolitan areas (CMAs) and census agglomerations (CAs). Census subdivisions (CSDs) within provinces that are outside CMAs and CAs are assigned to one of four categories according to the degree of influence (strong, moderate, weak or no influence) that the CMAs or CAs have on them. CSDs within the territories that are outside CAs are assigned to a separate category.

Census subdivisions within provinces are assigned to a MIZ category based on the percentage of their resident employed labour force that commutes to work in the core(s) of any CMA or CA. CSDs with the same degree of influence tend to be clustered. They form zones around CMAs and CAs that progress through the categories from 'strong' to 'no' influence as distance from the CMAs and CAs increases. As many CSDs in the territories are very large and sparsely populated, the commuting flow

of the resident employed labour force is unstable. For this reason, CSDs in the territories that are outside CAs are assigned to a separate category that is not based on their commuting flows.

### **Census subdivision**

Census subdivision (CSD) is the general term for municipalities (as determined by provincial/territorial legislation) or areas treated as municipal equivalents for statistical purposes (such as Indian reserves, Indian settlements and unorganized territories).

### **Census tract**

Census tracts (CTs) are small, relatively stable geographic areas that usually have a population between 2,500 and 8,000 persons. They are located in census metropolitan areas and in census agglomerations that had a core population of 50,000 or more in the previous census.

A committee of local specialists (for example, planners, health and social workers, and educators) initially delineates census tracts in conjunction with Statistics Canada. Once a census metropolitan area (CMA) or census agglomeration (CA) has been subdivided into census tracts, the census tracts are maintained even if the core population subsequently declines below 50,000.

### **Coordinate system**

A coordinate system is a reference system based on mathematical rules for specifying positions (locations) on the surface of the earth. The coordinate values can be spherical (latitude and longitude) using angular units of measure such as degrees, minutes and seconds or planar (Lambert conformal conic) using linear units such as metres.

Cartographic boundary files, digital boundary files, representative points and road network files are disseminated in Lambert conformal conic projection.

### **Core, fringe and rural area\***

The terms 'core,' 'fringe' and 'rural area' replace the terms 'urban core,' 'urban fringe' and 'rural fringe' for the 2016 census. These terms distinguish between population centres (POPCTRs) and rural areas (RAs) within a census metropolitan area (CMA) or census agglomeration (CA).

The term 'fringe' includes all population centres within a CMA or CA that have less than 10,000 persons and are not contiguous with the core.

All territory within a CMA or CA that is not classified as a core or fringe is classified as rural area.

\* Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

### **Designated place\***

A designated place (DPL) is normally a small community or settlement that does not meet the criteria established by Statistics Canada to be a census subdivision (an area with municipal status) or a population centre. Designated places are created by provinces and territories, in cooperation with Statistics Canada, to provide data for sub-municipal areas.

\* Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

### **Dissemination area**

A dissemination area (DA) is a small, relatively stable geographic unit composed of one or more adjacent dissemination blocks. It is the smallest standard geographic area for which all census data are disseminated. DAs cover all the territory of Canada.

**Dissemination block\***

A dissemination block (DB) is an area bounded on all sides by roads and/or boundaries of standard geographic areas. The dissemination block is the smallest geographic area for which population and dwelling counts are disseminated. Dissemination blocks cover all the territory of Canada.

\* Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

**Economic region**

An economic region (ER) is a grouping of complete census divisions (CDs) (with one exception in Ontario) created as a standard geographic unit for analysis of regional economic activity.

**Federal electoral district**

A federal electoral district (FED) is an area represented by a member of the House of Commons. The federal electoral district boundaries used for the 2016 census were based on the 2013 representation order.

**Geocoding**

Geocoding is the process of assigning geographic identifiers (codes or x,y coordinates) to map features and data records. The resulting geocodes permit data to be linked geographically to a place on the earth.

**Geographic code**

A geographic code is a numerical identifier assigned to a geographic area. The code is used to identify and access standard geographic areas for the purposes of data storage, retrieval and display.

**Geographic reference date**

The geographic reference date is a date determined by Statistics Canada for the purpose of finalizing the geographic framework for which census data will be collected, tabulated and reported. For the 2016 census, the geographic reference date was 1 January 2016.

**Population centre\***

A population centre (PopCtr) has a population of at least 1,000 and a population density of 400 persons or more per square kilometre, based on the current census population count. All areas outside population centres are classified as rural areas. Taken together, population centres and rural areas cover all of Canada.

\* Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

**Population density**

Population density is the number of persons per square kilometre.

**Postal Code<sup>OM</sup>**

The postal code<sup>OM</sup> is a six-character code defined and maintained by Canada Post Corporation for the purpose of sorting and delivering mail.

**Province or territory**

'Province' and 'territory' refer to the major political units of Canada. Canada is divided into 10 provinces and 3 territories.

**Representative point**

A representative point is a coordinate 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.

On the PCCF, postal codes<sup>OM</sup> are linked to block-face representative points (coordinates) when street address information is available; otherwise, they are linked to dissemination block (DB) representative points. In some cases, postal codes<sup>OM</sup> are linked to dissemination area (DA) representative points when they cannot be linked to dissemination blocks.

**Rural area\***

Rural areas (RAs) include all territory lying outside population centres (PopCtr). Taken together, population centres and rural areas cover all of Canada.

Rural population includes all population living in rural areas of census metropolitan areas (CMAs) and census agglomerations (CAs), as well as population living in rural areas outside CMAs and CAs.

\* Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

**Statistical Area Classification**

The Statistical Area Classification (SAC) groups census subdivisions according to whether they are a component of a census metropolitan area, a census agglomeration or a metropolitan influence zone (MIZ). The MIZ classifies all CSDs in provinces and territories that are outside census metropolitan areas and census agglomerations.

**Appendix B: Record Layouts for PCCF+ input/output files****PCCF+ output file****B.1: Output file produced from PCCF+ geocoding.**

Type	Field Name	Description
C	Coder	Residential or institutional coding indicator (R, I)
C	Version	Revision of PCCF+, e.g., 7A
C	ID	User-supplied unique identifier
C	PCODE	User-supplied postal code <sup>OM</sup>
C	PR	Province
C	DAuid	2016 Dissemination area unique identifier
C	DB	2016 Dissemination block code
C	DB_ir2016	2016 census Indian reserve refusal flag
C	CSDuid	Census Subdivision unique identifier
C	CSDname	Census Subdivision name
C	CSDtype	Census Subdivision type
C	CMA	Census Metropolitan Area / Census Agglomeration unique identifier
C	CMAtype	Census Metropolitan Area type
C	CMAname	Census Metropolitan/Agglomeration Area name
C	CTname	Census tract name
C	Tracted	Flag for tracted / non-tracted area
C	SACcode	Statistical Area Classification code
C	SACtype	Statistical Area Classification type
C	CCSuid	Census Consolidated Subdivision code
C	FEDuid	Federal electoral district (2013) unique identifier
C	FEDname	Federal electoral district (2013) name
C	DPLuid	Designated place identifier
C	DPLtype	Designated place type
C	DPLname	Designated place name
C	ERuid	Economic Region identifier
C	ERname	Economic Region name
C	CARuid	Census Agricultural Region identifier
C	CARname	Census Agricultural Region name
C	PopCtrRAPuid	Population centre/rural area code
C	PopCtrRAName	Population centre/rural area name
C	PopCtrRAtype	Population centre/rural area type
C	PopCtrRAclass	Population centre/rural area classification
C	CSize	Community size code (2016 census metropolitan area / census agglomeration population)
C	CSizeMIZ	Census metropolitan / census agglomeration size and MIZ code
C	HRuid	Health Region unique identifier
C	HRename	Health Region name (English)
C	HRfname	Health Region name (French)
C	AHRuid	Alternate Health Region unique identifier
C	AHRename	Alternate Health Region name (English)
C	AHRfname	Alternate Health Region name (French)
C	SLI	Single link indicator
C	Rep_Pt_type	Representative point type (PCCF)
C	RPF	Representative point flag (PCCF+)
C	PCtype	postal code <sup>OM</sup> type
C	DMT	Delivery mode type
C	H_DMT	Historic delivery mode type
C	DMTDIFF	Previous or alternate DMT (if applicable)
C	PO	Delivery installation
C	QI	Quality indicator



Type	Field Name	Description
C	Source	Source of postal code <sup>OM</sup> geocoding (PCCF)
N	Lat	Latitude of lowest level geographic area
N	Long	Longitude of lowest level geographic area
C	Link_Source	Source of geographic coding (PCCF+)
C	Link	Link type
N	nCD	Number of census divisions
N	nCSD	Number of census subdivisions
C	Prec	Precision
C	Comm_Name	Canada Post community name
C	AirLift	Canada Post air stage community
C	InstFlag	Institutional flag
C	Resflag	Residence flag (for postal codes <sup>OM</sup> DMT=E,G,M)
C	InuitLands	Inuit Nunangat land claims regions
N	BTIPPE	Neighbourhood before tax income per single person equivalent (BTIPPE)
N	ATIPPE	Neighbourhood after tax income per single person equivalent (ATIPPE)
C	QABTIPPE	Neighbourhood income quintile before tax (in CMA/CA)
C	QNB TIPPE	Neighbourhood income quintile before tax (national)
C	DABTIPPE	Neighbourhood income decile before tax (in CMA/CA)
C	DNBTIPPE	Neighbourhood income decile before tax (national)
C	QAATIPPE	Neighbourhood income quintile after tax (in CMA/CA)
C	QNATIPPE	Neighbourhood income quintile after tax (national)
C	DAATIPPE	Neighbourhood income decile after tax (in CMA/CA)
C	DNATIPPE	Neighbourhood income decile after tax (national)
C	IMPFLG	Imputation flag for IPPE (mean household income imputed)
C	DB11uid	2011 dissemination block unique identifier
C	DA06uid	2006 dissemination area unique identifier
C	DA01uid	2001 dissemination area unique identifier
C	EA96uid	1996 enumeration area unique identifier
C	EA91uid	1991 enumeration area unique identifier
C	EA86uid	1986 enumeration area unique identifier
C	EA81uid	1981 enumeration area unique identifier

## PCCF+ output problem file

### B.2: Output file produced for problem records

Type	Field Name	Description
C	Coder	Residential or institutional coding indicator (R, I)
C	Version	Revision of PCCF+, e.g., 7A
C	ID	User-supplied unique identifier
C	PCODE	User-supplied postal code <sup>OM</sup>
C	MESSAGE	Error, warning, or note on problem record
C	DMT	Delivery mode type
C	DMTDIFF	Previous or alternate DMT (if applicable)
C	Link_Source	Source of geographic coding (PCCF+)

Type	Field Name	Description
C	Link	Link type
C	PR	Province
C	DAuid	Dissemination area unique identifier
C	DB	Dissemination block code
C	CSDuid	Census subdivision unique identifier
C	CMA	Census metropolitan area / census agglomeration
C	CTname	Census tract name (nnnn.nn)
C	InstFlag	Institutional flag
C	ResFlag	Residence flag (for postal codes <sup>OM</sup> DMT=E,G,M)
C	Adr	Building name and address

### Air stage office (cpcref.airstage.v1706.txt)

#### B.3: CPC airstage delivery (6+ months per year)

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
9	30	C	Comm_Name	Canada Post community name

### Building name and addresses (cpcref.bldgnam.v1706.txt)

#### B.4: Building names and addresses (possible non-residential) for manual resolution.

Position	Size	Type	Field Name	Description
2	3	N	NumAdr	Number of address ranges at this postal code <sup>OM</sup>
8	6	C	PCODE	Postal code <sup>OM</sup>
17	97	C	NameAdr	Building name and address
116	26	C	Comm_Name	Canada Post community name

### Residential Postal Code<sup>OM</sup> file (cpcref.egmres.v1706.txt)

#### B.5: Flag for possible residential postal codes<sup>OM</sup> despite institutional type

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
8	1	C	ResFlag	Flag for residential (+) or possible non-residential (-)
14	97	C	BldgName	Building Name

### Institutional flag (cpcref.instflag.v1706.txt)

#### B.6: Institutional flag.

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
12	1	C	InstFlag	Institutional flag

### Address range file (cpcref.nadr.v1706.txt)

#### B.7: Number of address records for each postal code<sup>OM</sup>.

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
9	3	N	NumAdr	Number of address ranges for this postal code <sup>OM</sup>

**British Columbia old FSA<sup>®</sup> file (pccf1706.pccf.bcvuniq.txt)****B.8: British Columbia postal codes<sup>OM</sup> moved by Canada Post Corporation in mid 1990s.**

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
7	3	C	FSA	Forward Sortation Area <sup>®</sup>
10	2	C	PR	Province code
14	2	C	CD	Census Division code
20	3	C	CSD	Census Subdivision code
23	70	C	CSDname	Census Subdivision name
93	3	C	CSDtype	Census Subdivision type
96	3	C	CCScore	Census Consolidated Subdivision code
99	3	C	SAC	Statistical Area Classification code
102	1	C	SACtype	Statistical Area Classification type
103	7	C	CTname	Census Tract name
110	2	C	ER	Economic Region code
112	4	C	DPL	Designated Place code
118	3	C	FED	Federal Electoral District (2013) 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
130	4	C	DA	Dissemination area code
134	3	C	DB	Dissemination block code
137	1	C	Rep_Pt_Type	Representative Point Type
138	9.6	N	LAT	Latitude of lowest level geographic area
149	11.6	N	LONG	Longitude of lowest level geographic area
162	1	C	SLI	Single Link Indicator
163	1	C	PCtype	Postal code <sup>OM</sup> type
164	30	C	Comm_Name	Canada Post Community Name
194	1	C	DMT	Delivery Mode Type
195	1	C	H_DMT	Historic Delivery Mode Type
196	1	C	DMTDIFF	Previous or alternate DMT (if applicable)
197	8	C	Birth_Date	Birth date of postal code <sup>OM</sup> (yyyymmdd)
205	8	C	Ret_Date	Retirement date of postal code <sup>OM</sup> (yyyymmdd)
213	1	C	PO	Delivery installation (PCCF)
214	3	C	QI	Quality indicator (PCCF)
217	1	C	Source	Source of postal code <sup>OM</sup> geocoding (PCCF)
218	1	C	POP_CNTR_RA _SIZE_CLASS	Population centre/rural area classification

**PCCF+ duplicates file (pccf1706.pccf.dups.txt)****B.9: Duplicate postal codes<sup>OM</sup> from PCCF.**

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
7	3	C	FSA	Forward Sortation Area <sup>®</sup>
10	2	C	PR	Province code
14	2	C	CD	Census Division code
20	3	C	CSD	Census Subdivision code
23	70	C	CSDname	Census Subdivision name
93	3	C	CSDtype	Census Subdivision type
96	3	C	CCScore	Census Consolidated Subdivision code
99	3	C	SAC	Statistical Area Classification code
102	1	C	SACtype	Statistical Area Classification type

Position	Size	Type	Field Name	Description
103	7	C	CTname	Census Tract name
110	2	C	ER	Economic Region identifier
112	4	C	DPL	Designated Place identifier
116	3	C	FED	Federal Electoral District (2003) 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
130	4	C	DA	Dissemination area code
134	3	C	DB	Dissemination block code
137	1	C	Rep_Pt_Type	Representative Point Type
138	11.6	N	LAT	Latitude of lowest level geographic area
149	13.6	N	LONG	Longitude of lowest level geographic area
162	1	C	SLI	Single Link Indicator
163	1	C	PCType	Postal code <sup>OM</sup> type
164	30	C	Comm_Name	Canada Post Community Name
194	1	C	DMT	Delivery Mode Type
195	1	C	H_DMT	Historic Delivery Mode Type
196	1	C	DMTDIFF	Previous or alternate DMT (if applicable)
197	8	C	Birth_Date	Birth date of postal code <sup>OM</sup> (yyyymmdd)
205	8	C	Ret_Date	Retirement date of postal code <sup>OM</sup> (yyyymmdd)
213	1	C	PO	Delivery installation
214	3	C	QI	Quality indicator
217	1	C	Source	Source of postal code geocoding (PCCF)
218	1	C	Pop_Cntr_RA_Size_Class	Population centre/rural area classification
219	1	N	nCD	Number of census divisions for this Postal Code <sup>OM</sup> (1-9+)
220	1	N	nCSD	Number of census subdivisions for this postal code <sup>OM</sup> (1-9+)
221	1	N	nDA	Number of dissemination areas for this postal code <sup>OM</sup> (1-9+)
222	1	N	nDB	Number of dissemination blocks for this postal code <sup>OM</sup> (1-9+)

### Duplicate pointer file (pccf1706.pccf.pointdup.txt)

#### B.10: Pointer file for duplicate Postal Codes<sup>OM</sup>.

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
7	4	N	nPCODE	Number of records for this postal code <sup>OM</sup>
11	8	N	ObsDup	Observation number for first occurrence on duplicates file

### Rural Post Office (pccf1706.pccf.rpo.txt)

#### B.11: Coding for rural post offices.

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
7	3	C	FSA	Forward Sortation Area <sup>©</sup>
10	2	C	PR	Province code
14	2	C	CD	Census Division code
20	3	C	CSD	Census Subdivision code
23	70	C	CSDname	Census Subdivision name
93	3	C	CSDtype	Census Subdivision type

Position	Size	Type	Field Name	Description
96	3	C	CCScode	Census Consolidated Subdivision code
99	3	C	SAC	Statistical Area Classification code
102	1	C	SACtype	Statistical Area Classification type
103	7	C	CTname	Census Tract name
110	2	C	ER	Economic Region identifier
112	4	C	DPL	Designated Place identifier
116	3	C	FED	Federal Electoral District (2013) 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
130	4	C	DA	Dissemination area code
134	3	C	DB	Dissemination block code
137	1	C	Rep_Pt_Type	Representative Point Type
138	11.6	N	LAT	Latitude of lowest level geographic area
149	13.6	N	LONG	Longitude of lowest level geographic area
162	1	C	SLI	Single Link Indicator
163	1	C	PCtype	Postal code <sup>OM</sup> type
164	30	C	Comm_Name	Canada Post Community Name
194	1	C	DMT	Delivery Mode Type
195	1	C	H_DMT	Historic Delivery Mode Type
196	1	C	DMTDIFF	Previous or alternate DMT (if applicable)
197	8	C	Birth_Date	Birth date of postal code <sup>OM</sup> (yyyymmdd)
205	8	C	Ret_Date	Retirement date of postal code <sup>OM</sup> (yyyymmdd)
213	1	C	PO	Delivery installation
214	3	C	QI	Quality indicator
217	1	C	Source	Source of postal code <sup>OM</sup> geocoding (PCCF)
218	1	C	POP_CNTR_RA_SIZE_CLASS	Population centre/rural area classification

## Unique Postal Codes<sup>OM</sup> (pccf1706.pccf.uniq.txt)

### B.12: Unique postal codes<sup>OM</sup>.

Position	Size	Type	Field Name	Description
1	6	C	PCODE	Postal code <sup>OM</sup>
7	3	C	FSA	Forward Sortation Area <sup>®</sup>
10	2	C	PR	Province code
14	2	C	CD	Census Division code
20	3	C	CSD	Census Subdivision code
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
102	1	C	SACtype	Statistical Area Classification type
103	7	C	CTname	Census Tract name
110	2	C	ER	Economic Region identifier
112	4	C	DPL	Designated Place identifier
116	3	C	FED	Federal Electoral District (2013) 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
130	4	C	DA	Dissemination area code
134	3	C	DB	Dissemination block code
137	1	C	Rep_Pt_Type	Representative Point Type
138	9.6	N	LAT	Latitude of lowest level geographic area
149	11.6	N	LONG	Longitude of lowest level geographic area

Position	Size	Type	Field Name	Description
162	1	C	SLI	Single Link Indicator
163	1	C	PCtype	Postal code type
164	30	C	Comm_Name	Canada Post Community Name
194	1	C	DMT	Delivery Mode Type
195	1	C	H_DMT	Historic Delivery Mode Type
196	1	C	DMTDIFF	Previous or alternate DMT (if applicable)
197	8	C	Birth_Date	Birth date of postal code <sup>OM</sup> (yyyymmdd)
205	8	C	Ret_Date	Retirement date of postal code <sup>OM</sup> (yyyymmdd)
213	1	C	PO	Delivery installation
214	3	C	QI	Quality indicator
217	1	C	Source	Source of postal code <sup>OM</sup> geocoding (PCCF)
218	1	C	POP_CNTR_RA _SIZE_CLASS	Population centre/rural area classification
219	1	N	nBLK	Number of dissemination blocks for this postal code <sup>OM</sup> (1-9+)

### First 2 character unique and duplicates (pccf1706.pccf.wc2dups.txt)

#### B.14: Weighting for first 2 characters of postal code<sup>OM</sup>.

Position	Size	Type	Field Name	Description
1	2	C	PCODE2	First 2 characters of postal code <sup>OM</sup>
7	2	C	PR	Province code
9	2	C	CD	Census Division code
11	4	C	DA	Dissemination Area code
19	3	C	CSD	Census subdivision code
22	3	C	SAC	Statistical Area Classification code
25	7	C	CT	Census Tract name
32	1	C	Tracted	Flag for census tracted (DA)
33	9.6	N	LAT	Latitude of dissemination area centroid
44	11.6	N	LONG	Longitude of dissemination area centroid
57	1	C	RPF	Representative point flag (PCCF+)
58	1	N	nDA	Number of dissemination areas for PCODE2
59	1	N	nCD	Number of census divisions for PCODE2
60	1	N	nCSD	Number of census subdivisions for PCODE2
61	4.2	N	PC2DAWT	Dissemination area level weight for PCODE2

### Pointers for first 2 characters (pccf1706.pccf.wc2point.txt)

#### B.15: Pointer for 2-character weighting file.

Position	Size	Type	Field Name	Description
1	2	C	PCODE2	First 2 characters of postal code <sup>OM</sup>
7	7	N	FirstObs	Pointer for first observation on wc2dups
14	5	N	nOBS	Total number of observations for first 2 characters
19	4.2	N	TWT	2 character population weight

### Forward Sortation Area<sup>®</sup> unique and duplicates (pccf1706.pccf.wc3dups.txt)

#### B.14: Weighting for first 3 characters of postal code<sup>OM</sup> (FSA<sup>®</sup>).

Position	Size	Type	Field Name	Description
1	3	C	PCODE3	First 3 characters of postal code <sup>OM</sup>
7	2	C	PR	Province code
9	2	C	CD	Census Division code

Position	Size	Type	Field Name	Description
11	4	C	DA	Dissemination Area code
19	3	C	CSD	Census subdivision code
22	3	C	SAC	Statistical Area Classification
25	7	C	CT	Census Tract name
32	1	C	Tracted	Flag for census tracted (DA)
33	9.6	N	LAT	Latitude of dissemination area centroid
44	11.6	N	LONG	Longitude of dissemination area centroid
57	1	C	RPF	Representative point flag (PCCF+)
58	1	N	nDA	Number of dissemination areas for PCODE3
59	1	N	nCD	Number of census divisions for PCODE3
60	1	N	nCSD	Number of census subdivisions for PCODE3
61	4.2	N	PC3DAWT	Dissemination area level weight for PCODE3

### Forward Sortation Area<sup>®</sup> pointers (pccf1706.pccf.wc3point.txt)

#### B.15: Pointer for 3-character weighting file (FSA<sup>®</sup>).

Position	Size	Type	Field Name	Description
1	3	C	PCODE3 (FSA <sup>®</sup> )	Forward Sortation Area <sup>®</sup>
7	7	N	FirstObs	Pointer for first observation on wc3dups
14	5	N	nOBS	Total number of observations for FSA <sup>®</sup>
19	4.2	N	TWT	3 character population weight

### WCF unique and duplicates, 4-character (pccf1706.pccf.wc4dups.txt)

#### B.17: Weighting for first 4 characters of postal code<sup>OM</sup>.

Position	Size	Type	Field Name	Description
1	4	C	PCODE4	First 4 characters of postal code <sup>OM</sup>
7	2	C	PR	Province code
9	2	C	CD	Census Division code
11	4	C	DA	Dissemination Area code
19	3	C	CSD	Census subdivision code
22	3	C	SAC	Statistical Area Classification
25	7	C	CT	Census Tract name
32	1	C	Tracted	Flag for census tracted (DA)
33	9.6	N	LAT	Latitude of dissemination area centroid
44	11.6	N	LONG	Longitude of dissemination area centroid
57	1	C	RPF	Representative point flag (PCCF+)
58	1	N	nDA	Number of dissemination areas for PCODE4
59	1	N	nCD	Number of census divisions for PCODE4
60	1	N	nCSD	Number of census subdivisions for PCODE4
61	4.2	N	PC4DAWT	Dissemination area level weight for PCODE4

### WCF pointers, 4-character (pccf1706.pccf.wc4point.txt)

#### B.18: Pointer for 4-character weighting file.

Position	Size	Type	Field Name	Description
1	4	C	PCODE4	First 4 characters of postal code <sup>OM</sup>
7	7	N	FirstObs	Pointer for first observation on wc4dups
14	5	N	nOBS	Total number of observations for PCODE4
19	4.2	N	TWT	Total weight

**WCF unique and duplicates, 5-character (pccf1706.pccf.wc5dups.txt)****B.19: Weighting for first 5 characters of postal code<sup>OM</sup>.**

Position	Size	Type	Field Name	Description
1	5	C	PCODE5	First 5 characters of postal code <sup>OM</sup>
7	2	C	PR	Province code
9	2	C	CD	Census Division code
11	4	C	DA	Dissemination Area code
19	3	C	CSD	Census subdivision code
22	3	C	SAC	Statistical Area Classification
25	7	C	CT	Census Tract name
32	1	C	Tracted	DA is census tracted
33	9.6	N	LAT	Latitude of dissemination area centroid
44	11.6	N	LONG	Longitude of dissemination area centroid
57	1	C	RPF	Representative point flag
58	1	N	nDA	Number of dissemination areas PCODE5
59	1	N	nCD	Number of census divisions for PCODE5
60	1	N	nCSD	Number of census subdivisions for PCODE5
61	4.2	N	PC5DAWT	Dissemination area level weight for PCODE5

**WCF pointers, 5-character (pccf1706.pccf.wc5point.txt)****B.20: Pointer for 5-character weighting file.**

Position	Size	Type	Field Name	Description
1	5	C	PCODE5	First 5 characters of postal code <sup>OM</sup>
7	7	N	FirstObs	Pointer for first observation on wc5dups
14	5	N	nOBS	Total number of observations for PCODE5
19	4.2	N	TWT	Total weight

**WCF unique and duplicates (pccf1706.pccf.wc6dups.txt)****B.21: Weighting for postal code<sup>OM</sup>.**

Position	Size	Type	Field Name	Description
1	6	C	PCODE	6 character postal code <sup>OM</sup>
7	2	C	PR	Province code
9	2	C	CD	Census Division code
11	4	C	DA	Dissemination Area code
19	3	C	CSD	Census subdivision code
22	3	C	SAC	Statistical Area Classification
25	7	C	CT	Census Tract name
32	1	C	Tracted	Census tracted DA
33	9.6	N	LAT	Latitude of dissemination area centroid
44	11.6	N	LONG	Longitude of dissemination area centroid
57	1	C	DMT	Delivery Mode Type
58	1	C	H_DMT	Historic Delivery Mode Type
59	1	C	DMTDIFF	Previous DMT if different from current DMT
60	1	C	Rep_Pt_Type	Representative Point Type
61	1	C	PCtype	Postal code <sup>OM</sup> type
62	1	N	nDA	Number of dissemination areas for PCODE
63	1	N	nCD	Number of census divisions for PCODE
64	1	N	nCSD	Number of census subdivisions for PCODE
65	4.2	N	PC6DAWT	Dissemination area level weight for PCODE



**WCF pointers, 6-character (pccf1706.pccf.wc6point.txt)****B.22: Pointer for postal code<sup>OM</sup> weighting file.**

Position	Size	Type	Field Name	Description
1	6	C	PCODE	6 character postal code <sup>OM</sup>
7	7	N	FirstObs	Pointer for first observation on wc6dups
14	5	N	nOBS	Total number of observations for PCODE
19	4.2	N	TWT	Total weight

**DA-Block pointer file (georef16.dablkpnt16.txt)****B.23: Pointer file for dissemination area and dissemination block file.**

Position	Size	Type	Field Name	Description
1	8	C	DAuid	Dissemination area unique identifier
1	2	C	PR	Province
3	2	C	CD	Census division
5	4	C	DA	Dissemination area
9	4	N	nBLK	Number of dissemination blocks in DA
13	6	N	FirstObs	Observation of first block occurrence
19	6	N	DAPop2016	Sum of DB population within DA
26	3	C	SACcode	Statistical Area Classification code
30	3	C	CSD	Census subdivision

**Partial geographic attribute file (georef16.gaf16.txt)****B.24: Subset of Geographic Attribute File.**

Position	Size	Type	Field Name	Description
1	11	C	DBuid	Dissemination block unique identifier
1	2	C	PR	Province or territory code
3	2	C	CD	Census division
5	4	C	DA	Dissemination area
9	2	C	DB	Dissemination block
12	8	C	DBpop2016	Dissemination block population (rounded)
20	8	C	DBtdwell2016	Dissemination block total private dwellings
28	1	C	DB_ir2016	Indian Reserve flag
29	8	C	DAuid	Dissemination area (2016) unique identifier
37	9.6	N	DAlat	Dissemination area latitude coordinate (decimal degrees)
46	11.6	N	DALong	Dissemination area longitude coordinate (decimal degrees)
59	30	C	PRename	Province or territory name in English
89	30	C	PRfname	Province or territory name in French
119	5	C	FEDuid	Federal Electoral District (2013) unique identifier
124	85	C	FEDname	Federal Electoral District (2013) name
209	4	C	ERuid	Economic Region unique identifier
213	85	C	ERname	Economic Region name
298	7	C	CDuid	Census Division unique identifier
302	40	C	CDname	Census Division name
342	7	C	CSDuid	Census Subdivision unique identifier
349	55	C	CSDname	Census Subdivision name
404	1	C	SACtype	Statistical Area Classification type
405	3	C	SACcode	Statistical Area Classification code
408	7	C	CCSuid	Census Consolidated Subdivision unique identifier

Position	Size	Type	Field Name	Description
415	55	C	CCSname	Census Consolidated Sub-division name
470	6	C	DPLuid	Designated Place unique identifier
476	85	C	DPLname	Designated Place name
561	3	C	DPLtype	Designated Place type
564	5	C	CMApuid	Census Metropolitan Area unique identifier
569	100	C	CMAname	Census Metropolitan Area name
669	1	C	CMAtype	Census Metropolitan Area type
670	10	C	CTuid	Census Tract unique identifier within a census metropolitan / agglomeration area
680	4	C	CTcode	Census Tract unique identifier
684	7	C	CTname	Census Tract 7.2 character numeric 'name'
691	6	C	PopCtrRAPuid	Population Centre and Rural Area unique identifier
697	100	C	PopCtrRAname	Population Centre and Rural Area name
797	1	C	PopCtrRAtype	Population Centre and Rural Area type
798	1	C	PopCtrRAclass	Population Centre and Rural Area class
799	4	C	CARuid	Census Agricultural Area unique identifier
803	50	C	CARname	Census Agricultural Area name
853	10	C	DB11uid	Dissemination block (2011)
863	10	C	DA11uid	Dissemination block (2011)
871	8	C	DA06uid	Dissemination area (2006)
879	8	C	DA01uid	Dissemination area (2001)
887	8	C	EA96uid	Enumeration Area (1996)
895	8	C	EA91uid	Enumeration Area (1991)
903	8	C	EA86uid	Enumeration Area (1986)
911	8	C	EA81uid	Enumeration Area (1981)
919	1	C	CSize	Community Size Code
920	1	C	CSizeMIZ	Community Size with MIZ
921	1	C	InuitLands	Inuit Nunangat land claim regions
922	3	C	CSDtyp	Census Subdivision type

### Health region definition (georef16.hrdef.txt)

#### B.25: Health region and alternate health region definition.

Position	Size	Type	Field Name	Description
1	2	C	PR	Province code
3	2	C	CD	Census Division code
5	4	C	DA	Dissemination Area code
9	3	C	DB	Dissemination Block code
20	3	C	CSD	Census subdivision code
27	4	C	HRuid	Health Region unique identifier
31	60	C	HRename	Health Region name (English)
91	60	C	HRfname	Health Region name (French)
151	4	C	AHRuid	Alternate Health Region unique identifier
155	60	C	AHRename	Alternate Health Region name (English)
215	60	C	AHRfname	Alternate Health Region name (French)

### SES reference file (georef16.ses16.txt)

#### B.26: Neighbourhood income quintiles (2006 DA identifiers).

Position	Size	Type	Field Name	Description
1	8	C	DA16UID	Dissemination Area unique identifier
10	3	C	AREA	CMA/CA identifier or: CMA/CA code or R+PR (Ex : R24 = Québec)

Position	Size	Type	Field Name	Description
13	1	C	IMPFLG	Imputation flag for IPPE (mean household income imputed)
14	8	N	BTIPPE	Neighbourhood before tax income per single person equivalent (BTIPPE)
23	8	N	ATIPPE	Neighbourhood after tax income per single person equivalent (ATIPPE)
32	1	C	QABTIPPE	Neighbourhood income quintile before tax (in CMA/CA)
34	1	C	QNB TIPPE	Neighbourhood income quintile before tax (national)
36	2	C	DABTIPPE	Neighbourhood income decile before tax (in CMA/CA)
39	2	C	DNBTIPPE	Neighbourhood income decile before tax (national)
42	1	C	QAATIPPE	Neighbourhood income quintile after tax (in CMA/CA)
44	1	C	QNATIPPE	Neighbourhood income quintile after tax (national)
46	2	C	DAATIPPE	Neighbourhood income decile after tax (in CMA/CA)
49	2	C	DNATIPPE	Neighbourhood income decile after tax (national)

## Appendix C: Supplementary programs and data files included with PCCF+

### Programs

1. *dist.sas* – Calculates distance between two geocoded points. This can be used to calculate distance between residents (such as patients) geocoded via PCCF+ and institutions (such as hospitals) geocoded via PCCF+.
2. *explode.sas* – Explodes a dataset that has only a single record per postal code<sup>OM</sup>, but a field indicating the number of subjects at each postal code<sup>OM</sup>. This results in a dataset suitable for coding by PCCF+.
3. *fix\_pcodes.sas* – Fixes common coding errors in reported postal code<sup>OM</sup>, such as using a “0” (zero) instead of an “O”.
4. *histSESref.sas* – Codes historic neighbourhood income quintiles, 1981 through 2006, for geocoded records.

### Historical SES Data Files

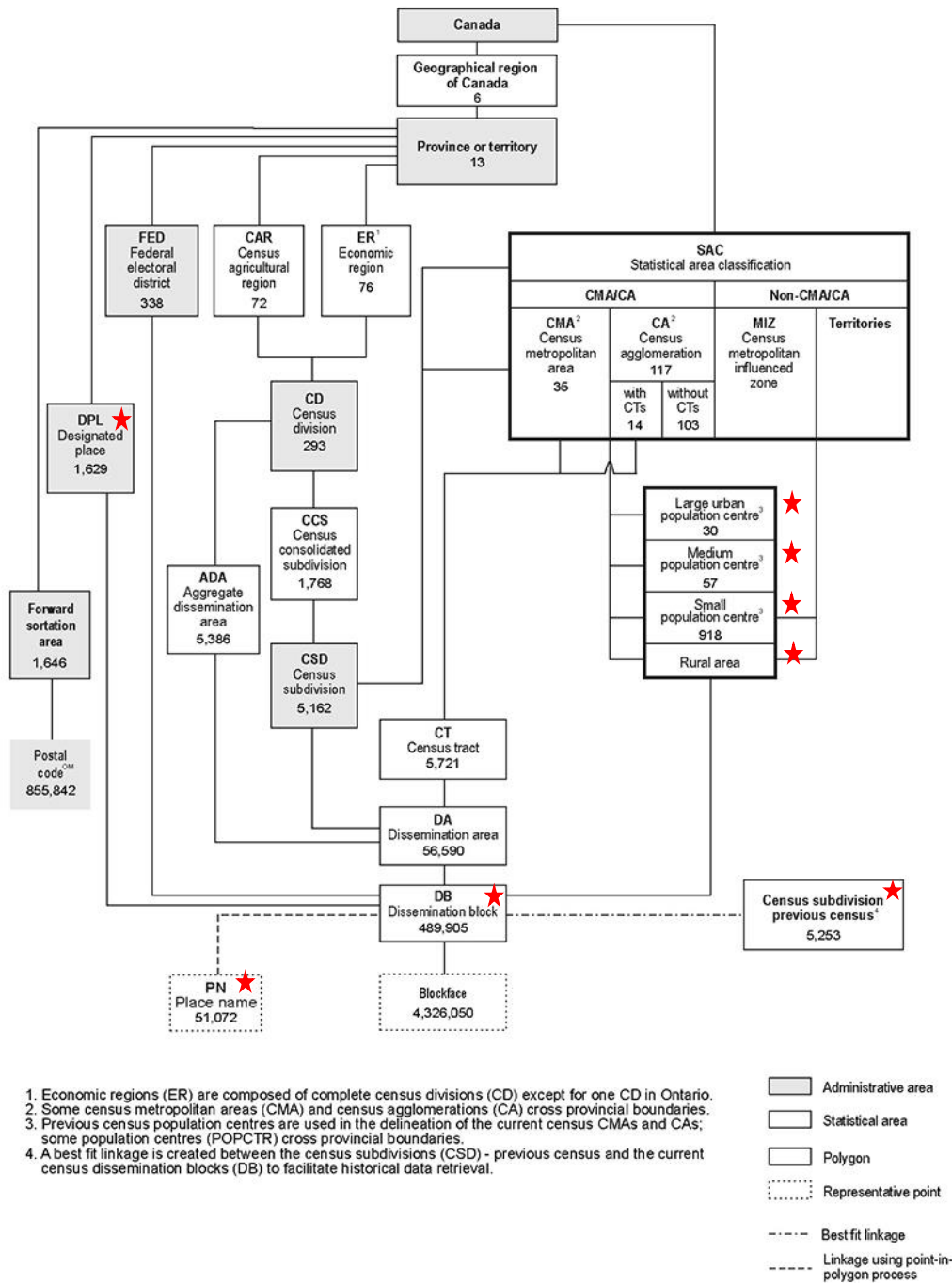
1. *qaippe\_1981.sas7bdat* – SAS dataset containing national and area-based income quintiles and deciles by 1981 EAuid used by *histSESref.sas* program
2. *qaippe\_1986.sas7bdat* – SAS dataset containing national and area-based income quintiles and deciles by 1986 EAuid used by *histSESref.sas* program
3. *qaippe\_1991.sas7bdat* – SAS dataset containing national and area-based income quintiles and deciles by 1991 EAuid used by *histSESref.sas* program
4. *qaippe\_1996.sas7bdat* – SAS dataset containing national and area-based income quintiles and deciles by 1996 EAuid used by *histSESref.sas* program
5. *qaippe\_2001.sas7bdat* – SAS dataset containing national and area-based income quintiles and deciles by 2001 DAuid used by *histSESref.sas* program
6. *qaippe\_2006.sas7bdat* – SAS dataset containing national and area-based income quintiles and deciles by 2006 DAuid used by *histSESref.sas* program
- 7.

### Sample Datasets

1. hospitals.txt – listing of hospitals in Western Canada (BC, AB, SK, MB) taken from Wikipedia to be used as an example in the *dist.sas* program
2. events.sas7bdat – list of events created from the sample data output (BC, AB, SK, MB) to be used as an example input in the *dist.sas* program
3. pcbad.sas7bdat – file of problem postal codes<sup>OM</sup> to be used as an example in the *fix\_pcodes.sas* program
4. grouped.sas7bdat – unique list of postal codes<sup>OM</sup> with associated counts to be exploded into a larger file with unique identifiers to be used as an example in the *explode.sas* program

**Appendix D: Hierarchy of standard geographic units for dissemination, 2016 Census**

Figure B.1 Hierarchy of standard geographic units for dissemination, 2016 Census



**Sources:** Statistics Canada, 2011 Census of Population; Canada Post Corporation, May 2011.

★ Note that this code requires dissemination block precision which is unreliable for postal codes<sup>OM</sup> used by about 25% of the population (primarily those living in urban fringe and rural areas).

## Appendix E: Derivation of neighbourhood income quintiles

2016 Census Profile data available at the dissemination area (DA) geographic level were used to calculate neighborhood income quintiles and deciles. This analysis relied on single-person equivalent (SPE) to take into consideration household size. SPE is the person-weights implicit in the Statistics Canada low-income cut-offs needed to specify an appropriate multiplier for different household sizes (see Table below). This adjustment is necessary since it generally costs less per person for two or more persons living together compared to one person living alone. SPE values were based on low income lines 2015-2016.

Table 1. Single-person equivalent weights for the calculation of neighbourhood income quintile or decile

	Before-tax income	After-tax income
Single person household	1.00	1.00
2 person household	1.24	1.22
3 person household	1.53	1.52
4 person household	1.86	1.89
5+ person household	2.24	2.26

Statistics Canada, Income Research Paper Series – Low Income Lines 2015-2016. Statistics Canada, Catalogue no. 75F0002MIE, 2017, no. 002.

For each DA, total income was calculated by multiplying the DA's median income<sup>2</sup> (either before- or after-tax) by the number of households in that DA. That total income for the DA was then divided by the sum of single-person equivalent in the DA to obtain income per single person equivalent (n=54,594 DAs). For DAs where median income was unavailable, neighbouring DAs were used to estimate income per single person equivalent (n=1,812). The remaining DAs that could not have their values imputed from neighbouring DAs were excluded (n=184).

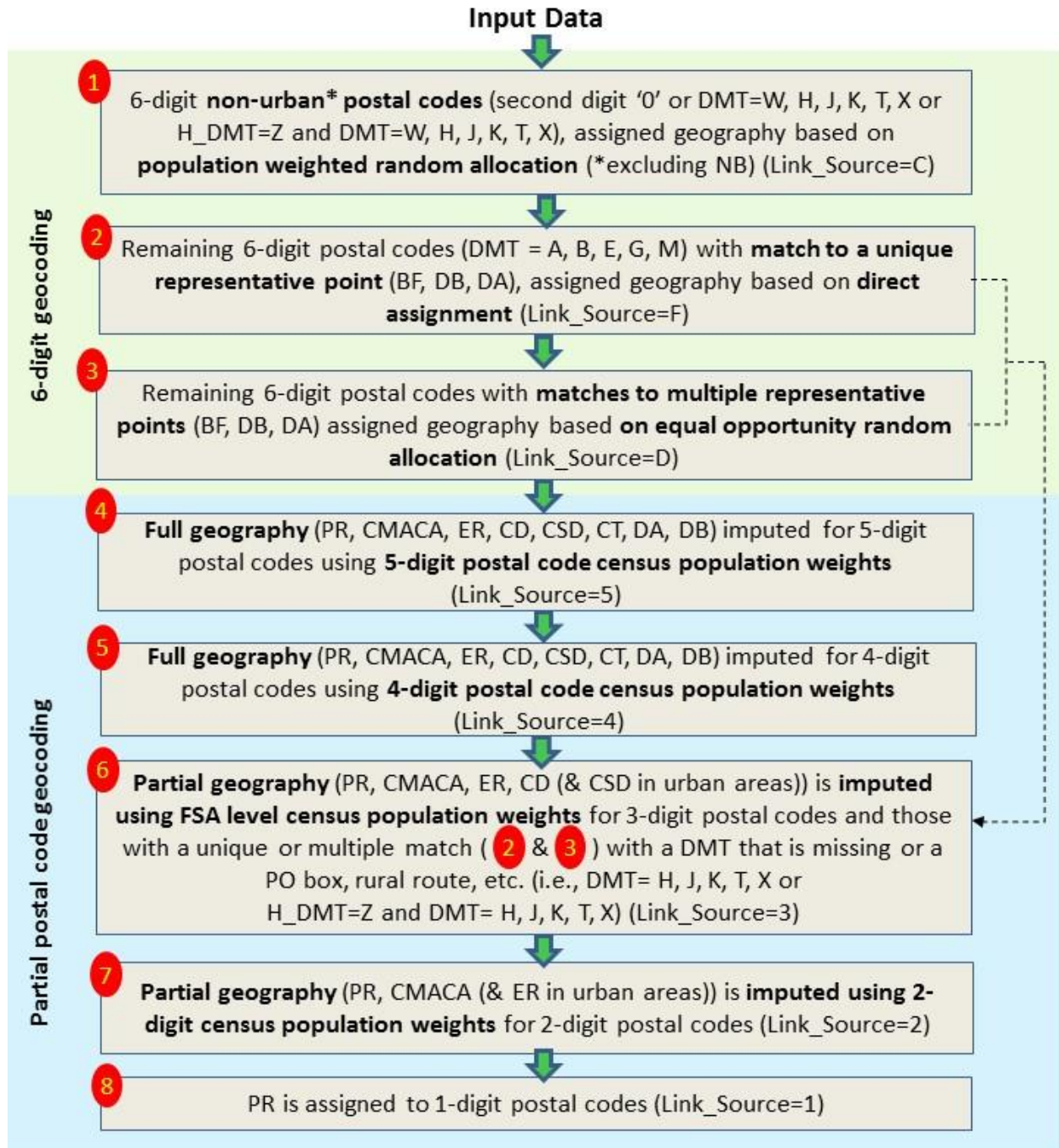
Based on income per single-person equivalent, national-level and area-based neighbourhood income quintiles and deciles were created. National-level neighbourhood income quintiles and deciles were constructed by ranking all DAs in a given year from the lowest income per single-person equivalent to the highest, and by assigning DAs to five or ten groups, such that each group contained approximately one-fifth or one-tenth of the total in-scope population. Dissemination areas were weighted by population size to ensure an even distribution of population in each quintile or decile.

Area-based neighbourhood income quintiles and deciles were constructed separately for each census metropolitan area, census agglomeration or residual areas within each province. Dissemination areas within each such area are ranked from the lowest average income per single-person equivalent to the highest, and dissemination areas were assigned to five or ten groups, such that each group contained approximately one-fifth or one-tenth of the total in-scope population of each area. The quintile data were then pooled across the areas. The rationale for creating the quintiles within each area is that housing and other costs vary enormously across Canada. Rents and house prices in some places (such as most of Quebec and the Atlantic provinces) have historically been much lower than those in other places such as Toronto, Ontario or Vancouver, British Columbia.

<sup>2</sup> The median income statistic is the measure of central tendency that is available for 100% of the population (short-form census questionnaire).

Appendix F: Residential Routine Flowchart for PCCF+

# Geocoding of Residential Postal Codes in PCCF+

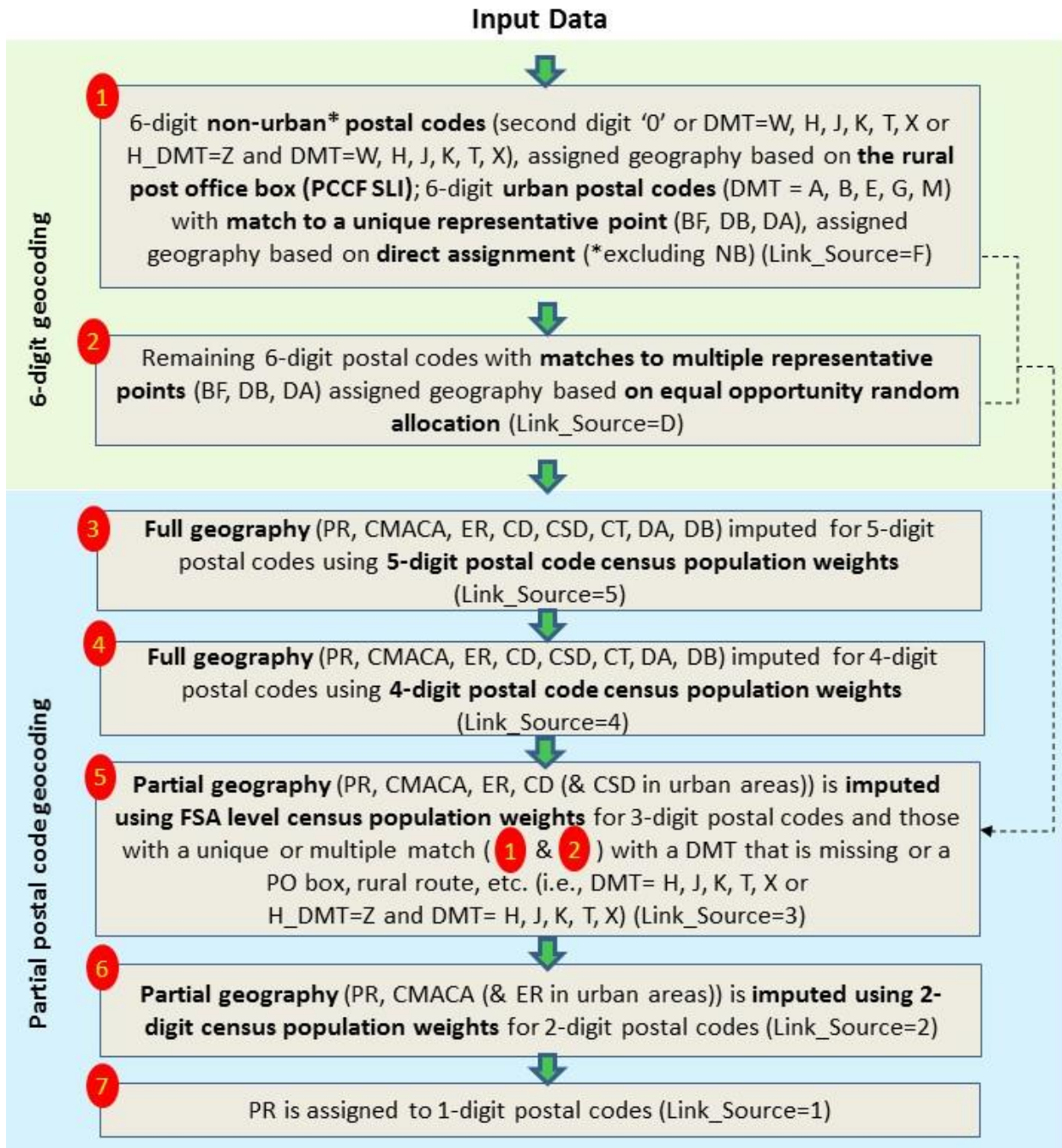


Final geocoded output file = 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8



## Appendix G: Institutional Routine Flowchart for PCCF+

## Geocoding of Institutional Postal Codes in PCCF+



Final geocoded output file = **1** + **2** + **3** + **4** + **5** + **6** + **7**