

Modeling Guide

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1 Introduction

This guide will walk through the steps in modeling. Please bear in mind that this is a work-in-progress guide and will be updated on a regular basis.

2 Requirements

The following are the software requirements. Refer to individual software for hardware requirements. A high-end system will help complete some of the modeling steps faster, but most day-to-day machines should have no problem.

1. Jupyter or Spyder (install Python, osm2gmns, pandas)
2. QGIS
3. EMME
4. Excel

3 Steps

1. Go to the OpenStreetMap website (<https://www.openstreetmap.org/>).
2. Click on "Export" and select 'Manually select a different area', which will allow you to select an area in a rectangular shape.
3. Once the desired area is selected, click on 'Export,' and an OSM file will be downloaded.
4. Open your notebook, type the code (image, this will be expanded later), and run the code.
5. The code at this point should produce a routable network, POI, grids, and modify the necessary files to accommodate EMME's requirements.
6. Open QGIS, add the generated node and link files as delimited text layers. Export the layers as ESRI shapefiles.
7. Open EMME and open the 'Shapefile to EMME conversion tool.' Choose the node and link shapefiles appropriately and click on next.
8. EMME will allow you to choose various parameters from each of your shapefiles. Select the necessary parameters (such as node ID, speed, lanes, etc.) and click on next.
9. Choose a location for your base network and database files. Click on run.
10. If there were no errors or issues with your shapefiles, the tool will finish running, and you can close the tool. Otherwise, go back to the previous steps and rectify your errors (a section will be added on potential errors).

11. Open the EMME modeler tool and search for 'process base network transaction.' Select the base network and database files and run the tool.
12. Locate the database file and copy-paste it into your EMME database folder. Rename the file to the scenario's number.
13. Refresh EMME, and a network will be generated.
14. TO BE EXPANDED