TRIP ASSIGNMENT

Trip assignment first involves the calculation of the shortest path from each origin to all destinations (usually the minimum time path is used). Trips for each O-D pair are then assigned to the links in the minimum path and the trips are added up for each link. The assigned trip volume is then compared to the capacity of the link to see if it is congested. If a link is congested the travel time is adjusted to result in a longer travel time on that link. Changes in travel time means that the shortest path may change. Hence the whole process is repeated several times (iterated) until there is an equilibrium between travel demand and travel supply. Trips on congested links will be shifted to uncongested links until this equilibrium, condition occurs. Figure 15 shows the trip assignment process for the Lincoln MPO model.

TransCAD Stochastic User Equilibrium method is utilized for each assignment with a default number of 70 iterations per assignment. After each assignment, the output volumes for each link are exported to a new geographic file.

Several summary tables are created for each assignment run. They are –
- *LOS mileage summary table based on V/C ratio* – summarizes roadway mileage for each type of LOS based on V/C ratio. Table 22 lists the V/C ratio ranges used.
- *LOS mileage summary table based on percent reduction in actual speed* - summarizes the mileage for each type of LOS using the percent reduction in actual speed. Table 23 lists the percent reduction speed ranges used for each LOS type.
- *Screenline results summary table* – compares the model assigned volume to actual counts for links on each screenline.
- *Functional class summary table for VMT, VHT, Average Speed* – summarizes the VMT, VHT, and Average Speed values for each functional class type.
- *Area type summary table for VMT, VHT, Average Speed* - summarizes the VMT, VHT, and Average Speed values for each area type.
- *Count Vs Flow (Assigned volumes) summary statistics for each functional class type* – summarizes model statistics such as percent error (assigned volume vs actual counts), RMSE for each functional class type.
- *Turn Movements Table* – stores the turn movement volumes for intersections selected during model setup.

TABLE 22. LEVEL OF SERVICE - V/C RATIOS USED IN LINCOLN MPO MODEL

Level of Service	V/C Ratio
A	0-0.50
B	0.51-0.70
C	0.71-0.80
D	0.81-0.90
E	0.91-0.99
F	≤ 1

TABLE 23. LEVEL OF SERVICE – PERCENT REDUCTION IN SPEED USED IN LINCOLN MPO MODEL

Level of Service	Percent Reduction in Posted Speed
A	0
B	1-7
C	8-15
D	16-32
E	33-48
F	>48

FIGURE 15. TRIP ASSIGNMENT