Statistical Geomatics Centre
Postal Code Section – PCODE2GEO

Delivering insight through data for a better Canada

Brief Background - What we produce:

The Postal Code^{OM} Conversion File (PCCF)

- links six-character postal codes to standard geographic areas such as dissemination areas, census tracts, and census subdivisions.
- by linking postal codes to standard geographic areas, the file facilitates the extraction and subsequent aggregation of data for selected geographic areas.
- associates each postal code with a longitude and latitude coordinate to support mapping applications.

The Postal Codes^{OM} by Federal Ridings File (PCFRF)

- provides a link between the six-character postal code and Canada's federal electoral districts (2013 Representation Order).

PCCF Details

- First PCCF was created in 1983.
- Links approximately 900,000 unique postal codes across the entire country to dissemination geography.
  - A postal code can be geocoded as high as a Census sub-division all the way down to the block face level for most records.
- Includes supplementary data for each record such as the Single link indicator (SLI), Quality indicator (QI), Source, and more.
- Released quarterly alongside an updated reference guide in English and French.

How we previously produced

- **PCUS (Postal Code Update System):**
  - The PCUS application took in the monthly postal code data we received from Canada Post and identified any new postal codes that were not in our database. If a new postal code wasn't in our database and the address range existed on our road network file, the database was updated with the new postal codes linked to our dissemination geographies.
  - From this database, we were able to produce the PCCF and PCFRF.
  - This is a cumulative method to geocoding. Instead of older records being updated, a new record for the same postal code would be entered leaving multiple records per postal code.
  - Consequently, manually geocoded entries were kept in the database for decades without being updated.

Going forward – PCODE2GEO

- Throughout the pandemic, the postal code unit along with our friends over at ITSLM developed our new geocoding application: PCODE2GEO.
- We had our first release using PCODE2GEO on March 15th, 2022, linking postal codes to 2021 Census dissemination geographies.

Highlighted Changes – What's different:

- All postal codes are geocoded for each production run instead of cumulatively adding to a database.

  Ensures each record is up to date each release

- Records can now be automatically geocoded using the postal code latitude-longitude coordinates from Canada Post.
- With approximately 93% of the records being automatically geocoded to the block face level, the PCCF will be a cleaner and more accurate data file.
- As a last resort, geocode with imputation methods to cover almost all postal codes in the country.
- A PCCF without retired records inside the date file, and an updated retired file with each PCCF release rather than updating a cumulative retired file every 5 years.

Additional Changes

- The naming convention of our Postal Code Data Products is now aligned with the Canada Post Corporation.

  Previously our naming convention was a month behind, i.e. the February PCCF was released in March. Now we receive March CPC data that is used to produce the PCCF that is released in March.

- Addition of a new Rep_Pt_Type value.

  5 is now included to state that a record is geocoded at the Province level (however we currently do not need to geocode any record at the province level as we are able to geocode, at a minimum, at the Census sub-division).

- Addition of two new Source values.

  5 is included to state a record was geocoded using lat-long coordinates

  6 is included to state a record was geocoded using imputation methods

Geocoding metrics

These metrics highlight the differences in the Rep_Pt_Type variable, which identifies whether the record geocodes to a blockface (1), dissemination block (2), dissemination area (3), or census subdivision (4).Table 1 is from the December 15, 2021 release (2016 Census dissemination geographies) and Table 2 is from the December 15, 2022 release (2021 Census dissemination geographies).

Table 1 (2016)

Rep_pt_type	Percent	Cumulative Percent
1	81.39	81.39
2	10.96	92.35
3	6.80	99.15
4	0.85	100.00

Table 2 (2021)

Rep_pt_type	Percent	Cumulative Percent
1	92.84	92.84
2	5.48	98.32
3	0.87	99.20
4	0.80	100.00

Geocoding metrics, continued

The following tables showcase the improvement of our geographic coverage across Canada, identifying the number of Census subdivisions (CSD) and Dissemination areas (DA) inside the PCCF.

Province or Territory	Number of CSD's December 2022	Number of CSD's December 2021
Newfoundland and Labrador	362	344
Prince Edward Island	98	110
Nova Scotia	91	87
New Brunswick	266	271
Quebec	1211	1166
Ontario	553	530
Manitoba	209	199
Saskatchewan	875	694
Alberta	393	357
British Columbia	641	476
Yukon	27	23
Northwest Territories	32	28
Nunavut	27	27
Total	4785	4312

Province or Territory	Number of DA's December 2022	Number of DA's December 2021
Newfoundland and Labrador	897	997
Prince Edward Island	312	285
Nova Scotia	1616	1627
New Brunswick	1440	1437
Quebec	13598	13298
Ontario	20020	19856
Manitoba	1853	2011
Saskatchewan	1907	1949
Alberta	5510	5536
British Columbia	7393	7129
Yukon	57	51
Northwest Territories	77	75
Nunavut	29	44
Total	54709	54295

Questions!

Community Data Program

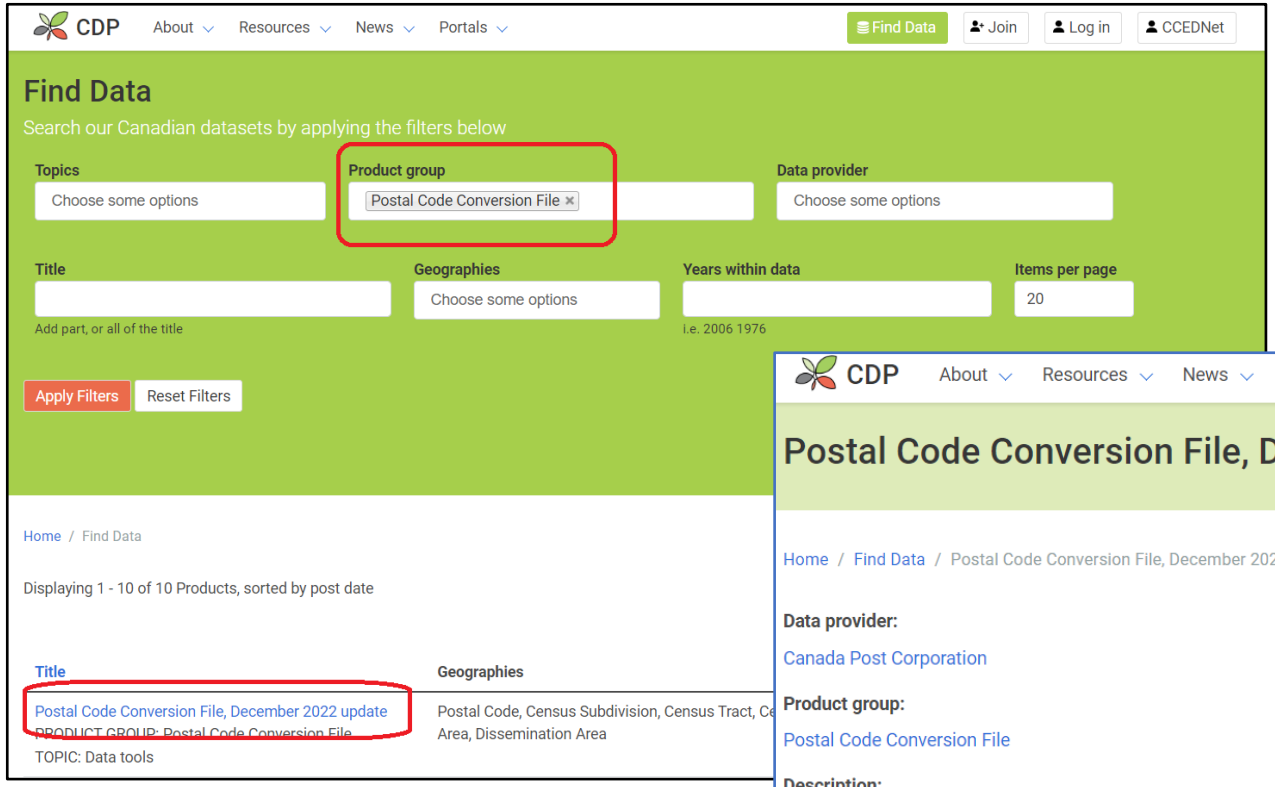
Working with the Postal Code Conversion File (PCCF)

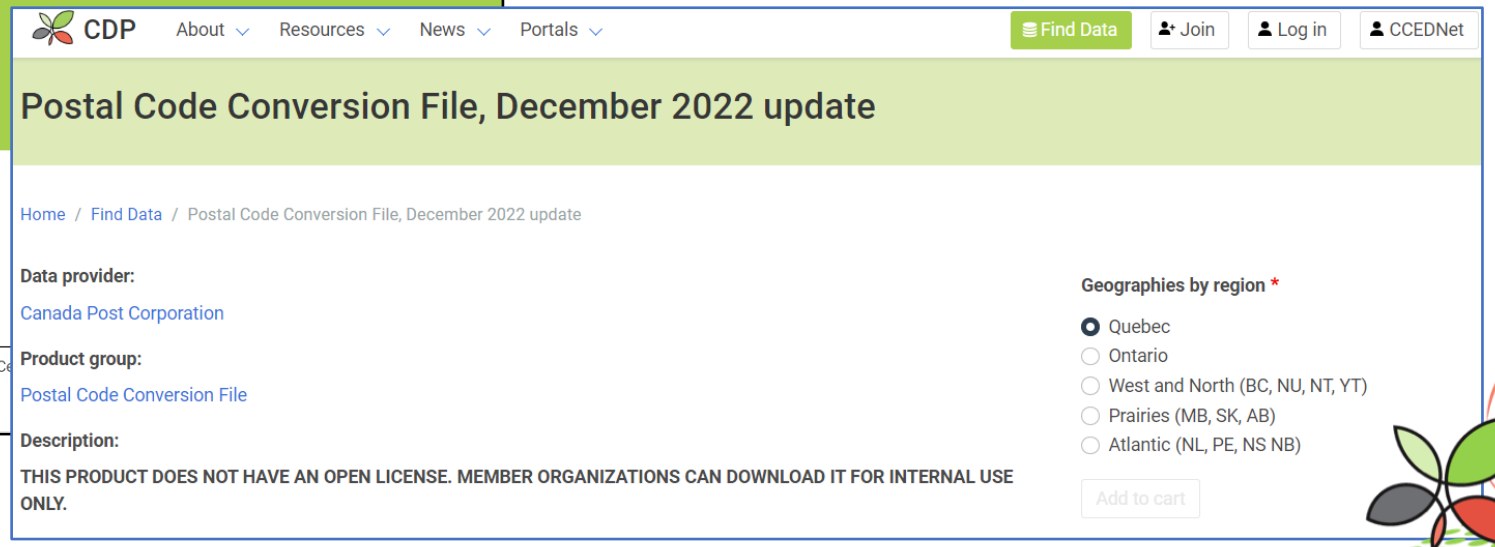
May 2nd, 2023
1:30 pm – 3:00 pm Eastern Time

Presentation by Michael Ditor

Postal Code Conversion File in the CDP catalogue

- The PCCF can be downloaded from the CDP catalogue
- Updates are available annually – typically in January



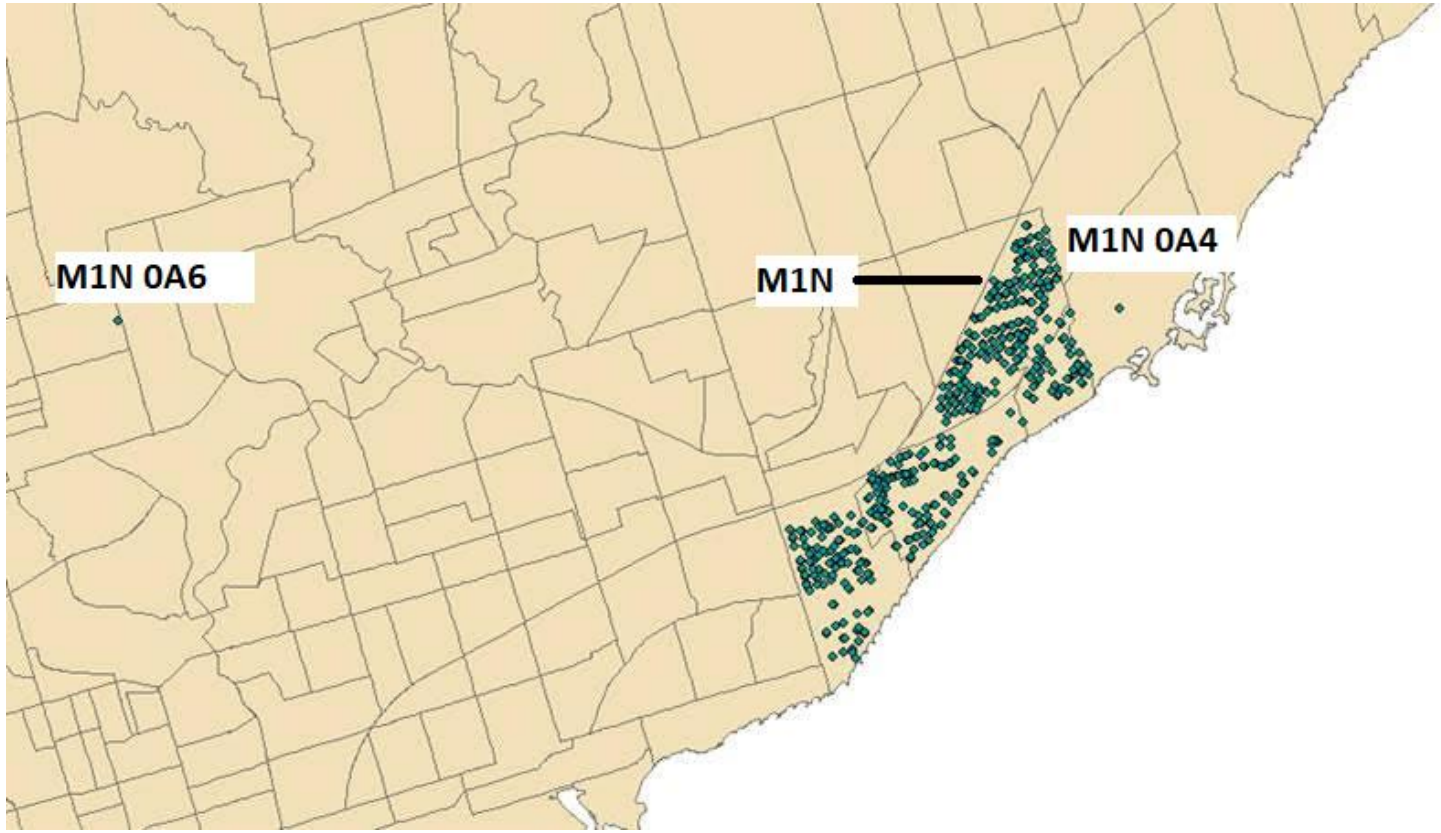


Postal Code Conversion File in the CDP catalogue

- Use of the PCCF is permitted under a restrictive licence
- Members of the Community Data Program can use the PCCF for internal purposes only
- The PCCF can **NOT** be published or shared with non-members
- The PCCF **can** be used to create correspondences with custom (non-Census) geographies (e.g., Wards, Service Delivery Areas)
    - These can be shared, so long as the correspondence with Census geographies can not be derived

Postal Code Conversion File issues

- Census FSAs are not always the same as Canada Post Corporation FSA



Postal Code Conversion File issues

- Reverse matching:
  - not all Census geographies have a corresponding postal code
- Rural routes, postal boxes:
  - civic addresses, location of dwellings can not be precisely known
- Google Maps validation: don’t do it!