

Instructions for Mapping 2011 Census Data

To map 2011 census data, you must download the census boundary files and the census data separately, then join the two files in ArcMap. In this guide, we will download the 2011 population for each census tract in Toronto.

Downloading Census Boundaries

1. To download the census boundaries, go to the Statistics Canada census boundary files web page.
<http://www12.statcan.gc.ca/census-recensement/2011/geo/bound-limit/bound-limit-eng.cfm>
2. Click on the appropriate year to download. Note the difference between the cartographic and digital files. For our purposes, we want to download the cartographic boundary file.

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Boundary files

There are two types of boundary files: cartographic and digital. Cartographic boundary files portray the geographic areas using only the major land mass of Canada and its coastal islands. Digital boundary files portray the full extent of the geographic areas, including the coastal water area.

Cartographic boundary file

Digital boundary file

Please select a year below:

Year

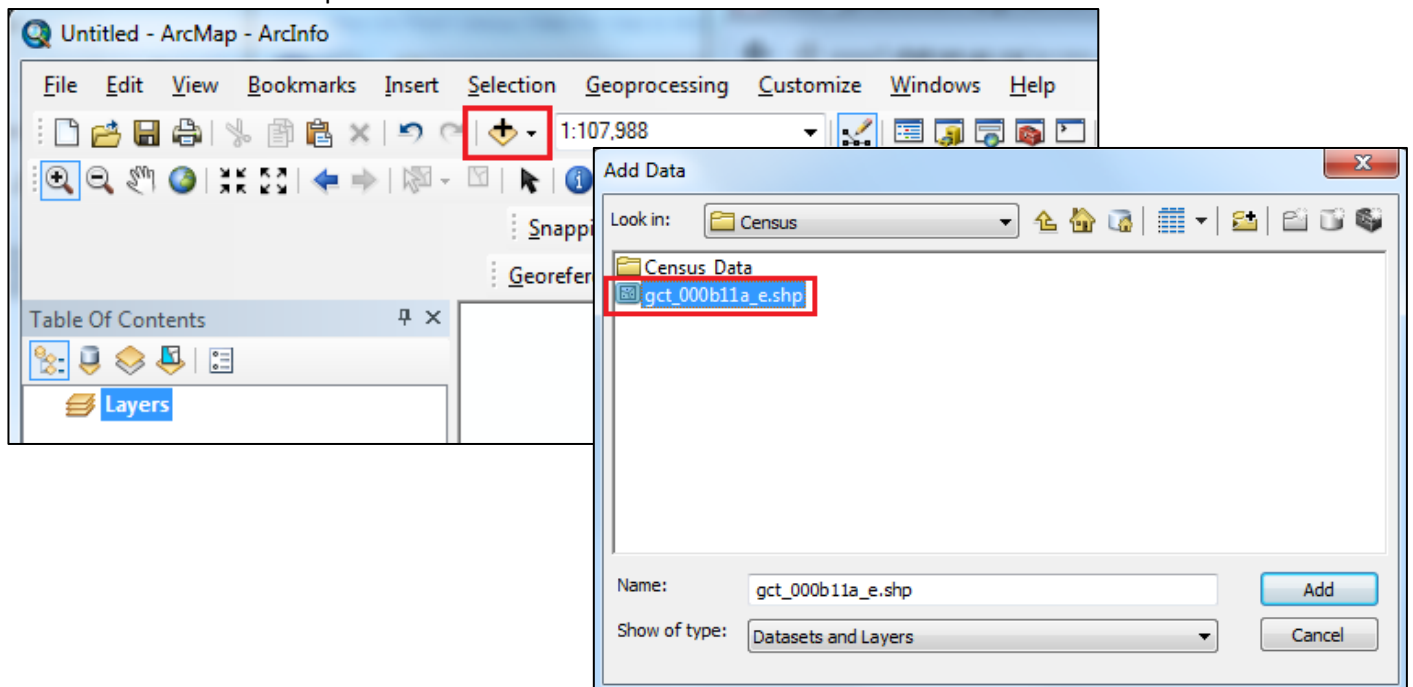
| Census year | Intercensal year |
|----------------------|----------------------|
| 2011 | 2012 |
| 2006 | 2010 |
| 2001 | 2009 |
| | 2008 |

3. Select the language and the format of the boundary, and select Census Tracts under Cartographic Boundary File, as shown below.

The screenshot shows the 'Language' and 'Format' sections of the Census of Canada website. The 'Language' section has 'English' selected. The 'Format' section has 'ArcGIS (.shp)' selected. The 'Boundary files' section shows a table with 'Census Tracts' selected under the 'Cartographic Boundary File' column.

| Geographic Area or Water Feature | Cartographic Boundary File | Digital Boundary File | Water File |
|---|----------------------------------|-----------------------|-----------------------|
| Provinces/Territories | <input type="radio"/> | <input type="radio"/> | ... |
| Federal Electoral Districts (2003 Representation Order) | <input type="radio"/> | <input type="radio"/> | ... |
| Economic Regions | <input type="radio"/> | <input type="radio"/> | ... |
| Census Divisions | <input type="radio"/> | <input type="radio"/> | ... |
| Census Agricultural Regions | <input type="radio"/> | <input type="radio"/> | ... |
| Census Consolidated Subdivisions | <input type="radio"/> | <input type="radio"/> | ... |
| Census Subdivisions | <input type="radio"/> | <input type="radio"/> | ... |
| Census Metropolitan Areas and Census Agglomerations | <input type="radio"/> | <input type="radio"/> | ... |
| Census Tracts | <input checked="" type="radio"/> | <input type="radio"/> | ... |
| Dissemination Areas | <input type="radio"/> | <input type="radio"/> | ... |
| Dissemination Blocks | <input type="radio"/> | <input type="radio"/> | ... |
| Designated Places | <input type="radio"/> | <input type="radio"/> | ... |
| Population Centres | <input type="radio"/> | <input type="radio"/> | ... |
| Population Ecumene | <input type="radio"/> | ... | ... |
| Agricultural Ecumene | <input type="radio"/> | ... | ... |
| Forward Sortation Areas © | <input type="radio"/> | <input type="radio"/> | ... |
| Lakes and Rivers (polygons) | ... | ... | <input type="radio"/> |
| Rivers (lines) | ... | ... | <input type="radio"/> |
| Coastal Waters (polygons) | ... | ... | <input type="radio"/> |

4. Download the zip file to an appropriate folder. Unzip the file, then open ArcMap. Use the add data button to add the census tracts to ArcMap.



Downloading the Census Data

1. The next step is to download the census data, using the CHASS Canadian Census Analyzer.
<http://dc1.chass.utoronto.ca/census/index.html>

2. Select 2011 for the year, and then choose Profile of Census Tracts (cumulative).

| CHASS Canadian Census Analyzer / Analyseur de recensement canadien 2011 Census / Recensement | |
|---|--|
| Advancing Knowledge through Technology | |
| Census / Recensement | |
| Profile of Canada, provinces, territories (cumulative) | Profil pour le Canada, les provinces et les territoires (cumulatif) |
| Profile of Federal Electoral Districts (2003 Representation Order) (cumulative) | Profil des circonscriptions électorales fédérales (Ordonnance de représentation de 2003) (cumulatif) |
| Profile of Census Divisions (cumulative) | Profil des divisions de recensement (cumulatif) |
| Profile of Census Subdivisions (cumulative) | Profil des subdivisions de recensement (cumulatif) |
| Profile of Census Tracts (cumulative) | Profil des secteurs de recensement (cumulatif) |
| Profile of Dissemination Areas (cumulative) -updated- | Profil des aires de diffusion (cumulatif) -mise à jour- |

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3. Next, choose 2011 Population for Toronto. Check the “T” box at the top, and select Toronto. In the variables box, select Population, 2011, under the Population and dwelling counts tab. You can also add additional variables here.

Step1: Specify Census Geography for retrieval

Census Geography: (1 selected)

Locate census geography (CMAs/CAs with CTs) in the database using the you would like to include in your search.

by Name | by Province

-check all- | -unchecked all-

☒ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G
☐ H ☐ K ☐ L ☐ M ☐ N ☐ O ☐ P
☐ Q ☐ R ☒ T ☐ V ☐ W

-check all- | -unchecked all- | -remove all- | -order-

4 items found:

☐ Abbotsford (B.C.)
☐ Thunder Bay (Ont.)
☒ Toronto (Ont.)
☐ Trois-Rivières (Que.)

Selected items:

☒ Toronto (Ont.)

Or select all geography

Step2: Specify Census Profile variables for retrieval

Census Profile: (1 selected)

Select the Census Profile variables (-see definitions-) to include in your search.

Age, sex | Marital, families & households | Language

Population and dwelling counts

Age characteristics
Total
Age characteristics
Males
Age characteristics
Females

-check all- | -unchecked all-

Population and dwelling counts

☒ Population, 2011 (v1)
☐ Population, 2006 (v2)
☐ Population percentage change, 2006 to 2011 (v3)
☐ Total private dwellings (v4)
☐ Private dwellings occupied by usual residents (v5)
☐ Population density per square kilometre (v6)
☐ Land area in square kilometres (v7)

-remove all-

Selected items:

☒ Population, 2011 (v1)

4. Next, choose your output options, in the same page. Make sure to select dbase (DBF) file, and click Submit Query.

Step3: Specify the output details and submit query

Output details:

Optionally include in the result:

☐ Province code ☐ Province name
☐ CMA code ☐ CMA name
☐ Census Tract name

Optionally filter CT names (the format of CT name is xxxx.yy):
(e.g.: 1.01-4.00 7-9 59 302)

Census variables to be listed as: (apply only to Screen output format)

columns: ☒ rows: ☐

Optionally provide an email address for larger downloads notifications: (apply only to Download to a file output format)

Optionally enable zip file compression: (apply only to Download to a file output format)

none: ☒ zip: ☐

Select the output format:

Screen output

Text
HTML
Comma-Separated Values (CSV) for spreadsheet
MS Excel ready
SAS
SPSS

Download to a file

Comma-Separated Values (CSV) file for spreadsheet
dBase (DBF) file

Submit Query. This will open a new tab or window in the browser.

Submit Query

5. The next page will contain the data and column header files. Download both to an appropriate folder.

Data Request Summary

Job ran from 04/01/2013 10:50:50 to 04/01/2013 10:50:50
Job completed successfully!

1089 lines/observations retrieved.

Download the files:
Data file: http://dc1.chass.utoronto.ca/grid1/census/TImasv79tJII5D_data.dbf
Header file: http://dc1.chass.utoronto.ca/grid1/census/TImasv79tJII5D_header.txt

Download instructions: Internet Explorer, Firefox and Chrome users... Right-click and select "Save Link As..."

Query parameters:

2011 Census Profiles Files / Profile of Census Tracts

| | |
|-----------------|--|
| Data Request ID | TImasv79tJII5D |
| Geography | 535 |
| Variables | COL0 - GEO UID COL1 - Population and dwelling counts / Population, 2011 |
| Names ranges | |

Information contained in header file

6. In ArcMap, add the data file to the map, using the Add Data button. The header file will contain the names of the columns in the shapefile.

Joining the Data and Boundary Files Using ArcMap

1. In ArcMap, you should have the tracts file and the data file both showing in the table of contents on the left side of the screen.

2. To join the two tables, they must have a common field that contain the same values. To identify the common field, right click on each file and select "Open Attribute Table". You will notice that the COL0 column in the data table is the GEO UID in the header file. COL0 corresponds with the CTUID column in the boundary shapefile (.shp).

Table
gct_000b11a_e

| FID | Shape | CTUID | CTNAME | CMAUID | CMANA |
|-----|---------|------------|---------|--------|--|
| 0 | Polygon | 5550021.00 | 0021.00 | 555 | London |
| 1 | Polygon | 5410010.00 | 0010.00 | 541 | Kitchener - Cambridge - Waterloo |
| 2 | Polygon | 5350091.02 | 0091.02 | 535 | Toronto |
| 3 | Polygon | 5800161.01 | 0161.01 | 580 | Greater Sudbury / Grand Sudbury |
| 4 | Polygon | 2050120.00 | 0120.00 | 205 | Halifax |
| 5 | Polygon | 4620659.06 | 0659.06 | 462 | Montréal |
| 6 | Polygon | 5500001.02 | 0001.02 | 550 | Guelph |
| 7 | Polygon | 5050151.02 | 0151.02 | 505 | Ottawa - Gatineau (Ontario part / partie d |
| 8 | Polygon | 4620659.06 | 0659.06 | 462 | Montréal |
| 9 | Polygon | 5350128.02 | 0128.02 | 535 | Toronto |
| 10 | Polygon | 6020100.01 | 0100.01 | 602 | Winnipeg |
| 11 | Polygon | 5350412.15 | 0412.15 | 535 | Toronto |
| 12 | Polygon | 4620734.05 | 0734.05 | 462 | Montréal |
| 13 | Polygon | 5350341.04 | 0341.04 | 535 | Toronto |
| 14 | Polygon | 5390203.02 | 0203.02 | 539 | St. Catharines - Niagara |
| 15 | Polygon | 4620073.00 | 0073.00 | 462 | Montréal |
| 16 | Polygon | 9350111.01 | 0111.01 | 935 | Victoria |
| 17 | Polygon | 5350363.04 | 0363.04 | 535 | Toronto |
| 18 | Polygon | 7050101.01 | 0101.01 | 705 | Regina |
| 19 | Polygon | 8050200.00 | 0200.00 | 805 | Medicine Hat |
| 20 | Polygon | 6020051.01 | 0051.01 | 602 | Winnipeg |
| 21 | Polygon | 5350513.01 | 0513.01 | 535 | Toronto |
| 22 | Polygon | 5220006.00 | 0006.00 | 522 | Belleville |
| 23 | Polygon | 4620131.00 | 0131.00 | 462 | Montréal |
| 24 | Polygon | 9330147.01 | 0147.01 | 933 | Vancouver |
| 25 | Polygon | 5350403.07 | 0403.07 | 535 | Toronto |
| 26 | Polygon | 9330187.14 | 0187.14 | 933 | Vancouver |
| 27 | Polygon | 5350442.03 | 0442.03 | 535 | Toronto |
| 28 | Polygon | 5350377.07 | 0377.07 | 535 | Toronto |
| 29 | Polygon | 5550006.05 | 0006.05 | 555 | London |
| 30 | Polygon | 9330203.00 | 0203.00 | 933 | Vancouver |
| 31 | Polygon | 4620781.00 | 0781.00 | 462 | Montréal |
| 32 | Polygon | 4620637.01 | 0637.01 | 462 | Montréal |
| 33 | Polygon | 7050026.00 | 0026.00 | 705 | Regina |

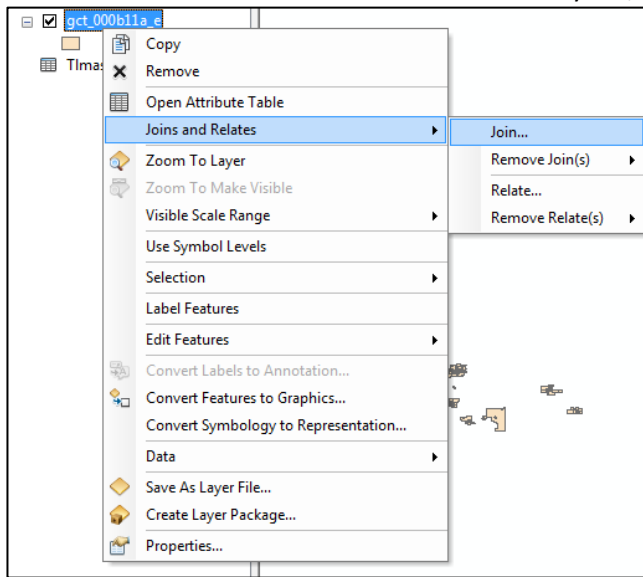
Attribute table for boundary file

Table
Tlmasv79tU115D_data

| OID | COL0 | COL1 |
|-----|------------|--------|
| 0 | 5350000.00 | 558306 |
| 1 | 5350001.00 | 604 |
| 2 | 5350002.00 | 657 |
| 3 | 5350003.00 | 673 |
| 4 | 5350004.00 | 6781 |
| 5 | 5350005.00 | 5510 |
| 6 | 5350006.00 | 0 |
| 9 | 5350008.00 | 9282 |
| 10 | 5350009.00 | 271 |
| 11 | 5350010.01 | 4608 |
| 12 | 5350010.02 | 7113 |
| 13 | 5350011.00 | 8645 |
| 14 | 5350012.01 | 5911 |
| 15 | 5350012.02 | 10664 |
| 16 | 5350013.00 | 10601 |
| 17 | 5350014.00 | 644 |
| 18 | 5350015.00 | 3411 |
| 19 | 5350016.00 | 6063 |
| 20 | 5350017.00 | 6883 |
| 21 | 5350018.00 | 2088 |
| 22 | 5350019.00 | 3127 |
| 23 | 5350020.00 | 2352 |
| 24 | 5350021.00 | 5081 |
| 25 | 5350022.00 | 3767 |
| 26 | 5350023.00 | 3340 |
| 27 | 5350024.00 | 6590 |
| 28 | 5350025.00 | 3277 |
| 29 | 5350026.00 | 6394 |
| 30 | 5350027.00 | 4459 |
| 31 | 5350028.00 | 6118 |
| 32 | 5350029.00 | 6495 |
| 33 | 5350030.00 | 3831 |
| 34 | 5350031.00 | 6176 |
| 35 | 5350032.00 | 5264 |

Attribute table for census data

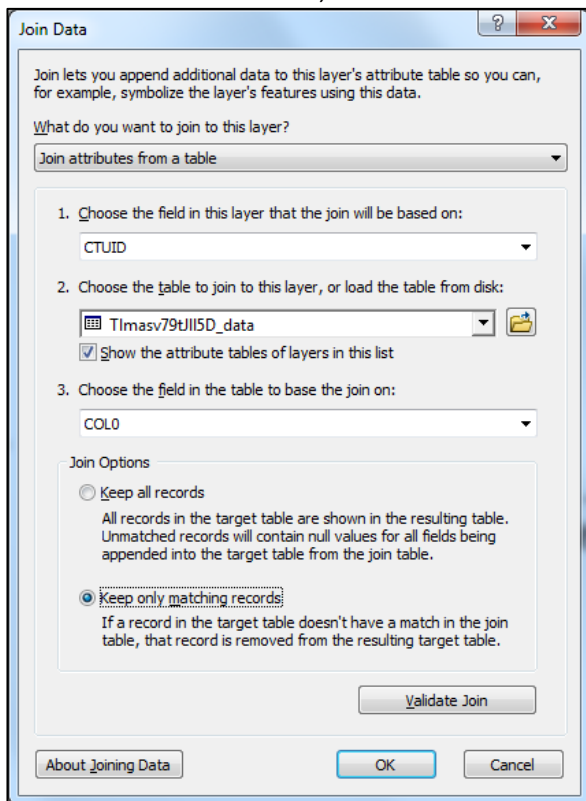
3. To join the census data to the boundary file, right click on the boundary file and select “Joins and Relates” → “Join...”. Note: You must start with the boundary file, not the data file.



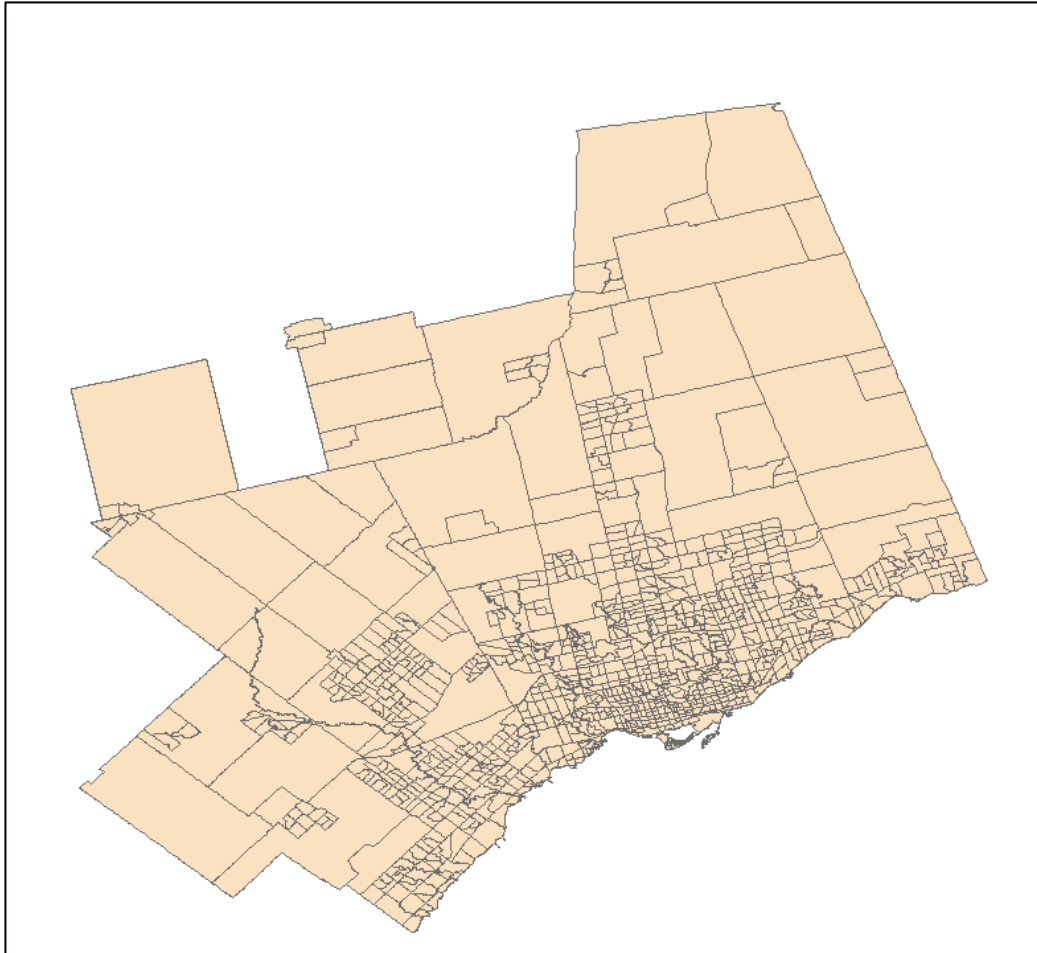
4. Fill out the form that pops up. Options should be:

- Join attributes from a table
- CTUID – this is the field from the boundary file layer
- the census data table
- COLO – this is the field from the census data table that matches the first field
- Keep only matching records

We only want the matching records because we only want the census tracts from Toronto. If you recall, the census tracts are for all of Canada, and the census data table is only for Toronto.



5. You should be left with a map of the census tracts in Toronto, with the 2011 population counts in the attribute table. **COL1 is the population count** – remember to check the header file to see the column names. There may be some tracts missing – generally this is because the census data isn't available.



| FID | Shape | CTUID | CTNAME | CMAUID | CMANAME | CMATYPE | CMAUID | PRUID | PRNAME | OID | COL0 | COL1 |
|-----|---------|------------|---------|--------|---------|---------|--------|-------|---------|-----|------------|-------|
| 2 | Polygon | 5350091.02 | 0091.02 | 535 | Toronto | B | 35535 | 35 | Ontario | 102 | 5350091.02 | 3359 |
| 10 | Polygon | 5350128.02 | 0128.02 | 535 | Toronto | B | 35535 | 35 | Ontario | 142 | 5350128.02 | 8345 |
| 12 | Polygon | 5350412.15 | 0412.15 | 535 | Toronto | B | 35535 | 35 | Ontario | 644 | 5350412.15 | 5425 |
| 14 | Polygon | 5350341.04 | 0341.04 | 535 | Toronto | B | 35535 | 35 | Ontario | 437 | 5350341.04 | 4432 |
| 18 | Polygon | 5350363.04 | 0363.04 | 535 | Toronto | B | 35535 | 35 | Ontario | 474 | 5350363.04 | 3624 |
| 22 | Polygon | 5350513.01 | 0513.01 | 535 | Toronto | B | 35535 | 35 | Ontario | 761 | 5350513.01 | 6909 |
| 26 | Polygon | 5350403.07 | 0403.07 | 535 | Toronto | B | 35535 | 35 | Ontario | 596 | 5350403.07 | 7222 |
| 28 | Polygon | 5350442.03 | 0442.03 | 535 | Toronto | B | 35535 | 35 | Ontario | 694 | 5350442.03 | 5697 |
| 29 | Polygon | 5350377.07 | 0377.07 | 535 | Toronto | B | 35535 | 35 | Ontario | 519 | 5350377.07 | 5162 |
| 39 | Polygon | 5350412.23 | 0412.23 | 535 | Toronto | B | 35535 | 35 | Ontario | 650 | 5350412.23 | 11859 |
| 43 | Polygon | 5350140.00 | 0140.00 | 535 | Toronto | B | 35535 | 35 | Ontario | 157 | 5350140.00 | 2479 |
| 46 | Polygon | 5350591.01 | 0591.01 | 535 | Toronto | B | 35535 | 35 | Ontario | 975 | 5350591.01 | 5158 |
| 47 | Polygon | 5350576.17 | 0576.17 | 535 | Toronto | B | 35535 | 35 | Ontario | 935 | 5350576.17 | 6902 |
| 53 | Polygon | 5350311.05 | 0311.05 | 535 | Toronto | B | 35535 | 35 | Ontario | 384 | 5350311.05 | 6576 |

6. The joined shapefile is only a temporary file. To save it as a permanent shapefile, right click on the shapefile on the left side of the screen, and select Data → Export Data. Name and save this file to an appropriate folder.

