

Catalogue no. 92-179-G
ISBN: 978-1-100-21321-7

Forward Sortation Area Boundary File, Reference Guide

Census year 2011



Statistics
Canada

Statistique
Canada

Canada

How to obtain more information

For information about this product or the wide range of services and data available from Statistics Canada, visit our website, www.statcan.gc.ca.

You can also contact us by

email at infostats@statcan.gc.ca,

telephone, from Monday to Friday, 8:30 a.m. to 4:30 p.m., at the following toll-free numbers:

- | | |
|---|----------------|
| • Statistical Information Service | 1-800-263-1136 |
| • National telecommunications device for the hearing impaired | 1-800-363-7629 |
| • Fax line | 1-877-287-4369 |

Depository Services Program

- | | |
|------------------|----------------|
| • Inquiries line | 1-800-635-7943 |
| • Fax line | 1-800-565-7757 |

To access this product

This product, Catalogue no. 92-179-G, is available free in electronic format. To obtain a single issue, visit our website, www.statcan.gc.ca, and browse by "Key resource" > "Publications."

Standards of service to the public

Statistics Canada is committed to serving its clients in a prompt, reliable and courteous manner. To this end, Statistics Canada has developed standards of service that its employees observe. To obtain a copy of these service standards, please contact Statistics Canada toll-free at 1-800-263-1136. The service standards are also published on www.statcan.gc.ca under "About us" > "The agency" > "Providing services to Canadians."

Published by authority of the Minister responsible for
Statistics Canada

© Minister of Industry, 2013.

All rights reserved. Use of this publication is governed by the
Statistics Canada Open Licence Agreement ([http://www.
statcan.gc.ca/reference/licence-eng.html](http://www.statcan.gc.ca/reference/licence-eng.html)).

Cette publication est aussi disponible en français.

Note of appreciation

Canada owes the success of its statistical system to a long-standing partnership between Statistics Canada, the citizens of Canada, its businesses, governments and other institutions. Accurate and timely statistical information could not be produced without their continued co-operation and goodwill.

Standard symbols

The following symbols are used in Statistics Canada publications:

- | | |
|----------------|--|
| . | not available for any reference period |
| .. | not available for a specific reference period |
| ... | not applicable |
| 0 | true zero or a value rounded to zero |
| 0 ^s | value rounded to 0 (zero) where there is a meaningful distinction between true zero and the value that was rounded |
| ^p | preliminary |
| ^r | revised |
| X | suppressed to meet the confidentiality requirements of the <i>Statistics Act</i> |
| E | use with caution |
| F | too unreliable to be published |
| * | significantly different from reference category (p < 0.05) |

What's new?

- All 2011 Census Boundary Files are available for free download from the Statistics Canada website (www.statcan.gc.ca).
- The 2011 Census Forward Sortation Area Boundary File portrays the boundaries of 1,621 forward sortation areas derived from postal codes^{OM} captured from the 2011 Census of Population questionnaires.
- The 2011 Census Forward Sortation Area Boundary File now includes the province and territory name.
- All 2011 Census Boundary Files are available as national files.
- Updates were made to the hydrographic files with a selection of features from the National Hydro Network (NHN). As a result, users may notice differences in the geometry of the hydrography network in British Columbia compared to the 2006 Census version.

© This data includes information copied with permission from Canada Post Corporation.

OM. Postal code is an official mark of Canada Post Corporation.

Table of contents

	Page
What's new?	3
1. About this guide	5
2. Overview	6
How to cite this guide	7
How to cite this product	7
Acknowledgements	7
3. About this product	8
Purpose of the product	8
Definitions and concepts	8
Content	8
General methodology	9
Limitations	12
Comparison to other products/versions	13
Using with other products	13
Reference dates	13
4. Technical specifications	14
Record layouts and data descriptions	14
Software formats	17
File extension and accented character information	17
Geographic representation	17
File naming convention	18
5. Data quality	19
Lineage	19
Positional accuracy	20
Attribute accuracy	20
Logical consistency	21
Consistency with other products	21
Completeness	21
Appendix A Glossary	23
Appendix B Hierarchy of standard geographic units for dissemination, 2011 Census	29
Appendix C Geographic units by province and territory, 2011 Census	30
Appendix D Census subdivision types by province and territory, 2011 Census	31

1. About this guide

This reference guide is intended for users of the 2011 Census Forward Sortation Area Boundary File. The guide provides an overview of the file, the general methodology used in its creation, and important technical information.

This reference guide does not provide details on specific software packages that are available for use with the 2011 Census Forward Sortation Area Boundary File. Users are advised to contact the appropriate software vendor for information.

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

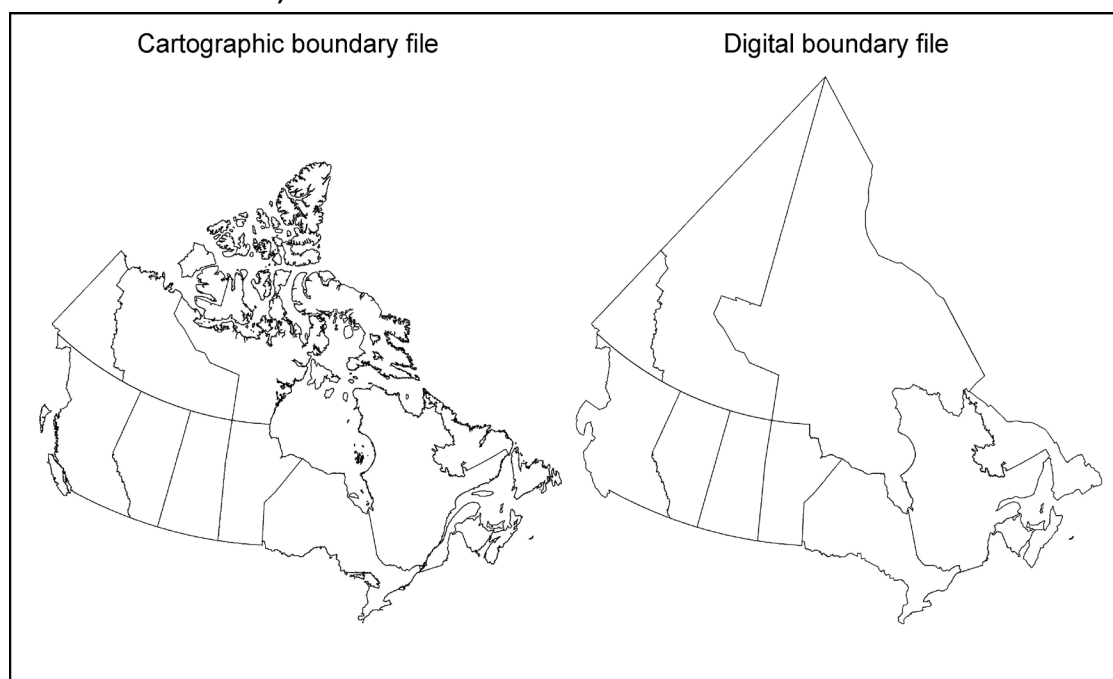
2. Overview

The 2011 Census Forward Sortation Area (FSA) Boundary File depicts the boundaries of 1,621 forward sortation areas (identified by the first three characters of the postal code^{OM}) derived from postal codes^{OM} captured from the 2011 Census of Population questionnaires.

Through analysis of the postal codes^{OM} reported by census households, a single FSA was assigned to each dissemination block based on the most frequently reported FSA for the dissemination block. Unreported dissemination blocks were assigned an FSA based on proximity to reported dissemination blocks in the same province or territory or nearest Canada Post Corporation delivery installation.

The 2011 Census FSA Boundary File provides a framework for mapping and spatial analysis. It is available in two types: cartographic and digital. The cartographic boundary file depicts the 2011 FSAs with the shoreline of the major land mass of Canada and its coastal islands. The digital boundary file depicts the full extent of the 2011 FSAs, including the coastal water area. Figure 2.1 illustrates an example of cartographic and digital boundary files in Lambert conformal conic projection.

Figure 2.1 Example of a cartographic boundary file and a digital boundary file (provinces and territories)



Hydrographic reference files are available for download from the Statistics Canada website (www.statcan.gc.ca).

- coast
- lakes
- rivers

How to cite this guide

Forward Sortation Area Boundary File, Reference Guide, 2011 Census. Statistics Canada Catalogue no. 92-179-G.

How to cite this product

Forward Sortation Area Boundary File, 2011 Census. Statistics Canada Catalogue no. 92-179-X.

Acknowledgements

© This data includes information copied with permission from Canada Post Corporation.

3. About this product

Purpose of the product

The purpose of the 2011 Census Forward Sortation Area (FSA) Boundary File is to provide a spatial representation of forward sortation areas as reported by census respondents and to facilitate the linkage of 2011 Census data. The file provides a framework to support Geographic Information System (GIS) applications used for land use and demographic studies, social, economic and market research and mapping. The 2011 Census FSA Boundary File can be used with the suite of 2011 Census Boundary Files and the 2011 Census Road Network File, which provides additional reference for mapping.

This product is based upon reported postal codes^{OM} rather than the postal code^{OM} assigned to the address by Canada Post Corporation. As a result, they should be interpreted as places where respondents reported a postal code^{OM} other than the one assigned by Canada Post Corporation.

Other differences may arise from the methodology used to delineate the FSA boundaries. As described in Section 5, Data quality, the method used for this product relies on the 2011 Census responses, while those of Canada Post Corporation's are a result of the assignment of postal codes^{OM} for use as a delivery mechanism.

Definitions and concepts

Geographic terms and concepts are briefly defined in the glossary (Appendix A). More details can be found in the *2011 Census Dictionary* (Catalogue no. 98-301-X) and the 2011 Illustrated Glossary (Catalogue no. 92-195-X).

Content

The 2011 Census FSA Boundary File contains boundaries for 1,621 FSAs. In total, census respondents reported 1,638 FSAs, seventeen of which are not represented given the methodology described in Section 5, Data quality/Completeness. The 1,621 FSAs portrayed in the boundary file cover the entire country.

A breakdown of the number of FSAs by province and territory is provided below.

Table 3.1 Number of forward sortation areas by province and territory

Province or territory	Forward sortation areas
Newfoundland and Labrador	35
Prince Edward Island	7
Nova Scotia	77
New Brunswick	110
Quebec	414
Ontario	516
Manitoba	64
Saskatchewan	48
Alberta	152
British Columbia	189
Yukon	3
Northwest Territories	3
Nunavut	3
Canada	1,621

A geographic area representing an FSA can be in multiple parts.

General methodology

The National Geographic Database (NGD) is a joint Statistics Canada-Elections Canada initiative to develop and maintain a spatial database which serves the needs of both organizations. The focus of the NGD is the continual improvement of quality and currency of spatial coverage using updates from provinces, territories and local sources. The source files used for the creation of the FSA boundary file reside on Statistics Canada's Spatial Data Infrastructure (SDI) which was derived directly from data stored in the NGD.

The 2011 Census FSA Boundary File contains the boundaries of 1,621 FSAs derived from postal codes^{OM} captured from 2011 Census questionnaires. By analysing the postal codes^{OM} reported by census households, a single FSA was assigned to each dissemination block (most often the FSA reported by the largest number of census households). FSA polygons were formed by grouping dissemination blocks.

The postal code^{OM} is a six-character code defined and maintained by Canada Post Corporation for the purpose of sorting and delivering mail. The first three characters of the postal code^{OM} identify the FSA. Individual FSAs are associated with a postal facility from which mail delivery originates. For the census, the postal code^{OM} is captured for all households from the address information on the front page of the 2011 Census questionnaire.

To produce the boundary file, the following processes were applied:

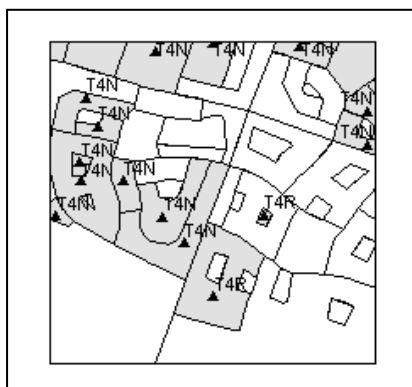
Creation of the 2011 Census FSA Digital Boundary File

Steps 1 through 5 were performed for each province and territory individually.

Step 1: Initial assignment of FSAs to dissemination blocks

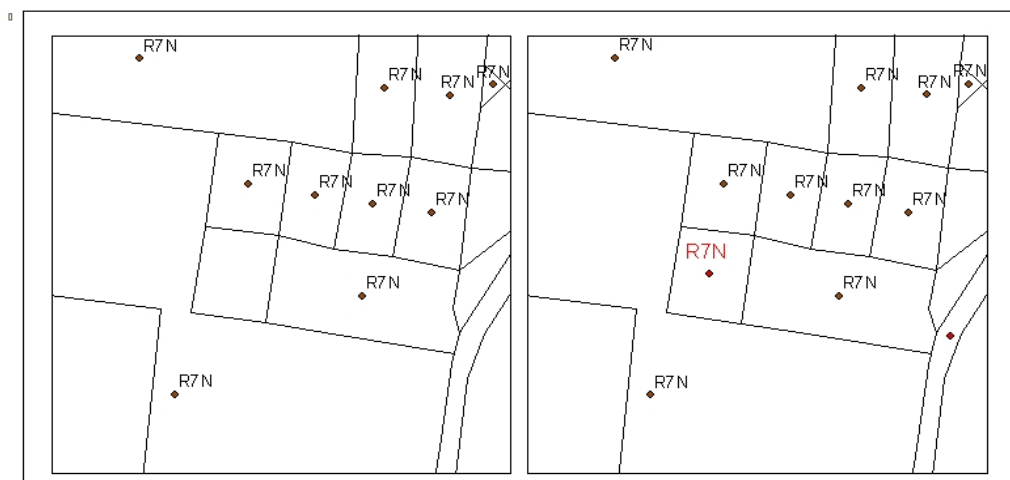
The FSA was derived from the first three characters of the postal code^{OM} of each household. The FSA most frequently associated with households in a dissemination block was assigned to that dissemination block. The initial FSAs were assigned in this step for each province and territory by linking census response data to dissemination block unique identifiers. FSAs for dissemination blocks without households were left blank in this layer. In Figure 3.1, the dissemination blocks with an associated FSA are shaded grey.

Figure 3.1 Dominant reported point layer

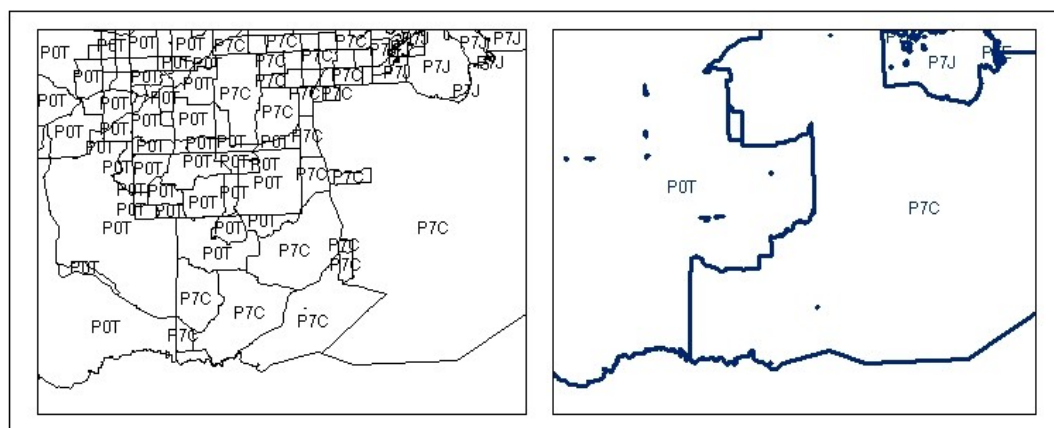


Step 2: Creation of the initial postal code^{OM} point layer

Dissemination blocks representative points were generated for each province and territory. Dissemination blocks that did not have an assigned FSA value were assigned the value of the nearest neighbouring representative point (see Figure 3.2) from within the same province or territory. The nearest neighbouring FSA values were then linked back to the provincial or territorial dissemination block polygon layers and updated where blanks previously existed.

Figure 3.2 Assignment of forward sortation area to blank dissemination blocks**Step 3: Creation of FSAs**

The polygons with the same FSA value were aggregated to form larger FSA areas (see Figure 3.3).

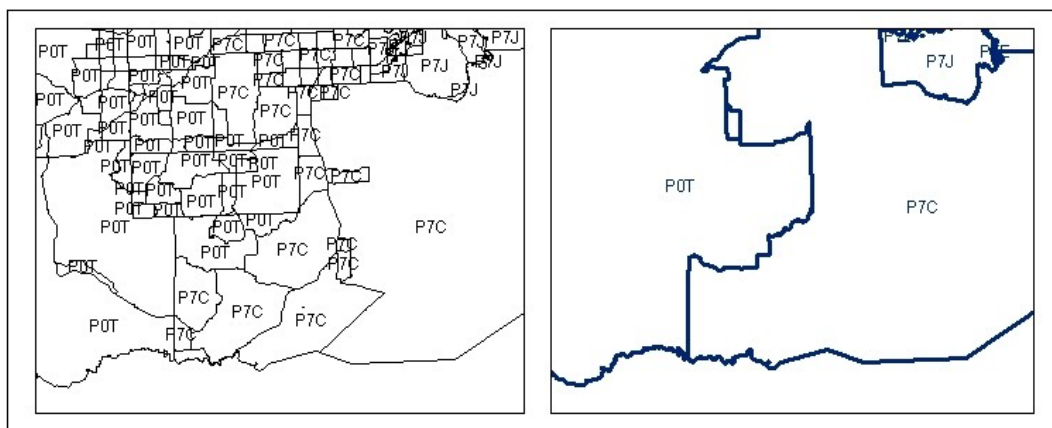
Figure 3.3 Integration of the forward sortation area and the dissemination blocks

Step 4: Manual editing and generalization of the polygons to improve aesthetic appearance of boundary file (see Figure 3.4).

This included the following steps for each provincial and territorial layer:

1. Where there were very small polygons with an FSA value that did not match that of the surrounding area, or where there were non-contiguous FSAs, these polygons were re-assigned the value of the surrounding polygon, where appropriate and where set criteria for number of dwellings reported were met.
2. In other instances where FSAs were not contiguous and more than one FSA was reported, these dissemination blocks were examined in terms of the second most frequently reported FSA or the third most frequently reported FSA. Some of the FSAs were then smoothed by taking into consideration the less frequently reported postal codes^{OM}, where applicable.

Figure 3.4 Generalization of the forward sortation area



Step 5: Creation of the provincial and territorial FSA piece

The layer created in Step 4 was dissolved again on the FSA. This resulted in a provincial and territorial FSA piece.

Step 6: Integration of provincial and territorial pieces

The various provincial and territorial FSA pieces were appended into a single coverage, producing a national FSA Digital Boundary File.

Creation of the 2011 Census FSA Cartographic Boundary File

To create the cartographic boundary file, a subset of the full hydrography, the coastal file, was created. This subset of coastal hydrographic features was then used to erase the portions of FSAs that are covered by coastal waters.

The digital and cartographic files were verified for their spatial and attribute content, translated into French and English, and appropriately named according to the file naming convention. Final data processing consisted of the conversion from the File Geo Database format, using FME® (Safe Software), into the following GIS file formats: ArcGIS® (.shp), Geography Markup Language (.gml) and MapInfo® (.tab).

The ArcGIS®, Geography Markup Language and MapInfo® files were compressed into WinZip® files (file extension .zip).

Creation of the 2011 hydrographic reference files

Coastal file

The coastal file was created by selecting a subset of hydrographic features which represent the coastal water bodies surrounding the land area of Canada. This file includes the St. Lawrence River, the Great Lakes, and Lake-of-the-Woods.

Inland lakes and rivers (polygon) file

The inland water file was created by selecting water features from the National Geographic Database's hydrographic reference layer. These reference data were sourced from the National Topographic Data Base (1:50,000 and the 1:250,000 maps) and the Digital Chart of the World. In British Columbia, information was supplemented with data from the National Hydro Network. The inland lakes and rivers polygon file contains a selection of water bodies not found in the coastal file.

Inland rivers (line) file

The inland rivers file contains a selection of linear water features such as rivers and streams.

The hydrographic reference files were translated into French and English, and appropriately named according to the file naming convention. Final data processing consisted of the conversion from the File Geo Database format, using FME® (Safe Software), into the following GIS file formats: ArcGIS® (.shp), Geography Markup Language (.gml) and MapInfo® (.tab).

The ArcGIS®, Geography Markup Language and MapInfo® files were compressed into WinZip® files (file extension .zip) and made available for download from the Internet.

Limitations

The positional accuracy of the 2011 Census FSA Boundary File does not support cadastral, surveying, digitizing or engineering applications.

The FSAs contained within this product are those reported by census respondents. The postal code^{OM} provided by a respondent may not be the same postal code^{OM} as the one assigned to their dwelling by Canada Post Corporation. Therefore, calculating a provincial population and dwelling count by grouping FSAs will not necessarily yield the same count as the one provided in the provincial or territorial population and dwelling counts table.

The product was created to support the analysis of data from the 2011 Census of Population. It may not be adequate for other purposes, especially if users are interested in business postal codes^{OM} or linking information from other administrative sources.

The geographic data used to create the file were obtained from several sources having a wide range of scales. Boundary files will not be precise if plotted at a larger scale than the scale of the source material used in their creation. Maps created from the boundary file should not be used to determine the precise location of boundaries. The boundary file is not intended to serve as a legal or cadastral representation of 2011 Forward Sortation Areas.

Comparison to other products/versions

The 2011 Census FSA Boundary File is compatible with other Statistics Canada spatial data products such as the 2011 Census Road Network File and 2011 Census Boundary Files. The 2011 Census FSA Boundary File is not necessarily compatible with the 2006 Census FSA Boundary File.

Using with other products

When considering using the 2011 Census FSA Boundary File, users should be aware of the compatibility of this file with those that are available from other sources. They may not be consistent with Statistics Canada files.

Reference dates

Postal codes^{OM} were determined to be applicable for the 2011 Census if they appeared on Canada Post Corporation's Address Lookup File in May 2011, the month of the census. However, postal codes^{OM} provided by the respondents were considered acceptable if they were found in the file from Canada Post Corporation within the six months leading up to the census. This is consistent with the effort to represent the FSA and the postal code^{OM} whenever they could be considered as being in use at the time of the census.

4. Technical specifications

Record layouts and data descriptions

The following table identifies and briefly describes the selected attributes comprising the content of the 2011 Census Forward Sortation Area Boundary File.

Table 4.1 2011 Census Forward Sortation Area Boundary File record layout

Attribute name	Data type	Description
FID	Object ID (4)	Specific to ArcGIS®
Shape	Geometry	Specific to ArcGIS®
DigitalBoundary CartographicBoundary	MultiPolygon PropertyType	Shape geometry; specific to Geography Markup Language
CFSAUID	Character (3)	Uniquely identifies a forward sortation area (composed of three alphanumeric characters)
PRUID	Character (2)	Uniquely identifies a province or territory
PRNAME	Character (55)	Province or territory name

Hydrographic reference files

The hydrographic reference files are provided for the mapping of inland and coastal waters, Great Lakes and the St. Lawrence River. These files were created to be used in conjunction with the boundary files to enable mapping at various scales. The record layout in Table 4.2 below is for inland lakes and rivers (polygons), coast (polygons) and inland rivers (lines).

Table 4.2 Hydrographic reference files record layout

Attribute name	Data type	Description
FID	Object ID (4)	Specific to ArcGIS®
Shape	Geometry	Specific to ArcGIS®
DigitalBoundary Cartographic Boundary	MultiPolygon PropertyType	Shape geometry; specific to Geography Markup language
HYDROUID	Character (7)	Uniquely identifies a hydrographic feature
NAME	Character (55)	Feature name
RANK	Integer	Feature rank
PRUID	Character (2)	Uniquely identifies a province or territory

Table 4.3 Hydrographic reference files feature count

PRUID	Coastal file (number of polygons)	Lakes and Rivers file (number of polygons)	Rivers file (number of lines)
10	5,083	4,965	6,062
11	147	358	80
12	1,966	8,226	4,063
13	472	3,418	3,759
24	4,330	37,775	19,078
35	12,164	43,237	19,471
46	71	6,804	4,745
47	0	5,455	6,027
48	0	4,270	9,606
59	26,386	56,834	186,648
60	35	1,563	3,714
61	1,319	26,236	8,375
62	26,264	26,659	5,988
Greater than 62	53	22	5
Total	78,290	225,822	277,621

Table 4.4 Hydrographic reference files feature count by rank

Rank	Coastal file (number of polygons)	Lakes and Rivers file (number of polygons)	Rivers file (number of lines)
0	78,290	0	0
1	0	111	0
2	0	3,237	11,442
3	0	3,357	19,221
4	0	10,873	36,032
5	0	19,967	80,914
6	0	64,245	130,012
7	0	124,032	0
Total	78,290	225,822	277,621

Notes:

All features within the Coastal file (polygon) are assigned a rank value equal to the value 'zero.'

Within the Lakes and Rivers file (polygons) and the Rivers file (lines), the general guiding principle is that larger features are assigned lower rank values (e.g., 1, 2, 3) whereas smaller features are assigned higher rank values (e.g., 5, 6, 7).

Lakes and Rivers (polygon) features assigned rank value '7' consist of hydrographic bodies and islands having extremely small polygon areas.

Features located outside Canada are assigned a PRUID value greater than 62.

Attribute domain values

Province and territory unique identifier (PRUID)

The following is a list of province and territory unique identifiers and their associated name.

PRUID	Province or territory name
10	Newfoundland and Labrador/Terre-Neuve-et-Labrador
11	Prince Edward Island/Île-du-Prince-Édouard
12	Nova Scotia/Nouvelle-Écosse
13	New Brunswick/Nouveau-Brunswick
24	Quebec/Québec
35	Ontario
46	Manitoba
47	Saskatchewan
48	Alberta
59	British Columbia/Colombie-Britannique
60	Yukon
61	Northwest Territories/Territoires du Nord-Ouest
62	Nunavut

Forward sortation area unique identifier (CFSAUID)

The following is a list of province and territory unique identifiers and the first letter of the FSAs associated with that province or territory within the FSA Boundary File.

PRUID	FSA first letter
10	A
11	C
12	B
13	E
24	G, H, J
35	K, L, M, N, P
46	R
47	S
48	T
59	V
60	Y
61	X
62	X

Software formats

The 2011 Census Forward Sortation Area Boundary File is available in the following formats.

- ArcGIS®
File extension: .shp
- Geography Markup Language version 3.1.1
File extension: .gml
- MapInfo®
File extension: .tab

This reference guide does not provide details on specific software packages that are available for use with the 2011 Census Forward Sortation Area Boundary File. Users are advised to contact the appropriate software vendor for information.

File extension and accented character information

The ArcGIS®, Geography Markup Language and MapInfo® files are compressed into WinZip® files (file extension .zip).

An XML schema file (.xsd) is included to describe and validate the structure and content of the .gml files.

The 2011 Census Forward Sortation Area Boundary File contains attributes with accented characters. They were successfully tested on desktop versions of ArcGIS® 9.3.1 and MapInfo® 11.0.1.

Geographic representation

The 2011 Census Forward Sortation Area Boundary File is available in the following geographic representation:

Datum:	NAD83
Coordinates:	Latitude and Longitude

The North American Datum of 1983 (NAD83) is an adjustment of the 1927 datum (NAD27) that reflects the higher accuracy of geodetic surveying.

The geographical coordinate system is the primary locational reference system for the earth. This system provides for the unique statement of location for features such as points, lines and polygons.

Users of 2011 Census Forward Sortation Area Boundary File can transform the file into the representation that best satisfies their needs, knowing the effects these representations have on angles, areas, distances and direction.

File naming convention

Spatial product file names follow a file naming convention. The file projection, geographic level, geographic coverage, file type, geographic reference date, software type and language are embedded within the file name. Standardizing the names of the files facilitates the storage of compressed files, all having the extension .zip.

Each file name is 13 characters in length. All alphabetic characters are in lower case to maintain consistency.

First character: projection of file

g projection is Geographic (latitude and longitude)

Next three characters: primary geographic level of file/type of file

fsa forward sortation area
hy_ supporting hydrography (Great Lakes, St. Lawrence River, oceans, etc.)

Next three numbers: geographic code of coverage

000 Canada

Next character: file type

a digital boundary file
b cartographic boundary file
c interior lakes and rivers hydrographic reference file (polygon)
d interior rivers hydrographic reference file (line)
h hydrographic coverage of Great Lakes, St. Lawrence River and surrounding oceans

Next two numbers: geographic reference date

The geographic reference date is a date determined by Statistics Canada for the purpose of finalizing the geographic framework for which census statistical data are collected, tabulated and reported. For 2011 Census products, the geographic reference date is January 1, 2011.

11 geographic reference date is 2011

Next character: file format

a ArcGIS® (.shp)
g Geography Markup Language (.gml)
m MapInfo® (.tab)

Final two characters: language

_e English
_f French

5. Data quality

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

Lineage

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

The National Geographic Database (NGD) is a joint Statistics Canada-Elections Canada initiative to develop and maintain a spatial database which serves the needs of both organizations. The focus of the NGD is the continual improvement of quality and currency of spatial coverage using updates from provinces, territories and local sources. The source files used for the creation of the boundary file reside on Statistics Canada's Spatial Data Infrastructure (SDI) which was derived directly from data stored on the NGD.

For digital boundary file creation, spatial and attribute information were extracted from the SDI using the lowest level of geography, the dissemination block. Primary data manipulation of the product files included preserving the geographic hierarchy of the attributes inherent within a geographic level. The dissemination block file was copied into a File Geo Database to facilitate geo-processing (e.g., projecting, joins, transforming and verification operations). The spatial component of the file was reprojected from Lambert conformal conic into latitude and longitude coordinates (NAD83) using the ArcGIS® ArcCatalog Feature-Project tool.

All of the higher level digital boundary files were created from the dissemination block level. The files were verified for their spatial and attribute content, translated into French and English, and appropriately named according to the file naming convention. The 2011 Census standard geographic area unique identifier, name, type, and the relationships among the various geographic levels are found on the SDI.

To create the cartographic boundary files, a subset of the full hydrography, the coastal file, was created. This subset of coastal hydrographic features was then used to erase portions of forward sortation areas that are covered by coastal waters.

The inland lakes and rivers file was created by selecting hydrographic features from the National Geographic Database's hydrographic reference layer. These reference data were sourced from the National Topographic Data Base (1:50,000 and the 1:250,000 maps) and the Digital Chart of the World. In British Columbia, information was supplemented with data from the National Hydro Network.

The inland lakes and rivers polygon file contains a selection of hydrographic bodies not found in the coastal file. The inland rivers file contains a selection of linear hydrographic features such as rivers and streams.

Final data processing consisted of the conversion from the File Geo Database format, using FME® (Safe Software), into the following GIS file formats: ArcGIS® (.shp), Geography Markup Language (.gml) and MapInfo® (.tab).

Sources

The product was derived from the 2011 Census postal code^{OM} variable and the National Geographic Database. The postal code^{OM} is captured for all households from the address information provided or accepted by the respondent on the front page of the census questionnaire. For the 2011 Census, held on May 10, 2011, some census questionnaires contained a pre-printed postal code^{OM} that the respondents could either accept or correct; however, other census questionnaires did not contain a pre-printed postal code^{OM} and respondents were asked to provide a postal code^{OM} by writing it on the questionnaire. These reported postal codes^{OM} were processed through a series of edit operations that identified missing or invalid responses and replaced them with a valid response to produce the 2011 Census postal code^{OM} variable. At the end of this process, a final postal code^{OM} was associated with each census household.

Positional accuracy

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

The Spatial Data Infrastructure is not Global Positioning Systems (GPS)-compliant. However, every possible attempt is made to ensure that the 2011 Census standard geographic area boundaries maintained in the Spatial Data Infrastructure respect the limits of the administrative entities that they represent (e.g., forward sortation areas) or on which they are based (e.g., dissemination blocks). The positional accuracy of these limits is dependent upon source materials used by Statistics Canada to identify the location of limits. In addition, due to the importance placed on relative positional accuracy, the positional accuracy of other geographic data (e.g., road network data and hydrographic data) that are stored within the Spatial Data Infrastructure is considered when positioning the limits of the 2011 Census standard geographic areas.

Attribute accuracy

Attribute accuracy refers to the accuracy of the quantitative and qualitative information attached to each feature (e.g., forward sortation area unique identifier).

The attribute data associated with the polygons in the 2011 Census FSA Boundary File are derived from postal codes^{OM} captured from the 2011 Census of Population questionnaires. Edit procedures verify that a reported postal code^{OM} was valid and consistent with neighbouring postal codes^{OM}. Postal codes^{OM} which failed these checks were imputed, thus ensuring that 100% of the reported postal codes^{OM} were valid postal codes^{OM} according to Canada Post Corporation as of the postal code^{OM} reference month.

It is important to note that postal codes^{OM} were not verified against Canada Post Corporation's address information, merely that the postal code^{OM} was considered valid by Canada Post Corporation.

Logical consistency

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

Boundaries found in this product are compatible with those found in other spatial products produced as part of the suite of 2011 Census Geography products. FSA boundaries are derived from the dissemination block level of the 2011 dissemination block boundaries and as such are inherently consistent with those features.

The FSA Boundary File is derived from the 2011 Census responses and not from address-based data from Canada Post Corporation. Whole dissemination blocks are assigned only one FSA in the FSA Boundary File. Furthermore, since whole dissemination blocks are assigned one and only one FSA, the population and dwelling counts derived by aggregating dissemination blocks assigned to an FSA will not match the aggregations based on each household's reported FSA.

Consistency with other products

Topology checks were performed with the road network file and the FSA boundary file to measure the degree of integration amongst these products. The results indicated the degree of integration was within the default tolerance parameters as defined below.

XY resolution: 0.000000001 degrees

XY tolerance: 0.000000008983153 degrees

The 2011 Census Forward Sortation Area Boundary File and the associated hydrographic reference files are not necessarily compatible with files available from other sources.

Completeness

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

The product contains boundaries for 1,621 FSAs. In total, 1,638 FSAs were reported by at least one household in the 2011 Census.

The reasons why a reported FSA may not be represented in the 2011 Census FSA Boundary File includes cases where the FSAs did not meet the criteria for minimum number of responses and were eliminated due to this constraint. As well, an FSA may not be the most frequently reported on any dissemination block thus not appearing in the product. Finally, an FSA may not have appeared in the Census Response Database.

It is important to note that in the digital boundary file and cartographic boundary file, a 2011 FSA may be depicted by more than one polygon. In the digital boundary file, there are some 2011 FSAs that have two or more parts. The cartographic boundary file contains additional polygons as a result of removing the coastal water area from the digital boundary file, thus creating several polygons for one 2011 FSA.

Below is a list of the seventeen forward sortation areas which are not included in the boundary file because they failed to meet the minimum number of response criterion and/or were not the dominant FSA in a dissemination block.

E2R
G1A
H0M
H4Y
H5B
K1A
L0V
L5P
M5K
M5L
M5W
M5X
M7A
M7R
M7Y
T1Z
V7X

Appendix A Glossary

Adjusted counts

'Adjusted counts' refer to previous census population and dwelling counts that were adjusted (i.e., recompiled) to reflect current census boundaries, when a boundary change occurs between the two censuses.

Block-face

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

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

Census agricultural region

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

Census consolidated subdivision

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

Census division

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

Census metropolitan area and census agglomeration

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

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

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

Census metropolitan influenced zone

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

CMAs or CAs have on them. CSDs within the territories that are outside CAs are assigned to a separate category.

Census subdivisions within provinces are assigned to a MIZ category based on the percentage of their resident employed labour force that commutes to work in the core(s) of CMAs or CAs. CSDs with the same degree of influence tend to be clustered. They form zones around CMAs and CAs that progress through the categories from 'strong' to 'no' influence as distance from the CMAs and CAs increases. As many CSDs in the territories are very large and sparsely populated, the commuting flow of the resident employed labour force is unstable. For this reason, CSDs in the territories that are outside CAs are assigned to a separate category that is not based on their commuting flows.

Census subdivision

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

Census tract

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

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

Coordinate system

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

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

Core, fringe and rural area

The terms 'core,' 'fringe' and 'rural area' replace the terms 'urban core,' 'urban fringe' and 'rural fringe' for the 2011 Census. These terms distinguish between population centres (POPCTRs) and rural areas (RAs) within a census metropolitan area (CMA) or census agglomeration (CA).

A CMA or CA can have two types of cores: the core and the secondary core. The core is the population centre with the highest population, around which a CMA or a CA is delineated. The core must have a population (based on the previous census) of at least 50,000 persons in the case of a CMA, or at least 10,000 persons in the case of a CA.

The secondary core is a population centre within a CMA that has at least 10,000 persons and was the core of a CA that has been merged with an adjacent CMA.

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

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

Datum

A datum is a geodetic reference system which includes an ellipsoid and an origin against which the latitude and longitude of all other points on the earth's surface are referenced. A datum may often be associated with a particular ellipsoid (mathematical reference model of the earth).

Designated place

A designated place (DPL) is normally a small community or settlement that does not meet the criteria established by Statistics Canada to be a census subdivision (an area with municipal status) or a population centre.

Designated places are created by provinces and territories, in cooperation with Statistics Canada, to provide data for submunicipal areas.

Dissemination area

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

Dissemination block

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

Economic region

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

Ecumene

Ecumene is a term used by geographers to mean inhabited land. It generally refers to land where people have made their permanent home, and to all work areas that are considered occupied and used for agricultural or any other economic purpose. Thus, there can be various types of ecumenes, each having its own unique characteristics (population ecumene, agricultural ecumene, industrial ecumene, etc.).

Federal electoral district

A federal electoral district (FED) is an area represented by a member of the House of Commons. The federal electoral district boundaries used for the 2011 Census are based on the 2003 Representation Order.

Geocoding

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

Households, postal codes^{OM} and place of work data are linked to block-face representative points (coordinates) when the street and address information is available; otherwise, they are linked to dissemination block (DB) representative points. In some cases, postal codes^{OM} and place of work data are linked to dissemination area (DA) representative points when they cannot be linked to DBs. As well, place of work data are linked to census subdivision representative points when the data cannot be linked to DAs.

Geographic code

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

Geographic reference date

The geographic reference date is a date determined by Statistics Canada for the purpose of finalizing the geographic framework for which census data will be collected, tabulated and reported. For the 2011 Census, the geographic reference date is January 1, 2011.

OM: Postal code is an official mark of Canada Post Corporation.

Geographical region of Canada

The geographical regions of Canada are groupings of provinces and territories established for the purpose of statistical reporting. The six geographical regions of Canada are: Atlantic, Quebec, Ontario, Prairies, British Columbia and Territories.

Land area

Land area is the area in square kilometres of the land-based portions of standard geographic areas. Land area data are unofficial and are provided for the sole purpose of calculating population density.

Map projection

A map projection is the process of transforming and representing positions from the earth's three-dimensional curved surface to a two-dimensional (flat) surface. The process is accomplished by a direct geometric projection or by a mathematically derived transformation.

The Lambert conformal conic map projection is widely used for general maps of Canada at small scales and is the most common map projection used at Statistics Canada.

National Geographic Database

The National Geographic Database (NGD) is a shared database between Statistics Canada and Elections Canada. The database contains roads, road names and address ranges. It also includes separate reference layers containing physical and cultural features, such as hydrography and hydrographic names, railroads and power transmission lines.

Place name

'Place name' refers to selected names of active and retired geographic areas as well as names from the Canadian Geographical Names Data Base. Place names include names of census subdivisions (municipalities), designated places and population centres, as well as the names of some local places.

Population centre

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

Population centres are classified into three groups, depending on the size of their population:

- small population centres, with a population between 1,000 and 29,999
- medium population centres, with a population between 30,000 and 99,999
- large urban population centres, with a population of 100,000 or more

Population centre population includes all population living in the cores, secondary cores and fringes of census metropolitan areas (CMAs) and census agglomerations (CAs), as well as the population living in population centres outside CMAs and CAs.

Population density

Population density is the number of persons per square kilometre.

Postal code^{OM}

The postal code^{OM} is a six-character code defined and maintained by Canada Post Corporation for the purpose of sorting and delivering mail.

Province or territory

'Province' and 'territory' refer to the major political units of Canada. From a statistical point of view, province and territory are basic areas for which data are tabulated. Canada is divided into 10 provinces and 3 territories.

Reference map

A reference map shows the location of the geographic areas for which census data are tabulated and disseminated. The maps display the boundaries, names and unique identifiers of standard geographic areas, as well as major cultural and physical features, such as roads, railroads, coastlines, rivers and lakes.

Representative point

A representative point is a coordinate point that represents a line or a polygon. The point is centrally located along the line, and centrally located or population weighted in the polygon.

Representative points are generated for block-faces, as well as for selected geographic areas – province/territory (PR), federal electoral district (FED), economic region (ER), census division (CD), census metropolitan area/census agglomeration (CMA/CA), census subdivision (CSD), population centre (POPCTR), designated place (DPL), census tract (CT), dissemination area (DA) and dissemination block (DB).

Households, postal codes^{OM} and place of work data are linked to block-face representative points (coordinates) when the street and address information is available; otherwise, they are linked to dissemination block (DB) representative points. In some cases, postal codes and place of work data are linked to dissemination area (DA) representative points when they cannot be linked to DBs. As well, place of work data are linked to census subdivision (CSD) representative points when the data cannot be linked to DAs.

Rural area

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

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

Spatial Data Infrastructure

The Spatial Data Infrastructure (SDI) is an internal maintenance database that is not disseminated outside of Statistics Canada. It contains roads, road names and address ranges from the National Geographic Database (NGD), as well as boundary arcs of standard geographic areas that do not follow roads, all in one integrated line layer. The database also includes a related polygon layer consisting of basic blocks (BB; basic blocks are the smallest polygon units in the database, and are formed by the intersection of all roads and the arcs of geographic areas that do not follow roads), boundary layers of standard geographic areas, and derived attribute tables, as well as reference layers containing physical and cultural features (such as hydrography, railroads and power transmission lines) from the NGD.

The SDI supports a wide range of census operations, such as the maintenance and delineation of the boundaries of standard geographic areas (including the automated delineation of dissemination blocks and population centres) and geocoding. The SDI is also the source for generating many geography products for the 2011 Census, such as cartographic boundary files and road network files.

Spatial data quality elements

Spatial data quality elements provide information on the fitness for use of a spatial database by describing why, when and how the data are created, and how accurate the data are. The elements include an overview describing the purpose and usage, as well as specific quality elements reporting on the lineage, positional accuracy, attribute accuracy, logical consistency and completeness. This information is provided to users for all spatial data products disseminated for the census.

Standard Geographical Classification

The Standard Geographical Classification (SGC) 2011 is Statistics Canada's main classification of geographic areas in Canada. It is designed to classify statistical information by geographic areas. The classification consists of four levels: geographical regions of Canada, provinces and territories, census divisions (such as counties and regional municipalities) and census subdivisions (such as municipalities). The four geographic levels are hierarchically related; a seven-digit code is used to show this relationship.

Statistical Area Classification

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

The Statistical Area Classification is a variant of the Standard Geographical Classification (SGC). Census subdivisions (CSDs) form the lowest level of the classification variant. The next level consists of individual census metropolitan areas (CMAs), census agglomerations (CAs) and census metropolitan influenced zones (MIZs). The highest level consists of three categories that cover all of the land mass of Canada:

- census metropolitan areas
- census agglomerations
- outside census metropolitan areas and census agglomerations.

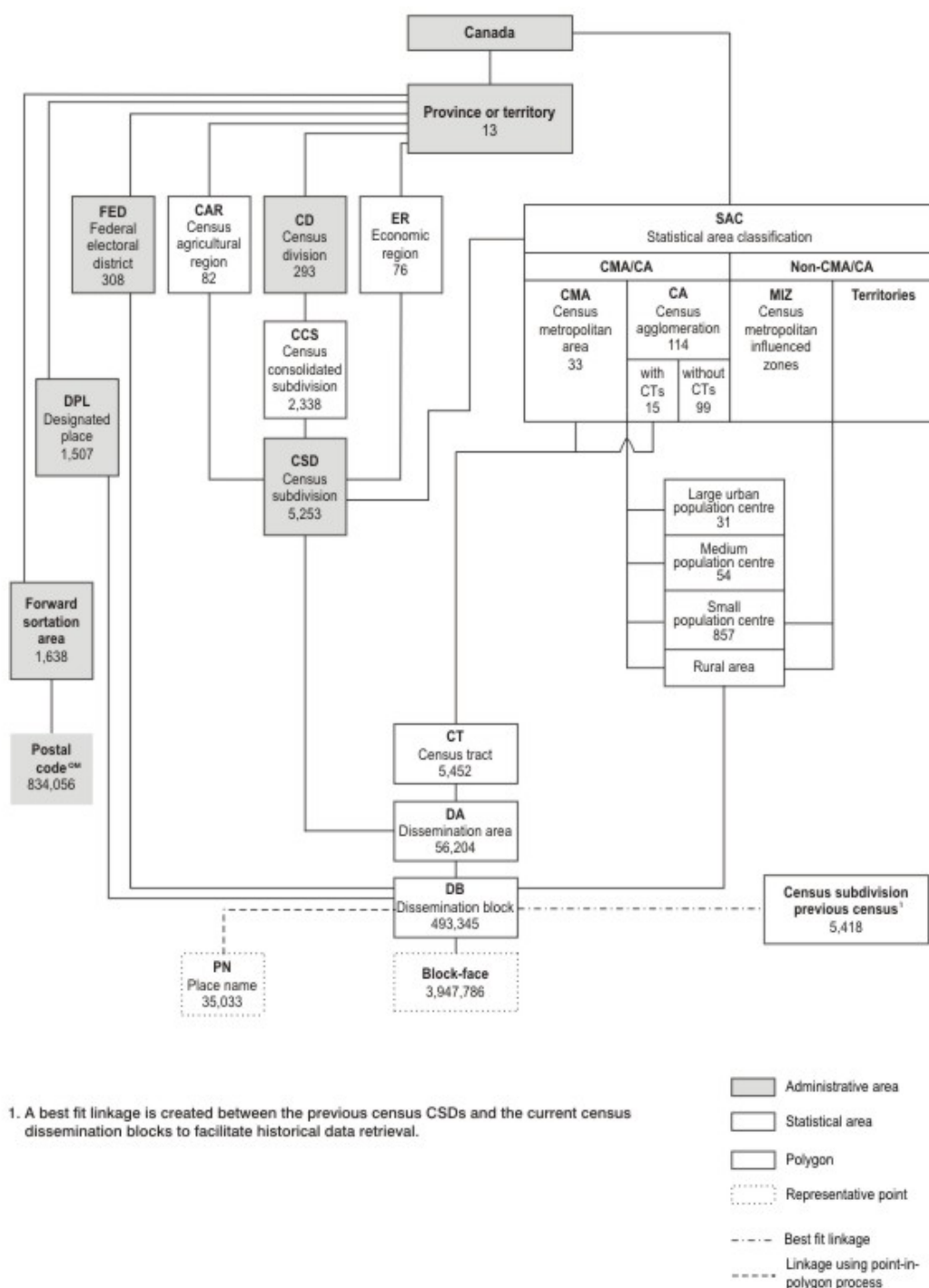
The SAC provides unique numeric identification (codes) for these hierarchically-related geographic areas. It was established for the purpose of reporting statistics.

Thematic map

A thematic map shows the spatial distribution of one or more specific data themes for selected geographic areas. The map may be qualitative in nature (e.g., predominant farm types) or quantitative (e.g., percentage population change).

Appendix B Hierarchy of standard geographic units for dissemination, 2011 Census

Figure B.1 Hierarchy of standard geographic units for dissemination, 2011 Census



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

Appendix C Geographic units by province and territory, 2011 Census

Table C.1 Geographic units by province and territory, 2011 Census

Geographic unit	Canada 2006	Canada 2011	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
Federal electoral district (2003 Representation Order)	308	308	7	4	11	10	75	106	14	14	28	36	1	1	1
Economic region	76	76	4	1	5	5	17	11	8	6	8	8	1	1	1
Census agricultural region	82	82	3	3	5	4	14	5	12	20	8	8	0	0	0
Census division	288	293	11	3	18	15	98	49	23	18	19	29	1	6	3
Census consolidated subdivision	2,341	2,338	89	68	43	151	1,005	316	126	300	77	153	1	6	3
Census subdivision (CSD)	5,418	5,253	376	113	99	273	1,285	574	287	959	435	743	37	41	31
CSD dissolutions (Jan. 2, 2006 to Jan. 1, 2011)	221	...	3	0	1	6	13	13	13	26	19	126	0	1	0
CSD incorporations (Jan. 2, 2006 to Jan. 1, 2011)	...	56	2	0	0	3	4	2	3	1	1	33	2	5	0
Designated place	1,289	1,507	183	0	65	167	106	114	97	194	261	319	1	0	0
Census metropolitan area	33	33	1	0	1	2	6 ¹	15 ¹	1	2	2	4	0	0	0
Census agglomeration (CA)	111	114	3	2	4	5 ¹	25 ¹	28 ¹	4	7 ¹	16 ¹	21	1	1	0
CA with census tracts	15	15	0	0	0	1	3	4	0	0	3	4	0	0	0
CA without census tracts	96	99	3	2	4	4 ¹	22 ¹	24 ¹	4	7 ¹	13 ¹	17	1	1	0
Census tract	5,076	5,452	47	0	93	102	1,371	2,273	173	109	573	711	0	0	0
Small population centre (1,000 to 29,999)	811	857	29	6	35	30 ¹	224 ¹	237 ¹	42 ¹	59 ¹	101 ¹	87	1	3	7
Medium population centre (30,000 to 99,999)	54	54	0	1	1	2	13	19	1	2	6	9	0	0	0
Large urban population centre (100,000 or more)	29	31	1	0	1	1	6 ¹	14 ¹	1	2	2	4	0	0	0
Place name	21,411	35,033	1,836	709	3,138	2,679	6,985	8,091	1,839	2,687	3,117	3,528	195	153	76
Dissemination area	54,626	56,204	1,071	293	1,645	1,454	13,622	19,964	2,179	2,467	5,711	7,582	68	98	50
Dissemination block	478,831	493,345	8,732	3,573	15,842	15,415	109,455	132,777	30,471	51,610	66,332	55,529	1,359	1,492	758
Block-face	3,739,041	3,947,786	81,868	27,050	155,484	135,411	842,992	1,003,813	201,005	362,238	525,180	577,975	13,036	15,612	6,122
Forward sortation area	1,625	1,638	35	7	77	111	418	526	64	48	153	190	3	3	3
Postal code ^{OM}	805,640	834,056	10,878	3,316	27,852	58,617	212,162	276,844	24,568	21,923	80,948	115,435	968	516	29

... not applicable

1. Census metropolitan areas, census agglomerations, large urban population centres and small population centres crossing provincial boundaries are counted in both provinces, and, therefore, do not add up to the national total.

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

Appendix D Census subdivision types by province and territory, 2011 Census

Table D.1 Census subdivision types by province and territory, 2011 Census

Census subdivision type		Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
		5,253	376	113	99	273	1,285	574	287	959	435	743	37	41	31
C	City / Cité	6	...	...	...	4	...	2	...	...	...	...	...	...	...
CC	Chartered community	3	...	...	...	...	...	...	...	...	...	...	...	3	...
CG	Community government	4	...	...	...	...	...	...	...	...	...	...	...	4	...
CN	Crown colony / Colonie de la couronne	1	...	...	...	...	...	...	...	1	...	...	...	...	...
COM	Community	33	...	33	...	...	...	...	...	...	...	...	...	...	...
CT	Canton (municipalité de)	45	...	...	...	...	45	...	...	...	...	...	...	...	...
CU	Cantons unis (municipalité de)	2	...	...	...	...	2	...	...	...	...	...	...	...	...
CV	City / Ville	2	...	...	...	...	...	2	...	...	...	...	...	...	...
CY	City	149	3	2	...	4	...	46	9	16	17	49	1	1	1
DM	District municipality	52	...	...	...	...	...	...	...	...	...	52	...	...	...
HAM	Hamlet	36	...	...	...	...	...	...	...	...	...	...	2	10	24
ID	Improvement district	7	...	...	...	...	...	...	...	...	7	...	...	...	...
IGD	Indian government district	2	...	...	...	...	...	...	...	...	...	2	...	...	...
IM	Island municipality	1	...	...	...	...	...	...	...	...	...	1	...	...	...
IRI	Indian reserve / Réserve indienne	961	3	4	25	18	27	139	75	168	81	419	...	2	...
LGD	Local government district	2	...	...	...	...	...	...	2	...	...	...	...	...	...
LOT	Township and royalty	67	...	67	...	...	...	...	...	...	...	...	...	...	...
M	Municipality / Municipalité	3	...	...	...	...	...	3	...	...	...	...	...	...	...
MD	Municipal district	76	...	...	12	...	...	...	...	...	64	...	...	...	...
MÉ	Municipalité	619	...	...	...	...	619	...	...	...	...	...	...	...	...
MU	Municipality	54	...	...	...	...	...	54	...	...	...	...	...	...	...
NH	Northern hamlet	11	...	...	...	...	...	...	...	11	...	...	...	...	...
NL	Nisga'a land	1	...	...	...	...	...	...	...	...	...	1	...	...	...
NO	Unorganized / Non organisé	137	...	...	...	...	96	16	10	2	...	...	4	6	3
NV	Northern village	11	...	...	...	...	...	...	...	11	...	...	...	...	...
P	Parish / Paroisse (municipalité de)	150	...	...	...	150	...	...	...	...	...	...	...	...	...
PE	Paroisse (municipalité de)	179	...	...	...	...	179	...	...	...	...	...	...	...	...
RCR	Rural community / Communauté rurale	4	...	...	...	4	...	...	...	...	...	...	...	...	...
RDA	Regional district electoral area	158	...	...	...	...	...	...	...	...	...	158	...	...	...
RG	Region	1	1	...	...	...	...	...	...	...	...	...	...	...	...

Table D.1 Census subdivision types by province and territory, 2011 Census (continued)

Census subdivision type		Canada	N.L.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Y.T.	N.W.T.	Nvt.
RGM	Regional municipality	4	...	...	3	...	...	...	...	...	...	1	...	...	...
RM	Rural municipality	413	...	...	...	...	...	...	117	296	...	...	...	...	...
RV	Resort village	40	...	...	...	...	...	...	...	40	...	...	...	...	...
S-É	Indian settlement / Établissement indien	28	...	...	...	...	6	5	4	1	4	3	5	...	...
SA	Special area	3	...	...	...	...	...	...	...	...	3	...	...	...	...
SC	Subdivision of county municipality / Subdivision municipalité de comté	28	...	...	28	...	...	...	...	...	...	...	...	...	...
SÉ	Settlement / Établissement	13	...	...	...	...	...	...	...	...	...	...	13	...	...
SET	Settlement	13	...	...	...	...	...	...	...	...	...	...	...	10	3
SG	Self-government / Autonomie gouvernementale	4	...	...	...	...	...	...	...	...	...	...	4	...	...
SM	Specialized municipality	5	...	...	...	...	...	...	...	...	5	...	...	...	...
SNO	Subdivision of unorganized / Subdivision non organisée	92	92	...	...	...	...	...	...	...	...	...	...	...	...
SV	Summer village	51	...	...	...	...	...	...	...	...	51	...	...	...	...
T	Town	743	277	7	31	13	...	88	51	147	108	14	3	4	...
TC	Terres réservées aux Cris	8	...	...	...	...	8	...	...	...	...	...	...	...	...
TI	Terre inuite	12	...	...	...	...	12	...	...	...	...	...	...	...	...
TK	Terres réservées aux Naskapis	1	...	...	...	...	1	...	...	...	...	...	...	...	...
TL	Teslin land	1	...	...	...	...	...	...	...	...	...	...	1	...	...
TP	Township	207	...	...	...	...	...	207	...	...	...	...	...	...	...
TV	Town / Ville	15	...	...	...	14	...	1	...	...	...	...	...	...	...
V	Ville	222	...	...	...	...	222	...	...	...	...	...	...	...	...
VC	Village cri	8	...	...	...	...	8	...	...	...	...	...	...	...	...
VK	Village naskapi	1	...	...	...	...	1	...	...	...	...	...	...	...	...
VL	Village	550	...	...	...	66	45	11	19	266	95	43	4	1	...
VN	Village nordique	14	...	...	...	...	14	...	...	...	...	...	...	...	...

... not applicable

Source: Statistics Canada, 2011 Census of Population.