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Census Subdivision Boundary File, Reference Guide, 2019

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Census Subdivision Boundary File, Reference Guide, 2019

This reference guide is intended for users of the 2019 Census Subdivision Boundary File. The guide provides an overview of the file, the general methodology used in its creation, and important technical information.

What's new?

- The 2019 Census Subdivision Boundary File portrays the boundaries of all 5,141 census subdivisions, which combined, cover all of Canada.
- The boundaries, names, and codes of census subdivisions reflect those in effect on January 1, 2019, the geographic reference date for this edition of the Census Subdivision Boundary File.
- The 2019 Census Subdivision Boundary File is now available in File Geodatabase (.gdb), Esri® REST service and Web Map Service (WMS) formats.

1. About this guide

This reference guide does not provide details on specific software packages that are available for use with the 2019 Census Subdivision Boundary File. Users are advised to contact the appropriate software vendor for information.

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2. Overview

The 2019 Census Subdivision Boundary File depicts the boundaries of all 5,141 census subdivisions, which combined, cover all of Canada and contains information such as unique identifiers (UIDs), names and types of the geographic area presented. As well, the UIDs, names and types (where applicable) are included for the following geographic levels:

- province or territory
- census division

The 2019 Census Subdivision Boundary File depicts the full extent of census subdivisions.

The Census Subdivision Boundary File is portrayed in Lambert conformal conic projection (North American Datum of 1983 [NAD83]). The 2019 Census Subdivision Boundary File is available as a national file.

How to cite this guide

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How to cite this product

Census Subdivision Boundary File, 2019, Statistics Canada Catalogue no. 92-162-X.

3. About this product

Purpose of the product

The purpose of the 2019 Census Subdivision Boundary File is to provide a framework for mapping and spatial analysis, and to support Geographic Information System (GIS) applications used for land use and demographic studies, as well as social, economic and market research.

The 2019 Census Subdivision Boundary File is positionally consistent with the 2019 Road Network File, which provides additional reference for mapping.

Note: It is recommended that the 2019 Census Subdivision Boundary File and Road Network File be used as a basis for the retrieval of 2019 data for user-defined areas. Users can define their custom areas based on the roads in the 2019 Road Network File. Roads within the 2019 Road Network File correspond to the 2019 geographic frame and therefore do not require additional boundary reconciliation work, which facilitates the geocoding process. For information on custom area creation and geocoding services, please contact us at 1-800-263-1136 or STATCAN.infostats-infostats.STATCAN@canada.ca.

Definitions and concepts

A census subdivision is a municipality or an area treated as equivalent to a municipality for statistical purposes (for example, Indian reserves and unorganized territories). Municipal status is defined by laws in effect in each province and territory in Canada.

Geographic terms and concepts are briefly defined in the *Dictionary, Census of Population, 2016*.

Content

The 2019 Census Subdivision Boundary File contains the unique identifiers (UIDs), names and types of the geographic areas represented, as well as the UIDs, names and types (where applicable) of higher geographic levels including census divisions and provinces or territories.

Note: The boundaries, names, and codes of census subdivisions reflect those in effect on January 1, 2019, the geographic reference date for this edition of the Census Subdivision Boundary File.

The 2019 Census Subdivision Boundary File is available in English and French, in five formats: Shapefile (.shp) Geography Markup Language (.gml), File Geodatabase (.gdb), Esri® REST service and Web Map Service (WMS).

General methodology

The National Geographic Database (NGD) is a joint Statistics Canada-Elections Canada initiative to develop and maintain a spatial database that 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 is derived directly from data stored on the NGD.

Creation of the 2019 Census Subdivision Boundary File

The Census Subdivision Boundary File was created from the lowest level of geography maintained in the NGD. Primary data manipulation of the product file included preserving the geographic hierarchy of the attributes inherent within a geographic level. A copy of the source census subdivision boundary file in its original format was created to facilitate geo-processing (e.g., joins, modifications and verification operations).

The file was verified for 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 of the file using FME® (Safe Software), into the following GIS file formats: Shapefile (.shp), Geography Markup Language (.gml) and File Geodatabase (.gdb).

The Esri® REST service and Web Map Service (WMS) were created and published using ArcGIS® Enterprise.

The Shapefile, Geography Markup Language and File Geodatabase files are compressed into WinZip® files (file extension .zip) and made available for download from the Statistics Canada website.

Limitations

The input data used to create the file was originally obtained from several sources having a wide range of scales. This boundary file will not be precise if plotted at a larger scale than the scale of the source material used in its creation. Maps created from the boundary file should not be used to determine the precise location of boundaries.

The positional accuracy of the file does not support cadastral, legal, surveying, digitizing or engineering applications.

Comparison to other products/versions

Differences between the 2019 Census Subdivision Boundary File and previous versions of the census subdivision boundary file include:

- The 2019 Census Subdivision File is compatible with the 2019 edition of the Road Network File as well as the Interim List of Change to Municipal Boundaries, Status and Names.
- The 2019 Census Subdivision Boundary File is similar but not necessarily consistent with the suite of boundary files made available as a part of the 2016 Census geographic product line.

Use with other products

When considering using the 2019 Census Subdivision 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 date

The geographic reference date is a date determined by Statistics Canada to finalize the geographic framework for which statistical data are collected, tabulated and reported. The geographic reference date for the 2019 Census Subdivision Boundary File is January 1, 2019.

4. Technical specifications

Record layout and data description

The following table identifies and briefly describes the selected attributes comprising the content of the 2019 Census Subdivision Boundary File.

Table 4.1
2019 Census subdivision boundary file record layout

Attribute name	Data type	Description
PRUID	Character (2)	Uniquely identifies a province or territory
PRNAME	Character (100)	Province or territory name
CDUID	Character (4)	Uniquely identifies a census division (composed of the 2-digit province or territory unique identifier followed by the 2-digit census division code)
CDNAME	Character (100)	Census division name
CDTYPE	Character (3)	Census division type
CSDUID	Character (7)	Uniquely identifies a census subdivision (composed of the 2-digit province or territory unique identifier followed by the 2-digit census division code and the 3-digit census subdivision code)
CSDNAME	Character (100)	Census subdivision name
CSDTYPE	Character (3)	Census subdivisions are classified according to designations adopted by provincial, territorial or federal authorities

Attribute domain values

PRUID

Uniquely identifies a province or territory. Please see the Province or territory definition from the *Dictionary, Census of Population, 2016* for more information.

CSDTYPE

Census subdivisions (CSD) are classified according to designations adopted by provincial, territorial or federal authorities. The following is a list of the types of CSDs.

Table 4.2
CSD type

CSDTYPE	Description
C	City / Cité
CC	Chartered community
CÉ	Cité
CG	Community government
CM	County (municipality)
CN	Crown colony / Colonie de la couronne
COM	Community
CT	Canton (municipalité de)
CU	Cantons unis (municipalité de)
CV	City /Ville
CY	City

Table 4.2
CSD type

CSDTYPE	Description
DM	District municipality
FD	Fire District
HAM	Hamlet
ID	Improvement district
IGD	Indian government district
IM	Island municipality
IRI	Indian reserve / Réserve indienne
LGD	Local government district
LOT	Township and royalty
M	Municipality / Municipalité
MD	Municipal district
MÉ	Municipalité
MRM	Regional Municipality / Municipalité régionale
MU	Municipality
NH	Northern hamlet
NL	Nisga'a land
NO	Unorganized / Non organisé
NV	Northern village
NVL	Nisga'a village
P	Parish / Paroisse (municipalité de)
PE	Paroisse (municipalité de)
RCR	Rural community / Communauté rurale
RDA	Regional district electoral area
RG	Region
RGM	Regional municipality
RM	Rural municipality
RMU	Resort Municipality
RV	Resort village
SA	Special area
SC	Subdivision of county municipality / Subdivision municipalité de comté
SÉ	Settlement / Établissement
S-É	Indian settlement / Établissement indien
SET	Settlement
SG	Self-government / Autonomie gouvernementale
SM	Specialized municipality
SNO	Subdivision of unorganized / Subdivision non organisée
SV	Summer village
T	Town
TC	Terres réservées aux Cris

Table 4.2
CSD type

CSDTYPE	Description
TI	Terre inuite
TK	Terres réservées aux Naskapis
TL	Teslin land
TP	Township
TV	Town / Ville
V	Ville
VC	Village cri
VK	Village naskapi
VL	Village
VN	Village nordique

CDTYPE

The following is a list of the types of census divisions (CD).

Table 4.3
CD type

CDTYPE	Description
CDR	Census division / Division de recensement
CT	County / Comté
CTY	County
DIS	District
DM	District municipality
MRC	Municipalité régionale de comté
RD	Regional district
REG	Region
RM	Regional municipality
TÉ	Territoire équivalent
TER	Territory / Territoire
UC	United counties

Software formats

The 2019 Census Subdivision Boundary File is available for download from the Statistics Canada website in the following formats:

- Shapefile
  File extension: .shp
- Geography Markup Language (GML) 3.1.1
  File extension: .gml
- File Geodatabase
  File extension: .gdb

The 2019 Census Subdivision Boundary File is also available as map services from the Statistics Canada website in the following formats:

- Esri® REST service
- Web Map Service (WMS)

This reference guide does not provide details on specific software packages available for use with the 2019 Census Subdivision Boundary File. Users should contact the appropriate software vendor for such information.

File extension and accented character information

The Shapefile, Geography Markup Language and File Geodatabase files are compressed into WinZip® files (file extension .zip).

The 2019 Census Subdivision Boundary File contains attributes with accented characters. They were successfully tested on desktop versions of ArcGIS® 10.5.1 and FME Data Inspector 2015.1 ®.

Metadata

The downloadable compressed packages (.zip) include a metadata file (.xml) that describes and validates the structure and content of the Census Subdivision Boundary File.

The same metadata are applied to the Esri® REST service and Web Map Service.

Geographic representation

The 2018 Census Subdivision Boundary File is available from the Statistics Canada website in the following geographic representation:

- Projection: Lambert conformal conic
- False easting: 6200000.000000
- False northing: 3000000.000000
- Central meridian: -91.866667
- Standard parallel 1: 49.000000
- Standard parallel 2: 77.000000
- Latitude of origin: 63.390675
- Linear unit: metre (1.000000)
- Datum: North American 1983 (NAD83)
- Prime meridian: Greenwich
- Angular unit: degree
- Spheroid: GRS 1980

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

Users of the 2019 Census Subdivision Boundary File can transform the file into the representation that best satisfies their needs, knowing of the effects these representations have on angles, areas, distances and direction. Users have the option to choose the best projection in concert with display objectives.

File naming convention

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

- l - projection of file is Lambert conformal conic

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

- csd - census subdivision

Next three numbers: geographic code of coverage

- 000 - Canada

Next character: file type

- a - digital boundary file

Next two numbers: geographic reference date

The geographic reference date is a date determined by Statistics Canada to finalize the geographic framework for which statistical data are collected, tabulated and reported. The geographic reference date for the 2019 Census Subdivision Boundary File is January 1, 2019.

- 19 - geographic reference date is 2019

Next character: file format

- a - ArcGIS®Shapefile (.shp)
- f - File Geodatabase (.gdb)
- g - Geography Markup Language (.gml)
- r – Esri® REST service
- w – Web Map Service (WMS)

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 of lineage, positional accuracy, attribute accuracy, logical consistency and completeness. This information is provided to users for all spatial data products disseminated.

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.

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 NGD is not fully Global Positioning Systems (GPS)-compliant. However, every possible attempt is made to ensure that the standard geographic area boundaries maintained in the NGD respect the limits of the administrative entities that they represent (e.g., census division and census subdivision) or on which they are based (e.g., census metropolitan area or census agglomeration). 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 NGD is considered when positioning the limits of the standard geographic areas.

Attribute accuracy

Attribute accuracy refers to the accuracy of quantitative and qualitative attributes information attached to each feature (e.g., census subdivision unique identifier, name, type).

As noted under the General methodology section, the attributes (names, types and unique identifiers) for all standard geographic areas are sourced from Statistics Canada's SDI. The names and types of standard geographic areas have been updated using source materials from provincial, territorial and federal authorities.

The attribute data associated with the polygons in the 2019 Census Subdivision Boundary File were verified against data in the SDI and found to accurately reflect them.

Logical consistency

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

The 2019 Census Subdivision Boundary File was verified against data in the SDI and found to be logically consistent.

Consistency with other products

The position of the boundaries in the 2019 Census Subdivision Boundary File is not necessarily consistent with previous editions of boundary files or road network files as a result of updates made using provincially and territorially sourced data.

Topology checks were performed with the 2019 Road Network File and the 2019 Census Subdivision Boundary File to measure the degree of integration amongst these products. The results indicated that the degree of integration was within the default tolerance parameters, as defined below.

- Tolerance: 0.001 metres
- Resolution: 0.0001 metres

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 2019 Census Subdivision Boundary File contains the complete set of standard geographic areas for this level of the geographic hierarchy. Users should be aware that individual census subdivisions may consist of two or more geographic parts.

Appendices

See definitions of the geography universe from the *Dictionary, Census of Population, 2016*.

See Figure 1.1 Hierarchy of standard geographic areas for dissemination, 2016 Census from the *Dictionary, Census of Population, 2016*.

See Table 1.1 Geographic areas by province and territory, 2016 Census from the *Dictionary, Census of Population, 2016*.

See Table 1.5 Census subdivision types by province and territory, 2016 Census from the *Dictionary, Census of Population, 2016*.

See Interim List of Changes to Municipal Boundaries, Status, and Names, Up to January 1st, 2019.