PCCF + VERSION 3G
USER'S GUIDE

(GEOCODES/PCCF)

AUTOMATED GEOGRAPHIC CODING BASED ON THE STATISTICS CANADA POSTAL CODE CONVERSION FILES

INCLUDING POSTAL CODES TO JUNE 2001

by

Russell Wilkins

Health Analysis and Modeling Group
Social and Economic Studies Division
Statistics Canada
Ottawa

August 2001

Catalogue no. 82F0086-XDB

Russell Wilkins. *PCCF+ Version 3G User's Guide (Geocodes/PCCF). Automated Geographic Coding Based on the Statistics Canada Postal Code Conversion Files, Including Postal Codes to June 2001.* Health Analysis and Modeling Group, Social and Economic Studies Division, Statistics Canada, Ottawa, August 2001.

ABSTRACT

PCCF+ (*Geocodes/PCCF) Version 3* consists of a SAS control program and a series of reference files derived from the most recent Statistics Canada Postal Code Conversion File (PCCF) and the June 1996 Weighted Conversion File (WCF). It automatically assigns a full range of geographic identifiers (down to enumeration area and latitude, longitude) based on postal codes. It is consistent and logical in the way it does this. Any incorrect coding due to errors in the underlying reference files can easily be corrected once identified. To do such coding by manual methods would require highly skilled coders with much time and access to the full mailing address or property description. Even so, the results of manual coding would tend to be less accurate (particularly in urban areas), and they could inadvertently introduce systematic bias (especially in rural areas).

As long as the postal codes on the incoming file are valid for the corresponding addresses, *PCCF+* will usually generate highly accurate geographic coding. Manual geographic coding is no longer required except in very rare circumstances. Records with postal codes which serve more than one enumeration area--including most rural postal codes and several classes of urban postal codes—are assigned geographic codes based on a population-weighted random allocation among the possible codes. This produces an unbiased allocation of events in relation to the resident population. However, because of the nature of the postal code conversion files, a few classes of valid postal codes cannot be assigned full geographic identifiers corresponding to a place of residence or business. In such cases, as well as for postal codes that do not match exactly to the PCCF or WCF, the first two or three characters of the postal code are used to try to assign partial geographic identifiers to the extent possible. This takes care of many situations where the last one, two, or three characters of the postal code are invalid, but the first two or three characters are valid. Problem records include full diagnostic and reference information. Business and institutional addresses are clearly identified, which facilitates determining if the postal code corresponds to the client's usual place of residence (or business), or was the result of a keying or reporting error. An alternate version of the control program is also provided for better coding of the location of health facilities and professionals, as opposed to places of residence, where that is desired.

Note: For authorized university research and teaching purposes, *PCCF+* is now available under the Data Liberation Initiative (DLI). On the DLI FTP site, the filenames are shown in the directory -/health/pccf-fccp. For general information on the DLI, including contact persons at each participating university, see the Statistics Canada website: www.statcan.ca (Education resources / Data Liberation Initiative).

TABLE OF CONTENTS

Page

LIST OF APPENDICES

GETTING STARTED

Introduction

To do automated geographic coding based on postal codes using *PCCF+*, all you need to do is follow Steps 1, 2 and 3 below. The rest of the documentation provides supplementary detail and background information which should be read eventually, but it is not essential to getting started. A list of **Abbreviations** begins on page 17, the **References** begin on page 18**,** and a **List of Appendices** available can be found on page 21.

If you want to find out what the program does and how it works before getting started, skip Steps 1-3, and begin reading at the section entitled **Origins and objectives of *PCCF+***. Then come back to Step 1 when you are ready to begin coding.

Step 1: Getting set up

The *PCCF+* package consists of four SAS control files (the programs) plus several reference files derived mainly from the Statistics Canada Postal Code Conversion File (PCCF) and Weighted Conversion File (WCF). To use the programs, you must first have installed SAS on your mainframe or personal computer (PC) and copied all of the following files to your own library:

Filename / PC filename (if different)	Description
CNTL(GEORES3x) / GEORES3x.SAS	SAS PROG (RESIDENCE CODES)
CNTL(GEOINS3x)* / GEOINS3x.SAS*	ALT SAS PROG (OFFICE CODES)
CNTL(R3xOLD)# / R3xOLD.SAS#	SAS PROG OLD FSAs (RESIDENCE CODES)
CNTL(I3xOLD)#* / I3xOLD.SAS#*	ALT SAS PROG OLD FSAs (OFFICE CODES)
PCCFyymm.UNIQ.CAN	PCODES UNIQUE ON PCCF
PCCFyymm.RPO.CAN*	RURAL POST OFFICE LOCATIONS
PCCFyymm.POINTDUP.CAN	POINTER TO 1ST DUPLICATE PCODE
PCCFyymm.DUPS.CAN	ALL OCCURRENCES DUPLICATE PCODES
PCCFyymm.FSAGEOG.CAN	GEOGRAPHY AT EACH FSA
PCCFyymm.FSAGEO1.CAN#	GEOGRAPHY AT EACH FSA—OLD FSAs
PCCFyymm.FSA12GEO.CAN	GEOGRAPHY AT EACH FSA12
PCCFyymm.FSA12GE1.CAN#	GEOGRAPHY AT EACH FSA12—OLD FSAs
PCCFyymm.CPCOMM.CAN	CANADA POST COMMUNITY NAMES
PCCFyymm.WCFUDUPS.CAN	ALL OCCURRENCES DUPL+UNIQUE PCODES
PCCG96.CSDNAMES.CAN	CENSUS SUBDIVISION NAMES
PCCFC96.WCFPOINT.CAN	POINTER TO 1ST DUPLICATE PCODE
PCCFC96.FSAPOINT.CAN	POINTER TO 1ST DUPLICATE FSAEA
PCCFC96.FSAUDUPS.CAN	ALL OCCURRENCES DUPL+UNIQUE FSAEA
PCCFG96.CMANAMES.CAN	CMA+CA NAMES
PCCFG96.CDNAMES.CAN	CENSUS DIVISION NAMES
BLDG9606.EGMRES.CAN	POSSIBLE RES FOR DMT E G M
BLDG9805.TXTF1EZ.CAN	BLDG NAMES & ADDRESSES
CPADR.NADR9606.CAN	NUMBER ADDRESS RANGES FOR PCODE
GEOREF.EA96COLL.CAN	EA COLLECTIVE DWELLING TYPE
GEOREF.G96EACMT.CAN	ENUMERATORS COMMENTS ON EA
GEOREF.CSIZE96.CAN	COMMUNITY SIZE BASED ON CMA-CA CODE
SESREF.QAIPPE.CAN	IPPE QUINTILES WITHIN CMA-CA
GEOREF.HREA0008.CAN	HEALTH REGION & HEALTH DISTRICT CODES
GEOREF.HRSGC1.CAN	CSD-BASED IMPUTATION OF HEALTH REGION
GEOREF.SUBSGC1.CAN	CSD-BASED IMPUTATION OF HLTH DISTRICT
GEOREF.HRNAMES.CAN	HEALTH REGION NAMES
GEOREF.SUBNAMES.CAN	HEALTH DISTRICT NAMES
MSWORD.PCCF3x.DOC	*PCCF+* VER 3x USER GUIDE-ENGLISH (MS Word document file)
MSWORD.FCCP3x.DOC	*PCCF+* VER 3x USER GUIDE-FRENCH (MS Word document file)

Note: Provincial or regional subsets of the reference files will end with one of the following extensions in place of CAN: NF NS PE NB PQ ON MB SK AB BC YT NT NU ATL PRA WES. (For the meanings of the filename extensions, see page 13.) Provincial or regional subsets will only be able to find geographic codes for postal codes occurring within the same province or region. For best results, all of the files used should have the same extentions.

* An asterisk following a filename indicates that it is only needed for office coding.
# A number sign following a filename indicates that it is only needed for coding FSAs which have been moved.
PCCFyymm replaced by PCCF9805 (May 1998) or PCCF9901 (January 1999), etc.
GEORES3x GEOINS3x replaced by GEORES3A GEOINS3A (Version 3A), etc.

Because of the need to handle old and new geographies for two FSAs in British Columbia, program FSAIMP is no longer supported. Mainframe filenames are all prefixed by HLTH.GEOPCCF3x.PUBREAD.

Step 2: Your input file (with postal codes to be assigned geography)

Your incoming data to be coded will be known to the programs as HLTHDAT. You must indicate to the program where to find your income file, by changing the shaded filename shown below to your own incoming *filename.ext* at the following line (mainframe JCL shown first, followed by PC-SAS):

```
//HLTHDAT DD DSN=HLTH.PCCF3G.PUBREAD.SAMPLDAT.TXT

filename HLTHDAT  'r:\pccf3g\sampldat.txt'; /* your input file       */
```

Your incoming file can be sorted in any order or unsorted. Each logical record of the incoming file must contain a unique identifier (ID), plus a postal code (PCODE) if available. The postal code can have a space or hyphen between the first 3 characters (FSA) and the last 3 characters (LDU), or no space. Those fields can be anywhere in the file, but you must tell SAS where to find them, as in the following example:

```
DATA HLTHDAT0; INFILE HLTHDAT MISSOVER;
INPUT
  @     5      ID      $CHAR8.        /* UNIQUE IDENTIFIER OR REGISTRAT NUMBER   */
                                      /* IT CAN BE UP TO 12 CHARACTERS IN LENGTH */
  @     88     FSA     $CHAR3.        /* FSA (ANA)--FIRST 3 CHARACTERS OF PCODE  */
  @     92     LDU     $CHAR3.;       /* LDU (NAN)--LAST 3 CHARACTERS OF PCODE   */
PCODE=FSA||LDU;                       /* POSTAL CODE (ANANAN)                    */
```

The ID can be numerical, alphabetic or mixed. It can be up to 12 characters in length, and can be found anywhere in your file, as specified in the INPUT statement. If ID is more than 12 characters in length, the output file formatting would have to be modified. Records with the same ID but different postal codes will each be assigned geographic codes. *However, if the same ID and postal code appear in combination more than once, only one example of each combination will be retained.* The postal code can also be found anywhere in the file, with the FSA optionally separated from the LDU, or together.

Step 3: The two output files produced

PCCF+ will produce two output files, one for all of the coded data, and a subset of that which contains the problem records (errors, warnings and notes). You must specify the name of these output files by changing the shaded filenames to the names you want your output files to be called. We suggest using the extensions GEOG1 and GEOPROB for mainframe files, or GEO and PRB for PC files, but you can use any extensions you wish. (Once again, mainframe JCL is shown first, followed by PC-SAS:)

```
//HLTHOUT DD DSN=HLTH.PCCF3G.PUBREAD.SAMPLDAT.GEOG1
//GEOPROB DD DSN=HLTH.PCCF3G.PUBREAD.SAMPLDAT.GEOPROB

filename HLTHOUT  'r:\pccf3g\sampldat.geo'; /* the main output file  */
filename GEOPROB  'r:\pccf3g\sampldat.prb'; /* the problem file      */
```

The first of these two output files, known to SAS as HLTHOUT, will contain the ID and postal code from your incoming HLTHDAT file, plus all of the geographic codes which the programs could successfully determine, and diagnostic fields to help you understand how the coding proceeded in each case.

The second output file, known to SAS as GEOPROB, will contain a subset of the HLTHOUT records, for any cases identified as errors, warnings or notes. To facilitate checking and correction, it will be sorted by type of problem (errors first, followed by warnings, followed by notes), then by Delivery Mode Type (DMT), then by postal code. In the unlikely event that none of the HLTHOUT records were identified as potential problems (errors, warnings, or notes), then the GEOPROB dataset and corresponding file would be empty.

When Steps 1, 2 and 3 are completed, you will be ready to start assigning geographic identifiers to your file based on postal codes. If you are eager to get started, go right ahead. Just submit the program. The rest of the documentation can be read later.

Step 4 (optional): Getting appropriate geographic coding for FSAs which were moved (V1H & V9G)

After completing Step 3 (running the program), check the printed output. Immediately following the Summary of Automated Coding Results (at the beginning of the .LST output), if your data contained any postal codes beginning with V1H or V9G, you will see a table showing how many postal codes with each of those two FSA were involved. If that table is present (and non-blank), then to get the appropriate geographic coding for those postal codes, you may need to run a supplemental program (R3xOLD for residential coding, or I3xOLD for institutional coding). Whether or not you need to run the supplemental program depends on the vintage of your postal codes (see Appendix C for how the vintage of a postal code is defined). If the vintage is 1 April 1999 or later, then use of the supplemental programs is unnecessary and will have no effect on the data. In all other cases, if the results of Step 3 show postal codes beginning in V1H or V9G, you should run the supplemental program to ensure that the appropriate geographic codes are assigned.

First identify your input file, as you did in Step 2, except that this time the input filename will be the same as the HLTHOUT filename which you identified in Step 3.

Assuming that each record in your data has approximately the same vintage of postal code, then check the first input data step in R3xOLD or I3xOLD, and modify the value of PCVDATC if required, as shown in the shaded area below. If your data contain no postal codes of vintage later than 1 June 1996, then do not change the value of PCVDATC.

```
/* ONLY CHANGE DATE BELOW IF VINTAGE IS LATER THAN 19970601: */
PCVDATC='19970601';  /* YYYYMMDD VINTAGE OF PCODES     */
                     /* MM=01-12; DD=01-31 ONLY—NOT OO OR 99 */
```

When you have completed the above, submit the supplemental program. Depending on the vintage of your postal codes, some, none or all of the geographic coding for postal codes beginning with V1H and/or V9G may be changed to correspond to their former location.

The rest of this step is needed only if each record of your data may have a different vintage of postal code, so that the global change of the PCVDATC as shown above is not appropriate. But if (as will most often be the case) the global change was appropriate, then stop here.

If each record of your data may have a different vintage of postal code, then append that date to the end of each HLTHOUT record output by GEORES3x or GEOINS3x, and then revise the first input data step in R3xOLD or I3xOLD to include one of the following lines:

```
 @ nnn PCVDATC $CHAR8.;  /* YYYYMMDD VINTAGE OF PCODE */
or
 @ nnn PCVDATC $CHAR6.;  /* YYYYMM   VINTAGE OF PCODE */
```

And in that case, don't forget to delete the semicolon at the end of the old input statement, and to comment out the line (just below the end of the input statement) that defines PCVDATC as a constant. Do the latter by adding the SAS comment characters as shown in the shaded text below:

```
/* PCVDATC='19970601'; */ /* YYYYMMDD VINTAGE OF PCODES     */
```

HOW THE PACKAGE WORKS

Origins and objectives of *PCCF+*

PCCF+ consists of two SAS control programs (GEORES3x for residential coding, GEOINS3x for office coding) and a series of reference files derived from the Statistics Canada *Postal Code Conversion File* (PCCF), the Weighted Conversion File (WCF) and other sources. It automatically assigns a full range of geographic identifiers (PR CD CSD CMA CT FEDEA LAT LONG DPL) based on postal codes. It is consistent and logical in the way it does this. *PCCF+* uses techniques developed over a period of years for research studies at Statistics Canada. Any incorrect coding due to errors in the underlying reference files can easily be corrected once identified. To do such coding by manual methods would require highly skilled coders with much time and access to full mailing addresses. Even so, the results of manual coding would tend to be less accurate (particularly in urban areas), and they could inadvertently introduce systematic bias (especially in rural areas).

Version 1: 1986 Census geography; equal weight to each duplicate record
Version 2: 1991 Census geography; 2B (20% sample) household weights for most duplicate records
Version 3: 1996 Census geography; 2A (100% count) population weights for most duplicate records

Objectives

At their place of residence, 27% of the Canadian population use postal codes which are vague and ambiguous with respect to location (see **Table 1**, page 20), or which are only linked to post office location. This is the biggest problem facing geographic coding from Canadian postal codes. For example, about 23% of the population uses rural postal codes (which each serve an average of about 1200 persons), 4% use rural route services from urban post offices, and 1% use small post office boxes. For the other 73% of Canadians, the vast majority use postal codes presenting little or no problem with respect to geographic coding, which can usually be done with great precision. For example, for the most common category of service—letter carrier delivery to a private dwelling—only about 30 people share the same postal code. However, a few classes of urban postal codes are primarily used by business and institutions, and may or may not be valid as a place of residence. It is important to identify and deal with the various sorts of problems represented by each of the above categories, and that is what *PCCF+* does, as summarized below.

- Deal with community mail boxes and other sources of duplicate records on PCCF (DMT A, B).
- Identify postal codes which may be used by businesses or institutions (DMT E, G, M).
- Provide geographically unbiased coding despite the great ambiguity of rural postal codes and rural routes from urban post offices (DMT W, H, T).
- Provide geographically unbiased coding for persons or organizations using small PO boxes at urban post offices (DMT K), and for those using General Delivery at urban post offices (DMT J).
- Provide client site coding (vs PO location) for institutions using large PO boxes (DMT M).
- Deal with retired postal codes, taking into account problems related to previous DMT.
- Provide for translation across different vintages of census geography.

Bells and whistles

- Use the FSA to impute or partially impute geographic coding where the postal code is not found or is only linked to post office geography.
- Use the first 1 or 2 characters of the postal code for partial imputation if FSA not found.
- Provide information which may help in correcting erroneous or problematic postal codes, or for finding geographic codes by other means (if possible); try to furnish enough information so that the user can decide whether to accept or reject the coding suggested (if correction of the underlying problem is not possible or feasible).
- For postal codes which may or may not refer to a place of business (DMT E, G, or M), flag records for postal codes known to serve non-residential addresses, and flag those known to serve residential addresses.
- For enumeration areas serving collective dwellings, indicate the type of collective dwelling (hospital, prison, etc.).

Operational requirements

- Provide detailed diagnostics indicating how coding was done, what problems were encountered, and how ambiguous the postal code was (especially re CD and CSD codes).
- Document everything in a detailed *User's Guide*.
- Make it simple to use by persons with little or no previous knowledge of geography or computers, and small enough to run regional subsets on unsophisticated PCs.
- Update semi-annually following release of new vintages of the PCCF.

What was new in Version 2?

Version 2 of *PCCF+* (*Geocodes/PCCF)* incorporated several significant improvements over the original version.

- Manual geographic coding is no longer required for records with valid postal codes, except in very rare circumstances (< 1%). Previously, about 10-15% of records with valid postal codes could not be coded to census tract and enumeration area without manual intervention. Now most postal codes for rural routes from urban post offices, for post office boxes (group of boxes), as well as for suburban service and general delivery, can automatically be assigned the full complement of geographic codes available for other types of postal codes.

- Records with postal codes which serve more than one enumeration area--including most rural postal codes and several classes of urban postal codes—were assigned geographic codes based on a household-weighted random allocation among the possible locations. This produced an unbiased allocation of events in relation to the resident population. An alternative program can be chosen which will assign all rural postal codes to village centres.

- Problem records now include better diagnostic and reference information. Fields indicating the source of the matching and the number of different levels of geographic codes assigned were added, in addition to the previously available fields which indicate the type of problem, the number of census divisions and census subdivisions served by the postal code, and the DMT.

- Business and institutional addresses are more clearly identified. The problem records for most such cases show the building, company, or institutional establishment name and brief address--which help determine if the postal code corresponds to the client's usual place of residence (or business), or was the result of a keying or reporting error.

- "Most likely" partial geographic coding based on the first two characters of the postal code is suggested (where possible) for records with invalid postal codes. Previously, such coding was attempted only if the first three characters were valid.

- For geographic coding of the location of health facilities and health professionals, an alternate SAS control program (GEOINS3x) and one additional file (RPO) are provided. With the alternate program and file, records with rural postal codes are assigned to the same enumeration area as the rural post office.

What was new in Version 3A?

- Version 3 produces output coded to 1996 Census standard geography, whereas Version 2 coded to 1991 census standards, and Version 1 coded to 1986 census standards. In Version 3A, all postal codes in use up to May 1998 were included.

- Whenever possible, 1996 2A (100%) population weights are used for postal codes served by rural post offices, or by rural routes, PO boxes, and suburban route service from urban post offices. However, 1991 2B (20% sample) household weights are used for such postal codes if they were not part of the 1996 census population weight file.

- EAs are now imputed for rural as well as most urban postal codes. However, imputation of EA from urban FSAs (new in Version 2) is no longer performed for postal codes linked to post office geography, for which the service area or users may be outside the nominal FSA boundaries.

- New fields have been added, but all of the former fields have been retained, as has the "look and feel" of the programs. The only change to the definitions of former fields is for Problem type 2 (unused since Version 1), which has been redefined as a Warning (rather than Error as formerly) when the postal code is improbable as a place of residence. Latitude and longitude are now shown with much greater precision (degrees + 6 places after the decimal rather than degrees + 4 places previously). The field CCSUM is no longer written to the files, but it is still calculated for the printouts.

DPL A field for Designated Place (DPL) code has been added. This is a new sub-municipal level of geography with the 1996 census.

RESFLG Postal codes for addresses which are improbable as a place of residence are now flagged (RESFLG), as are postal codes for business and institutional type addresses which appear to be possible places of residence.

EACOL A field for Enumeration Area Collective Dwelling (EACOL) type has been added. This field identifies EAs which are specific to hospitals, nursing homes, prisons, etc.

EACMT An Enumeration Area Comment (EACMT) may occur in the problem file output if other address information is not available. The comment field usually names the collective dwelling, business or institution specific to that EA. A flag field (EACMTFLG) identifies EAs for which such comments are available in the G96EACMT file.

Five new diagnostic fields have been added. The first three are derived from the PCCF, while the last two are derived from other sources:

DMTDIFF A new field based on the previous DMT (DMTDIFF) allows retired postal codes to be used without fear of overlooking problems related to the previous DMT.

RPF The Representative Point Flag (RPF) indicates the precision of the underlying geographic linkage (to BLKFACE or EA, and single or multiple links in each case).

SERV The Canada Post Service Type code (SERV) distinguishes route service with street address from route service without street address.

PREC The precision (PREC) of latitude and longitude coordinates is indicated with respect to the service area of the postal code, as well as with respect to the blockface or EA nature of the coordinates, and with respect to the nature of the imputation required (if any). 0=least precise; 9=most precise.

NADR The number of address ranges (NADR) served by a postal code is usually one, but may be many. For example, community mail boxes and rural route services usually refer to several address ranges, while most other urban postal codes refer to only one address or address range.

Because of these changes, the record layout for the last section of both output files has been changed.

The source program code is still written in SAS, and is easily modifiable—for example, to reduce the printed output by deleting frequency tabulations of each field. As before, the source program is self-documenting to facilitate understanding of what the program actually does and doesn't do.

Preliminary versions of supplemental files and model programs are now available for translating back and forth between 1991 and 1996 census geographies.

What's new in version 3E?

Health regions (HR) and health district (SUB) codes are now assigned based on the enumeration area code, if present. If an enumeration area code is not present, then the program attempts to assign health region and health district codes based on the census subdivision code, if known, as long as 90% or more of the census subdivision population resides in a single health region or health district.

Canada Post recently moved two FSAs in British Columbia: 100km south in the case of V9G, and 400 km south in the case of V1H. This means that the vintage of the postal code must now be taken into account in order to correctly assign geography in such cases. Thus, the main programs (GEORES3E & GEOINS3E) have been revised to assign only the most current geographic codes for those cases, and supplementary programs (R3EOLD & I3EOLD) have been written to assign the old geographic coding where required, depending on the vintage of the postal codes (which can be specified). The supplementary programs also print out a summary of the corrections and problems encountered in the recoding, if any, and merge the corrections back into a revised main file. To explain how to use the supplementary programs, and to determine whether or not their use is required, a new Step 4 (optional) has been added to the Getting Started section of the documentation.

To further increase the functionality of the output files, community size (CSIZE) codes are now assigned based on the census metropolitan area and census agglomeration code (the CMA field, which includes CA codes). Also, to demonstrate the ease of attaching geographically-coded variables from other data sets (such as summary data from the quinquennial census), neighbourhood income quintile (QAIPPE) codes are now assigned, based on the enumeration area code.

The CPCCODE field (a sequential numeric code corresponding to the Canada Post Community Name) has now been fully implemented. In previous versions, records which were coded by the weighted conversion file (WCF) were not assigned a CPCCODE, but beginning with Version 3E, all records with a valid postal code will have it assigned.

The main output files (dataset HLTHOUT) are identical in format to those produced by Version 3D, except for the addition of the 4 new fields (HR SUB CSIZE QAIPPE) appended to the end of the record, as noted in the revised documentation. The output of the supplementary programs (R3EOLD and I3EOLD) also includes 3 additional fields (BTHDATEC RETDATEC PCVDATC) appended to the end of the record.

The problem file output has been modified slightly by reducing the latitude and longitude fields each to 2 digits in order to leave enough room to show the HR and SUB fields.

The documentation has been revised to reflect the above changes.

How the reference files were produced

To develop the reference files used, the PCCF was pre-processed as follows. First the file was analyzed to determine which postal codes were unique, and which occurred more than once on the file (linked to more than one enumeration area or blockface). The unique postal codes were then separated from the duplicate codes. Only the essential fields of the PCCF were retained, to reduce disk storage and memory requirements. Canada Post community names were assigned numeric codes so the names could be moved off to a much smaller, non-redundant auxiliary file. Census

subdivision names (but not the corresponding numeric SGC codes) were also removed to a much smaller, non-redundant auxiliary file. Additional reference files were created to show the relationship of the first three characters of the postal code to corresponding census divisions, census subdivisions, census metropolitan areas/census agglomerations, census tracts, enumeration areas, and latitude/longitude. A similar file was created showing the relationship of the first 2 characters of the postal code to the most frequently corresponding census geography and latitude/longitude. Other files were created for matching postal codes to a subset of the 1991 and 1996 Weighted Conversion Files (WCF), which combine census population or household data, postal codes and geography with the PCCF. A building name and address file was constructed to help check the validity of postal codes for problem records related to business, commercial and institutional establishments. Using census data plus visual inspection of building names, postal codes for addresses which are improbable as a place of residence were flagged, as were postal codes for business and institution-type addresses which appear to be possible places of residence. Health region and health district codes were obtained from provincial health departments. When necessary, enumeration area approximations to the definitions were created. For records with missing enumeration area codes, files for imputation of health region and health district were created, using approximations based on census subdivision codes. A file showing neigbourhood income quintiles within each census metropolitan area or census agglomeration (CMA-CA) was created, based on enumeration area summary data from the 1996 census. Community size groups were determined, based on the 1996 census population in each CMA-CA. Areas outside of any CMA-CA were taken as the smallest community size group ("rural and small town Canada").

What the package does

The result is a set of related files, which together with the SAS control programs provided, can be used for automated coding of most records with a valid postal code. As long as the postal codes on your incoming file are valid for the addresses, *PCCF+* will generate highly accurate geographic coding for your data. However, because of the nature of the PCCF and WCF, a few classes of valid postal codes still cannot be assigned full geographic identifiers corresponding to a place of residence or place of business. In such cases, as well as for postal codes that do not match exactly to the PCCF or WCF, the first three characters of the postal code are used to try to assign partial geographic identifiers to the extent possible. If that fails, then the first two characters of the postal code are tried.

In each case where *PCCF+* encounters a possible problem with its automated coding, diagnostic codes are output to the problem file, together with any partial geographic identifiers which may have been determined. The program listing prints out the problem records grouped by type of problem; the records themselves follow a brief printed message describing the problem and suggesting how to correct it. Usually the first thing to do is to check the postal code to make sure that it was correctly entered, and to see that the postal code shown is the correct one for the address.

Why it is important to have accurate postal codes

The coding produced by *PCCF+* is only as good as the postal codes on your incoming data file. The *Postal Code Directory* issued by Canada Post, or computerized versions of the directory (available from various sources), can be used to find missing postal codes as well as to validate or correct existing postal codes on your file. With computerized versions, the reverse lookup of address ranges from postal codes is an effective and efficient way of validating postal codes for incomplete or incorrectly spelled addresses. Note that in addition to its troublesome consequences for geographic coding, the absence of a valid postal code on your file could adversely affect any later follow up which might be required. Moreover, the delivery of mail by Canada Post may be delayed or impossible without a valid postal code.

How the matching process works

The routines in GEORES3x are for assigning geographic codes for places of usual residence. Similar routines in GEOINS3x can be used to assign geographic codes for locations of health facilities or offices of health professionals.

The SAS control program for residential coding is explained below; procedures which apply only to office coding are shown in italics:

(1) First, rural postal codes and postal codes 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 (WCF)--consisting of about 46,000 records for 17,500 different postal codes. As most such codes serve more than one enumeration area, the geographic codes are assigned randomly in proportion to the distribution of population with that postal code, as seen in the WCF. *For coding of office locations, etc., the GEOINS3x program omits the rural postal codes from this step, so that they can all be assigned to the same enumeration area as the rural post office.*

(2) Second, remaining postal codes which are unique on the PCCF (only linked to a single enumeration area or blockface) are matched to corresponding codes on the incoming HLTHDAT file. The unique codes (about 662,000 for all Canada, including most urban postal codes) are by far the biggest file which has to be dealt with. *For coding of office locations, rural postal codes together with their corresponding post office geography (File RPO) are added at this point, since those records are also unique.*

(3) Then postal codes which are not unique on the PCCF (about 83,000 different postal codes for which about 232,000 PCCF records exist, including each of the multiple occurrences of the same postal code) are matched to the remaining records from the HLTHDAT file. Most urban postal codes and some rural postal codes which are not unique on the PCCF (in the sense that they link to more than one enumeration area or blockface) are nonetheless not ambiguous in terms of higher levels of geography such as CD, CSD or CMA, CT. To avoid "many-to-many" matching, the matching in this part of the program is done in two steps: (a) Each remaining HLTHDAT record (not already matched to the WCF or to the PCCF unique file) is matched by postal code to a pointer file (POINTDUP) which contains a single record for each postal code which occurs more than once on the PCCF. The pointer file shows how many times the postal code occurs, and the physical location (observation number) of the first occurrence of that postal code on the DUPS file. (b) The information on the POINTDUP file is used to match each successive HLTHDAT record with the next occurrence of that postal code on the DUPS file. This has the effect of distributing events for such postal codes across all possible enumeration areas (or blockfaces) which are served by that postal code--with equal weight assigned to each PCCF record.

(4) Error records are then identified and processed as follows: (a) Any record with a postal code which did not match on all 6 characters to the PCCF is identified as an error record (PROB=0). (b) Records with postal codes which matched to the PCCF or WCF, but whose DMT is M or X are also identified as error records (PROB=1), since the PCCF only indicates their post office location. (c) The geographic codes for error records are set to missing values. (d) Using auxiliary files, an attempt is then made to assign highly probable CMA, CD and CSD codes, plus CT and EA for urban postal codes. Coding will be suggested based on the first 3 characters of the postal code (FSA), or failing that, based on the first 2 characters of the postal code. PR (only) may be assigned based on the first character of the postal code.

Steps 5-7 below are new beginning with Version 3E:

(5) Health region and health district codes are then assigned by matching to EA. If the EA is missing, the codes may be imputed based on the CSD code, if at least 90% of the CSD population falls within a single health region or health district.

(6) Neighbourhood income quintiles within each CMA-CA (QAIPPE) are then assigned, based on the EA. Note that neighbourhood income data are not available for EAs made up of institutional collective dwellings.

(7) Community size codes (CSIZE) are then assigned, based on CMA-CA populations from the 1996 census.

(8) All records with their corresponding geography (to the extent found) are output to the HLTHOUT file. If some or all geographic codes could not be determined, those fields are set to missing values before writing to the HLTHOUT file. See **Appendix A** for the record layout, and **Appendix C** for an explanation of the fields and codes.

(9) A smaller file (GEOPROB) is then created containing: records with postal codes which could not be matched on all 6 characters (problem type 0: error); records with postal codes for a Delivery Mode Type (DMT) which

is only linked to post office location on the PCCF (problem type 1: error), and for which census location data were not available on the WCF; records where the DMT frequently indicates a non-residential address (problem types 3 and 4: warning); records for postal codes known to indicate a non-residential address (problem type 2: warning); records which could have been assigned more than one CSD based on the unweighted PCCF (problem type 5: note); records which could have been assigned to more than one CSD based on the WCF (problem type 6: note). See **Appendix B** for the record layout, and **Appendix C** for an explanation of the fields and codes.

(10) A one page summary of what happened, including the number of records in each problem type above is printed in the program listing, 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. See **Appendix D** for sample output.

(11) Frequency counts of the occurrence of each value of the main fields are printed out. This is done first for the entire HLTHOUT dataset, and then for the GEOPROB subset.

(12) The entire problem dataset (GEOPROB) is printed out. In this case, the spacing of the printout mirrors that of the corresponding file. See **Appendix D** for sample output.

(13) The first 500 records from the output dataset (HLTHOUT, including fully coded, partially coded, and uncoded records) are printed out. The printout includes one field which is not present in the output dataset: DISTANCE, which was calculated for illustrative purposes only. See **Appendix D** for sample output.

How the programs deal with multiple matches

Version 3 of *PCCF+* has two different ways of dealing with multiple matches--where a single postal code can be linked to more than one enumeration area or blockface. (1) For rural postal codes and for urban postal codes with a delivery mode type (DMT) of H, K, M,T and Z, a subset of the WCF is used whenever possible to make a population-weighted random distribution of records among the applicable geographic areas served. In this way, if 75% of the population served by a postal code was known to be in EA1, then on average, 75% of the records will be assigned to that EA. (2) For other types of postal codes with multiple matches possible, equal weight is given to each enumeration area or blockface. Successive events at such a postal code are coded in turn to each applicable enumeration area or blockface. *For office coding only, rural postal codes are always assigned to the enumeration area of the rural post office*.

In most cases, a full mailing address would not allow any greater accuracy in the determination of CSD, and using only the city or community name line of the address for coding purposes would tend to bias the results towards whichever CSD had a name most similar to that of the postal community. The result would be the often-noted "hot spots" surrounded by "cold spots".

In summary, then, whenever a postal code can be linked to more than one CSD, an explanatory message is printed, the record is output to the problem file (as a Warning only), and a systematically selected CSD code is written out to both the main file (HLTHOUT) and the problem file (GEOPROB). *For office coding, links to more than one CSD are rare, since rural postal codes are assigned to the enumeration area of the rural post office*.

How the programs deal with reuse of postal codes (beginning with Version 3E)

After a period of retirement, postal codes are sometimes rebirthed by Canada Post for reuse at a new location. Such reuse may also entail a change of DMT. Reuse of postal codes occurs most frequently, but not exclusively, in areas undergoing rapid expansion which was not foreseen by Canada Post planners when the FSA structure was initially created. However, in almost all cases, reuse of postal codes occurs within the same FSA, and most frequently within a very short distance of the former use. Thus, reuse of postal codes is not normally a problem, and the birth date and retirement date of postal codes is not part of the usual processing of postal codes in the GEORES3x and GEOINS3x programs. Recently however, two entire FSAs in British Columbia were first retired, and then moved by Canada Post

(approximately 100 km south in the case of V9G, and 400 km south in the case of V1H). So the main programs (GEORES3x and GEOINS3x) have now been revised to assign only the most current geography to records with those two FSAs. Supplemental programs (R3xOLD and I3xOLD) have been written to read the output of the main program, and reassign the old geographic coding where required, based on the vintage of the postal codes (which may be specified by the user). Users with less than current data from British Columbia will thus need to run the main program (eg, GEORES3x) followed by the supplemental program (eg, R3xOLD). The results from the supplemental program are automatically merged back into the data output from the main program. However, if your data do not include postal codes with those FSAs, or if you data only contain postal codes of vintage 19990401 or later, then use of the alternate programs is unnecessary and will have no effect on the coding produced by the regular programs GEORES3x and GEOINS3x.

How to indicate unknown or partially unknown postal codes

If the postal code for a given record does not match exactly to any postal code on the PCCF, *PCCF+* will attempt to assign partial geography based on the first 1, 2 or 3 characters the unmatched postal code. Thus, you should give some thought to how unknown or partially complete postal codes should be indicated on your incoming file. If you were to assign the non-existent postal code H0H0H0 (ho-ho-ho!) to records with missing (and unfindable) postal codes, then those records would all be assigned PR 24 and CMA 462, since nearly all postal codes beginning with H are from metropolitan Montreal, Quebec. Even worse, the non-existent postal code H9H9H9 would be assigned to PR 24, CMA 462 and CD 65 (Île de Montréal), since that is the only place legitimate codes beginning with H9H are found. If only the province of residence is known, be sure to indicate the corresponding first letter (for example, B for Nova Scotia) in the initial position of the postal code field, so that the province and region code (PR) will be generated and written to the output files and listings

How to run *PCCF+*

To do automated geographic coding based on postal codes using *PCCF+* all you need to do is follow steps 1, 2 and 3 at the beginning of this *User's Guide*. The rest of the documentation provides supplementary detail and background information which should be read eventually, but which is not essential to getting started.

Future versions of *PCCF+*

For each new version of the PCCF, which is to be released semi-annually, a corresponding update of *PCCF+* will be produced. In addition to keeping up with new and revised postal codes, as well as with new or revised definitions of health regions and health districts, future versions of *PCCF+* may also assist in determining if a postal code refers uniquely or partially to an institutional address. Preliminary versions of supplementary files and sample programs for EA translation across census years are now available for testing (contact Russell Wilkins for more information).

Verification of geographic coding produced by *PCCF+*

Table 2 (page 20) shows the population-based error percentages for each level of geography, for coding produced by *PCCF+* Version 3 (R3A) compared to coding from the PCCF Single Link Indicator (SLI), and compared to population-weighted coding from FSA only. In each case, the "gold standard" is a 1% sample of the census population and corresponding postal codes collected in the 1996 Census of Canada. The error percentages are consistently smaller for the *PCCF+* method, compared to the SLI method, at all levels of geography. At the CSD level, for example, the SLI error percentage is three times higher than that produced by *PCCF+*. At the CT level (mostly in urban postal codes areas), the SLI did much better than at the CSD level, but the error percentage was still over 40% higher compared to *PCCF+*.

Table 3 (page 20) shows that if the only objective is to assign codes as close as possible to the known census EA centroids (whether or not the population is distributed among all applicable areas), then the SLI method is somewhat more accurate, at least beyond the 75th percentile of distance.

WHERE TO GET HELP

Technical assistance

Any technical problems noted with the functioning of these programs or suggestions for improvements to the programs or documentation should be addressed to Russell Wilkins, Social and Economic Studies Division, Statistics Canada, RHC-24Q, Ottawa, Ontario K1A 0T6, tel: 1-613-951-5305, fax: 1-613-951-5643.

For Vital Statistics and Cancer Registry users *only*: For copies of the control programs and/or provincial or regional subsets of the Canada files, or operational problems getting started using the programs, please contact Colette Brassard, Operations and Integration Division--Health, Statistics Canada, JT2-B20, Ottawa, Ontario K1A0T6; tel: 1-613-951-1850, fax: 1-613-951-0709. Colette can also handle technical questions related to PC-SAS running under UNIX, DOS or Windows.

Suspected problems with the PCCF

If you have identified possible errors in coding, please look at the SOURCE diagnostic code. If the SOURCE code is F, D or V you may have identified possible errors on the Postal Code Conversion File, so please report these to the Geography Division of Statistics Canada, which is responsible for the creation, maintenance and updates to the PCCF. Include a list of the postal codes which you find suspicious, the geography assigned by the PCCF, and an indication of the nature of the problem (which fields appear to be wrong?). Contact the GeoHelp desk, Geography Division, Statistics Canada, JT3-B6, Ottawa, Ontario K1A0T6, tel: 1-613-951-3889, fax: 1-613-951-0569.

If on the other hand the SOURCE code is I , 3, or 2, the problem is not with the PCCF itself, but rather with the supplementary files created by the Health Statistics Division. The same applies to problems with the RESFLG or diagnostic codes (PROB, SOURCE, NCSD, NCD, RPF, PREC, NADR, CODER, CPCCODE). For all such cases, contact Russell Wilkins at the address noted above. Also, if the SOURCE code is C, please inform the Health Statistics Division, which has employed a modified version of the WCF in this application. Because of its origins in census data, the original WCF will probably not be changed, but the version employed in *PCCF+* could be.

ADDITIONAL REFERENCE INFORMATION

Acceptable characters and numbers in Canadian postal codes

The first character must be in A B C E G H J K L M N P R S T V X Y. The third an fifth characters may be any character valid for the first position, plus W and Z. The second, fourth and sixth positions may be any single numeric digit (0-9). Acceptable syntax does not guarantee that the postal code will be valid; many combinations have never been used. See Appendices F1, F2 and F3 for acceptable characters or combinations of characters in the first 1, 2 or 3 positions, respectively.

Filename extensions

The filename extensions have the following meaning:

CAN	Canada
NF	Newfoundland
PE	Prince Edward Island
NS	Nova Scotia
NB	New Brunswick
QC	Quebec
ON	Ontario
MB	Manitoba
SK	Saskatchewan
AB	Alberta
BC	British Columbia (including data for YT and NT)
YT	Yukon
NT	Northwest Territories
NU	Nunavut
ATL	Atlantic region (NF NS PE NB)
PRA	Prairie region (MB SK AB)
WES	Western region (MB SK AB BC YT NT)
DOC	Documentation (in TXT or MS Word format)

Abbreviations

Some of the abbreviations used in this documentation and programs are as follows:

ANANAN	Alpha Numeric Alpha Numeric Alpha Numeric (format of Canadian Postal Codes)
CA	Census Agglomeration (included in CMA field)
CCHS	Canadian Community Health Survey
CD	Census Division (a county-level code)
CMA	Census Metropolitan Area (this field also includes CAs)
CODER	*PCCF+* program, version and release (R3A=GEORES3A)
CPCCODE	Canada Post community code (corresponding to a postal community name)
CSD	Census Subdivision (a municipal-level code)
CSDNAME	Name of CSD.
CSDTYPE	Type of CSD.
CSIZE	Community size code (based on 1996 CMA-CA population)
CT	Census Tract (a neighborhood-level code)
DIAG	Diagnostic fields (in HLTHOUT and GEOPROB files)
DISTANCE	Distance in km between two centroids (shortest or "great circle" distance)
DMTDIFF	Previous DMT if different than current DMT.
DMT	Delivery Mode Type (specified by Canada Post)
DPL	Designated Place (a sub-municipal level code used for unincorporated places)
EA	Enumeration area (also short for PRFEDEA).
EACMT	Enumeration area comments (of census enumerators).
FEDEA	Federal Electoral District and census Enumeration Area
FSA	Forward Sortation Area (first three characters of postal code)
GEOPROB	SAS dataset name used for the output file containing all problem records (including errors, warnings and notes)
HLTHDAT	SAS dataset name used for the incoming records to be coded
HLTHOUT	SAS dataset name used for the output records after processing
HR	Health region (as defined by provincial health departments)
ID	Identifier (unique identifier or registration number)
IPPE	Neighbourhood income per person equivalent (based on 1996 EA summary data)

JCL	Job Control Language (for mainframe computers)
LAT	Latitude (North)
LDU	Local delivery unit (last three characters of the postal code)
LL	Latitude and longitude
LONG	Longitude (West)
OBS	Observations (records in SAS dataset)
PCCF	Postal Code Conversion File
PCODE	Postal code
PR	Province and Region
QAIPPE	Quintile of neighbourhood income per person equivalent (within CMA-CA)
PREC	Precision of geographic coding
PRFEDEA	Province, Federal Electoral District, and Enumeration Area
RESFLG	Residence flag
RPF	Representative point flag (indicates type of latitude longitude centroid shown)
SAS	Statistical Analysis System
SERV	Canada Post service type
SGC	Standard Geographic Classification code (PR CD CSD)
SOURCE	Source of geographic codes assigned (C D F I 3 2 1 0 or .)
SLI	Single link indicator (used mainly to avoid multiple matches when weights not used)
SUB	Health district (as defined by provincial health departments)
TRACTED	If centroid is in a census tracted area, then TRACTED=1.
WCF	Weighted Conversion File (PCCF-style records with PRFEDEA and population-based weights derived from the 1996 census, and household-based weights derived from the 1991 census)

References

Canada Post Corporation. *Canada's Postal Code Directory 1998* (and related files on magnetic tape). Canada Post Corporation, Montreal, 1998. / Société canadienne des postes. *Répertoire des codes postaux au Canada 1998* (et fichiers d'adresses sur bande magnétique). Société canadienne des postes, Montréal, 1998.

Ng E, Wilkins R, Perras A. How far is it to the nearest hospital? Calculating distances using the Statistics Canada Postal Code Conversion File. *Health Reports* 1993;5(2):179-188. / Ng E, Wilkins R, Perras A. À quelle distance se trouve la plus proche hôpital? Le calcul des distances à l'aide du Fichier de conversion des codes postaux de Statistique Canada. *Rapports sur la Santé* 1993;5(2):179-188.

Ng E, Wilkins R, Pole J, Adams OB. How far to the nearest physician? *Health Reports* 1997; 8(4):19-31. / Ng E, Wilkins R, Pole J, Adams OB. À quelle distance se trouve le plus proche médecin? *Rapports sur la Santé* 1997; 8(4):21-34.

SAS Institute. *SAS Language Reference, Version 6*. SAS Institute, Cary, North Carolina, 1990.

Statistics Canada. 1996 *Census Dictionary*. Catalogue 92-351-XPE. Minister of Industry, Ottawa, 1997. / Statistique Canada. *Dictionnaire du recensement* 1997. Catalogue 92-351-XPF. Ministre de l'Industrie, Ottawa, 1997.

Statistics Canada. *Postal Code Conversion File, May 1998 Postal Codes. Reference Guide.* Catalogue No. 92F0027XDB. Geography Division, Statistics Canada, Ottawa, September 1998. / Statistique Canada. *Fichier de conversion des codes postaux, Codes postaux de mai 1998. Guide des Utilisateurs*. Division de la Géographie, Statistique Canada, Ottawa, septembre 1998.

Statistics Canada. *Postal Code Population Weight File*. May 1996 Postal Codes. Reference Guide. Catalogue No. 93F0040XDB. Geography Division, Statistics Canada, August 1998. / Statistique Canada. *Fichier de la pondération par codes postaux.* Codes postaux de mai 1996. Guide de référence. No 93F0040XDB au catalogue. Division de la Géographie, Statistique Canada, août 1998.

Statistics Canada. *Standard Geographical Classification SGC 1996, Volume I.* Catalogue 12-571. Minister of Industry, Ottawa, 1997. / Statistique Canada. *Classification géographique type CGT 1996, Volume I.* Catalogue 12-571. Ministre de l'Industrie, Ottawa, 1997.

Statistics Canada. *User Guide. 1991 Place Name Master File*. Geography Division, Statistics Canada, Ottawa, April 1993. / Statistique Canada. *Fichier principal des nomn de localité 1991. Guide de l'utilisateur*. Division de la géographie, Statistique Canada, Ottawa, avril 1993.

Statistics Canada. *GeoRef (CD-ROM)*. Catalogue 92F008XCB. Geography Division, Statistics Canada, Ottawa, 1997. / Statisique Canada. *GéoRef*. No 92F008XCB au catalogue. Division de la géographie, Statistique Canada, Ottawa, 1997.

Wilkins R. *Verification of geographic coding produced by Geocodes/PCCF version 3*. Technical note. Health Statistics Division, Statistics Canada, November 1998.

Wilkins R. Use of postal codes and addresses in the analysis of health data. *Health Reports* 1993;5(2):157-177. / Wilkins R. Utilisation des codes postaux et adresses dans l'analyse des données sur la santé. *Rapports sur la Santé* 1993;5(2):157-177.

Wilkins R. *Geocodes/PCCF Version 2 User's Guide. Automated Geographic Coding Based on the Statistics Canada Postal Code Conversion File*. Ottawa: Health Statistics Division, Statistics Canada, Ottawa, July 1996. / Wilkins R. *Géocodes/FCCP Version 2 Guide de l'Utilisateur. Répérage automatique des codes géographiques basé sur le fichier de conversion des codes postaux de Statistique Canada*. Ottawa: Division des statistiques sur la santé, Statistique Canada, 1996.

Warning and disclaimer

PCCF+ is intended only for authorized users of the PCCF and WCF. Installation, use and/or modification of the control program and related files are solely the responsibility of the user. The accuracy and consistency of the geographic coding generated by the package should be tested thoroughly and evaluated by the user--prior to employing the package for production runs.

Acknowledgements

For Version 1, René Poulin of the Health Statistics Division, Statistics Canada suggested splitting the PCCF into unique and non-unique records to avoid "many-to-many" matching, as well as counting in modulo, random sorting and use of pointers to cycle through the duplicate records for the same postal code. Edward Ng, also of the Health Statistics Division, and Ron Cunningham of the Geography Division implemented the routines for distance calculation. Laszlo Szabo, then of the Social Survey Methods Division and Geography Division, created the first Weighted Conversion File from the 1991 Census 2B postal codes and PCCF, and later the FSA to EA equivalences from the 1996 Census 2A postal codes. Jason Pole, then a University of Waterloo Coop student, and Edward Ng (then of Health Statistics Division) revised a routine for household-weighted matching to the Weighted Conversion File. The Small Area and Administrative Division (SAAD) derived the historic DMT field. Robert Parenteau, Richard Nadwodny, Nelson Kopustus, Peter Bissett, Brenda Wannell, Cam McEwen, and Ingrid Ivanov have each provided considerable help with successive versions of the PCCF, for which they have had responsibility within the Geography Division of Statistics Canada. The current definitions of health regions and health districts (where applicable) were supplied by provincial departments of health, and are subject to change in the future. Health Canada (LCDC) has provided essential support, encouragement and advice for successive upgrades to the PCCF and for all stages of the development and implementation of *PCCF+* (*Geocodes/PCCF)*. Users in several other divisions of Statistics Canada and elsewhere have provided useful comments and suggestions. Thanks to the Data Liberation Initiative (DLI), this software is now freely available for eligible university teaching and research purposes. Thanks also to the Canadian Association of Public Data Users (CAPDU), which has been instrumental in helping DLI users to make effective use of the programs.

Table 1
Distribution of postal codes and census population by delivery mode type (DMT), May 1996

DMT	PCCF pcodes		Census population		Cen pop/ cen pcode	PCCF records
	n	%	n	%	av	/ pcode
Total	733,981	100.0	28,846,711	100.00	47	1.4
Urban post office						
A (ordinary urban)	666,570	90.8	18,458,091	64.0	32	1.3
B (apartments)	15,825	2.2	2,338,610	8.1	156	1.3
E (business, etc)	8,878	1.2	24,840	0.1	10	1.5
G (gov, inst, etc)	14,244	1.9	85,559	0.3	32	1.6
H (rural route from urban PO)	1,278	0.2	1,071,503	3.7	936	7.0
J (general delivery)	890	0.1	6,699	0.0	20	1.6
K (group of PO boxes)	7,558	1.0	241,323	0.8	56	1.8
M (single PO box)	10,189	1.4	19,811	0.1	17	1.9
R (miscellaneous services)	10	0.0	--	--	--	1.7
T (suburban service)	411	0.1	38,262	0.1	472	2.2
X (mobile route)	17	0.0	206	0.0	206	2.3
Z (retired)	1,637	0.2	8,882	0.0	63	2.6
Rural post office						
W (rural PO all service types)	6,474	0.9	6,552,925	22.7	1188	4.6

Note: PCCF June 1997 (slightly different in May 1998 PCCF, which is used in GEORES3A). 1996 census.
For this table, if DMT=Z then DMT=previous DMT. DMT=R is no longer in use.

Table 2
Comparison of population-based coding errors using *PCCF+* Version 3 (GEORES3A) versus coding errors using the PCCF Single Link Indicator (SLI), versus coding errors using FSA-based imputation (FSA)

Level		FSA %	SLI %	R3A %	Diff SLI-R3A	Ratio SLI/R3A
PR	Province	0.0	0.1	0.1	0.0	1.00
CD	Census Division	0.5	0.6	0.3	0.3	2.00
CSD	Census Sub-division	4.7	9.4	3.2	6.2	2.94
CMA	Census Metropolitan Area /Census Agglom.	0.3	0.4	0.2	0.2	2.00
CT	Census Tract	11.6	2.7	1.9	0.8	1.42
EA	Enumeration Area	41.8	33.6	15.8	17.8	2.13
DPL	Designated Place – applicable areas only	30.3	50.9	20.0	30.9	2.55

Note: Population-based coding errors are defined as the sum over all areas at this level of the absolute value of the population coded less the population known from the census sample, expressed as a percentage of the total population in all areas at this level. Based on simple 1% sample of individuals in the total population. Error percentages calculated after improbable census postal codes excluded from sample.

Table 3
Individual record-based distance from census EA representative point (centroid) to blockface or EA-based representative point generated by *PCCF+* Version 3 (R3A), the PCCF Single Link Indicator (SLI), or FSA-based imputation (FSA).

Mean or Percentile rank	Distance in km		
	FSA	SLI	R3A
Mean	3.4	1.1	1.4
P50 (median)	1.8	0.2	0.2
P75	3.4	0.5	0.6
P90	8.4	3.2	4.6
P95	14.5	7.0	8.6
P99	22.7	15.2	17.5
Maximum	25.0	25.0	25.0

Note: Based on simple 1% sample of individuals in the total population. Distances calculated after improbable census postal codes excluded from sample.

LIST OF APPENDICES

Page

APPENDIX A:
RECORD LAYOUT OF THE HLTHOUT FILE

```
DATA HLTHOUT;SET HLTHOUT;FILE HLTHOUT;
PUT
  @ 1  ID       $CHAR12./* RECORD IDENTIFICATION (AS INPUT)       */
  @13  PCODE    $CHAR6. /* POSTAL CODE (AS INPUT)                */
  @19  RESFLG   $1.     /* RESIDENCE FLAG ON PCODES IF DMT=E,G,M  */
  @20  PR       Z2.     /* PROVINCE CODE (99=UNKNOWN)            */
  @22  CD       Z2.     /* CENSUS DIVISION CODE (00=UNKNOWN)     */
  @24  CSD      Z3.     /* CENSUS SUBDIVISION CODE (999=UNKNOWN) */
  @28  CMA      Z3.     /* CMA OR CA CODE (999=UNKNN;000=NOT APPL) */
  @32  CT       Z6.2    /* CENSUS TRACT--URBAN CT'S ONLY (NO PCT) */
  @38  EACOLL   $1.     /* EA COLLECTIVE DWELL TYPE (' '=NOT APPL) */
  @39  FEDEA    Z6.     /* FED ELECT DIST/ENUM AREA (999999=MISS) */
  @45  EACMTFLG $1.     /* ENUMERATION AREA COMMENT FLAG         */
  @46  LAT      Z8.     /* LATITUDE DEGREES(2)+DECIMALS(6)       */
  @54  LONG     Z9.     /* LONGITUDE DEGREES(3)+DECIMALS(6)      */
                        /* DIAGNOSTIC FLAGS:                     */
  @64  DPL      Z3.     /* DESIGNATED PLACE (000=NOT APPL;999=UNKN */
  @67  DMTDIFF  $1.     /* PREVIOUS OR ALTERNATE DMT IF DIFFERENT */
  @68  DMT      $1.     /* DELIVERY MODE TYPE:                   */
  @69  PROB      Z1.    /* PROBLEM TYPE (INCREASING CONFIDENCE)  */
  @70  SOURCE    $1.    /* SOURCE OF GEOGRAPHIC CODES            */
  @71  NCSD      Z1.    /* NUMBER CSD POSSIBLE AT THIS PCODE 1-9+ */
  @72  NCD        1.    /* NUMBER CD POSSIBLE AT THIS PCODE 1-9+ */
  @73  RPF        1.    /* REPRESENTATIVE POINT (CENTROID) FLAG  */
  @74  SERV       1.    /* SERVICE TYPE                          */
  @75  PREC      $1.   /* PRECISION OF LAT LONG (0=LEAST;9=MOST) */
  @76  NADR       1.   /* NUMBER OF ADDRESS RANGES FOR THIS PCODE */
  @78  CODER     $3.   /* CODER: 'R3A'=GEORES3A MAY 1998 PCCF   */
  @82  CPCCODE   Z4.   /* CANADA POST COMMUNITY CODE (SEQUENTIAL) */
  /* THE FOLLOWING FIELDS ARE NEW BEGINNING WITH VERSION 3E:                    */
  @87  HR    $CHAR2. /* HEALTH REGION CODE (UNIQUE WITHIN PR)                  */
  @89  SUB   $CHAR3. /* HEALTH DISTRICT CODE (UNIQUE WITHIN PR OR PR+HR (QC ONLY) */
  @93  CSIZE      1. /* COMMUNITY SIZE CODE (BASED ON CMA-CA POP96)            */
  @95  QAIPPE     1.; /* NEIGHBOURHOOD INCOME QUINTILE (WITHIN CMA-CA)         */
 /* THE FOLLOWING FIELDS APPLY TO ALTERNATE PROGRAMS R3XOLD I3XOLD ONLY: */
  @97 BTHDATC   $CHAR6.  /* YYYYMM OF PCODE BIRTH DATE                  */
  @104 RETDATEC $CHAR6.  /* YYYYMM OF PCODE RETIREMENT DATE             */
  @111 PCVDATC  $CHAR6.; /* YYYYMM OF PCODE VINTAGE                     */
```

The dataset HLTHOUT is sorted first by ID, then by PCODE. If the incoming file HLTHDAT contains any records with identical ID+PCODE, only a single example of each such records will be processed. Then when the HLTHOUT records are merged back to the main file, every record with the same ID+PCODE will be assigned the same geographic codes, even if more than one set of geographic codes were possible for that postal code.

APPENDIX B:
RECORD LAYOUT OF THE GEOPROB FILE

```
DATA GEOPROB;SET GEOPROB;BY PROB;FILE GEOPROB;
PUT
    @ 1    ID    $CHAR12. /* RECORD IDENTIFICATION (AS INPUT)    */
    @13    PCODE $CHAR6.  /* POSTAL CODE (AS INPUT)             */
    @19  RESFLG  $1.  /* RESIDENCE FLAG ON PCODES IF DMT=E,G,M   */
    @20    PR    Z2.  /* PROVINCE CODE (99=UNKNOWN)             */
    @22    CD    Z2.  /* CENSUS DIVISION CODE (00=UNKNOWN)      */
    @24    CSD   Z3.  /* CENSUS SUBDIVISION CODE (999=UNKNOWN)  */
    @28    CMA   Z3.  /* CMA OR CA CODE (999=UNKN;000=NOT APPL) */
    @32    CT    Z6.2 /* CENSUS TRACT--URBAN CT'S ONLY (NO PCT) */
    @38  EACOLL  $1.  /* EA COLLECTIVE DWELL TYPE (' '=NOT APPL */
    @39    FEDEA Z6.  /* FED ELECT DIST/ENUM AREA (999999=UNKN) */
    @45 EACMTFLG $1.  /* EA COMMENT FLAG:                       */
  /* NOTE: GEOPROB HAS DIFF LAYOUT FROM HLTHOUT BEGINNING WITH LAT */
    @46    LAT   Z2.  /* LATITUDE DEGREES(2)                    */
    @48    LONG  Z2.  /* LONGITUDE DEGREES(3)/10=(2)            */
    @51    HR    $2.  /* HEALTH REGION CODE (UNIQUE WITHIN PR)                    */
    @53    SUB   $3.  /* HEALTH DISTRICT CODE (UNIQUE WITHIN PR OR PR+HR (QC ONLY) */
    @57    DPL   Z3.  /* DESIGNATED PLACE (999=UNKN;000=NOT APPL)*/
                      /* DIAGNOSTIC FLAGS:                      */
    @61    DMTDIFF  $1. /* PREVIOUS DMT IF DIFFERENT            */
    @62    DMT      $1. /* DELIVERY MODE TYPE                   */
    @63    PROB     Z1. /* PROBLEM TYPE                         */
    @64    SOURCE   $1. /* SOURCE OF GEOGRAPHIC CODES:               */
    @65    NCSD     Z1. /* NUMBER CSD POSSIBLE AT THIS PCODE/FSA/FSA12*/
    @66    NCD       1. /* NUMBER CD POSSIBLE AT THIS PCODE/FSA/FSA12 */
    @67    RPF       1. /* REPRESENTATIVE POINT (CENTROID) FLAG       */
    @68    SERV      1. /* SERVICE TYPE                               */
    @69    PREC     $1. /* PRECISION (0=LEAST;9=MOST)                 */
    @70    NADR      1. /* NUMBER OF ADDRESS RANGES FOR THIS PCODE    */
 /* FOLLOWING 4 FIELDS ARE NOT PRESENT IN THE GEOPROB FILE:              */
   /* @77  CODER     $3. /* CODER: 'R3A'=GEORES3A MAY 1998 PCCF         */
   /* @81  CPCCODE   Z4. /* CANADA POST COMMUNITY SEQUENCE CODE          */
   /* @93  CSIZE     1.  /* COMMUNITY SIZE CODE (BASED ON CMA-CA POP96)  */
   /* @95  QAIPPE    1.; /* UBCINE QUINTILE (IPPE, QTILES WITHIN CMA-CA) */
 /* FOLLOWING 3 FIELDS ONLY PRESENT IN GEOPROB FILE:                     */
   @  72  ADR    $50. /* BLDG NAME/EA CMT (IF APPL), STREET ADR, CITY */
   @ 123  CSDNAME $8. /* FIRST 8 CHARACTERS OF CSD NAME               */
   @ 131  CSDTYPE $2.;/* CSDTYPE WITH '*'  REPLACING TRAILING BLANK   */
```

The dataset GEOPROB is sorted first by PROB, then by RESFLG, DMT (or by DMTDIFF if DMT='Z'), PCODE, CSD, FEDEA and ID. That ensures that records with similar types of problems will be grouped together, which will facilitate corrections.

APPENDIX C:
EXPLANATION OF FIELDS AND CODES
APPEARING IN THE OUTPUT FILES AND PRINTOUTS

Except as noted, the following fields appear on both of the output files (HLTHOUT and GEOPROB) produced by *PCCF+*. When the same field appears on both files, it does *not* necessarily appear in the same position.

Identification (ID)

```
@  1 ID     $CHAR12.  /* ID OR REGIST NUMBER (AS INPUT) */
```

Record identification. This field will appear exactly as read in from the HLTHDAT file, including leading or trailing blanks, if any, plus all numbers, letters and special characters. The ID can be any combination of alphabetic, numeric or other characters.

Postal Code (PCODE)

```
@ 13 PCODE   $CHAR6.  /* POSTAL CODE (ANANAN) */
```

Postal code. The first three characters of the postal code represent the Forward Sortation Area (FSA). The last three characters represent the Local Delivery Unit (LDU). A zero (0) in the second position of the postal code indicates service from a *rural* post office. Rural route services and suburban route services are also provided from *urban* post offices (where the second position of the postal code is not 0), in which cases the PCCF will show a Delivery Mode Type (DMT) of H (rural route service) or T (suburban route service).

Lower case alphabetic characters in the postal code field will be converted to upper case prior to matching.

If the province of residence is known (but nothing else), then the first letter of the postal code should correspond to the first letter for that province as assigned by Canada Post (for example, use B for a Nova Scotia resident of unknown address).

Residence Flag on Postal Code if DMT is E, G or M (RESFLG)

```
@ 19  RESFLG  $1. /* RESIDENCE FLAG ON PCODES IF DMT=E,G,M:    */
                  /* ='@' FOR POSSIBLE RESIDENCE              */
                  /* ='-' FOR IMPROBABLE RESIDENCE            */
                  /* ='?' IF DMT=E,G,M BUT RES UNDETERMINED   */
                  /* =' ' IF DMT NOT IN (E,G,M)               */
```

If the delivery mode type is E, G or M, then RESFLG indicates postal codes for possible or improbable residence addresses, or postal codes for which the residential or non-residential nature is undetermined. If the DMT is not in E, G or M, then RESFLG will be blank.

Province, Census Division and Census Subdivision (PRCDCSD)

This field is composed of three subfields:

```
@ 20   PR      Z2.     /* PROVINCE CODE           */
@ 22   CD      Z2.     /* CENSUS DIVISION CODE    */
@ 24   CSD     Z3.     /* CENSUS SUBDIVISION CODE */
```

The form of this field tells you how much is known, and how much is unknown about each of the three subfields. The output will have one of the following forms (where each "n" represents a number from 0 through 9):

nnnnnnn	PR CD and CSD known
nnnn999	PR and CD known, CSD unknown
nn00999	PR known, CD and CSD unknown
9900999	PR CD and CSD unknown

See the 1996 *Standard Geographical Classification* (SGC) for lists of valid codes for PR PRCD and PRCDCSD. A missing CD is indicated by 00 (since 99 is a legitimate CD code in northern Quebec); other missing fields for SGC are filled with '9's.

Census Metropolitan Area/Census Agglomeration and Census Tract (CMACT)

This field is composed of two subfields:

```
@ 28   CMA     Z3.     /* CMA OR CA CODE */
@ 32   CT      Z6.2    /* CENSUS TRACT (000=NOT APPL;999=MISSING) */
```

The form of this field tells you how much is known, and how much is unknown about each of the subfields. The output will have one of the following forms (where each "n" represents a number from 0 through 9):

000 000.00	Not in a CMA or CA
nnn nnn.nn	CMA/CA with urban Census Tracts
nnn 999.99	CMA/CA with urban Census Tracts, but CT unknown
999 999.99	CMA/CA unknown, and CT unknown (if any)

EA Collective Dwelling Type (EACOLL)

```
@ 38  EACOLL  $1. /* EA COLLECTIVE DWELL TYPE (' '=NOT APPL)    */
                  /* 1=HOTELS,ETC;SCHOOL RES;Y&HOSTELS;CAMPGRND */
                  /* 2=WORK CAMPS;MERCHANT MARINE               */
                  /* 3=RELIGIOUS INSTITUTIONS                   */
                  /* 4=ORPHANAGES AND CHILDREN'S HOMES          */
                  /* 5=NURS&OLD AGE HOMES, CHRONIC CARE;SRS RES */
                  /* 6=HOSPITALS, PSYCHIATRIC, PHYS HANDICAPPED */
                  /* 7=HUTTERITE COLONIES                       */
                  /* 8=JUVENILE DELINQUENT HOMES, JAILS         */
                  /* 9=MILIT CAMPS, SINGLE QUARTERS, ARMY/NAVY  */
                  /*  =EA NOT COLLECTIVE DWELLING               */
                 /* H=EA NOT COLLECTIVE BUT PCODE FOR HOSPITAL */
```

If the enumeration area (EA) is composed of a single collective dwelling or group of collective dwellings, then the EACOLL field will be coded from 1 through 9, as indicated above; otherwise this field will be blank. The classification by type is that used for the census, and does not necessarily correspond to that used by the Health Statistics Division or by provincial or territorial authorities.

Federal Electoral District and census Enumeration Area (FEDEA)

```
@ 39   FEDEA   Z6.     /* FED ELECT DISTRICT/ENUMERATION AREA */
```

Federal Electoral District and census Enumeration Area. If missing, FEDEA will be set to 999999. If an exact match to the PCCF was not possible, but the postal code indicated an urban FSA, then the FEDEA may have been imputed proportionally to the population using that FSA (SOURCE=I). Otherwise (when SOURCE=3, 2 or 1), the FEDEA will always be 999999, for then it is not possible to derive the FEDEA from only the first 2 or 3 characters of the postal code.

Enumeration Area Comment Flag (EACMTFLG)

```
 @ 45 EACMTFLG $1. /* EA COMMENT FLAG:                              */
                   /* ='+' IF EA COMMENT AVAILABLE                 */
                   /* ='*' IF AVAIL &  SHOWN IN GEOPROB ADR FIELD */
```

In the HLTHOUT file, the enumeration area comment flag will be '+' if the enumerator's comments are available (see file G96EACMT), or blank otherwise. In the GEOPROB file, a '+' will be reset to '*' if the comment is shown in the address (ADR) field.

Beginning with the following fields, the record layout of the GEOPROB file differs from that of the HLTHOUT file. Where fields are common to both files, only the layout for the HLTHOUT file is shown as program lines, although differences in the GEOPROB file may be mentioned in the field description and shown within square brackets.

Latitude and longitude (LAT LONG)

```
 @ 46   LAT     Z8.     /* LATITUDE  DEGREES(2)+DECIMALS(6) */ [@ 46 LAT  Z2. on GEOPROB file]
 @ 53   LONG    Z9.     /* LONGITUDE DEGREES(3)+DECIMALS(6) */ [@ 48 LONG Z2. on GEOPROB file]
```

Latitude and longitude. If the geographic codes were derived from the full 6 characters of the postal code, then the latitude and longitude shown refer to enumeration area or blockface coordinates. In cases where there was no exact match to the PCCF (UNIQ, DUPS or WCF), but where the first 2 or 3 characters of the postal code (FSA12 or FSA) were, the latitude and longitude shown will be the average latitude and longitude of all postal codes in that FSA or aggregate of FSAs. The latter are clearly only an approximate locations, so the corresponding distance calculations will also be only approximate. If the first two characters of the postal code were invalid, then latitude and longitude will be unknown, and each field will contain a single period ("."), which indicates a missing numerical value. Exceptionally for these two fields, we did not use 99999999 and 999999999 to indicate missing values, since those would have been taken as legitimate values for the distance calculations, thus resulting in extreme distances, rather than missing distances. Note that in the GEOPROB file, in order to conserve space only two places after the implied decimal are shown.

Designated Place (DPL)

```
 @ 64  DPL   Z3. /* DESIGNATED PLACE (999=UNKN;000=NOT APPL) */
[@ 57  DPL   Z3. on GEOPROB file]
```

The Designated Place (DPL) field is for a new submunicipal level geography which is new with the 1996 census. In practice, DPLs have been defined--only in some provinces, as a group of EAs which refer to an unincorporated place within a Census Subdivision (CSD). Note that because DPLs mostly occur in areas served by rural postal codes (where a single postal code serves to a group of EAs), such areas are difficult or impossible to define with reasonable accuracy in terms of postal codes alone.

Diagnostic flags (DMTDIFF, DMT, PROB, SOURCE, NSCD, NCD, RPF, SERVE, PREC, NADR)

Note: There are now 10 characters (with no spaces between them) for diagnostic flags on both the HLTHOUT and GEOPROB files. These diagnostic flags are for DMTDIFF, DMT, PROB, SOURCE, NCSD, NCD,RPF,SERV,PREC and NADR. In addition, the GEOPROB file and printout will show truncated address information (if applicable), Canada Post Community Name or Census Division Name, and Census Subdivision Name and Census Subdivision Type (if known or estimated from partial matching).

Different Delivery Mode Type (DMTDIFF)

```
 @ 67   DMTDIFF $1.                    /* PREVIOUS OR ALTERNATE DMT IF DIFFERENT */
[@ 61 DMTDIFF $1. on GEOPROB file]     /* (? OR N=UNKNOWN;BLANK=NOT APPL) */
```

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).

Delivery Mode Type (DMT)

```
 @ 68   DMT     $1.     /* DELIVERY MODE TYPE */ [@ 62 DMT $1. on GEOPROB file]
```

The Delivery Mode Type is a single character which will be W if delivery is from a rural post office, or will be another alphabetic character if delivery is from an urban post office, or 9 if DMT is missing or not applicable. The Delivery Mode Type is determined by Canada Post, except that, beginning with Version 3 of *PCCF+*, W is always used in place of blank for delivery from a rural post office.

W Rural postal codes (regardless of type of service) now always have a DMT of W. Where more than 1 CSD is served by the rural post office, this will result in a Note to that effect on the GEOPROB 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/address, to see if they refer to a legitimate residence or office location. In most cases, the EGMRES field will indicate whether the postal code is probable or improbable as a place of residence. The building name and brief address are shown on the GEOPROB file. The legitimacy of a postal code 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/address, to see if they refer to a legitimate residence or office location. In most cases, the EGMRES field will indicate whether the postal code is probable or improbable as a place of residence. The building, company or institution name and brief address will be shown on the GEOPROB file. The legitimacy of postal codes 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 for a nursing home may be reasonable in regards to coding the place of usual residence on a death record, but it would be highly suspicious on a birth record.

Special note concerning Delivery Mode Types H, J, K, M, R and T: Except on rare occasions, it is no longer 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 post office counter), K (pick-up from group of post office boxes), or T (suburban service delivery). Most postal codes with those DMTs can now be assigned a full set of geographic codes by reference to the WCF. That also applies to many postal codes with DMT of M (pick up from a single large post office box) and R (miscellaneous services; no longer used by Canada Post).

H Rural route delivery from urban post office. For most rural routes, the WCF shows the 1996 Census 2A population weights associated with each PCODE/PRFEDEA combination. As rural routes serve large areas, more than one CSD or CD may be linked to a postal code with this DMT, in which case the record will be output to the GEOPROB file with a Note to that effect. If the SOURCE is not equal to 'C', then only PR and CMA will be imputed from FSA.

J General delivery (poste restante). Residence location may be available from census data (WCF). Otherwise, this DMT will result in an Error, and the only geographic codes assigned would be based on "most likely" values for the FSA.

K Group of post office boxes. Residence location may be available from census data (WCF). Otherwise, this DMT will result in an Error, and the only geographic codes assigned would be based on "most likely" values for the FSA.

M Single post office box. If present on the WCF, will be fully coded. In most cases, the EGMRES field will indicate whether the postal code is probable or improbable as a place of residence. The building, company or institution name and brief address will be shown on the GEOPROB file. If not present on the WCF, postal codes with this DMT will result in an Error, since the PCCF only links postal codes with this DMT to post office location. In that case the only geographic codes which could be assigned would be based on "most likely" values for the FSA.

R Miscellaneous delivery services. Residence location may be available from census data (WCF). Otherwise, this DMT will result in an Error, as the regular PCCF only links these to post office location, and the only geographic codes which could be assigned would be based on "most likely" values for the FSA. DMT R is no longer used by Canada Post, but it may appear in the field for previous DMT.

T Suburban service delivery (rare). Residence location may be available from census data (WCF). Otherwise, this DMT will result in an Error, as the regular PCCF only links these to post office location, and the only geographic codes which could be assigned would be based on "most likely" values for the FSA.

DMT=X is only linked to post office location, and thus results in an Error message as well as output to the GEOPROB file. However, since in such cases the first three characters of the postal code are known to be valid, then a "most likely" PR and CMA may often be imputed and an average LAT and LONG for the FSA would be assigned by the programs.

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, and the only geographic codes which could be assigned would be based on "most likely" values for the FSA.

W Rural postal codes. Usually geography for records with rural postal codes will be derived from the Weighted Conversion File.

Z Retired postal codes. Usually the DMTDIFF field will show the previous DMT for retired postal codes. If so, the PROB 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 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 WCF, hence DMT is unknown. These will result in an Error message as well as output to the GEOPROB file. A partial set of geographic codes may still be assigned based on the first 1, 2 or 3 characters of the postal code.

Problem type code (PROB)

```
@ 69  PROB  1.  /* PROBLEM TYPE (INCREASING CONFIDENCE) */ [@ 63 PROB 1. on GEOPROB file]
```

The meanings of the numbers in this field are as follows:

0 Error: No match to PCCF (UNIQ, DUPS, or WCF).
1 Error: Linked to PO geography.

2 Warning: Non-residential. DMT=E, G or M and EGMRES=- (probable non-residential).
3 Warning: Business building (may not be a legitimate residence). DMT=E.
4 Warning: Commercial or institutional (check if legitimate residence). DMT=G or M.
5 Warning: Retired postal code (slight chance of DMT problem prior to retirement, if). DMT=Z.

6 Note: Multiple match to CSD. CSD assigned by random allocation among possible CSDs shown in PCCF, with equal weight to each EA served. No further action required.
7 Note: Multiple match to CSD. CSD assigned by random allocation among possible CSDs shown in WCF, based on distribution of population by postal code and EA at the time of the 1996 census (no further action required).
9 Not applicable (no error, warning or note). *Such records do not appear on the GEOPROB file or printout.*

The problem type codes (PROB) 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 worst type is shown.

Source of Geographic Codes (SOURCE)

```
@ 70  SOURCE  $1. /* SOURCE OF GEOGRAPHIC CODES AND LAT/LONG */ [@ 64 SOURCE $1. on GEOPROB file]
```

The possible values of this field are as follows:

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, or Z).
I Full geography was imputed from the first 3 characters of a postal code (when DMT=9 or M), using census population weights.
3 A partial set of geographic codes was assigned based on only the first 3 characters of this postal code. Average latitude and longitude of the FSA were assigned.
2 A partial set of geographic codes were assigned based on only the first 2 characters of this postal code. Average latitude and longitude of the FSA12 were assigned (if 90% certain). CT and FEDEA always set to missing values. All of the records with this SOURCE are due to unknown (non-existant) postal codes.
1 A province code was assigned based on only the first character of this postal code. No other geographic codes or latitude and longitude were assigned. All of the records with this SOURCE are due to unknown (non-existent) postal codes.
0 The first character of this postal code is not in the set used for Canadian postal codes. No geographic codes assigned.
V A full set of geographic codes and latitude/longitude were derived from an exact match to a PCCFUNIQ record for a postal code with an FSA of V1H or V9G, including geography from the period prior to the rebirth of those FSAs in their new locations. This SOURCE only occurs where the program R3xOLD or I3xOLD is used to recode British Columbia FSAs which were moved by Canada Post.

Coding Completing Summary Code (CCSUM)

In Version 3, this field is not present in either output file, but is calculated for frequency tables in the printouts. This field shows how many geographic codes were assigned. It is the sum over all of the coding completion variables, which each have a value of 1 if a given geographic code was assigned.

0 No geographic codes were assigned, or latitude and longitude.
1 One geographic code was assigned: a province code, with no latitude or longitude.
2 Two geographic codes were assigned: a province and Census Division or Census Metropolitan Area / Census Agglomeration code, plus an average latitude and longitude for the FSA or aggregate of FSAs.
3 Three geographic codes were assigned: province, Census Division and Census Subdivision; or province, Census Division and Census Metropolitan Area or Census Agglomeration, plus an average latitude and longitude for the FSA or aggregate of FSAs.
4 Four geographic codes were assigned: province, Census Division, Census Subdivision, and Census Metropolitan Area or Census Agglomeration, plus an average latitude and longitude for the FSA or aggregate of FSAs.
6 All six geographic codes were assigned: province, Census Division, Census Subdivision, Census Metropolitan Area or Census Agglomeration, Census Tract (if applicable) and Enumeration Area, plus the latitude and longitude of the Enumeration Area or blockface.

Number of Census Subdivisions (NCSD)

```
@ 71  NCSD  Z1. /* NUMBER CSD POSSIBLE AT THIS PCODE (1-9+) */ [@ 65 NCSD Z1. on GEOPROB file]
```

This field indicates the number of Census Subdivisions served in whole or in part by this postal code. A value of 9 indicates 9 or more. Most urban postal codes serve only one Census Subdivision.

Number of Census Divisions (NCD)

```
@ 72  NCD   Z1. /* NUMBER CD POSSIBLE AT THIS PCODE (1-9+) */ [@66 NCD Z1. on GEOPROB file]
```

This field indicates the number of Census Divisions served in whole or in part by this postal code. A value of 9 indicates 9 or more. Most urban postal codes serve only one Census Division.

Representative Point Flag (RPF)

```
@ 73  RPF  1. /* REPRESENTATIVE POINT FLAG                   */ [@67 RPF 1. on GEOPROB file]
              /* FOR LAT & LONG CENTROID:                    */
              /* 1=BLKFACE IN STREET NETWORK FILE (SNF) AREA */
              /* 2=EA IN SNF AREA                            */
              /* 3=EA IN NON-SNF AREA                        */
              /* 4=HISTORIC BLKFACE IN SNF AREA              */
              /* 7=EA (ANY AREA)--WHEN SOURCE='C' OR 'I'     */
              /* 8=AV LAT LONG FOR FSA--WHEN SOURCE = 3 2 1  */
              /* 9=MISSING                                   */
```

Service Type (SERV)

```
@ 74  SERV   1. /* SERVICE TYPE (1,2=WITH STREET ADR)          */ [@68 SERV 1. on GEOPROB file]
                /* 1=STREET ADR W/ LETTER CARRIER SERVICE      */
                /* 2=STREET ADR W/ ROUTE SERVICE               */
                /* 3=PO BOX                                    */
                /* 4=ROUTE SERVICE W/O STREET ADR              */
                /* 5=GENERAL DELIVERY                          */
                /* 9=UNKNOWN (WHEN SOURCE=I 3 2 1)             */
```

Precision (PREC)

```
@ 75  PREC  $1. /* PRECISION OF LAT LONG (0=LEAST;9=MOST)      */ [@69 PREC $1. on GEOPROB file]
                /* 9=1 BLKFACE; DMT IN (A B E G)                */
                /* 8=2+ BLKFACES; DMT IN (A B E G)              */
                /* 7=1  EA;       DMT IN (A B E G)              */
                /* 6=2+ EA'S;     DMT IN (A B E G)              */
                /* ABOVE SERVICE POINTS < 300 M DIST            */
                /*   SO EA'S ADJACENT AND FEW                   */
                /* 5=1+ EA'S;     DMT IN (H-Z)                  */
                /* 4=EA, ETC IMPUTED FROM FSA WITH POP WEIGHTS  */
                /* 3=PR CD CSD CMA CODES IMPUTED FROM FSA       */
                /* 2=PR CD CSD CMA CODES IMPUTED FROM FSA12     */
                /* 1=PR CD CSD CMA CODES IMPUTED FROM FSA1      */
                /* 0=NO GEOGRAPHIC CODING POSSIBLE (NOT EVEN PR) */
```

Number of Addresses (NADR)

```
@ 76  NADR Z1.;/* NUMBER ADRRESS RANGES FOR THIS PCODE (1-9+) */ [@70 NADR Z1. on GEOPROB file]
```

This field indicates the number of address ranges served by this postal code. A value of 9 indicates 9 or more. The address ranges may be on different streets. Only the first or last address range (if applicable) is shown in the problem file output and printout

The following two fields (CODER and CPCCODE) are not present on the GEOPROB file:

Coder (CODER)

```
@ 78  CODER  $3. /* CODER: R3A=GEORES3A MAY 1998 PCCF */ [ not on GEOPROB file]
```

The *PCCF+* program and version is indicated by the CODER field. For example, CODER I3A indicates that the GEOINS program was run using the May 1998 vintage of the PCCF. Information about the coder is necessary for interpretation of the Canada Post Community Code (CPCCODE), and for understanding why certain categories of postal codes were coded the way they were. Using the wrong program to do the coding (GEORES for office coding, or GEOINS for residential coding—the opposite of what was intended) could easily go undetected without this field.

Canada Post Community Code (CPCCODE)

```
@ 82  CPCCODE  Z4. /* CANADA POST COMMUNITY CODE (SEQUENTIAL)       */ [not on GEOPROB file]
                   /* WARNING: THIS CODE CHANGES WITH EACH VINTAGE  */
                   /* OF PCCF, SO MUST ONLY BE USED WITH CPCNAMES   */
                   /* FILE ASSOCIATED WITH ABOVE CODER              */
                   /* WILL BE MISSING IF SOURCE=C                   */
                   /* NOTE:  TO REGENERATE PROBLEM FILE FROM GEOG1: */
                   /*   IF PROB LT 5; MERGE TO EACMT LOOKUP CPCOMM  */
                   /*   CSDNAMES CDNAMES                            */
```

Canada Post Communities were numbered sequentially after arranging in alphabetical order within provinces and territories. The numbering of communities will clearly change anytime there is an addition, deletion of a community, or change in spelling of a community name. That is why the CPCCODE can only be interpreted if correctly paired with the corresponding list of communities. For example, CODERs R3A and I3A use the community list of June 1996; the use of a list from any other month or year would be meaningless.

HR Health Region

```
 @ 87 HR    $CHAR2. /* HEALTH REGION CODE (UNIQUE WITHIN PR) */
[@ 51 HR    $CHAR2.  on GEOPROB file]
```

Health regions are subprovincial areas defined by provincial departments of health. In some cases, those definitions may split enumeration areas between two or more health regions, but to simplify the coding here, each EA has been uniquely assigned to a single health region. Since each health region covers many EAs, 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 HR code is only unique within a given province. Where a province only uses a single digit to represent a health region, a zero has been added preceding that digit. Note that the definitions used were generally those in effect on January 1, 2000, but the definitions may be changed by provinces at any time, particularly in provinces without a long history of producing data by health region. See Appendix H1 for a summary of health regions by province and type, and Appendix H2 for a complete list of health regions.

Health District (SUB)

```
 @ 89 SUB $CHAR3. /* HEALTH DISTRICT CODE – UNIQUE WITHIN PR OR PR+HR (QC ONLY) */
[@ 53 SUB $CHAR3. on GEOPROB file]
```

Health districts are geographically-defined areas which are smaller than health regions. They are defined by several but not all provincial departments of health. In most but not all cases, health districts are subdivisions of health regions. However, in Prince Edward Island, health districts are defined without respect to health region boundaries. In Ontario, all health districts except two (Sudbury and Porcupine) completely respect health region boundaries, and even those two exceptions mostly respect the health region boundaries. In Saskatchewan, the relationship of health districts to health regions is still uncertain (as the boundaries are as yet not well known to Statistics Canada). In all cases, a health district code is only unique within a given province. In Quebec, the health district code is only unique within the province and health region. Where a province uses only two characters to represent a health district, the third character will be zero. See Appendix J1 for a summary of health districts by province and type, and Appendix J2 for a complete list of health districts. Note that for Version 3E of PCCF+, the health district codes for British Columbia and Saskatchewan are not shown.

The following 5 fields are not present on the GEOPROB file:

Community Size (CSIZE)

```
@ 93  CSIZE     1.  /* COMMUNITY SIZE CODE (BASED ON CMA-CA POP96): */ [not present on GEOPROB file]
                    /*  1=1,000,000+             */
                    /*  2=  500,000-999,999      */
                    /*  3=  100,000-499,999      */
                    /*  4=   10,000- 99,999      */
                    /*  5= < 10,000 OR NON-CMACA */
```

Community Size is defined in terms of the 1996 census population in each census metropolitan area or census agglomeration (CMA or CA), as shown above. Community Size 1 consists of Toronto, Montreal, Vancouver and Ottawa-Hull CMAs. Community Size 2 consists of Edmonton, Calgary, Quebec, Winnipeg and Hamilton CMAs. Community Size 3 includes all 16 other CMAs plus the 8 largest CAs. Community Size 4 includes all other CAs. Community Size 5—"rural and small town Canada"--includes all places not included in any CMA or CA. (i.e., places with an urban area population less than 10,000, plus rural areas).

Note that almost all records with a valid FSA (whether or not the rest of the postal code is valid) can be assigned to a CMA or CA, and thus to a CSIZE category.

Neighbourhood Income Quintile (QAIPPE)

```
@ 95  QAIPPE  1. /* NEIGHBOURHOOD INCOME QUINTILE (WITHIN CMA-CA): */ [not present on GEOPROB file]
                 /*  1=LOWEST INCOME QUINTILE        */
                 /*  5=HIGHEST INCOME QUINTILE       */
```

Neighbourhood Income Per Person Equivalent (IPPE) is a household size-adjusted measure of household income, based on 1996 census summary data at the EA level, and using person-equivalents implied by the 1996 low income cut-offs (LICOs). Note that the 1996 single person equivalents were 1.00 for 1 person, 1.25 for 2 persons, 1.55 for 3 persons, 1.93 for 4 or 5 persons, and 2.40 for 6 or more persons sharing the same household (regardless of age). For a description of how IPPE was calculated previously based on 1991 census summary data and single-person equivalents from the 1991 LICOs, see Ng et al (1993).

Within each CMA, CA or provincial residual area not in any CMA or CA, the EA average IPPE was used to rank all EAs, and then the population was divided into approximate fifths, thus creating community-specific income quintiles based on IPPE. The quintiles were defined within each area in order to better reflect the relative nature of this measure, to minimize the effect on household welfare of large differences in housing costs, and to ensure that each CMA or CA would have about an equal percentage of the population in each income quintile.

The following three fields (ADR, CSDNAME, CSDTYPE) are not present on the HLTHOUT file, they only appear on the GEOPROB file:

Building Name and Address (ADR)

```
 @ 72  ADR  $50.  /* BLDG NAME/EA CMT (IF APPL), STREET ADR, CITY */ [only on GEOPROB file]
```

This field shows either (1) a somewhat abbreviated building name (if applicable), plus a street address and Canada Post community name (if available), or an EA comment, or (2) a Canada Post community name (if available), followed by a colon (:) plus an abbreviated census division name (if available). The contents of this field are intended to provide the most useful written description of the exact location which can be shown more or less readably in 50 spaces. *This field only applies to problem records; it is not shown on the HLTHOUT file or printout.*

With respect to Canada Post community names, note that the service areas of postal communities are defined by Canada Post with little regard for municipal boundaries established by local authorities, and that is frequently a source of confusion for geographic coding. Also, many smaller rural municipalities have no post office of their own, so those municipal names will appear only rarely in mailing addresses.

The census division name (if present) shows the first 19 characters of the alphabetic name corresponding to the PRCD code of the *Standard Geographical Classification*. If the CD field is missing (00), the 19 characters immediately following the colon will be blank. If a building name and address plus Canada Post Community name are shown instead, then no Census Division Name will be shown.

Census Subdivision Name (CSDNAME)

```
 @123  CSDNAME $8.     /* FIRST 8 CHAR OF CSD NAME */ [only on GEOPROB file]
```

This field contains the first 8 characters of the Census Subdivision Name. If the Census Subdivision (the last three positions of the PRCDCSD field) is missing (999), then the CSDNAME field will be blank. *The CSDNAME field is shown only on the GEOPROB file and printout; it does not appear on the HLTHOUT file or printout.*

Census Subdivision Type (CSDTYPE)

```
@131 CSDTYPE  $2.  /* CSD TYPE WITH * REPLACING TRAILING BLANK */ [only on GEOPROB file]
```

This field contains a one or two character abbreviation of the Census Subdivision Type. To facilitate uploading and downloading, if the second (and last) character of this field is blank, the blank will be replaced by an asterisk in order to ensure that every record will be of the same fixed length. (Uploading and downloading utility programs frequently delete trailing blanks, which would otherwise produce variable record lengths for successive records. The asterisk at the end of each record ensures that this won't happen. *This field is shown only on the GEOPROB file and printout; it does not appear on the HLTHOUT file or printout.*

Distance (DISTANCE)

This field shows the distance (in km) from the latitude and longitude centroid of the Montreal Children's Hospital to the centroid of the HLTHOUT record. If latitude and longitude of the HLTHOUT record could not be determined (that is, if their values were "."), then DISTANCE will be missing (indicated by a single period ("."). *This field appears only on the printout of the HLTHOUT dataset. It is not written to the corresponding file*, since DISTANCE was calculated merely as an illustration of how the latitude and longitude information can be used. For more details on the use of latitude and longitude for the calculation of distances using the PCCF, see Ng E and Wilkins R, How far is it to the nearest hospital? *Health Reports* 1993;5(2):157-177.

Message (MESSAGE)

A brief explanatory message corresponding to the problem type code (PROB) appears in the summary table and on the GEOPROB printout only; it does not appear in the GEOPROB or HLTHOUT files.

```
-------------------------------------------------------------------------
                      /* BRIEF MESSAGE DESCRIBING PROBLEM */
-------------------------------------------------------------------------
0  'ERROR:   NO MATCH TO PCCF----CHECK PCODE/ADDRESS &OR CODE MANUALLY';
1  'ERROR:   LINKED TO PO GEOG---CODE MANUALLY IF RESID ADD AVAILABLE';
2  'WARNING: NON-RESIDENTIAL-----CHECK PCODE/ADDRESS (LEGITIMATE RES?) ';
3  'WARNING: BUSINESS BLDG-------CHECK PCODE/ADDRESS (LEGITIMATE RES?)';
4  'WARNING: COMMERC/INSTITU-----CHECK PCODE/ADDRESS (LEGITIMATE RES?)';
5  'WARNING: RETIRED PCODE-------CHECK PCODE/ADDRESS IF OLD DMT UNKNOWN';
6  'NOTE:    MULT MATCH TO CSD---DISTRIBUTED AMONG APPLIC FEDEA/BLKF';
7  'NOTE:    MULT MATCH TO CSD---DISTRIBUTED BY POP WEIGHTS OBSERVED';
9  'NO PROB (ERR,WARN,NOTE)------NO ACTION REQUIRED';
-------------------------------------------------------------------------
```

The problem type codes (PROBs) and corresponding messages (MESSAGEs) 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 worst type is shown. The "no problem" message only appears on the summary table, since records with no problems (error, warning or note) are not part of the GEOPROB file or printout.

The following three fields are only present on the output from R3xOLD and I3xOLD, which are used for assigning the former geographic codes to British Columbia FSAs which have now been moved by Canada Post:

Birth date of postal code as used in this location (BTHDATC)

```
@ 97 BTHDATEC $CHAR6. /* YYYYMM OF BIRTH DATE OF PCODE */
[only present on OLDCODES and HLTHOUT2 files produced by R3xOLD or I3xOLD]
```

Retirement date of postal code as used in this location (RETDATC)

```
@ 104 RETDATEC  $CHAR6.  /* YYYYMM OF RETIREMENT DATE OF PCODE */
[only present on OLDCODES and HLTHOUT2 files produced by R3xOLD or I3xOLD]
```

Postal code vintage (PCVDATC)—for alternate programs R3xOLD, I3xOLD only

```
@111 PCVDATC $CHAR6. /* YYYYMM OF POSTAL CODE VINTAGE (AT THIS LOCATION) */
[from user input and written to OLDCODES and HLTHOUT2 files produced by R3xOLD or I3xOLD]
```

In this context, vintage refers to the year and month when the postal code was reported or generated (looked up). In most cases, the date of the event will be a reasonable proxy for the vintage of the postal code. However, if postal codes were missing when the data were collected, and subsequently looked up or generated (manually or by computer), then the vintage of the postal code may be months or even years later than the date of the event. Note that it is common for retired postal codes to remain in use for many months or even years after their retirement by Canada Post. However, it is safe to assume that newly created postal codes are not reported until after the postal code birth date indicated by Canada Post.

This field is created by user input and is only present in the OLCODES and HLTHOUT2 files produced by the supplemental programs R3xOLD and I3xOLD which are used to assign the old geographic coding to British Columbia FSAs V1H and V9G. Postal codes with those two FSAs were first retired and then subsequently moved and reused by Canada Post. V1H was moved about 400km south beginning 1 July 1997, while V9G was moved about 100km south beginning 1 April 1999. Beginning with Version 3E, the regular programs GEORES3x and GEOINS3x print a warning if your data contain either of the two FSAs which were moved. If your data do not include postal codes with those FSAs, or if your data only contains postal codes of vintage 19990401 or later, use of the alternate programs is unnecessary and will have no effect on the coding produced by the regular programs GEORES3x and GEOINS3x.

APPENDIX D:
SAMPLE OUTPUTS
FROM THE *PCCF+* PACKAGE

Summary table of results of the automated geographic coding

SUMMARY OF AUTOMATED CODING RESULTS USING GEOCODES/PCCF VERSION 3

RECORDS	PERCENT	PROB	MESSAGE	ACTION
3996	100.00	TOTAL RECORDS INPUT FROM HLTHDAT (ID + PCODE)		
131	3.28	0 ERROR: NO MATCH TO PCCF	---CHECK PCODE/ADDRESS &OR CODE MANUALLY	
5	0.13	1 ERROR: LINKED TO PO GEOG	--CODE MANUALLY IF RESID ADD AVAILABLE	
3	0.08	2 WARNING: NON-RESIDENTIAL	--CHECK PCODE/ADDRESS (LEGITIMATE RES?)	
3	0.08	3 WARNING: BUSINESS BLDG	----CHECK PCODE/ADDRESS (LEGITIMATE RES?)	
241	6.03	4 WARNING: COMMERC/INSTITU	--CHECK PCODE/ADDRESS (LEGITIMATE RES?)	
65	1.63	5 WARNING: RETIRED PCODE	----CHECK PCODE/ADDRESS IF OLD DMT UNKNOWN	
1	0.03	6 NOTE: MULT MATCH CSD-PCCF	-DISTRIBUTED AMONG APPLIC FEDEA/BLKF	
535	13.39	7 NOTE: MULT MATCH CSD-WCF	--DISTRIBUTED BY POP WEIGHTS OBSERVED	
3012	75.38	9 NO PROB (ERR,WARN,NOTE)	---NO ACTION REQUIRED	
8	0.20	NOT CODED AT ALL		
39	0.98	PARTIALLY CODED TO PR ONLY		
2	0.05	PARTIALLY CODED TO PR + (CD OR CMA)	--& APPROX LAT LONG	
12	0.30	PARTIALLY CODED TO PR+CD+CMA	--AND APPROX LAT LONG	
8	0.20	PARTIALLY CODED TO PR+CD+CMA+CSD	--AND APPROX LAT LONG	
3927	98.27	FULLY CODED TO PR+CD+CMA+CSD+CT+EA	--AND EA/BLKFACE LAT LONG	

Sample output from the HLTHOUT dataset

GEOCODES/PCCF VERSION 3 -- SAMPLE OUTPUT FROM THE HLTHOUT DATASET (.GEOG1 FILE)

ID	PCODE	PRCDCSD	CMA	CT	FEDEA	LAT	LONG	DPL	DIAG	VER	COMM	HRSUB	C	Q
101022	H2V2S8	2466065	462	361.00	049307	+45511042073615008		000	B9F11119.	R3E	3062	06404	1	5
101023	H2E2P8	2466025	462	241.00	050015	45555092073615960		000	A9F11119.	R3E	2987	06706	1	1
101024	H2T2R6	2466025	462	163.00	049410	45519985073591519		000	A9F11119.	R3E	2987	06504	1	4
101025	G011K0	2400999	999	999.99	999999	47422386069839296		999	902..892.	R3E	.		.	.
101026	G0W1M0	2491015	000	000.00	058002	48333309072139908		000	W7C217553	R3E	2511	02202	5	3
101027	G0W1V0	2491005	000	000.00	058274	48260250072184448		000	W9C117453	R3E	2783	02202	5	3
101028	G0W2E0	2492040	000	000.00	058158	48877247072493439		000	WZ5C11745.	R3E	3018	02203	5	2
101029	G0W2E0	2492040	000	000.00	058158	48877247072493439		000	WZ5C11745.	R3E	3018	02203	5	2
101033	G8H1B9@	2491025	000	000.00	6058012	48507130072220871		000	G4F11317.	R3E	3196	02202	5	.
101034	G0W3B0	2490804	000	000.00	014330	48667118074935432		000	W9C11755.	R3E	3046	04101	5	1
101035	G8H3K5	2491025	000	000.00	058052	48523762072254112		000	B9F11317.	R3E	3196	02202	5	5
101036	G8K1A5	2491040	000	000.00	058064	48652176072450424		000	B9F11317.	R3E	3353	02202	5	3
101037	H4E2R7	2466025	462	090.00	033010	45445814073594389		000	A9F11119.	R3E	2987	06204	1	2
101038	H7X3H7	2465005	462	652.03	036105	45530800073805549		000	A9D111282	R3E	2853	13803	1	4
101039	H7A1G2	2465005	462	625.01	021301	45674659073574378		000	A9F11119.	R3E	2853	13801	1	4
101040	H7R5S9	2465005	462	656.01	036255	+45562023073860413		000	B9F11217.	R3E	2853	13807	1	4
101041	H7V1E8	2465005	462	647.02	036014	45535340073736049		000	A9F11119.	R3E	2853	13803	1	5
101048	H3M3C3	2466025	462	268.01	060462	45534630073678001		000	AZ5F11217.	R3E	2987	06606	1	2
101049	H2E2H2	2466025	462	243.00	050058	45550796073614639		000	A9F11119.	R3E	2987	06706	1	1
101050	H1E4R4	2466025	462	290.05	003260	45633244073608221		000	A9F11119.	R3E	2987	06301	1	2
101051	H1B3J4	2466025	462	582.02	045311	45647033073504562		000	A9F11119.	R3E	3107	06302	1	3
101052	H1G6B7	2466020	462	610.01	011160	45603730073617163		000	B9F11119.	R3E	2990	06601	1	1
101053	H2K3C4	2466025	462	037.00	035410	45532032073552215		000	A9F11119.	R3E	2987	06701	1	1
101054	G4V1P8	2400999	999	999.99	999999	49392898066568543		999	902..892.	R3E	.		.	.
101055	H1T1Y8	2466025	462	198.00	024213	45565012073572876		000	A9F11119.	R3E	2987	06306	1	1
101056	H2W1X4	2466025	462	138.00	061770	45518830073586170		000	A9F11119.	R3E	2987	06504	1	2
101057	H4C1L9	2466025	462	084.00	061017	45470570073592721		000	A9F11119.	R3E	2987	06505	1	2
101061	H4C3L3	2466025	462	084.00	061018	45468988073595116		000	B9F11119.	R3E	2987	06505	1	1
101062	H1W3B6	2466025	462	022.00	024004	45542954073540814		000	A9F11119.	R3E	2987	06305	1	1
101308	J3B4	2456080	459	013.00	064167	45326530073283653		000	90I11994.	R3E	.	16406	4	5
101309	J3R4G8	2453045	454	000.00	055259	46027279073149139		000	A9F11317.	R3E	3999	16201	4	2
101310	J3G2T1	2457040	462	901.01	013266	45570990073206295		000	A9F11119.	R3E	2347	16204	1	3
101311	J7E2K6	2473010	462	705.00	009167	45648978073860433		000	A9F11119.	R3E	3686	15102	1	5
101312	G0R3Y0	2418030	000	000.00	007168	46734612070360283		000	W9C117455	R3E	3504	12704	5	1
101313	G9N3W8	2436030	444	000.00	067163	46559612072743698		000	A9F11317.	R3E	3709	04103	4	1
101314	H1X3E5	2466025	462	201.00	5059317	+45557782073579214		000	A9F11119.	R3E	2987	06306	1	.
101318	J2K2H4	2446080	437	000.00	012221	45207294072721519		000	A9F11317.	R3E	2491	16401	4	5
101319	G0C2H0	2402025	000	000.00	023015	48370258064599792		000	W7C317453	R3E	3063	11203	5	5
101321	J2C1K1	2449057	447	000.00	020121	45885448072488274		000	A9F11317.	R3E	2541	04202	4	4

Sample printout from the GEOPROB dataset GEOCODES/PCCF VERSION 3

PARTIAL PRINT OF GEOPROB FILE (ERRORS & WARNINGS, BUT NO NOTES)

```
ID          PCODE  PRCDCSD CMA CT     FEDEA  L L  HRSUB DPL DIAG       BLDG NAME/EACMT, STREET ADR (OR CPCOMM:CDNAME)     CSDNAME TY
-------------------------------------------------------------------------------------------------------------------------------------
0 ERROR:  NO MATCH TO PCCF---CHECK PCODE/ADDRESS &OR CODE MANUALLY
-------------------------------------------------------------------------------------------------------------------------------------
104685      G5L8R* 2410045 404 000.00 057163 4806 01101 000  90I31994.                                :RIMOUSKI-NEIGETTE   RIMOUSKIV*
101140      G7J5V8 2494050 408 005.00 019202 4807 02106 000  90I11994.                                :LE FJORD-DU-SAGUENA CHICOUTIV*
104398      J0SIG0 2469030 000 000.00 006016 4507 16102 000  90I92994.                                :LE HAUT-SAINT-LAURE TRES-SAIP*
103090      J1G1EY 2443020 433 111.03 069354 4507 05107 000  90I21994.                                :SHERBROOKE          FLEURIMOV*
102756      J9X1Y0 2486043 485 000.00 070204 4807 08103 000  90I72994.                                :ROUYN-NORANDA       ROUYN-NOV*
101278      P4M1S4 3556027 586 000.00 999999 4808 15056 999  902..892.                                :COCHRANE DISTRICT   TIMMINS C*
103479      11225  9900999 999 999.99 999999  . .       999  900..990.                                :                            *
-------------------------------------------------------------------------------------------------------------------------------------
1 ERROR: LINKED TO PO GEOG--CODE MANUALLY IF RESID ADD AVAILABLE
-------------------------------------------------------------------------------------------------------------------------------------
103433      H3E1J9 2466999 462 999.99 999999 4507       000 KZ1I11893.                               :COMMUNAUTE-URBAINE-         *
104686      G5L5T1@2410999 404 000.00 999999 4806       000  M1I318931 CENTRE HOSP REG DE RIMOUSKI BOX 3150 SUCC BUR RIMO         *
101381      G8B5W3@2493999 410 000.00 999999 4807       000  M1I118931 HOTEL-DIEU ALMA BOX 1300 SUCC BUREAU-CHEF ALMA             *
102786      G8B5W3@2493999 410 000.00 999999 4807       000  M1I11893. HOTEL-DIEU ALMA BOX 1300 SUCC BUREAU-CHEF ALMA             *
103687      J3Y5T4@2458999 462 999.99 999999 4507       000  M1I218931 BASE DES FORCES CANADIENNES RECEPTION DU COUR SAIN         *
-------------------------------------------------------------------------------------------------------------------------------------
2 WARNING: NON-RESIDENTIAL PCODE--CHECK PCODE/ADDRESS (LEGIT RES?)
-------------------------------------------------------------------------------------------------------------------------------------
102836      G1R5N5-2423999 421 999.99 999999  . .       999  E2F111191 IMMEUBLE COMMERCIAL 79 RENE-LEVESQUE BOUL E QUEBEC         *
103672      J9L3J1-2479999 000 000.00 999999  . .       999  E2F113171 PLAZA PAQUETTE 939 DR ALBINY-PAQUETTE BOUL MONT-LA         *
103916      H4G1T5-2466999 462 999.99 999999  . .       999  G2F111191 CHAMPLAIN DODGE CHRYSLER LTEE 3350 WELLINGTON VERD         *
-------------------------------------------------------------------------------------------------------------------------------------
3 WARNING: BUSINESS BLDG----CHECK PCODE/ADDRESS (LEGITIMATE RES?)
-------------------------------------------------------------------------------------------------------------------------------------
103331      H7C2J1 2465005 462 627.00 021263 4507 13801 000 EZ3F11119. ST-VINCENT-DE-PAUL           :LAVAL               LAVAL   V*
101429      H3Z3C5@2466030 462 351.00 061155 4507 06503 000  E3F111191 IMMEUBLE A APPARTEMENTS 1 WOOD AV WESTMOUNT       WESTMOUNV*
103791      J7Y4X8@2475035 462 788.005034115+4507 15104 000  E3F113171 ALICE ET ROGER 150 103E AV LAFONTAINE              LAFONTAIVL
-------------------------------------------------------------------------------------------------------------------------------------
4 WARNING: COMMERC/INSTITU--CHECK PCODE/ADDRESS (LEGITIMATE RES?)
-------------------------------------------------------------------------------------------------------------------------------------
101122      G1C1Z2@2423005 421 340.025046465+4607 03401 000  G4F114191 CENTRE SAINT-AUGUSTIN 2135 DE LA TERRASSE-CAD BEAU BEAUPORTV*
104572      G1C3X7@2423005 421 300.003046361+4607 03401 000  G4F111191 MAISON GEN DES SOEURS DE LA CHARITE 2655 LE P BEAU BEAUPORTV*
101962      G1J2G3@2423005 421 300.006046360+4607 03401 000  G4F11217. CENTRE HOSPITALIER ROBERT-GIFFARD 2601 DE LA QUEBE BEAUPORTV*
101696      G1K5N1@2423015 421 032.006031001+4607 03202 000  G4F112171 HOPITAL GENERAL 260 LANGELIER BOUL QUEBEC          NOTRE-DAP*
101727      G1S4M3@2423020 421 103.005041257+4607 03102 000  G4F111191 SAINT BRIGID'S HOME INC 1645 SAINT-LOUIS CH SILLER SILLERY V*
102532      H1G6L7@2466020 462 610.075011354+4507 06601 000  G4F11119. RESIDENCE PAUL LIZOTTE 6850 GOUIN BOUL E MONTREAL- MONTREALV*
-------------------------------------------------------------------------------------------------------------------------------------
5 WARNING:  RETIRED PCODE----CHECK PCODE/ADRESS IF OLD DMT UNKNOWN
-------------------------------------------------------------------------------------------------------------------------------------
```

[r:\xwdoc2\geoprob.ts2]

APPENDIX E

CENSUS METROPOLITAN AREAS AND CENSUS AGGLOMERATIONS IN NUMERICAL ORDER, 1996 CENSUS CLASSIFICATION WITH INDICATION IF AREA IS CENSUS TRACTED

Note: If CMA/CA is tracted, CT=999.99 (census tract unknown); if CMA/CA is not tracted, CT=000.00 (census tract not applicable).

All CMAs are tracted, but only the larger CAs. Smaller CAs are generally not tracted.

APPENDICE E

RÉGIONS MÉTROPOLITAINES DE RECENSEMENT ET AGGLOMÉRATIONS DE RECENSEMENT EN ORDRE NUMÉRIQUE, SELON LA CLASSIFICATION DU RECENSEMENT DE 1996 AVEC INDICATION SI LES SECTEURS DE RECENSEMENT S'APPLIQUENT

Nota: Si les SR s'appliquent à la RMR/AR, SR=999.99; sinon, SR=000.00 (SR ne s'applique pas).

Toutes les RMR et les plus grandes AR ont des SR. Les plus petites AR n'en ont pas.

APPENDIX E Census Metropolitan Areas and Census Agglomerations in numerical order, 1996 Census classification, with indication if area is census tracted

APPENDICE E Régions métropolitaines de recensement et Agglomérations de recensement en ordre numérique, selon la classification du recensement de 1996, avec indication si les secteurs de recensement s'appliquent

CMA/CA RMR/AR	CT SR	Type Type	Name Nom	Tracted Secteurs
000	000.00	Not in CMA/CA -- Non dans une RMR/AR		
001	999.99	CMA/RMR	St. John's	CT/SR
010	000.00	CA/AR	Grand Falls-Windsor	
011	000.00	CA/AR	Gander	
015	000.00	CA/AR	Corner Brook	
025	000.00	CA/AR	Labrador City	
105	000.00	CA/AR	Charlottetown	
110	000.00	CA/AR	Summerside	
205	999.99	CMA/RMR	Halifax	CT/SR
210	000.00	CA/AR	Kentville	
215	000.00	CA/AR	Truro	
220	000.00	CA/AR	New Glasgow	
225	000.00	CA/AR	Cape Breton (Sydney)	
305	999.99	CA/AR	Moncton	CT/SR
310	999.99	CMA/RMR	Saint John	CT/SR
320	000.00	CA/AR	Fredericton	
328	000.00	CA/AR	Bathurst	
330	000.00	CA/AR	Campbellton	
335	000.00	CA/AR	Edmundston	
403	000.00	CA/AR	Matane	
404	000.00	CA/AR	Rimouski	
405	000.00	CA/AR	Rivière-du-Loup	
406	000.00	CA/AR	Baie-Comeau	
408	999.99	CMA/RMR	Chicoutimi - Jonquière	CT/SR
410	000.00	CA/AR	Alma	
411	000.00	CA/AR	Dolbeau	
412	000.00	CA/AR	Sept Îles	
421	999.99	CMA/RMR	Québec	CT/SR
428	000.00	CA/AR	Saint-Georges	
430	000.00	CA/AR	Thetford Mines	
433	999.99	CMA/RMR	Sherbrooke	CT/SR
435	000.00	CA/AR	Magog	
437	000.00	CA/AR	Cowansville	
440	000.00	CA/AR	Victoriaville	
442	999.99	CMA/RMR	Trois-Rivières	CT/SR
444	000.00	CA/AR	Shawinigan	
446	000.00	CA/AR	La Tuque	
447	000.00	CA/AR	Drummondville	
450	000.00	CA/AR	Granby	
452	000.00	CA/AR	Saint-Hyacinthe	
454	000.00	CA/AR	Sorel	
456	000.00	CA/AR	Joliette	
459	999.99	CA/AR	Saint-Jean-sur-Richelieu	CT/SR
462	999.99	CMA/RMR	Montréal	CT/SR
465	000.00	CA/AR	Salaberry-de-Valleyfield	
468	000.00	CA/AR	Lachute	

CMA/CA RMR/AR	CT SR	Type Type	Name Nom	Tracted Secteurs
480	000.00	CA/AR	Val-d'Or	
485	000.00	CA/AR	Rouyn-Noranda	
501	000.00	CA/AR	Cornwall	
502	000.00	CA/AR	Hawkesbury	
505	999.99	CMA/RMR	Ottawa - Hull	CT/SR
508	000.00	CA/AR	Smiths Falls	
512	000.00	CA/AR	Brockville	
515	000.00	CA/AR	Pembroke	
521	999.99	CA/AR	Kingston	CT/SR
522	999.99	CA/AR	Belleville	CT/SR
527	000.00	CA/AR	Cobourg	
528	000.00	CA/AR	Port Hope	
529	999.99	CA/AR	Peterborough	CT/SR
530	000.00	CA/AR	Lindsay	
532	999.99	CMA/RMR	Oshawa	CT/SR
535	999.99	CMA/RMR	Toronto	CT/SR
537	999.99	CMA/RMR	Hamilton	CT/SR
539	999.99	CMA/RMR	St. Catharines - Niagara	CT/SR
541	999.99	CMA/RMR	Kitchener	CT/SR
543	999.99	CA/AR	Brantford	CT/SR
544	000.00	CA/AR	Woodstock	
546	000.00	CA/AR	Tillsonburg	
547	000.00	CA/AR	Simcoe	
550	999.99	CA/AR	Guelph	CT/SR
553	000.00	CA/AR	Stratford	
555	999.99	CMA/RMR	London	CT/SR
556	000.00	CA/AR	Chatham	
557	000.00	CA/AR	Leamington	
558	000.00	CA/AR	Strathroy	
559	999.99	CMA/RMR	Windsor	CT/SR
562	999.99	CA/AR	Sarnia (Sarnia-Clearwater)	CT/SR
566	000.00	CA/AR	Owen Sound	
567	000.00	CA/AR	Collingwood	
568	999.99	CA/AR	Barrie	CT/SR
569	000.00	CA/AR	Orillia	
571	000.00	CA/AR	Midland	
575	999.99	CA/AR	North Bay	CT/SR
580	999.99	CMA/RMR	Sudbury	CT/SR
582	000.00	CA/AR	Elliot Lake	
584	000.00	CA/AR	Haileybury	
586	000.00	CA/AR	Timmins	
590	999.99	CA/AR	Sault Ste. Marie	CT/SR
595	999.99	CMA/RMR	Thunder Bay	CT/SR
598	000.00	CA/AR	Kenora	
602	999.99	CMA/RMR	Winnipeg	CT/SR
607	000.00	CA/AR	Portage la Prairie	
610	000.00	CA/AR	Brandon	
640	000.00	CA/AR	Thompson	
705	999.99	CMA/RMR	Regina	CT/SR
710	000.00	CA/AR	Yorkton	
715	000.00	CA/AR	Moose Jaw	
720	000.00	CA/AR	Swift Current	

CMA/CA RMR/AR	CT SR	Type Type	Name Nom	Tracted Secteurs
725	999.99	CMA/RMR	Saskatoon	CT/SR
735	000.00	CA/AR	North Battleford	
745	000.00	CA/AR	Prince Albert	
750	000.00	CA/AR	Estevan	
805	000.00	CA/AR	Medicine Hat	
810	999.99	CA/AR	Lethbridge	CT/SR
825	999.99	CMA/RMR	Calgary	CT/SR
830	999.99	CA/AR	Red Deer	CT/SR
833	000.00	CA/AR	Camrose	
835	999.99	CMA/RMR	Edmonton	CT/SR
840	000.00	CA/AR	Lloydminster	
845	000.00	CA/AR	Grand Centre	
850	000.00	CA/AR	Grande Prairie	
860	000.00	CA/AR	Wood Buffalo (Fort McMurray)	
865	000.00	CA/AR	Wetaskiwin	
905	000.00	CA/AR	Cranbrook	
913	000.00	CA/AR	Penticton	
915	999.99	CA/AR	Kelowna	CT/SR
918	000.00	CA/AR	Vernon	
925	999.99	CA/AR	Kamloops	CT/SR
930	000.00	CA/AR	Chilliwack	
932	999.99	CA/AR	Abbotsford (Matsqui)	CT/SR
933	999.99	CMA/RMR	Vancouver	CT/SR
935	999.99	CMA/RMR	Victoria	CT/SR
937	000.00	CA/AR	Duncan	
938	999.99	CA/AR	Nanaimo	CT/SR
940	000.00	CA/AR	Port Alberni	
943	000.00	CA/AR	Courtenay	
944	000.00	CA/AR	Campbell River	
945	000.00	CA/AR	Powell River	
950	000.00	CA/AR	Williams Lake	
952	000.00	CA/AR	Quesnel	
955	000.00	CA/AR	Prince Rupert	
960	000.00	CA/AR	Kitimat	
965	000.00	CA/AR	Terrace	
970	999.99	CA/AR	Prince George	CT/SR
975	000.00	CA/AR	Dawson Creek	
977	000.00	CA/AR	Fort St. John	
990	000.00	CA/AR	Whitehorse	
995	000.00	CA/AR	Yellowknife	
999	999.99	CMA/CA unknown--RMR/AR inconnu		CT/SR?

Note: Former names (from 1991 census) shown in parentheses if different.
Nota: Les anciens noms (du recensement de 1991) sont indiqués entre parenthèses s'ils ont changé.

APPENDIX F

GEOGRAPHIC CODING FROM PARTIAL POSTAL CODES BASED ON PCCF

APPENDIX F1 Geographic coding from the first character of the postal code

APPENDIX F2 Geographic coding from the first two characters of the postal code

APPENDIX F3 Geographic coding from the first three characters of the postal code

APPENDIX F1

GEOGRAPHIC CODING FROM THE FIRST CHARACTER OF THE POSTAL CODE

Letter	Province/Territory Major Geographic Area (Canada Post)
A	Newfoundland
B	Nova Scotia
C	Prince Edward Island
E	New Brunswick
G H J	Quebec
G	Quebec East
H	Montreal Metro
J	Quebec West
K L M N P	Ontario
K	Eastern Ontario
L	Central Ontario
M	Toronto Metro
N	Southwestern Ontario
P	Northern Ontario
R	Manitoba
S	Saskatchewan
T	Alberta
V	British Columbia
X	Northwest Territories and Nunavut
Y	Yukon

APPENDIX F2

GEOGRAPHIC CODING
FROM THE FIRST TWO CHARACTERS
OF THE POSTAL CODE
BASED ON MAY 1998 PCCF

GEOGRAPHIC CODING FROM THE FIRST TWO CHARACTERS OF THE POSTAL CODE

FS	FSA12 - FIRST TWO CHARACTERS OF POSTAL CODE
NPC	NUMBER OF POSTAL CODES
CMA	MOST COMMON CENSUS METROPOLITAN AREA OR CENSUS AGGLOMERATION (CMA/CA)
PCMA	PERCENTAGE OF POSTAL CODES WITHIN THAT CMA/CA
PRCD	MOST COMMON CENSUS SUBDIVISION (CD)
PCD	PERCENTAGE OF POSTAL CODES WITHIN THAT CD
PRCDCSD	MOST COMMON CENSUS SUBDIVISON (CSD)
PCSD	PERCENTAGE OF POSTAL CODES WITHIN THAT CSD
AVLAT	AVERAGE LATITUDE IN DEGREES(2)+DECIMALS(6)
AVLONG	AVERAGE LONGITUDE IN DEGREES(3)+DECIMALS(6)
T	1=CMA/CA IS CENSUS TRACTED; 0=CMA/CA NOT TRACTED

FILE=FSA12GEO.CAN

GEOGRAPHIC CODING FROM FIRST TWO CHARACTERS OF THE POSTAL CODE

FS	NPC	CMA	PCMA	PRCD	PCD	PRCDCSD	PCSD	AVLAT	AVLONG	T
NEWFOUNDLAND										
A0	1068	000	87.0	1001	32.9	1001485	4.8	48743654	055182981	0
A1	5966	001	94.1	1001	94.8	1001519	73.1	47627294	052858082	1
A2	2456	015	47.1	1005	47.6	1005018	46.0	49427782	058956097	0
NOVA SCOTIA										
B0	1408	000	77.1	1209	10.2	1207001	5.8	45058077	063591270	0
B1	4478	225	100.0	1217	100.0	1217030	99.4	46175202	060129270	0
B2	5862	205	49.6	1209	49.6	1209022	34.6	45149712	062954420	1
B3	6411	205	100.0	1209	100.0	1209021	73.0	44650030	063608625	1
B4	4082	205	49.8	1209	49.9	1209012	28.3	44948754	064043310	1
B5	678	000	100.0	1202	99.7	1202006	93.5	43838971	066114179	0
PRINCE EDWARD ISLAND										
C0	273	000	81.3	1102	40.3	1103056	2.6	46392317	063342713	0
C1	2973	105	67.7	1102	67.8	1102075	59.6	46298204	063341118	0
NEW BRUNSWICK										
E0	1206	000	83.3	1315	14.9	1315001	2.6	46557809	065955974	0
E1	11536	305	62.0	1307	50.6	1307022	34.9	46473676	065020159	1
E2	7313	310	81.2	1301	64.9	1301006	60.6	45595279	066027432	1
E3	6882	320	67.7	1310	60.5	1310032	41.3	46346784	066910228	0
E4	2704	000	95.7	1305	61.0	1307009	16.2	45839150	065048873	0
E5	542	310	68.1	1305	75.1	1305014	39.9	45374467	066147456	1
E6	429	320	89.5	1310	100.0	1310031	89.5	46172632	066559234	0
E7	3211	000	80.8	1311	57.4	1311006	24.9	46620620	067868010	0
E8	584	000	100.0	1314	99.1	1314022	37.2	47590026	067338131	0
E9	976	000	100.0	1309	94.2	1309001	37.1	46974894	065480828	0
QUEBEC										
G0	2184	000	71.1	2425	13.5	2425005	6.1	47406441	069875617	0
G1	15770	421	100.0	2423	100.0	2423025	37.5	46827029	071250617	1
G2	4702	421	100.0	2423	100.0	2423025	37.5	46841591	071337837	1
G3	1954	421	100.0	2423	100.0	2423050	29.2	46851316	071391766	1
G4	2162	412	47.6	2497	48.1	2497010	44.8	49524614	067205623	0
G5	6400	000	30.6	2410	27.2	2410045	23.3	47827552	069226375	0
G6	10459	421	49.7	2425	30.1	2424020	18.0	46416946	071388325	1
G7	8614	408	85.8	2494	88.0	2494050	38.6	48208729	071141503	1
G8	8850	442	49.2	2437	49.2	2437055	19.4	47579370	072383100	1
G9	5602	444	63.0	2436	63.0	2436030	23.5	46623154	072698553	0
H0	12	462	75.0	2465	75.0	2465005	75.0	45634950	073667812	1
H1	13533	462	100.0	2466	100.0	2466025	65.0	45601735	073567885	1
H2	8871	462	100.0	2466	100.0	2466025	93.8	45534422	073598226	1
H3	8071	462	100.0	2466	100.0	2466025	73.2	45501546	073608744	1
H4	7364	462	100.0	2466	100.0	2466025	43.6	45486491	073651039	1
H5	124	462	100.0	2466	100.0	2466025	100.0	45503751	073564085	1
H7	12105	462	100.0	2465	100.0	2465005	100.0	45583359	073742752	1
H8	3653	462	100.0	2466	100.0	2466040	39.2	45453846	073696980	1
H9	7732	462	100.0	2466	100.0	2466140	17.6	45458691	073841145	1

GEOGRAPHIC CODING FROM FIRST TWO CHARACTERS OF POSTAL CODE

FS	NPC	CMA	PCMA	PRCD	PCD	PRCDCSD	PCSD	AVLAT	AVLONG	T
J0	2794	000	74.4	2477	6.3	2474005	3.5	46106158	074135429	0
J1	7676	433	65.3	2443	65.2	2443025	43.9	45418886	071957913	1
J2	10331	447	29.3	2449	29.3	2449057	24.4	45555401	072787624	0
J3	12272	462	66.7	2457	38.8	2458020	14.4	45601199	073259507	1
J4	9397	462	100.0	2458	83.7	2458030	41.9	45520242	073473350	1
J5	5062	462	84.5	2460	61.0	2467015	16.2	45706346	073432597	1
J6	11005	462	67.8	2470	23.0	2467050	17.1	45577625	073720090	1
J7	12844	462	99.2	2473	30.7	2472005	12.2	45617438	073895330	1
J8	10341	505	84.4	2481	74.9	2481015	41.5	45550241	075473533	1
J9	6877	505	34.9	2481	34.9	2481025	25.5	47042151	077147861	1
ONTARIO										
K0	2270	000	61.0	3506	20.5	3506042	8.4	44892042	076695036	0
K1	13935	505	100.0	3506	99.8	3506014	64.0	45413749	075643809	1
K2	9336	505	100.0	3506	100.0	3506012	44.2	45329455	075797557	1
K4	2494	505	99.9	3506	80.8	3506004	56.7	45419625	075466085	1
K6	3914	501	56.3	3501	56.3	3501012	54.4	44970067	075012248	0
K7	8783	521	52.8	3510	50.7	3510011	28.4	44575060	076452373	1
K8	4835	522	60.5	3512	60.0	3512008	36.5	44814458	077338585	1
K9	5253	529	65.0	3515	65.0	3515014	61.8	44257838	078379168	1
L0	2664	539	39.1	3526	41.6	3526057	14.8	43614066	079541524	1
L1	16185	532	62.3	3518	96.3	3518013	30.4	43883969	078903234	1
L2	11695	539	100.0	3526	100.0	3526053	49.8	43117154	079160364	1
L3	14787	535	61.0	3519	58.1	3519036	43.0	43701508	079355368	1
L4	20085	535	81.2	3519	63.2	3519028	24.2	43954438	079542015	1
L5	12228	535	100.0	3521	99.9	3521005	99.8	43573351	079673324	1
L6	14462	535	100.0	3521	52.5	3521010	52.4	43621727	079703953	1
L7	8398	537	62.7	3524	80.2	3524002	62.6	43506600	079808279	1
L8	11706	537	100.0	3525	99.9	3525018	79.3	43234408	079817773	1
L9	9510	537	54.1	3525	54.0	3525018	28.1	43623610	079848093	1
M1	11690	535	100.0	3520	100.0	3520001	99.8	43768042	079249351	1
M2	4540	535	100.0	3520	100.0	3520008	100.0	43777462	079392170	1
M3	4230	535	100.0	3520	100.0	3520008	99.9	43745629	079432126	1
M4	8665	535	100.0	3520	100.0	3520004	66.3	43690936	079352126	1
M5	6343	535	100.0	3520	100.0	3520004	89.5	43668738	079392209	1
M6	8429	535	100.0	3520	100.0	3520004	52.1	43676463	079453658	1
M7	1063	535	100.0	3520	81.2	3520004	62.5	43681978	079367418	1
M8	3182	535	100.0	3520	100.0	3520019	100.0	43621917	079515871	1
M9	7230	535	100.0	3520	100.0	3520019	82.0	43694179	079556898	1
N0	2552	000	72.8	3539	14.1	3539036	4.3	43341994	081231696	0
N1	7812	550	52.6	3523	59.9	3523008	52.2	43456663	080246411	1
N2	9735	541	95.8	3530	95.9	3530013	62.5	43480706	080546501	1
N3	7930	543	58.7	3529	58.8	3529006	50.8	43200398	080300857	1
N4	5652	000	32.9	3532	47.1	3532042	31.5	43559682	080813740	0
N5	8775	555	73.1	3539	50.8	3539036	50.7	42997375	081137288	1
N6	7205	555	100.0	3539	99.9	3539036	99.3	42966232	081270182	1
N7	6335	562	51.0	3538	51.0	3538030	47.8	42889212	082182821	1
N8	6884	559	76.4	3537	88.2	3537039	58.8	42301912	082840519	1
N9	5355	559	79.8	3537	100.0	3537039	63.9	42235013	083016919	1

GEOGRAPHIC CODING FROM FIRST TWO CHARACTERS OF POSTAL CODE

FS	NPC	CMA	PCMA	PRCD	PCD	PRCDCSD	PCSD	AVLAT	AVLONG	T
P0	1583	000	83.1	3560	13.2	3560090	5.6	47532049	083512539	0
P1	3529	575	74.3	3548	74.3	3548044	73.9	46008514	079410652	1
P2	903	000	100.0	3554	53.7	3554068	53.6	46853254	080027040	0
P3	4653	580	99.7	3553	99.7	3553007	83.7	46502204	080979522	1
P4	1552	586	99.7	3556	99.9	3556027	99.7	48478369	081336378	0
P5	1089	000	54.2	3557	45.9	3557041	45.8	47560689	082428861	0
P6	3275	590	99.8	3557	100.0	3557061	99.3	46524501	084325795	1
P7	4964	595	99.6	3558	100.0	3558004	98.9	48416151	089253993	1
P8	574	000	100.0	3560	100.0	3560026	75.4	49847667	092652634	0
P9	1151	598	52.0	3560	53.4	3560016	50.4	49230289	093970758	0
MANITOBA										
R0	1829	000	88.7	4602	10.7	4612047	4.8	50450294	098431112	0
R1	1463	000	51.1	4613	51.3	4609029	46.5	50050388	097584697	0
R2	11333	602	100.0	4611	96.6	4611040	96.6	49903039	097111553	1
R3	9888	602	99.9	4611	99.6	4611040	99.6	49866065	097180744	1
R4	352	602	94.9	4611	44.3	4611042	43.8	49936260	097286198	1
R5	186	000	74.2	4602	100.0	4602061	29.0	49619318	096770809	0
R6	533	000	100.0	4603	100.0	4603050	52.9	49184140	098012457	0
R7	2724	610	76.0	4607	76.9	4607062	75.9	50143633	099977963	0
R8	704	640	51.8	4622	53.0	4622026	51.8	55282070	099734003	0
R9	488	000	100.0	4621	100.0	4621045	77.7	53826966	101228558	0
SASKATCHEWAN										
S0	3358	000	95.0	4715	8.6	4718090	1.0	51649334	105510682	0
S3	757	710	98.3	4709	99.9	4709012	96.3	51211045	102466111	0
S4	9483	705	87.9	4706	87.9	4706027	87.3	50330158	104475001	1
S6	3069	715	50.0	4707	50.5	4707039	49.4	51781363	105645134	0
S7	7590	725	100.0	4711	99.9	4711066	99.0	52130697	106650265	1
S9	2269	720	42.4	4708	42.6	4708004	40.1	51907763	108384714	0
ALBERTA										
T0	3770	000	82.7	4811	10.5	4812004	3.1	52926333	113727584	0
T1	8703	810	42.1	4802	50.2	4802012	42.1	50121964	112504965	1
T2	19381	825	99.9	4806	100.0	4806016	99.7	51010504	114051220	1
T3	8797	825	100.0	4806	100.0	4806016	99.6	51091532	114132921	1
T4	4995	830	48.2	4808	66.8	4808011	48.2	52312387	113670702	1
T5	15938	835	100.0	4811	100.0	4811061	99.9	53567943	113514969	1
T6	10391	835	100.0	4811	100.0	4811061	99.5	53493224	113482748	1
T7	2376	000	54.5	4811	53.5	4811049	21.7	53654461	114829566	0
T8	5639	835	67.4	4811	67.4	4811052	31.5	54152554	115094511	1
T9	5021	835	30.8	4811	43.6	4811016	24.0	54112086	112154721	1

GEOGRAPHIC CODING FROM FIRST TWO CHARACTERS OF POSTAL CODE

FS	NPC	CMA	PCMA	PRCD	PCD	PRCDCSD	PCSD	AVLAT	AVLONG	T
BRITISH COLUMBIA										
V0	2544	000	80.7	5933	9.1	5941011	3.4	50940933	122163697	0
V1	16015	915	36.5	5935	36.5	5935010	31.7	50528813	119208263	1
V2	22271	932	20.7	5909	30.8	5953023	19.0	50616504	121948856	1
V3	24292	933	96.9	5915	96.9	5915004	44.4	49190359	122794896	1
V4	12893	933	85.7	5915	85.7	5915004	35.8	49157150	122535560	1
V5	15044	933	100.0	5915	100.0	5915022	62.9	49248544	123038076	1
V6	11242	933	100.0	5915	100.0	5915022	80.1	49244563	123136914	1
V7	10306	933	100.0	5915	100.0	5915046	33.6	49276605	123113862	1
V8	14622	935	78.5	5917	81.4	5917021	32.6	49323922	124176188	1
V9	14267	938	24.8	5921	31.4	5921007	22.7	49148186	124218431	1
NORTHWEST TERRITORIES										
X0	132	000	98.5	6106	46.2	6106016	18.9	64609775	107097989	0
X1	562	995	99.6	6106	100.0	6106023	99.6	62450839	114383112	0
YUKON										
Y0	68	000	98.5	6001	98.5	6001045	38.2	61876202	134991112	0
Y1	1039	990	99.4	6001	100.0	6001009	91.4	60731543	135078582	0

APPENDIX F3

GEOGRAPHIC CODING
FROM THE FIRST THREE CHARACTERS OF THE POSTAL CODE
BASED ON MAY 1998 PCCF

GEOGRAPHIC CODING FROM THE FIRST THREE CHARACTERS OF THE POSTAL CODE

FSA	FORWARD SORTATION AREA - FIRST THREE CHARACTERS OF POSTAL CODE
NPC	NUMBER OF POSTAL CODES
CMA	MOST COMMON CENSUS METROPOLITAN AREA OR CENSUS AGGLOMERATION (CMA/CA)
PCMA	PERCENTAGE OF POSTAL CODES WITHIN THAT CMA/CA
PRCD	MOST COMMON CENSUS SUBDIVISION (CD)
PCD	PERCENTAGE OF POSTAL CODES WITHIN THAT CD
PRCDCSD	MOST COMMON CENSUS SUBDIVISON (CSD)
PCSD	PERCENTAGE OF POSTAL CODES WITHIN THAT CSD
AVLAT	AVERAGE LATITUDE IN DEGREES(2)+DECIMALS(6)
AVLONG	AVERAGE LONGITUDE IN DEGREES(3)+DECIMALS(6)
T	1=CMA/CA IS CENSUS TRACTED; 0=CMA/CA NOT TRACTED

HLTH.PCCF9805.FSAGEOG.CAN

APPENDIX H1:
Summary List of Health Regions, by Province and Type, Canada, August 2000

PR	Health Region Type	HRTYP	Number
Total			118
NF	Community Health and Social Services Region	CHR	5
	Health Corporation	HCO	1
PE	Urban or Rural Area (for CCHS data collection only)	URA	2
NS	Health Zone	ZON	6
NB	Health Region	HRE	7
QC	Région socio-sanitaire	RSS	18
ON	District Health Council	DHC	16
MB	Health Region	HRE	12
SK	Service Area	SAR	9
	Health Services Branch	HSB	1
AB	Regional Health Authority	RHA	17
BC	Health Region	HRE	20
YK	Health Region	HRE	1
NT	Health Region	HRE	1
NU	Health Region	HRE	1

APPENDIX H2:
HEALTH REGIONS BY PROVINCE AND TYPE, CANADA, AUGUST 2000

HEALTH REGIONS, CANADA, 2000
REGIONS SOCIO-SANITAIRES, CANADA, 2000

PRHR	POP1996	HEALTH REGION / REGION SOCIO-SANITAIRE	HRTYP
NEWFOUNDLAND / TERRE-NEUVE			
1001	183488	SAINT JOHN'S	CHR
1002	122646	EASTERN	CHR
1003	111657	CENTRAL	CHR
1004	91194	WESTERN	CHR
1005	17637	GRENFELL	CHR
1006	25170	LABRADOR	HCO
PRINCE EDWARD ISLAND / ILE DU PRINCE-EDOUARD			
1101	62716	URBAN	URA
1102	71841	RURAL	URA
NOVA SCOTIA / NOUVELLE ECOSSE			
1201	124790	YARMOUTH	ZON
1202	81517	KENTVILLE	ZON
1203	103779	TRURO	ZON
1204	97828	NEW GLASGOW	ZON
1205	139632	CAPE BRETON	ZON
1206	361736	HALIFAX	ZON
NEW BRUNSWICK / NOUVEAU-BRUNSWICK			
1301	179117	MONCTON	HRE
1302	174580	SAINT JOHN	HRE
1303	162077	FREDERICTON	HRE
1304	53728	EDMUNDSTON	HRE
1305	32364	CAMPBELLTON	HRE
1306	87601	BATHURST	HRE
1307	48666	MIRAMICHI	HRE
QUEBEC			
2401	206064	BAS-SAINT-LAURENT	RSS
2402	286649	SAGUENAY - LAC-SAINT-JEAN	RSS
2403	633511	QUEBEC	RSS
2404	476415	MAURICIE ET CENTRE DU QUEBEC	RSS
2405	278470	ESTRIE	RSS
2406	1775846	MONTREAL-CENTRE	RSS
2407	307441	OUTAOUAIS	RSS
2408	153905	ABITIBI-TEMISCAMINGUE	RSS
2409	103299	COTE-NORD	RSS
2410	18331	NORD-DU-QUEBEC	RSS
2411	105174	GASPESIE - ILES-DE-LA-MADELEINE	RSS
2412	380496	CHAUDIERE-APPALACHES	RSS
2413	330393	LAVAL	RSS
2414	375174	LANAUDIERE	RSS
2415	431643	LAURENTIDES	RSS
2416	1255920	MONTEREGIE	RSS
2417	8715	NUNAVIK	RSS
2418	11349	TERRES-CRIES-DE-LA-BAIE-JAME	RSS

PRHR	POP1996	HEALTH REGION / REGION SOCIO-SANITAIRE	HRTYP
ONTARIO			
3501	1002674	CHAMPLAIN	DHC
3502	482842	QUINTE-KINGSTON-RIDEAU	DHC
3503	739748	DURHAM-HALIBURTON-KAWARTHA-PINE RIDGE	DHC
3504	2385421	TORONTO	DHC
3505	922310	SIMCOE-YORK	DHC
3506	1192401	HALTON-PEEL	DHC
3507	622487	WATERLOO-WELLINGTON-DUFFERIN	DHC
3508	467799	HAMILTON-WENTWORTH	DHC
3509	403504	NIAGARA	DHC
3510	217139	GRAND RIVER	DHC
3511	565917	THAMES VALLEY	DHC
3512	588954	ESSEX-KENT-LAMBTON	DHC
3513	285638	GREY BRUCE-HURON-PERTH	DHC
3514	213008	MUSKOKA-NIPISSING-PARRY SOUND	DHC
3515	419614	ALGOMA-COCHRANE-MANITOULIN-SUDBURY	DHC
3516	244117	NORTHWESTERN ONTARIO	DHC
MANITOBA			
4610	628634	WINNIPEG	HRE
4615	46395	BRANDON	HRE
4620	37521	NORTH EASTMAN	HRE
4625	50903	SOUTH EASTMAN	HRE
4630	73096	INTERLAKE	HRE
4640	93656	CENTRAL	HRE
4650	37601	MARQUETTE	HRE
4655	34824	SOUTH WESTMAN	HRE
4660	42855	PARKLAND	HRE
4670	23150	NORMAN	HRE
4680	44174	BURNTWOOD	HRE
4690	1089	CHURCHILL	HRE
SASKATCHEWAN			
4701	57698	WEYBURN (A)	SAR
4702	57366	MOOSE JAW (B)	SAR
4703	45685	SWIFT CURRENT (C)	SAR
4704	238505	REGINA (D)	SAR
4705	60800	YORKTON (E)	SAR
4706	270387	SASKATOON (F)	SAR
4707	47067	ROSETOWN (G)	SAR
4708	42901	MELFORT (H)	SAR
4709	73565	PRINCE ALBERT (I)	SAR
4710	65171	NORTH BATTLEFORD (J)	SAR
4711	31092	NORTHERN (K)	HSB

PRHR	POP1996	HEALTH REGION / REGION SOCIO-SANITAIRE	HRTYP
ALBERTA			
4801	141747	CHINOOK	RHA
4802	84712	PALLISER	RHA
4803	69166	HEADWATERS	RHA
4804	821628	CALGARY	RHA
4805	51515	CROWFOOT - WILD ROSE	RHA
4806	170421	DAVID THOMPSON	RHA
4807	101560	EAST CENTRAL	RHA
4808	87141	WESTVIEW	RHA
4809	37489	CROSSROADS	RHA
4810	763411	CAPITAL	RHA
4811	86087	ASPEN	RHA
4812	102708	LAKELAND	RHA
4813	83501	MISTAHIA	RHA
4814	20315	PEACE	RHA
4815	22138	KEEWEETINOK LAKES	RHA
4816	36124	NORTHERN LIGHTS	RHA
4817	17163	NORTHWESTERN	RHA
BRITISH COLUMBIA / COLOMBIE-BRITANNIQUE			
5901	76091	EAST KOOTENAY	HRE
5902	78616	WEST KOOTENAY-BOUNDARY	HRE
5903	109898	NORTH OKANAGAN	HRE
5904	212474	SOUTH OKANAGAN SIMILKAMEEN	HRE
5905	125329	THOMPSON	HRE
5906	222307	FRASER VALLEY	HRE
5907	521221	SOUTH FRASER VALLEY	HRE
5908	290183	SIMON FRASER	HRE
5909	69128	COAST GARIBALDI	HRE
5910	224792	CENTRAL VANCOUVER ISLAND	HRE
5911	114033	UPPER ISLAND / CENTRAL COAST	HRE
5912	69720	CARIBOO	HRE
5913	86542	NORTH WEST	HRE
5914	62053	PEACE LIARD	HRE
5915	123847	NORTHERN INTERIOR	HRE
5916	522233	VANCOUVER	HRE
5917	179209	BURNABY	HRE
5918	169968	NORTH SHORE	HRE
5919	148867	RICHMOND	HRE
5920	317989	CAPITAL	HRE
TERRITORIES / TERRITOIRES			
6001	30766	YUKON	HRE
6101	39672	NORTHWEST TERRITORIES	HRE
6102	24730	NUNAVUT	HRE

FILE=HRNAMES.CAN

APPENDIX J1:
Summary List of Health Districts by Type and Province, Canada, August 2000

PR	Health District Type	SUBTYP	Number
Total			299
PE	Health Region	HRE	5
QC	Centre local de services communautaires	CLS	174
ON	Public Health Unit	PHU	37
SK	Health District	DIS	32
	Health Authority	HAU	1
BC	Local Health Area	LHA	83

For Version 3E of PCCF+, the Health District codes for BC and SK are not shown.

APPENDIX J2:
List of Health Districts by Province, Canada, August 2000

HEALTH DISTRICTS, CANADA, 2000
DISTRICTS SOCIO-SANITAIRES, CANADA, 2000

PRHR	SUB	NAME / NOM	SUBTYP
PRINCE EDWARD ISLAND / ILE DU PRINCE-EDOUARD			
11	010	WEST PRINCE	HRE
11	020	EAST PRINCE	HRE
11	030	QUEENS	HRE
11	040	SOUTHERN KINGS	HRE
11	050	EASTERN KINGS	HRE
QUEBEC			
2401	101	RIMOUSKI-NEIGETTE	CLS
2401	102	MITIS	CLS
2401	103	MATANE	CLS
2401	105	MATAPEDIA	CLS
2401	301	LES BASQUES	CLS
2401	302	ST-ELEUTHERE	CLS
2401	303	RIVIERE-DU-LOUP	CLS
2401	304	KAMOURASKA	CLS
2401	305	CABANO	CLS
2402	101	FJORD	CLS
2402	102	SAGUENAY	CLS
2402	103	JONQUIERE	CLS
2402	106	CHICOUTIMI	CLS
2402	202	DOMAINE-DU-ROY	CLS
2402	203	MARIA-CHAPDELAINE	CLS
2402	204	LAC-SAINT-JEAN-EST	CLS
2403	000	PORTNEUF	CLS
2403	101	LAURENTIEN	CLS
2403	102	STE-FOY/SILLERY	CLS
2403	201	QUEBEC-HAUTE-VILLE	CLS
2403	202	QUEBEC-BASSE-VILLE	CLS
2403	203	LIMOILOU/VANIER	CLS
2403	204	DUBERGER-LES SAULES-LEBOURGNEUF	CLS
2403	300	LORETTEVILLE/VAL-BELAIR	CLS
2403	401	BEAUPORT	CLS
2403	402	ORLEANS	CLS
2403	500	CHARLESBOURG	CLS
2403	701	CHARLEVOIX-EST	CLS
2403	702	CHARLEVOIX-OUEST	CLS
2404	101	HAUT-SAINT-MAURICE	CLS
2404	102	MEKINAC	CLS
2404	103	CENTRE-DE-LA-MAURICIE	CLS
2404	202	DRUMMOND	CLS
2404	203	ARTHABASKA	CLS
2404	204	DE L'ERABLE	CLS
2404	301	MASKINONGE	CLS
2404	302	TROIS-RIVIERES	CLS
2404	303	DES CHENAUX	CLS
2404	304	NICOLET-YAMASKA	CLS
2404	305	CAP-DE-LA-MADELEINE	CLS
2404	306	BECANCOUR	CLS

PRHR	SUB	NAME / NOM	SUBTYP
2405	101	GRANIT	CLS
2405	102	ASBESTOS	CLS
2405	103	HAUT-SAINT-FRANCOIS	CLS
2405	104	VAL SAINT-FRANCOIS	CLS
2405	105	COATICOOK	CLS
2405	106	MEMPHREMAGOG	CLS
2405	107	FLEURIMONT/LENNOXVILLE	CLS
2405	108	SHERBROOKE	CLS
2406	101	LAC ST-LOUIS	CLS
2406	103	PIERREFONDS	CLS
2406	104	DOLLARD-DES-ORMEAUX	CLS
2406	105	LACHINE	CLS
2406	201	POINTE-ST-CHARLES	CLS
2406	202	VERDUN	CLS
2406	204	ST-PAUL	CLS
2406	206	LASALLE	CLS
2406	301	RIVIERE-DES-PRAIRIES	CLS
2406	302	POINTE-AUX-TREMBLES	CLS
2406	303	MERCIER-EST	CLS
2406	304	MERCIER-OUEST	CLS
2406	305	HOCHELAGA-MAISONNEUVE	CLS
2406	306	ROSEMONT	CLS
2406	308	ANJOU	CLS
2406	309	ST-LEONARD	CLS
2406	401	COTE-DES-NEIGES	CLS
2406	402	SNOWDON	CLS
2406	403	COTE-ST-LUC	CLS
2406	404	MONT-ROYAL	CLS
2406	501	NOTRE-DAME DE GRACE/MONTREAL-OUEST	CLS
2406	503	METRO/WESTMOUNT	CLS
2406	504	ST-LOUIS DU PARC	CLS
2406	505	ST-HENRI	CLS
2406	601	MONTREAL-NORD	CLS
2406	603	ST-MICHEL	CLS
2406	605	AHUNTSIC	CLS
2406	606	BORDEAUX-CARTIERVILLE	CLS
2406	608	ST-LAURENT	CLS
2406	701	MONTREAL-CENTRE-SUD	CLS
2406	702	PLATEAU MONT-ROYAL	CLS
2406	704	PARC-EXTENSION	CLS
2406	705	MONTREAL-CENTRE-VILLE	CLS
2406	706	VILLERAY	CLS
2406	707	PETITE PATRIE	CLS
2407	201	HULL	CLS
2407	202	AYLMER	CLS
2407	300	GATINEAU	CLS
2407	400	PONTIAC	CLS
2407	500	LES COLLINES-DE-L'OUTAOUAIS	CLS
2407	600	DOMAINE DES FORESTIERS	CLS
2407	701	VALLEE-DE-LA-LIEVRE	CLS
2407	702	PETITE-NATION	CLS

PRHR	SUB	NAME / NOM	SUBTYP
2408	101	TEMISCAMING	CLS
2408	102	VILLE-MARIE	CLS
2408	103	ROUYN-NORANDA	CLS
2408	104	ABITIBI-OUEST	CLS
2408	105	ABITIBI	CLS
2408	106	VALLEE-DE-L'OR	CLS
2409	101	LES ESCOUMINS	CLS
2409	102	FORESTVILLE	CLS
2409	103	MANICOUAGAN	CLS
2409	105	PORT-CARTIER	CLS
2409	106	SEPT-ILES	CLS
2409	107	CANIAPISCAU	CLS
2409	109	MINGANIE	CLS
2409	110	BASSE COTE-NORD	CLS
2410	101	CHIBOUGAMAU/CHAPAIS	CLS
2410	102	LEBEL-SUR-QUEVILLON	CLS
2410	103	MATAGAMI	CLS
2410	104	BAIE-JAMES	CLS
2411	201	BONAVENTURE	CLS
2411	203	PABOK	CLS
2411	204	GASPE	CLS
2411	205	GRANDE-VALLEE	CLS
2411	206	ILES-DE-LA-MADELEINE	CLS
2411	207	MURDOCHVILLE	CLS
2411	208	DENIS-RIVERIN	CLS
2411	209	AVIGNON	CLS
2412	101	LAC ETCHEMIN	CLS
2412	102	NOUVELLE-BEAUCE	CLS
2412	103	BEAUCE-SARTIGAN	CLS
2412	104	ROBERT-CLICHE	CLS
2412	105	AMIANTE	CLS
2412	401	DESJARDINS	CLS
2412	402	CHAUDIERE	CLS
2412	403	BELLECHASSE	CLS
2412	404	LOTBINIERE	CLS
2412	701	ST-JEAN-PORT-JOLI	CLS
2412	703	ST-PAMPHILE	CLS
2412	704	MONTMAGNY	CLS
2413	801	DUVERNAY	CLS
2413	803	CHOMEDEY	CLS
2413	805	PONT-VIAU	CLS
2413	807	STE-ROSE-DE-LAVAL	CLS
2414	201	D'AUTRAY	CLS
2414	202	MATAWINIE	CLS
2414	203	JOLIETTE	CLS
2414	204	MONTCALM	CLS
2414	205	LES MOULINS	CLS
2414	206	ASSOMPTION	CLS

PRHR	SUB	NAME / NOM	SUBTYP
2415	101	DEUX-MONTAGNES/MIRABEL	CLS
2415	102	THERESE-DE-BLAINVILLE	CLS
2415	103	ANTOINE-LABELLE	CLS
2415	104	RIVIERE-DU-NORD/MIRABEL	CLS
2415	105	LES PAYS-D'EN-HAUT	CLS
2415	106	LES LAURENTIDES	CLS
2415	107	ARGENTEUIL	CLS
2416	101	CHATEAUGUAY	CLS
2416	102	HAUT-SAINT-LAURENT	CLS
2416	103	VAUDREUIL-SOULANGES	CLS
2416	104	BEAUHARNOIS-SALABERRY	CLS
2416	201	BAS RICHELIEU	CLS
2416	203	LES MASKOUTAINS	CLS
2416	204	VALLEE-DU-RICHELIEU	CLS
2416	205	ACTON	CLS
2416	206	HAUTE-YAMASKA	CLS
2416	301	LAJEMMERAIS	CLS
2416	304	BROSSARD	CLS
2416	305	LA PRAIRIE	CLS
2416	306	ST-HUBERT	CLS
2416	307	LONGUEUIL-EST	CLS
2416	308	LONGUEUIL-OUEST	CLS
2416	401	BROME-MISSISQUOI	CLS
2416	402	ROUVILLE	CLS
2416	405	LES JARDINS DE NAPIERVILLE	CLS
2416	406	HAUT-RICHELIEU	CLS
2417	101	BAIE D'HUDSON	CLS
2417	102	UNGAVA	CLS
2418	101	TERRITOIRE CRI	CLS
ONTARIO			
3501	510	OTTAWA CARLETON	PHU
3501	570	RENFREW	PHU
3501	580	EASTERN ONTARIO	PHU
3502	380	HASTINGS-PRINCE EDWARD	PHU
3502	410	KINGSTON-FRONTENAC-LENNOX-ADDINGTON	PHU
3502	430	LEEDS-GRENVILLE-LANARK	PHU
3503	300	DURHAM	PHU
3503	350	HALIBURTON-KAWARTHA-PINE RIDGE	PHU
3503	550	PETERBOROUGH	PHU
3504	950	CITY OF TORONTO	PHU
3505	600	SIMCOE	PHU
3505	700	YORK	PHU
3506	360	HALTON	PHU
3506	530	PEEL	PHU
3507	650	WATERLOO	PHU
3507	660	WELLINGTON-DUFFERIN-GUELPH	PHU
3508	370	HAMILTON-WENTWORTH	PHU
3509	460	NIAGARA	PHU
3510	270	BRANT	PHU
3510	340	HALDIMAND-NORFOLK	PHU
3511	310	ELGIN-ST THOMAS	PHU
3511	440	MIDDLESEX-LONDON	PHU
3511	520	OXFORD	PHU

PRHR	SUB	NAME / NOM	SUBTYP
3512	400	KENT-CHATHAM	PHU
3512	420	LAMBTON	PHU
3512	680	WINDSOR-ESSEX	PHU
3513	330	BRUCE-GREY-OWEN SOUND	PHU
3513	390	HURON	PHU
3513	540	PERTH	PHU
3514	450	MUSKOKA-PARRY SOUND	PHU
3514	470	NORTH BAY	PHU
3514	630	TIMISKAMING	PHU
3515	260	ALGOMA	PHU
3516	490	NORTHWESTERN	PHU
3516	620	THUNDER BAY	PHU
35	560	PORCUPINE	PHU
35	610	SUDBURY	PHU
SASKATCHEWAN			
47	010	SOUTH EAST	DIS
47	020	SOUTH CENTRAL	DIS
47	030	SOUTH COUNTRY	DIS
47	040	ROLLING HILLS	DIS
47	050	SOUTHWEST	DIS
47	060	MOOSE MOUNTAIN	DIS
47	070	PIPESTONE	DIS
47	080	REGINA	DIS
47	090	MOOSE JAW-THUNDER CREEK	DIS
47	100	SWIFT CURRENT	DIS
47	110	NORTH VALLEY	DIS
47	120	TOUCHWOOD QU'APPELLE	DIS
47	130	EAST CENTRAL	DIS
47	140	LIVING SKY	DIS
47	150	MIDWEST	DIS
47	160	PRAIRIE WEST	DIS
47	170	ASSINIBOINE VALLEY	DIS
47	180	CENTRAL PLAINS	DIS
47	190	SASKATOON	DIS
47	200	GREENHEAD	DIS
47	210	PASQUIA	DIS
47	220	NORTH CENTRAL	DIS
47	230	GABRIEL SPRINGS	DIS
47	240	NORTH-EAST	DIS
47	250	PRINCE ALBERT	DIS
47	260	PARKLAND	DIS
47	270	BATTLEFORDS	DIS
47	280	TWIN RIVERS	DIS
47	290	LLOYDMINSTER	DIS
47	300	NORTHWEST	DIS
47	310	MAMAWETAN CHURCHILL RIVER	DIS
47	320	KEEWATIN YATHE	DIS
47	330	ATHABASCA	DIS

PRHR	SUB	NAME / NOM	SUBTYP
BRITISH COLUMBIA / COLOMBIE-BRITANNIQUE			
5901	010	FERNIE	LHA
5901	020	CRANBROOK	LHA
5901	030	KIMBERLEY	LHA
5901	040	WINDERMERE	LHA
5901	050	CRESTON	LHA
5901	180	GOLDEN	LHA
5902	060	KOOTENAY LAKE	LHA
5902	070	NELSON	LHA
5902	090	CASTLEGAR	LHA
5902	100	ARROW LAKES	LHA
5902	110	TRAIL	LHA
5902	120	GRAND FORKS	LHA
5902	130	KETTLE VALLEY	LHA
5903	190	REVELSTOKE	LHA
5903	200	SALMON ARM	LHA
5903	210	ARMSTRONG-SPALLUMCHEEN	LHA
5903	220	VERNON	LHA
5903	780	ENDERBY	LHA
5904	140	SOUTHERN OKANAGAN	LHA
5904	150	PENTICTON	LHA
5904	160	KEREMEOS	LHA
5904	170	PRINCETON	LHA
5904	230	CENTRAL OKANAGAN	LHA
5904	770	SUMMERLAND	LHA
5905	240	KAMLOOPS	LHA
5905	260	NORTH THOMPSON	LHA
5905	290	LILLOOET	LHA
5905	300	SOUTH CARIBOU	LHA
5905	310	MERRITT	LHA
5906	320	HOPE	LHA
5906	330	CHILLIWACK	LHA
5906	340	ABBOTSFORD	LHA
5906	750	MISSION	LHA
5906	760	AGASSIZ-HARRISON	LHA
5907	350	LANGLEY	LHA
5907	360	SURREY	LHA
5907	370	DELTA	LHA
5908	400	NEW WESTMINSTER	LHA
5908	420	MAPLE RIDGE	LHA
5908	430	COQUITLAM	LHA
5909	460	SUNSHINE COAST	LHA
5909	470	POWELL RIVER	LHA
5909	480	HOWE SOUND	LHA
5910	650	COWICHAN	LHA
5910	660	LAKE COWICHAN	LHA
5910	670	LADYSMITH	LHA
5910	680	NANAIMO	LHA
5910	690	QUALICUM	LHA
5910	700	ALBERNI	LHA

PRHR	SUB	NAME / NOM	SUBTYP
5911	710	COURTENAY	LHA
5911	720	CAMPBELL RIVER	LHA
5911	830	CENTRAL COAST	LHA
5911	840	VANCOUVER ISLAND WEST	LHA
5911	850	VANCOUVER ISLAND NORTH	LHA
5912	250	100 MILE HOUSE	LHA
5912	270	CARIBOU-CHILCOTIN	LHA
5912	280	QUESNEL	LHA
5912	490	BELLA COOLA VALLEY	LHA
5913	500	QUEEN CHARLOTTE	LHA
5913	510	SNOW COUNTRY	LHA
5913	520	PRINCE RUPERT	LHA
5913	530	UPPER SKEENA	LHA
5913	540	SMITHERS	LHA
5913	800	KITIMAT	LHA
5913	870	STIKINE	LHA
5913	880	TERRACE	LHA
5913	920	NISGA'A	LHA
5913	940	TELEGRAPH CREEK	LHA
5914	590	PEACE RIVER SOUTH	LHA
5914	600	PEACE RIVER NORTH	LHA
5914	810	FORT NELSON	LHA
5915	550	BURNS LAKE	LHA
5915	560	NECHAKO	LHA
5915	570	PRINCE GEORGE	LHA
5916	390	VANCOUVER	LHA
5916	161	CITY CENTRE VANCOUVER	LHA
5916	162	DOWNTOWN EAST SIDE VANCOUVER	LHA
5916	163	NORTH EAST VANCOUVER	LHA
5916	164	WEST SIDE VANCOUVER	LHA
5916	165	MIDTOWN VANCOUVER	LHA
5916	166	SOUTH VANCOUVER	LHA
5917	410	BURNABY	LHA
5918	440	NORTH VANCOUVER	LHA
5918	450	WEST VANCOUVER-BOWEN ISLAND	LHA
5919	380	RICHMOND	LHA
5920	610	GREATER VICTORIA	LHA
5920	620	SOOKE	LHA
5920	630	SAANICH	LHA
5920	640	GULF ISLANDS	LHA

FILE=R:\GEOREF2\ SUBNAMES.CAN + HLTH.GEOREF.SUBNAMES.CAN