1. Use osmnx python library to download the OSM pedestrian links and bike links, separately.
   1. Use this YML file to set up an environment: <https://github.com/mmatkinson7/Ped_Bike_Skims_OSM/blob/main/ox_env.yml>
   2. Code to download the links here: <https://github.com/mmatkinson7/Ped_Bike_Skims_OSM/blob/main/Download_NonMotorized_Networks_fromOSM.ipynb>
2. Open one set of links (shapefile) in TransCAD (do NOT import). You will repeat this entire process with the other set of links as well.
3. Export the DBD that references the Shapefile you opened to an actual DBD file - from TransCAD, File → Export → Geography. You can close the original links reference and open the new exported links if not already open.
4. Open TAZ Centroids (DBD) in the same map as the DBD of the links by right clicking on the map and selecting Layers → Add Layer.
5. Create a new ID column in the nodes data view (links are edges and nodes). A good name for this new field would be TAZ\_ID.
6. Set centroids as the working layer.
7. Add centroid connectors by going to Tools → Editing → Centroid Connectors. This will both add links to the edges and the centroids to the nodes. Make sure you set the TAZ ID to fill the new ID column in the nodes dataview for the nodes that are centroids.
8. Set nodes as the working layer and select all records where TAZ\_ID is null (missing).
9. Fill the selected records in the TAZ\_ID field with a sequence starting at 1,000,000 by 1.
10. Set edges as the working layer and export to a new DBD making the TAZ\_ID field the node ID field for the new DBD.
11. Create a network from the new edges.
12. Create one more new column called Centroids\_Only. Select where ID < 100000 to get only the centroid nodes and fill the Centroids\_Only column with 1 - they just need to be marked to select centroids.
13. Create a centroid set from the nodes by selecting only nodes where the Centroids\_Only column <> null and then using Selection → Select Centroids.
    1. As a note, the centroid selection does not persist after TransCAD is closed.
14. Remove unnecessary fields from edges
    1. Open a dataview of the edges layer
    2. Select DataView->Table->Modify
    3. Drop unused attributes
15. Simplify edges by joining edges where possible (i.e. not intersections)
    1. Select Tools->Editing->Layer Manager
    2. Click Simplify… button and select Centroids\_Only attribute to preserve nodes
    3. Select line fields (if any listed)
16. Optimize dbd for storage efficiency
    1. Select Tools->Editing->Layer Manager
    2. Click Optimize

**To skim interactively in TransCAD (TDM23 generates skims)**

1. Use the Multiple Shortest Paths tool to create a skim between all centroids as a Matrix File.
2. Export the skim matrix file to OMX or whatever preferred format.