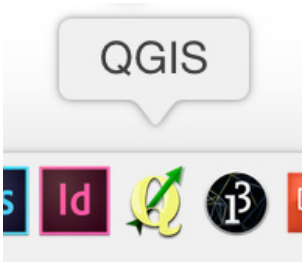
# QGIS: Download and Export OpenStreetMap Data

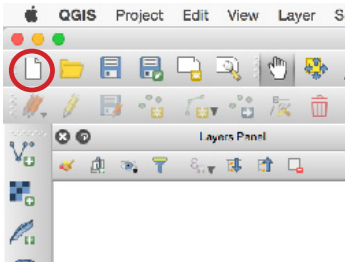
Windows: QGIS 2.18.12
Mac: QGIS 2.18.2

Welcome to the Essential QGIS Task Sheet Series. This series supplements the Iowa State University Geospatial Technology Training Program short course series. The task sheets are designed to provide quick, easy instructions for performing mapping tasks.

This task sheet presents an open source workflow that uses crowd-sourced data from OpenStreetMap (OSM) to create GeoJSON files that can be used on web mapping platforms like leaflet or mapbox. Using free QGIS software, users can download data from OSM, and then filter and edit it within the QGIS environment. The data can be used for analysis, in map layouts, or exported to various file formats, including GeoJSON.

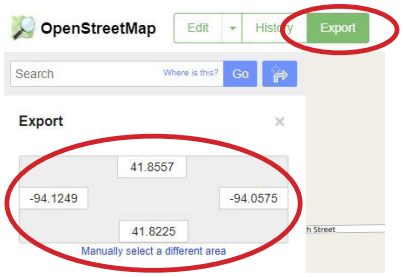
## 1. Downloading OpenStreetMap Data



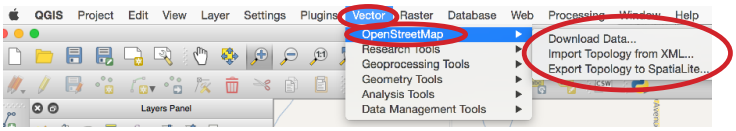




a. In order to download OSM data, you will need to define the extent of the area for which you wish to download data. You can do this in three ways: from the map canvas, from a layer, or manually by adding the coordinates. We will define the extent manually.

b. Go to OpenStreetMap.org and navigate the web map to your area of interest. Click on the **Export** button to see the coordinates of your current map extent. *Note: the larger the extent, the more time it will take to download and process the data.*

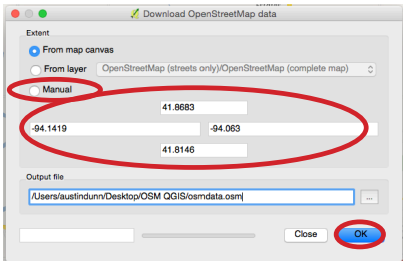



c. Open QGIS on your PC or Mac and proceed to open a new project. Click on **Vector** > **OpenStreetMap** > **Download Data**. In the **Download OpenStreetMap Data** window, click **Manual** and manually enter the extent identified in **step 1b**. Save the output .osm file in an appropriate location and click **OK** and close the window after the download is successful.

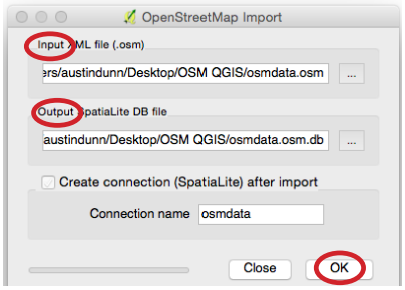



## 2. Importing Topology

a. Click **Vector** > **OpenStreetMap** > **Import Topology from XML**.




b. In the **OpenStreetMap Import** window under **input XML file** select the .osm file created in **step 1c**. Choose a name and location for the **Output SpatialLite DB file** and click **OK**. Close the window after the import is successful.



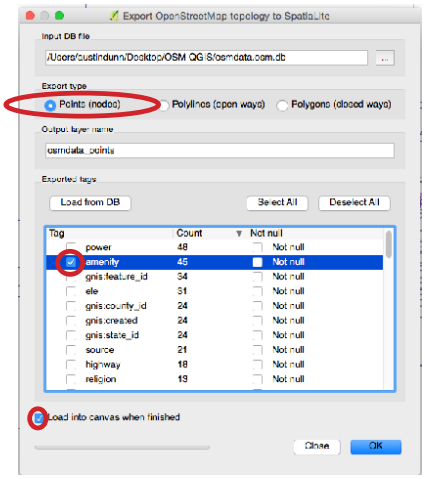

## 3. Exporting OSM Topology to SpatialLite

a. Click **Vector** > **OpenStreetMap** > **Export Topology to SpatialLite**.

b. In the **Export OpenStreetMap topology to SpatialLit** window select the file created in **step 2b** as the **Input DB file**.

c. Each geometry type: point (nodes), polylines (open ways), and polygons (closed ways) must be exported to the database individually and you can choose what type of features to add based on the OSM **tags**. To learn about OSM tags, visit wiki.openstreetmap.org/wiki/Tags.

d. First, select **Points (nodes)**, and click **Load from DB** to see the tags. Select the **amenity** tag to export features that are tagged as amenities. Select **Load into canvas when finished** and click **OK** and close the window. *Note: you can do this again for each of the geometry types and select as many tags as you are interested in.*

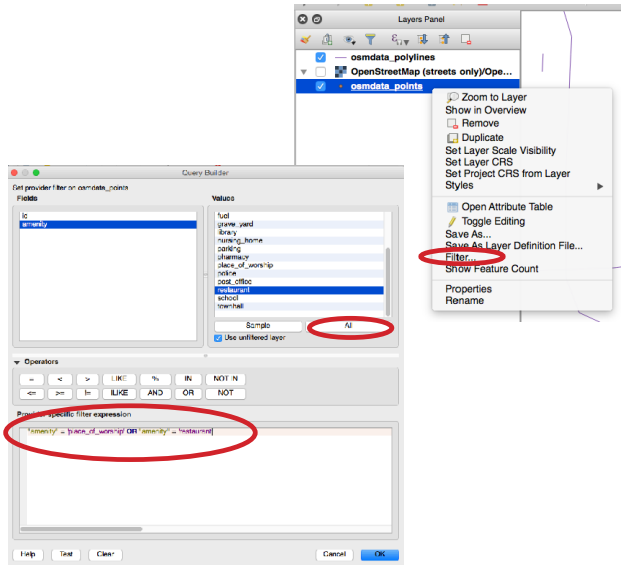



## 4. Filter the Data

a. To further filter the newly added data, **right-click** on the layer from the **Layers Panel** and select **Filter**.

b. In the **Query Builder** window double-click **amenity** from the list of fields and click **All** to load in all the values. Double-click on a field or value to add it to the **filter expression** box. Use the fields, values, and operators to create an expression that reads:
`"amenity" = 'place of worship' OR "amenity = 'restaurant'`
*Note: depending on your area of interest, you may not have these values available from the values field.*

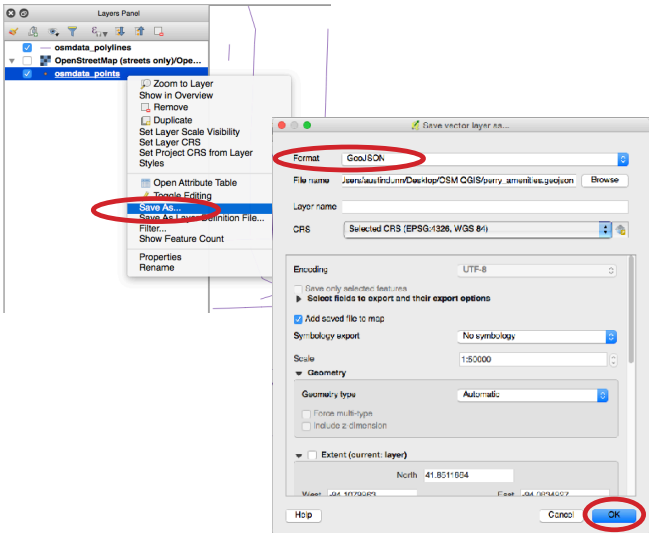
c. Click **OK**. Now the map will only display points for restaurants and places of worship.




## 5. Export the data as a GeoJSON

a. To export the layer as a GeoJSON file, right-click on the layer from the **Layer Panel** and select **Save As**.

b. Select **GeoJSON** as the **Format**, and create a name and designated location for the file. Click **OK**. *Note: there are over 20 different file formats to choose from.*




## Contact:

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