

EMME Modeller Tool for Intersection Turn Delays

Abstract

Regional travel demand models do not usually incorporate intersection turn delays to forecast travel demand. However, intersection delays have been incorporated by some travel demand models to more realistically model turning volumes at intersections. The process adds to the computational load of the model, and at times, can prove to be difficult to keep the sensitivity of traffic diversions under control. In some cases, intersection turn delays are required to more realistically depict the network travel times. Such a post-processing methodology to model intersection turn delays using prior assigned link and turn volumes is presented. The methodology is implemented for a portion of the network to extract travel times. HCM based delay equations are approximated in the context of using generalized signal timing plans for predefined set of signals. Turn delay equations are developed in the EMME Modeller using the Modeller API. An EMME Modeller tool is set up to estimate the network travel times and display the shortest travel paths that account for both link and turn delays. The resulting travel time plots are shown to represent travel times that are more in tune with the travel times collected in the field. The turn delay post-processing methodology is applied to the future year scenario to forecast the change in network travel times. The travel time results with post-processed turn delays are compared with travel times resulting from equilibrium assignment that considers turn delays, both from the calibration and forecasting perspectives.

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