

GIS F2E – ArcGIS Features to Edge List Toolbox

Citation: Karduni A, Kermanshah A, Derrible S (2016) GIS Protocol and Graph Data for World Urban Road Networks (Under review)

Available at: <http://csun.uic.edu/data.html#GISF2E>

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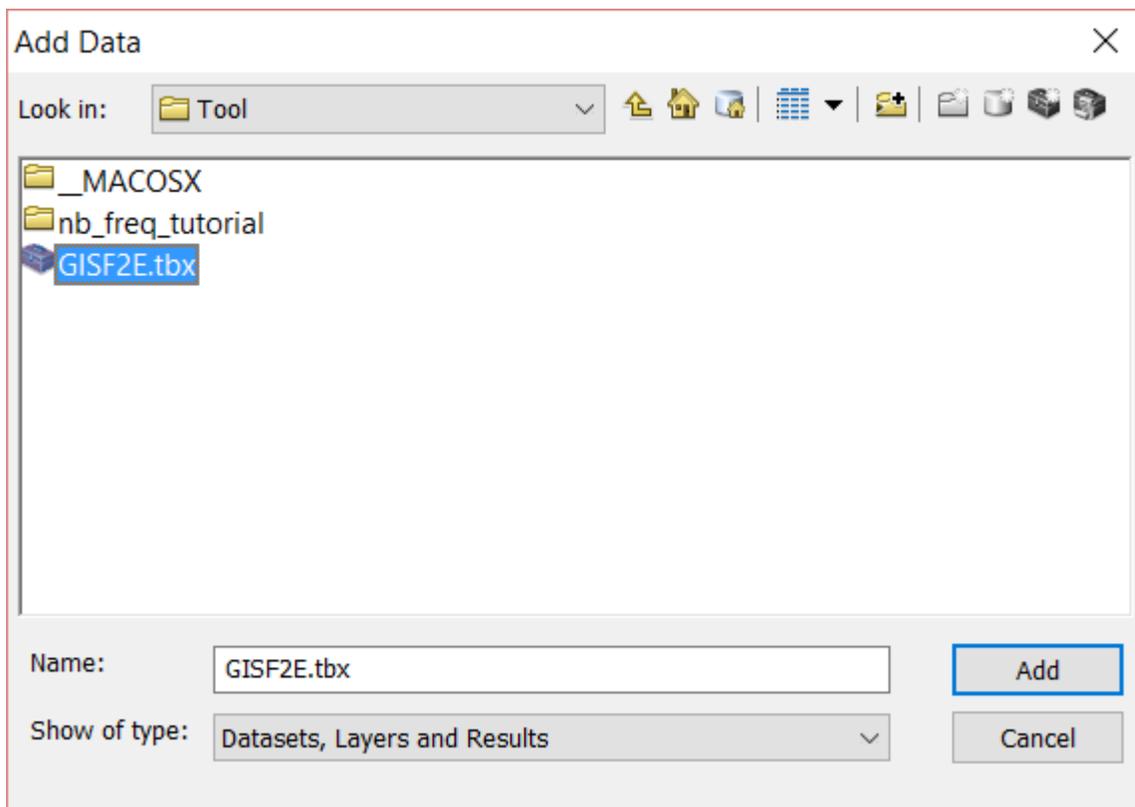
This is a brief tutorial to illustrate how this model can be used within ArcGIS to create and edge list from OpenStreetMaps Shapefiles.

First a few important notes:

- 1- This particular model needs an Arcinfo license to run
- 2- Recommended data source for this model is openStreetMaps shapefiles from [GeoFabrik](#).
- 3- ArcGIS 10.2 has been used to test the model.

In order to run the model you need to take these steps:

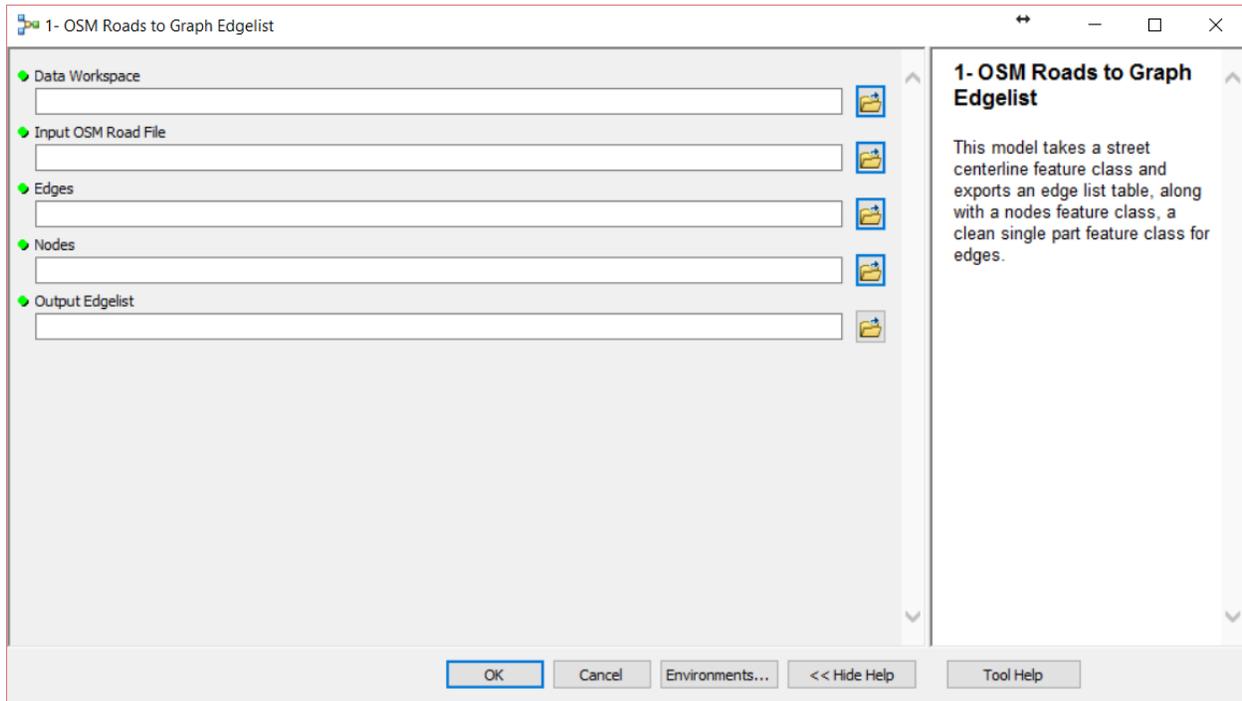
- 1- Add the Toolbox
 - a. Right Click on ArcToolBox
 - b. Click on Add Toolbox
 - c. Locate the Features to Edgelist Toolbox in your disk drive.
 - d. Click open.



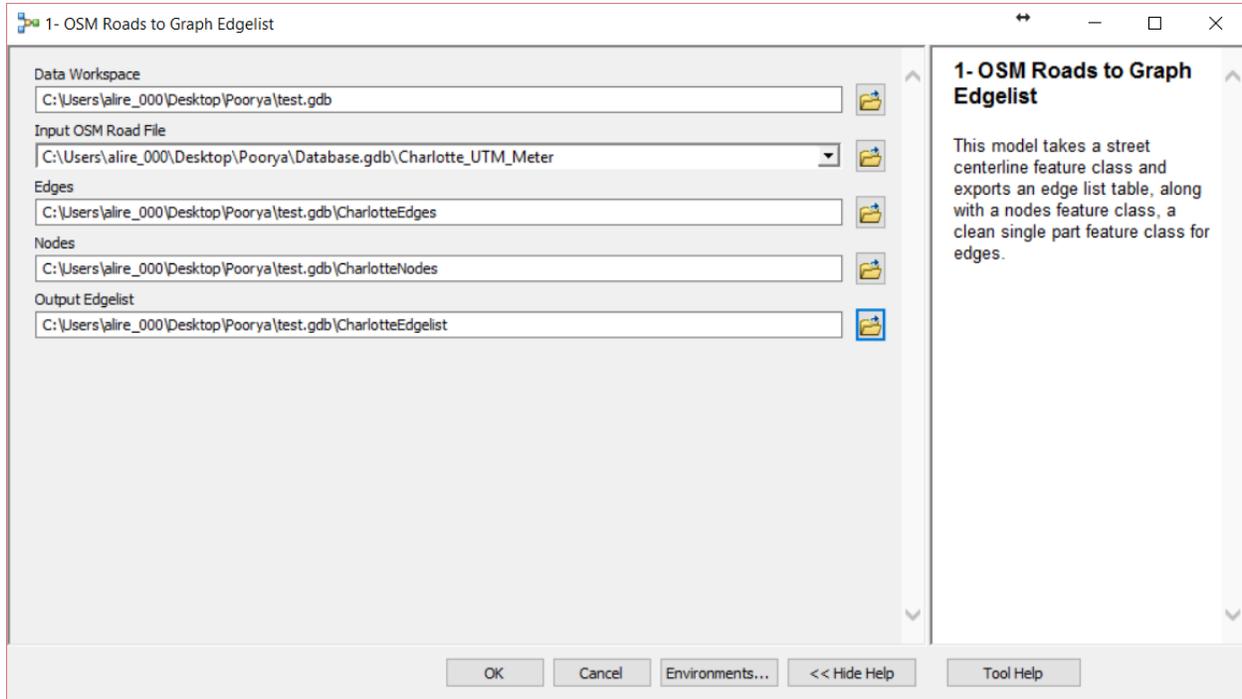
There are three models within the toolbox.

2- Open the 1- OSM Roads to Graph Edgelist Model

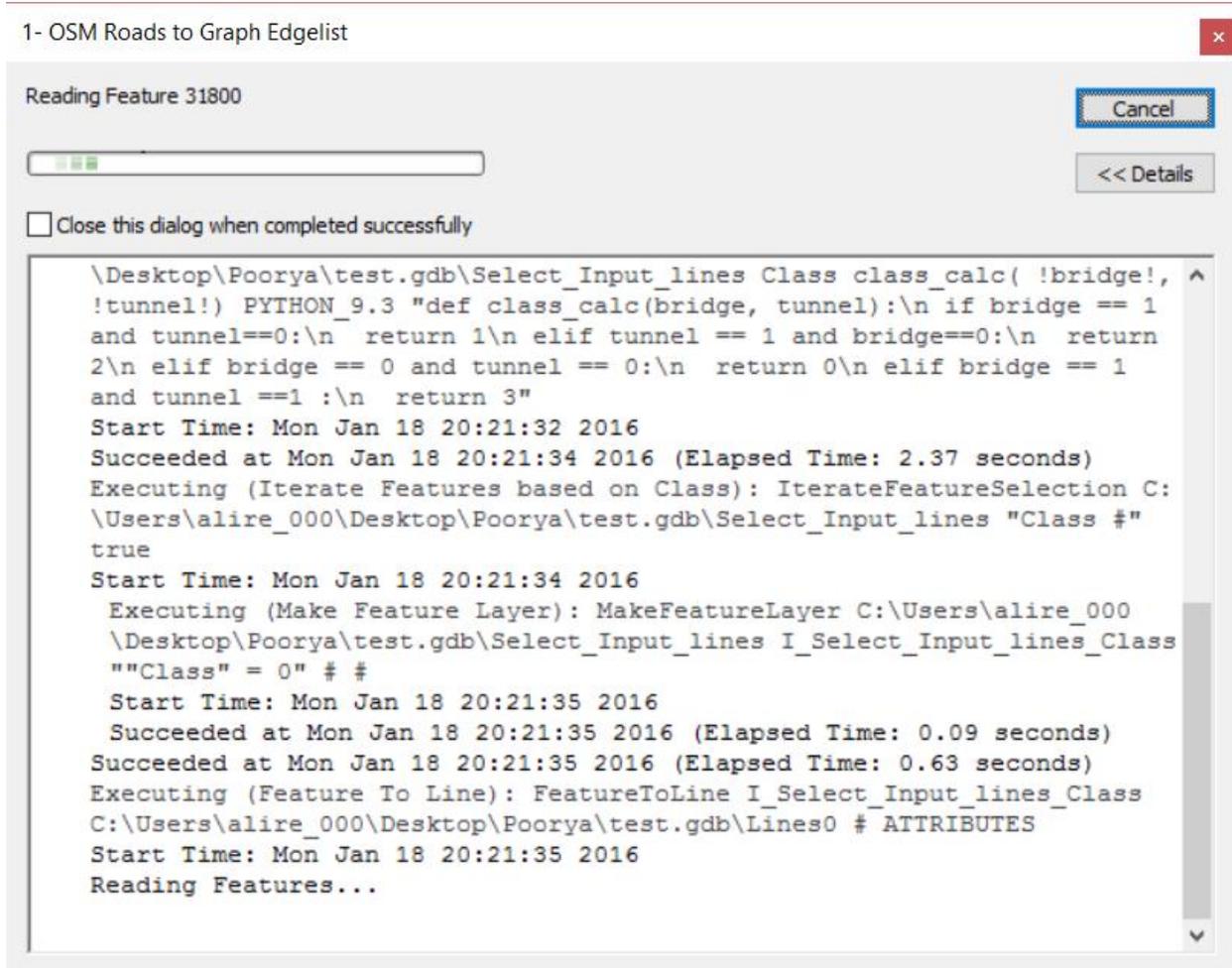
- a. Click on the + button to expand the added toolbox in ArcToolBox.
- b. Double Click on 1- OSM Roads To Graph Edgelist.
- c. The model dialog box will open.



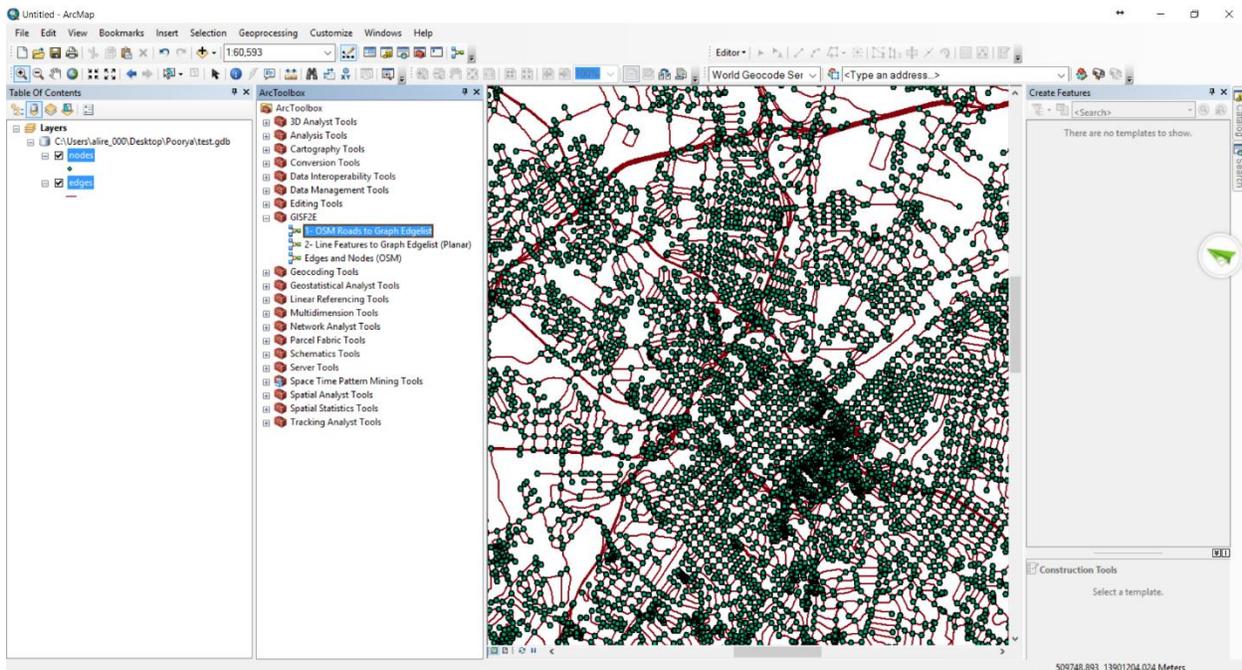
- 3- In the dialog box you need to enter the following information
 - a. Data Workspace: A geodatabase to contain the output results.
 - i. It is recommended to make this geodatabase the default session geodatabase from File > Map Document Properties
 - b. Input OSM Road File: your input roads files
 - c. Nodes: Output nodes feature class location and name
 - d. Edges: Output edges feature class location and name
 - e. Output Edgelist: Output edge list csv, will default to the geodatabase folder, feel free to change the output location if needed.



- 4- Wait for the model to run. (Maybe get some tea or coffee in the meanwhile)



5- After the model is completed, you can access the data in the workspace and use as desired!



Note: There is a simpler version of the model included in the toolbox that works with any line shapefiles. In order to run that model you can run 2- Line Features to Graph Edgelist (planar). The procedures are almost exactly the same as the OSM version. The only difference is that you don't need to have road elevation data in order for the model to run and also you can dissolve the streets based on street name (optional). The results would be a planar graph edgelist.

Note2: The third model "Edges and Nodes" in the toolbox is used within the main model, you don't need to tweak or run it.