

GEOG 204 - Tutorial 8

Reverse Geocoding

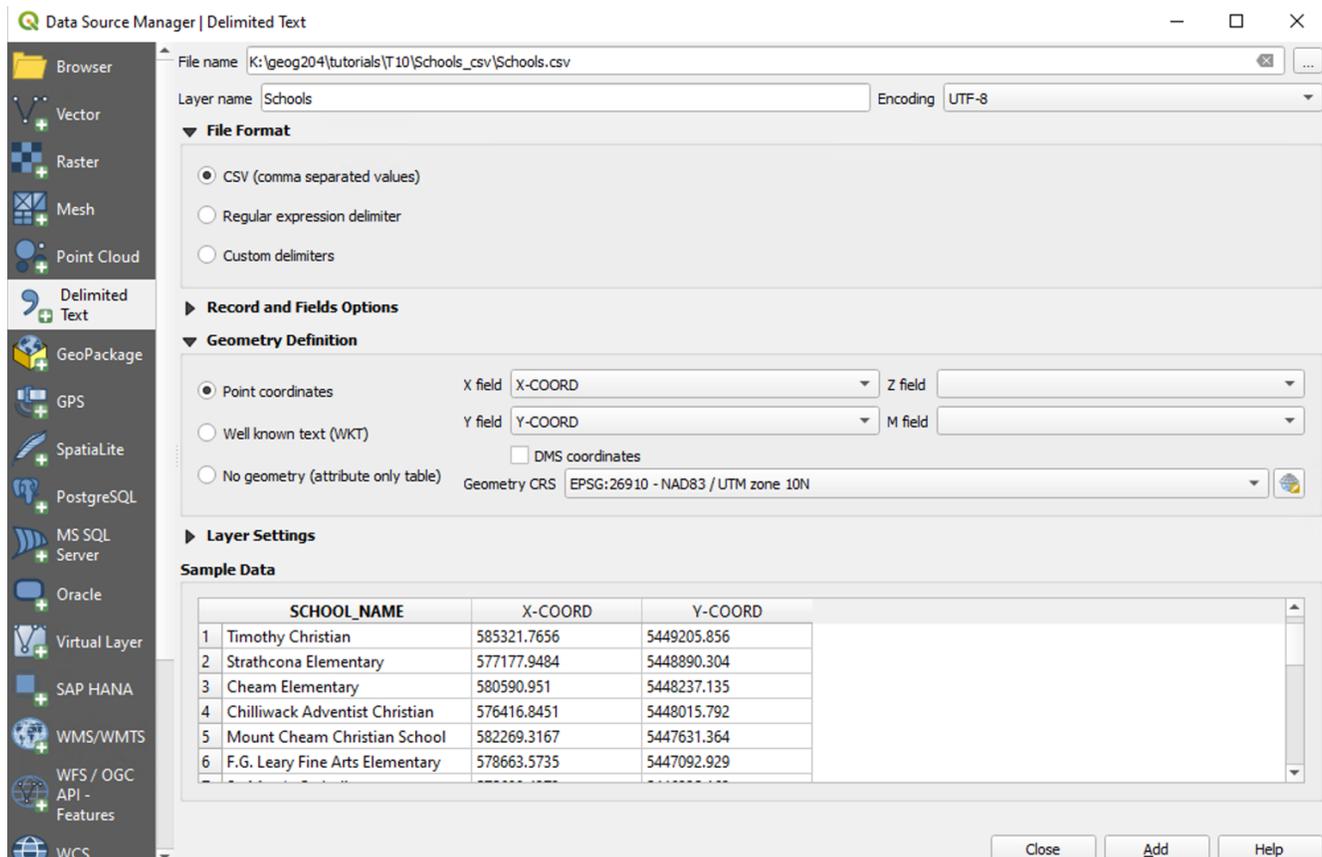
In this exercise, we will explore reverse geocoding using QGIS and ArcGIS Pro. You will be building on your skills already acquired during the Geocoding lab.

You are provided with street data for the city of Chilliwack, a shapefile showing the locations of the schools in the city and a CSV file with the names of the schools and their respective coordinates. The task before us is to reverse geocode on the data in the CSV file in order to get the street address for the schools.

As usual, copy your data from the L drive into a folder on the K drive.

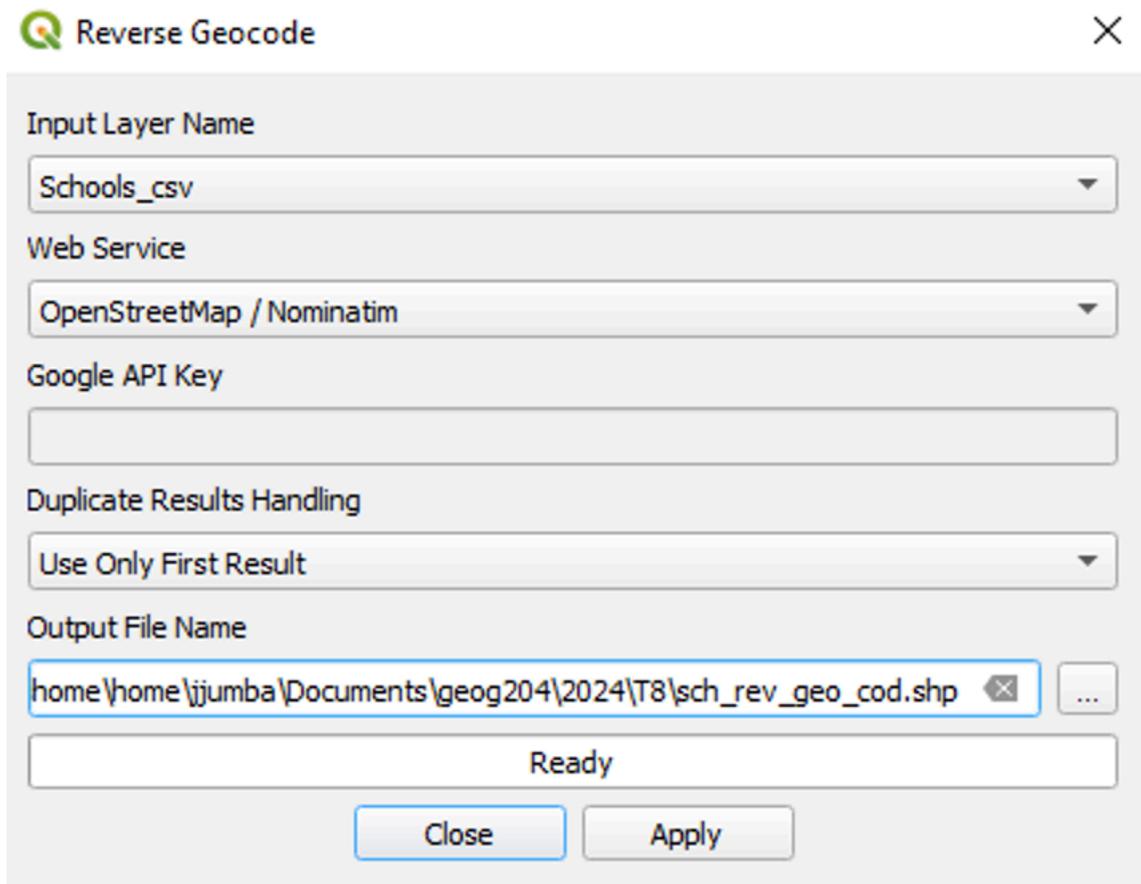
Reverse Geocode with QGIS

1. Add your shapefiles in QGIS.
2. Next, we want to display the data in the CSV using QGIS to examine how well it matches with the schools in the shapefile.
 - First, using the metadata file, which in this case the is the “Schools.txt” file located in the same folder as the CSV
 - **What is the CRS of the CSV data?**
 - Next, display the CSV points in QGIS. On the main menu, go to Layer >> Data Source Manager. In the left-hand column, choose Delimited Text.
 - In the File name field, select the CSV file; under the Geometry Definition section, assign the Point coordinates fields their respective attributes. Make sure that the CRS is NAD83/UTM Zone 10



- **How do the points match with the school locations in the polygon shapefile?**

3. On the main menu MMQGIS >> Geocode >> Reverse Geocode
 - Specify the webservice as OpenstreetMap/Nominatim
 - Duplicate Results Handling: Use only first result
 - Specify the output file name and make sure it is in your K drive



4. Open the attribute table of the results file from the step above.
 - The school addresses are in the “display_na” field.
 - **What do you think of these results? Are all the school names identified correctly? How you explain the other names provides?**
 - **Also look at the latlong field. These are the coordinates of the coordinates of newly geocoded points. Are these coordinates in the same CRS as the those in the X-Coord and Y-Coord fields?**

Save your work and close QGIS

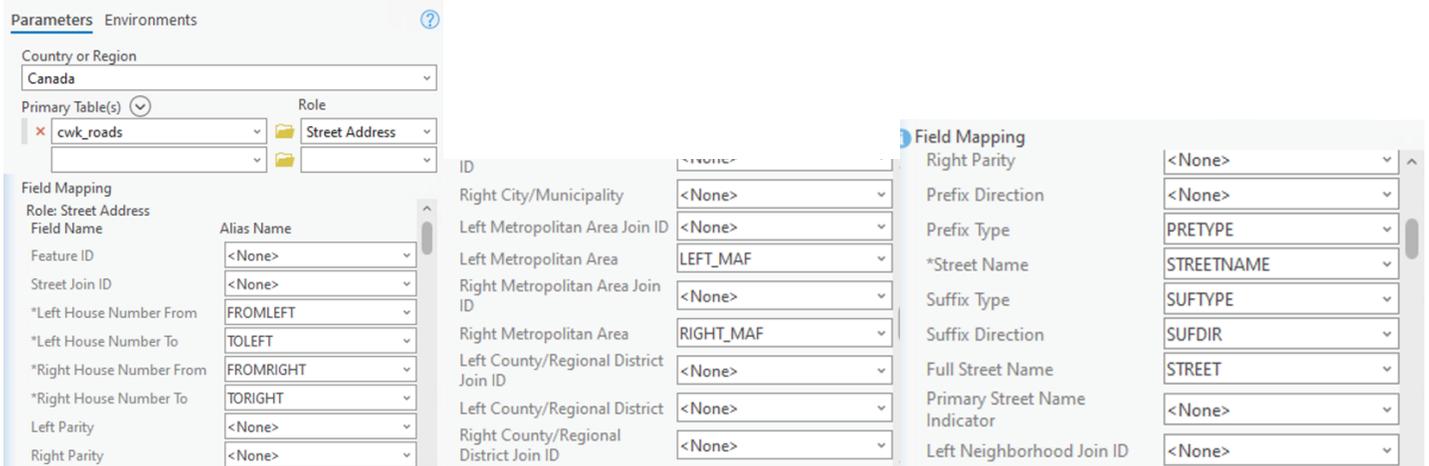
Reverse Geocode with ArcGIS Pro

5. Open ArcGIS Pro and add the two shapefiles and the CSV file.
6. In the Contents Panel, Right Click on the Map frame and make sure that the CRS is NAD83/UTM Zone 10
7. Display the points in the CSV file
 - Right Click on the schools CSV >> Create Points From Table >> XY Table To Point. Make sure the Coordinate system is NAD_1983_UTM_Zone_10N and that the X-Field and Y-Field are assigned appropriately

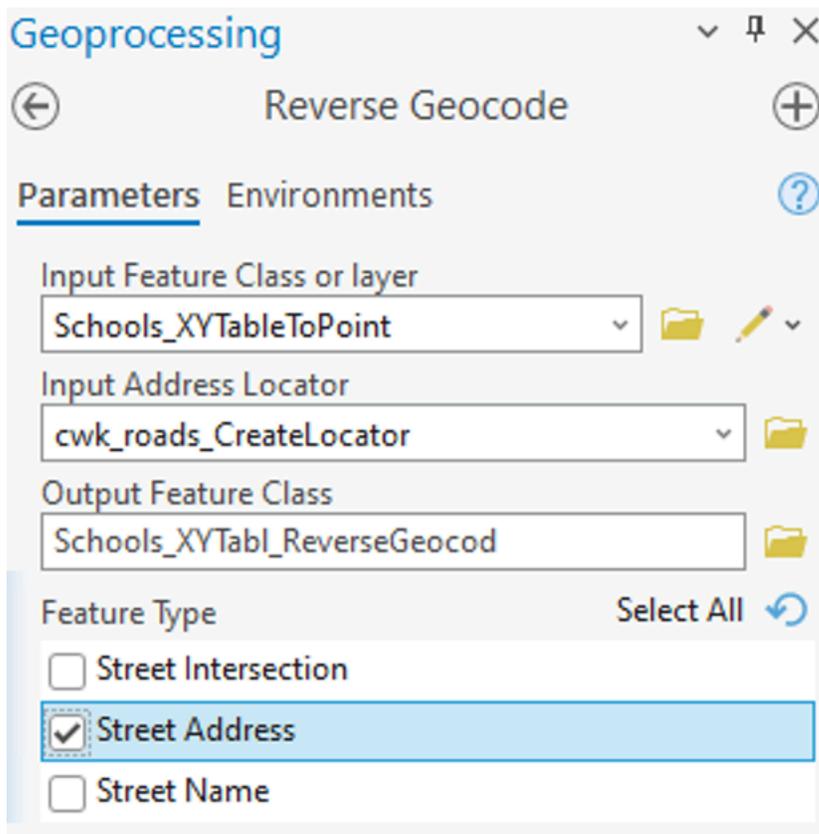
In ArcGIS, we need to create an “address locator” which one can use to do geocoding and reverse geocoding. Alternatively, one can use an API but that is beyond the expectations for this exercise.

8. On the main menu, Analysis >> Tools

- Search for Create Locator
- Specify the parameters as shown in the images below. Make sure the Language Code field is set to English. Your results may come with warnings. We will ignore them.



9. Reverse Geocode



10. Examine the output file in terms of the addresses, the locations on the map (as compared to school polygons) and the coordinates provided in the attribute table. What do you notice?

11. Using a web search, check the validity of your output. What do you observe?
12. What are your reflections about the differences in the QGIS geocoding engine compared to the one for ArcGIS Pro?