

TransModeler Training

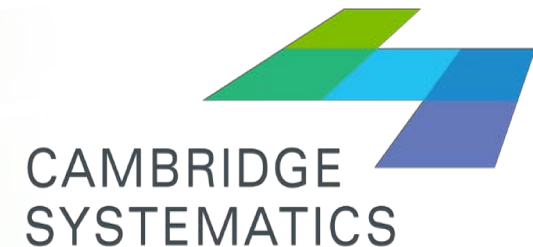
6- Simulation Outputs

presented to

Caltrans, District 1-Eureka

presented by




Shaghayegh (Rira) Shabanian, CS

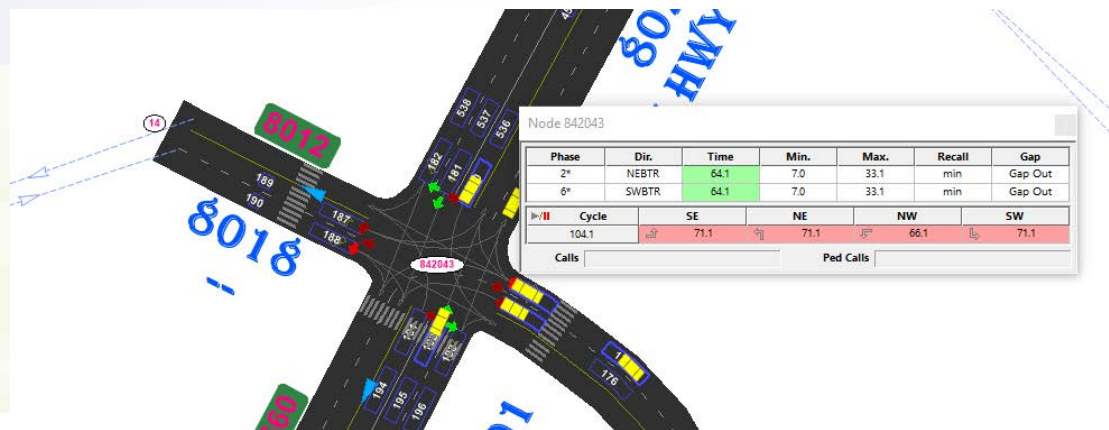


September 2018

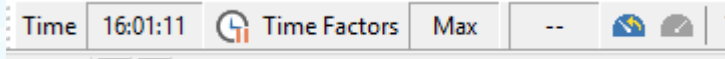
Think  Forward


Observing Simulation

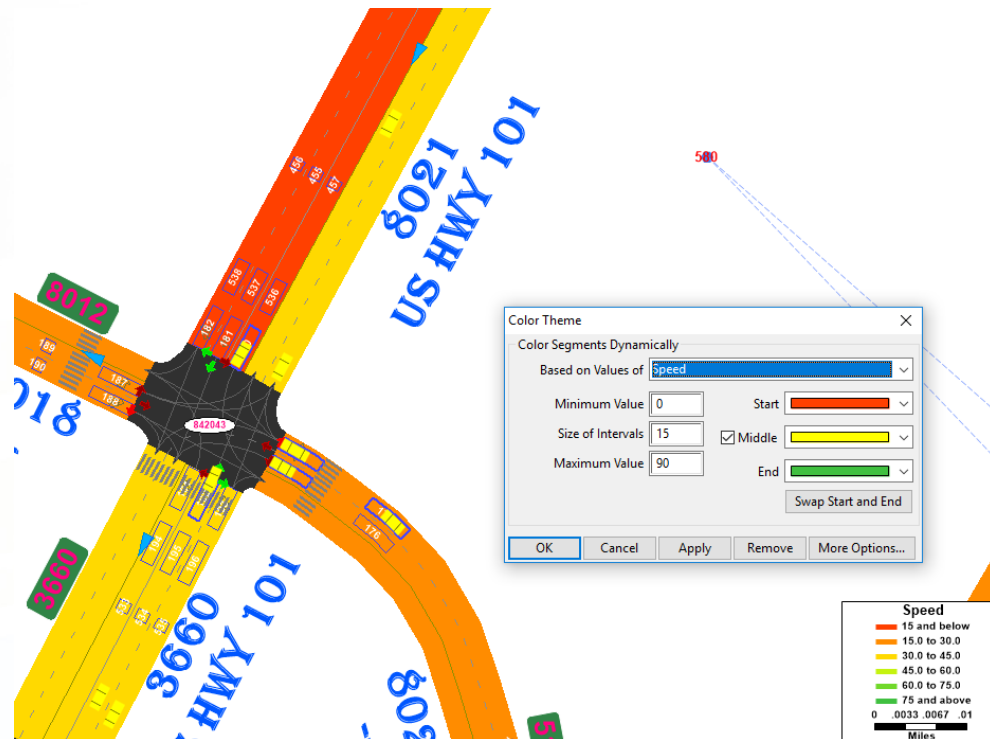
- Valuable diagnosis can be made while watching simulation:
- You can follow a vehicle  , you can know origin and destination of vehicle by clicking on it  (through simulation toolbar)
- you can know vehicles desired speed, current speed, its acceleration, deceleration (set the layer to “vehicle” and use the info button)
- At signals, you can follow closely how detectors and signal phases are operating ( on the simulation toolbar)



Observing Simulation

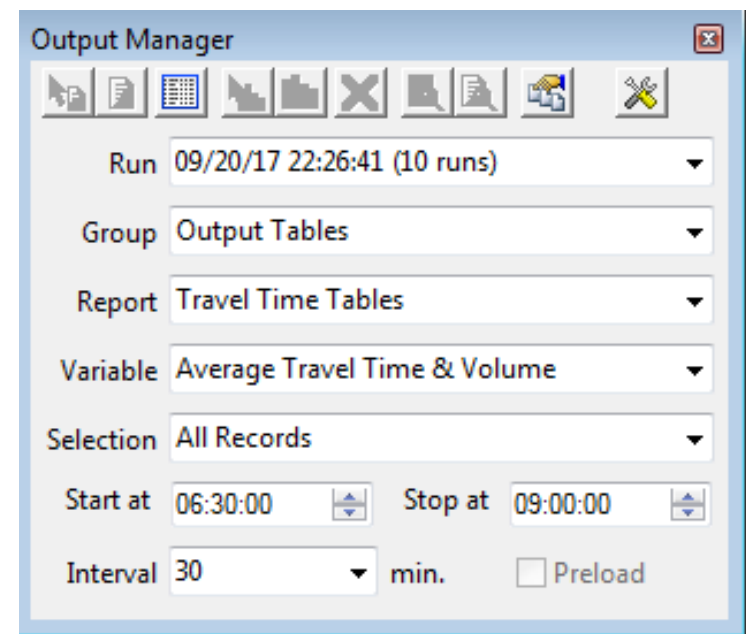
- You can adjust the speed of animation or pause it at desired time or by desired time: 

- You can observe segment-level statistics such as speed and density, dynamically changing during the simulation using 



Output Manager

- Trip Statistics (VMT, VHT, Average Speed, Trip Length)
- Freeway / Multilane Highway / 2 Lane Highway LOS
- Intersection Queue Length / Control Delay
- Segment Statistics (Flow, Speed, Density)
- Intersection / Roundabout LOS
- Turning Movement

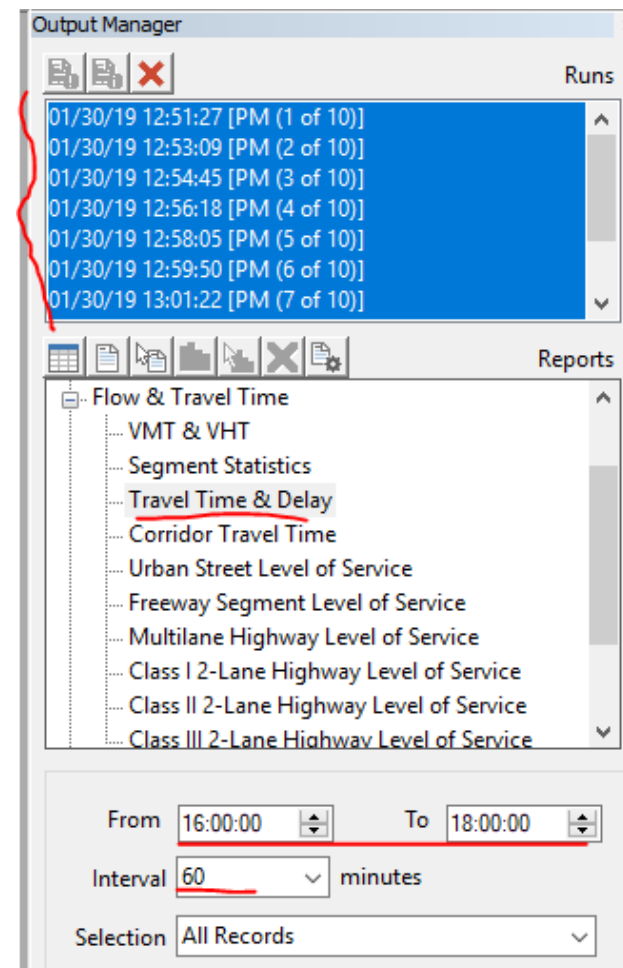
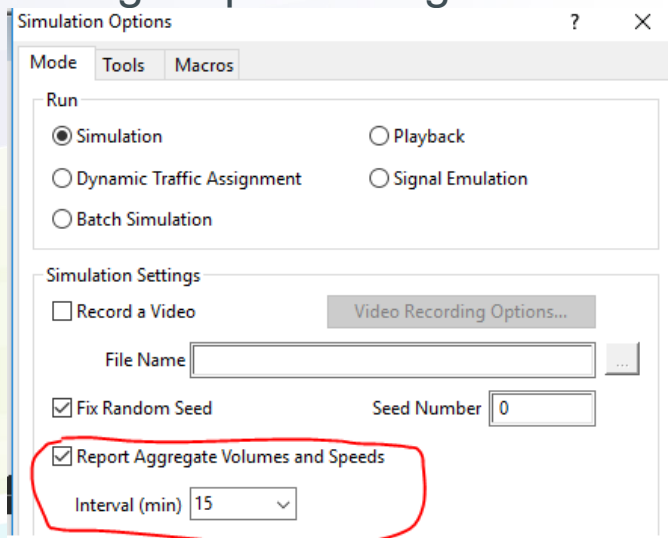


The screenshot shows the 'Output Manager' window with the following settings:

- Run: 09/20/17 22:26:41 (10 runs)
- Group: Output Tables
- Report: Travel Time Tables
- Variable: Average Travel Time & Volume
- Selection: All Records
- Start at: 06:30:00
- Stop at: 09:00:00
- Interval: 30 min.
- Preload:

Output Manager

- You can generate tables (.bin files) that can be attached to network layers (such as segment)
- If you have more than one run (batch of runs), click on all to get outputs for all of them*.
- You can create desired interval speed-volume output directly from simulation without using output manager:



Output Manager

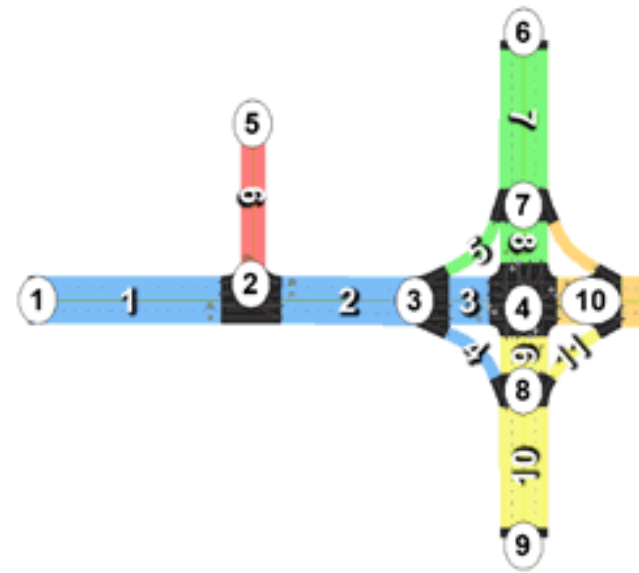
- You can visualize dynamic change of values on the map:

The screenshot displays the Output Manager interface. On the left, a map shows a road network with green and blue lines. A red box highlights the 'Output Themes' panel, which includes a time range of 16:30:00 - 16:35:00 and a dropdown menu set to 'Avg Travel Time'. On the right, the 'Runs' panel lists ten time intervals, with the eighth interval (01/30/19 13:02:55 [PM (8 of 10)]) highlighted in blue. Below the 'Runs' panel, the 'Reports' panel lists various metrics, with 'Travel Time & Delay' and 'Corridor Travel Time' highlighted. At the bottom, the 'From' and 'To' time filters are set to 16:05:00 and 18:00:00, respectively, and the 'Interval' is set to 5 minutes.

Superlink

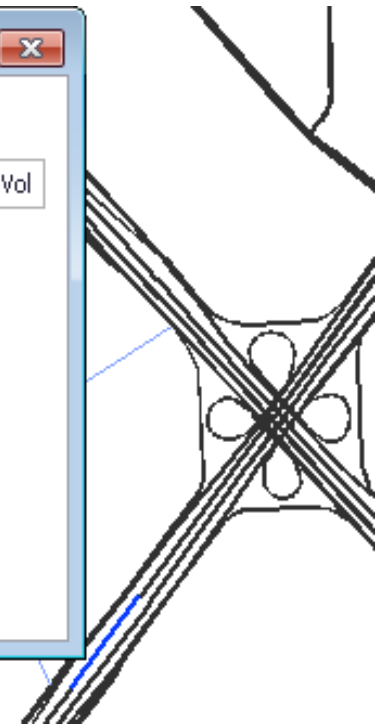
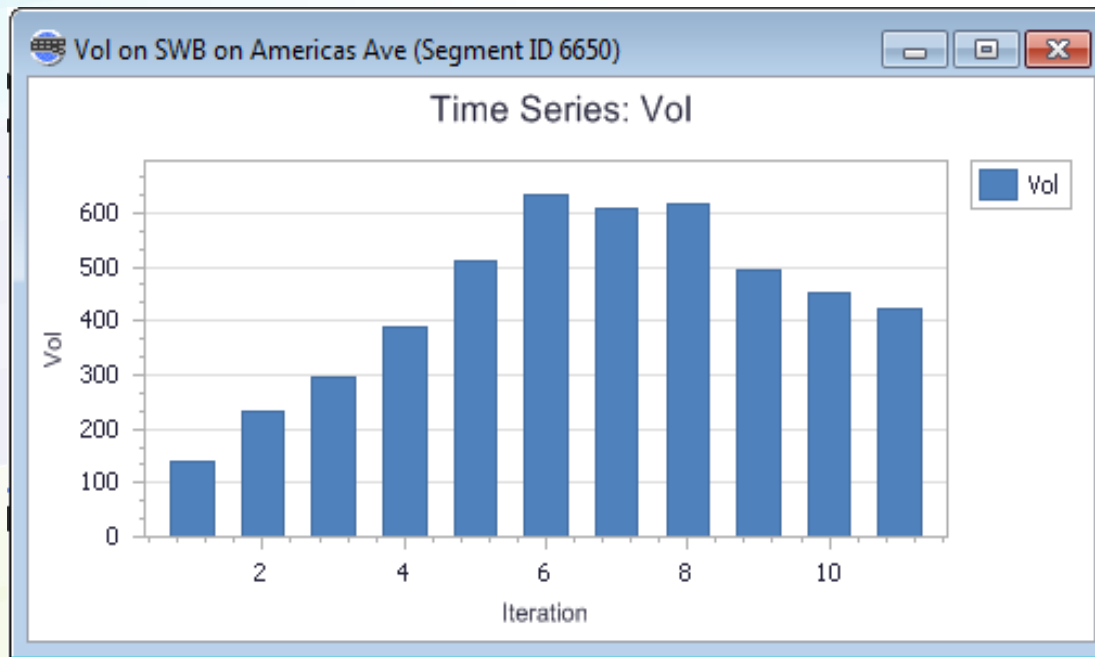
- *Superlinks* are a series of connected links that are grouped together to facilitate output delay and queue measurements. For instance when queue spills back to the upstream link, superlink can be used to appropriately report the queue length. Superlinks can be created by manual selection. Please consult the manual for detailed information.

Output → Superlink



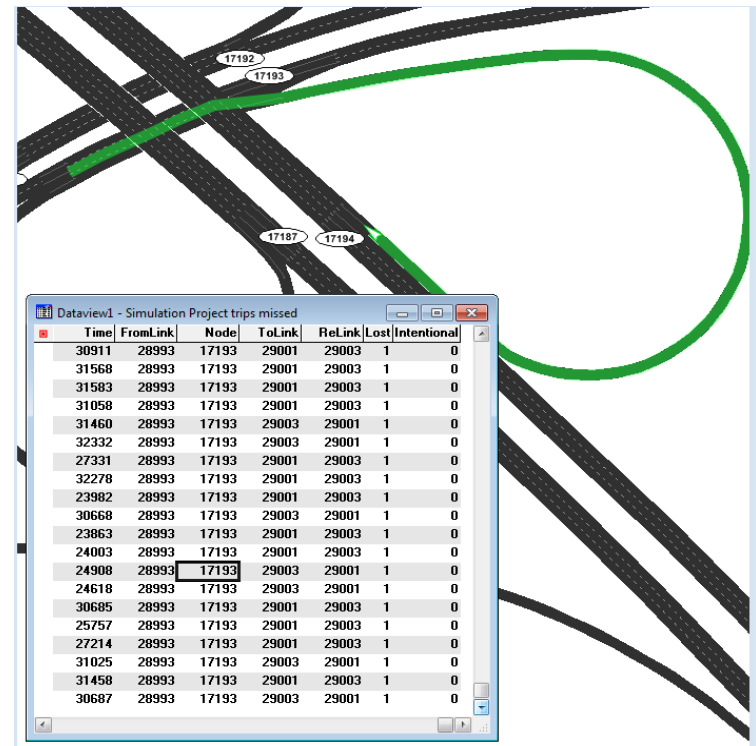
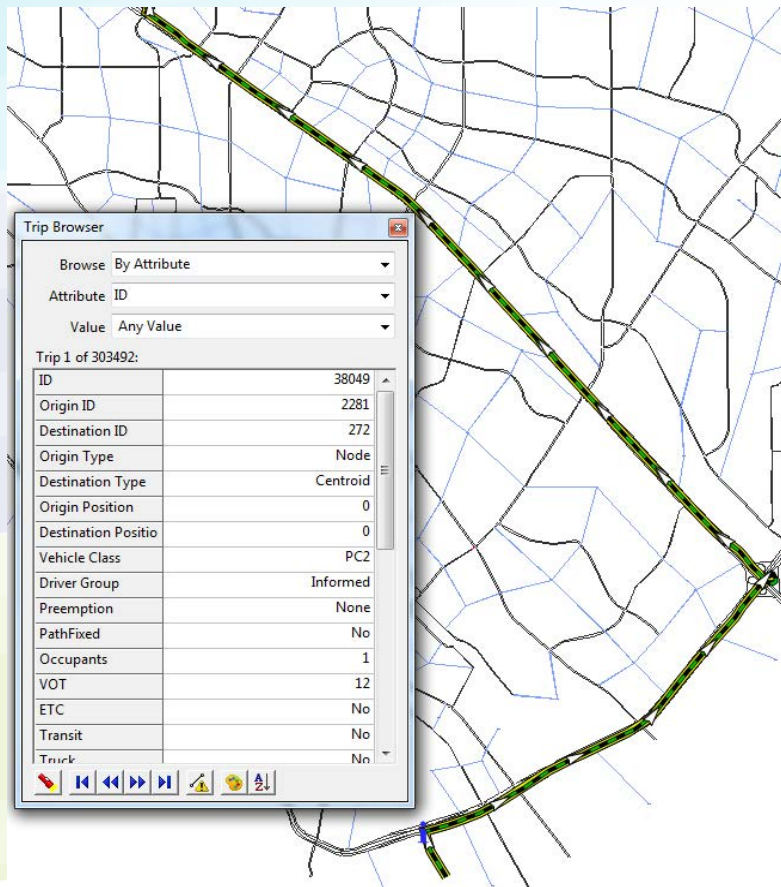
Time Series

Tools → Analysis → Time Series Toolbar

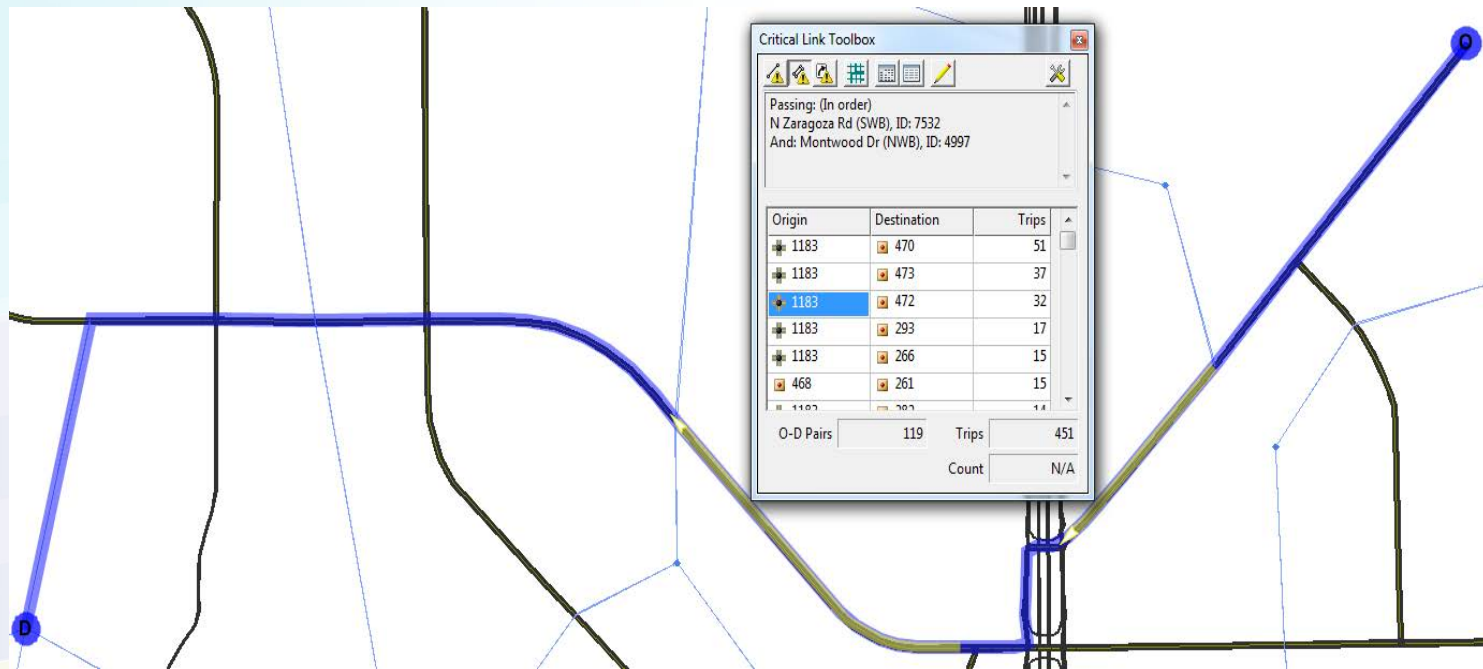


Trip Browser – Missed Turn Trips

- Open trip.bin or missed trip.bin files, right click on any row and select Browse to observe the trip:



Critical Link Toolbox



Path Toolbox

Demand → Path Tools

This is a tool to browse the paths that were generated during simulation (or based on previous DTA run)

It can provide an estimate of travel time between nodes and may be a good tool to visualize approximate travel time, but it DOES NOT reflect the simulated travel time.


The screenshot displays the Path Toolbox interface. On the left, a network diagram shows nodes (circles) and links (lines) with various labels such as 842033, 842045, 842042, 842055, 842072, 842077, 842039, 842083, 842037, 842099, 842080, 842028, 842038, 842001, 842096, 842034, 842041, 842096, 842001, 842038, 842039, 842083, 842037, 842099, 842080, 842028, 842038, 842039, 842083, 842037, 842099, 842080, 842028, 842038. A path is highlighted in purple, passing through nodes 842033, 842045, 842042, 842055, 842072, 842077, 842039, 842083, 842037, 842099, 842080, 842028, 842038. A Path Tools table is overlaid on the network, showing the following data:



Waypoints	Time (min)	Length (mi)
2	1.26	0.52

Below the table is a Path Tools Settings dialog box. The dialog box has the following fields and options:

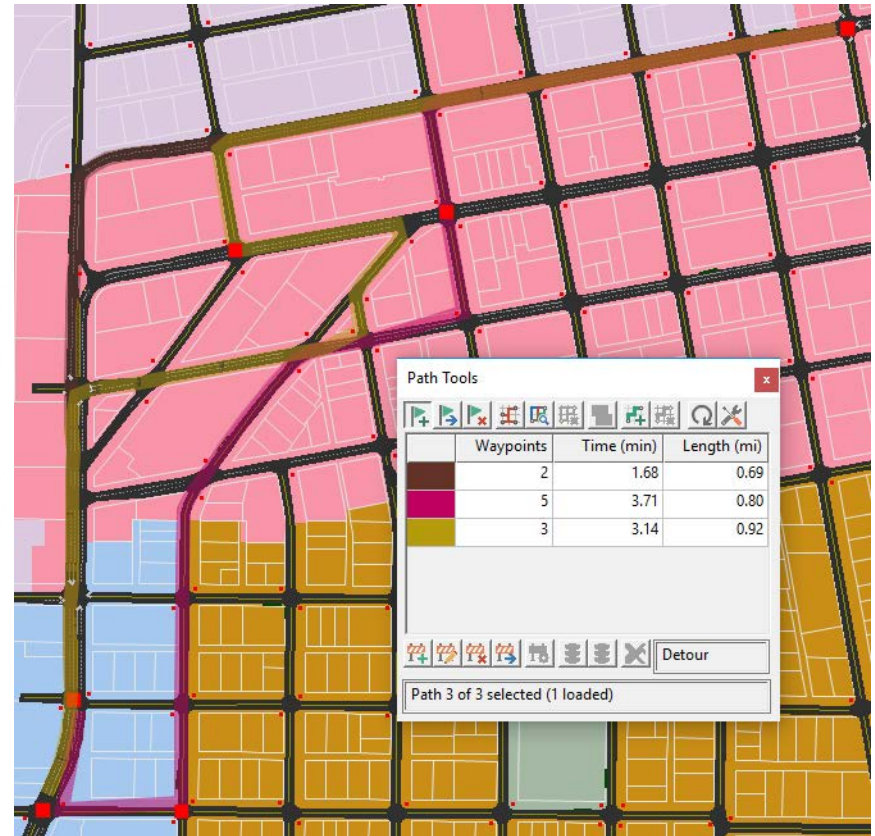
- Vehicle Type and Departure: Departure Time: 01:11, Occupants: 1
- Driver Group: Uninformed
- Categories: ETC, Transit, Truck, User A, User B
- Paths: Path Flows
- Display: Draw path: 0.0 feet, To right of: Center
- Path Table: A simulation is in progress. The Paths toolbox can be used to browse the 1831 path(s) available to vehicles in the current simulation run.
- Buttons: Load..., Clear, Save, Save As..., OK, Cancel

Path Toolbox

➤ Click on  to define a path between each 2 nodes. Double click on the second node to confirm your path. Length and travel time for the defined interval will be shown.

By clicking on  again, you can define a second route, even between the same nodes. With  you can move any mid-point to create your desired route.

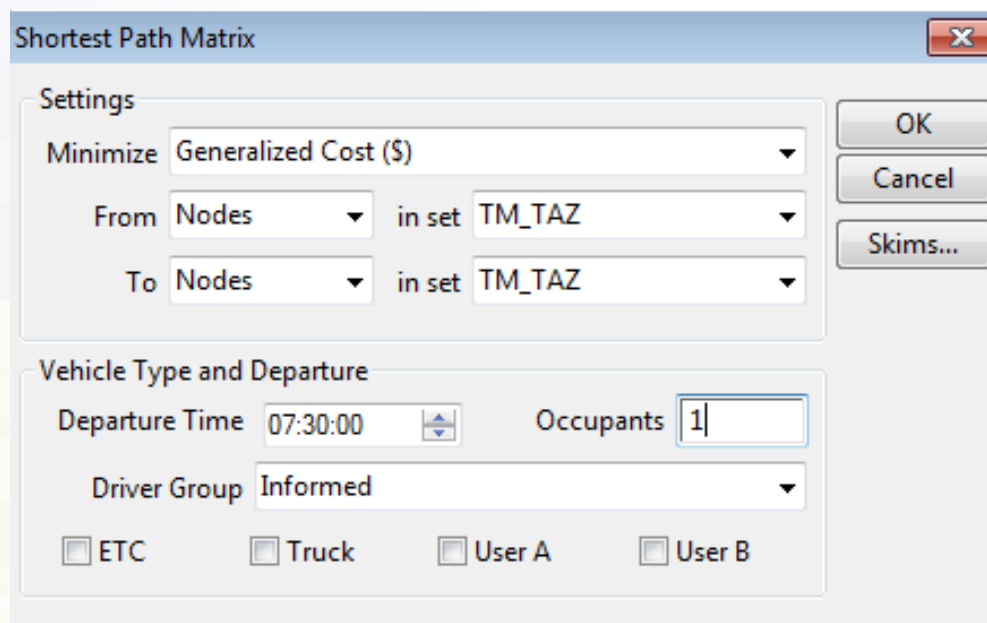
In the picture, all routes are from 4th & E street, to Broadway & Clark st.



Shortest Path Matrix (Skims)

➤ Demand → Shortest Path Matrix

create an attribute in the segment layer, attach simulated travel time table (.bin file) to the segment layer and fill this attribute. Shortest path between each node (or selection of nodes if previously defined) can be calculated.



The screenshot shows a dialog box titled "Shortest Path Matrix" with a close button (X) in the top right corner. The dialog is divided into two main sections: "Settings" and "Vehicle Type and Departure".

Settings:

- Minimize:** A dropdown menu set to "Generalized Cost (\$)".
- From:** A dropdown menu set to "Nodes", followed by "in set" and another dropdown menu set to "TM_TAZ".
- To:** A dropdown menu set to "Nodes", followed by "in set" and another dropdown menu set to "TM_TAZ".

Vehicle Type and Departure:

- Departure Time:** A time selection field set to "07:30:00".
- Occupants:** A text input field containing the number "1".
- Driver Group:** A dropdown menu set to "Informed".
- Vehicle Type Selection:** Four checkboxes are present: "ETC", "Truck", "User A", and "User B", all of which are currently unchecked.

On the right side of the dialog, there are three buttons: "OK", "Cancel", and "Skims...".