Traffic Management - Interactive Traffic Micro-simulation

Traffic simulation or the simulation of transportation systems is the mathematical modeling of transportation systems (e.g., freeway junctions, arterial routes, roundabouts, downtown grid systems, etc.) through the application of computer software to better help plan, design, and operate transportation systems. Microsimulation (microanalytic simulation or microscopic simulation) is a category of computerized analytical tools that perform highly detailed analysis of activities such as highway traffic flowing through an intersection. Microsimulation can be distinguished from other types of computer modeling in looking at the interaction of individual units such as people or vehicles. Each unit is treated as an autonomous entity and the interaction of the units is allowed to vary depending on stochastic (randomized) parameters. These parameters are intended to represent individual preferences and tendencies. For example, in a traffic model some drivers are cautious and wait for a large gap before turning, while others are aggressive and accept small gaps.

When to Use: 30-90% CR

Whom: Core Constructability Team, Planners

References:

Traffic Analysis Toolbox Volume III: Guidelines for Applying Traffic Microsimulation Modeling Software 2019 Update to the 2004 Version, https://ops.fhwa.dot.gov/trafficanalysistools/tat_vol3/sectapp_a.htm