
Vissim Measures of Effectiveness (MOEs)

Measures of Effectiveness are used to support effective alternatives. VISSIM model outputs requested for studies include (as appropriate):

A. Travel times and speeds for each corridor segment and associated cross streets

Travel time collection points should span the same distances and locations as the average car runs. For example, if a segment in the average car run extends 524 feet, the travel time collection point should be equal or almost equal to 524 feet. Alternatively, if the modeler wishes to extend or reduce that distance, an appropriate travel time needs to be calculated for the new distance.

Transit oriented studies must include transit travel times separate from automobile travel times (ex. bus).

B. Average and Maximum Queue lengths on each approach

Maximum and average queue lengths should be collected at the stop bar locations for signalized intersections or stop signs. Queues occurring on freeways should be measured from the start of the queue by observing the simulation and determining the start point. Networks should be modeled such that the maximum queue length measurements are encompassed by the network and queues do not extend past the end of the link.

VISSIM may provide 95th percentile queues in future updates – until such a tool is available maximum and average queues will still be required.

C. Intersection Delays (Nodes)

Intersection delays should be collected via the Node tool. Different modeling techniques may be used – each edge of the node may sit solely at the stop bars for each approach resulting in a small node, or each edge of the node may sit outside of the farthest turning bay resulting in wider nodes.

Node “start of delay segment” should consider the length of the queues at that node. Alternatively, this may be zeroed out of the edges of nodes from nearby intersections are bordering the node (i.e. back-to-back node systems).

D. Diverge, merge, and weave density outputs and speeds

For all studies, the link(s) on which a merge, diverge, or weave occurs must be evaluated for density output. The modeler should use HGV, auto densities and the Vissim “All Vehicle” density. The use of a 2.5 factor to convert HGV density to passenger car per mile per lane (pcmpl), which is added to the auto density, can be used.

Freeway segments have different breakdowns for weaves, diverges and merges. For all freeway analyses, diverge, merge, and weave lane density outputs must be collected.

Delays at the diverge/merge/weave may be considered in addition to the density.

E. Network performance Measures of Effectiveness (MOEs)

- a. Network Overall Delays
- b. Network Overall Travel Times (seconds per vehicle)
- c. Latent Vehicles (“vehicles denied entry”)

F. Additional MOEs that may be considered:

- a. Average number of stops
- b. Average speed (miles per hour)
- c. Averaged stopped delay (seconds per vehicle)
- d. Total vehicle-miles (miles)