**EPG 905.3 Transportation Impact Analysis, Accompaniment to VISSIM**

This guidanceaccompanies **EPG 905.3.5.3.2** and documents typical VISSIM input parameters that aid in communicating MoDOT’s VISSIM guidelines. Refer to **Table E1**.

**Table E1 – Typical VISSIM Input Parameters**

|  |  |  |
| --- | --- | --- |
| **VISSIM Input Parameter** | **Typical Value and/or Acceptable Ranges** | |
| **Existing Conditions** | **Future Conditions** |
| **Geometric and Analysis Parameters** | | |
| **Arrival distribution** | Select to “Exact Volume” instead of the default “Stochastic  Volume” | |
| **Auxiliary lane length** | Use existing field measurements | Based on existing field  measurements or design  plans |
| **Car following model** | Use Wiedemann 74 model car following model (arterial links)  or use Wiedemann 99 car following model (freeway links) | |
| **Entry Traffic Volumes** | Enter as 15-minute volumes for a period long enough to  account for seeding and for a minimum of four 15-minute intervals | |
| Use existing traffic count data | Based on projected traffic  count data |
| **Evaluations** | Use MOEs agreed upon during scoping | |
| **Heavy Vehicle Percentages (Vehicle compositions)** | Use existing count data | Based on existing count data  if future vehicle mix is projected to be similar to existing vehicle mix or based on projected future vehicle  mix (minimum of 2%) |
| **Link Length** | Arterial links should be broken at each intersection and  freeway links should be broken according to HCM “Influence  Area” definitions (i.e., weaving, merging, diverging, if HCM methodology is desired) | |
| For turn lanes, use effective storage length from existing field measurements | For turn lanes, use effective storage length from existing field measurements for No- Build scenarios and use maximum queue length as a minimum for Build scenarios unless geometrically constrained. |

**Table E1 (Continued) – Typical VISSIM Input Parameters**

|  |  |  |
| --- | --- | --- |
| **VISSIM Input Parameter** | **Typical Value and/or Acceptable Ranges** | |
| **Existing Conditions** | **Future Conditions** |
| **Geometric and Analysis Parameters** | | |
| **Link Speed (Desired Speed Distributions)** | Use existing speed data | * Based on existing speed data if the future geometry is similar to existing geometry OR * Use predefined   distribution for the posted speed limit |
| **Number of Microsimulation**  **Runs** | Refer to guidance given in **EPG 905.3.5.3.2.3.1** | |
| **Origin-Destination (O-D)** | Based on existing O-D data or routing decisions may be  combined or set up as O-D | |
| **Performance Measure**  **Intervals** | Report in 15-minute intervals unless otherwise specified in  project requirements | |
| **Simulation Resolution** | Use a value of 10 in most models (Note: this value should not  change between existing and future analyses) | |
| **Simulation Run Time** | * Should include a minimum of a 15-minute seeding period prior to the peak period * A minimum of one-hour peak period should be analyzed * Determined by the peak period duration, which may extend beyond an hour * Each evaluation time period should be 900 seconds (15   minutes)   * Future analyses should include the same simulation run time as existing analyses | |
| **Turning Speed (Reduced**  **Speed Areas)** | * For right turns, use 7.5 mph to 15.5 mph * For left turns, use 12.4 mph to 18.6 mph | |
| **Vehicle Fleet** | MoDOT’s default vehicle fleet has been included in the base  VISSIM file. | |
| **Signal Timing Input Parameters** | | |
| **All-Red time** | Based on existing timing plans or field measurements | Based on guidance in the *Yellow Change Intervals and Red Clearance Intervals TED*  *Memorandum (TE-306.1)* |
| **Controller** | Ring-Barrier Controller (RBC) is the preferred traffic signal  emulator | |
| Use existing timing plans or field observations | Based on existing timing plans unless otherwise  directed |

**Table E1 (Continued) – Typical VISSIM Input Parameters**

|  |  |  |
| --- | --- | --- |
| **VISSIM Input Parameter** | **Typical Value and/or Acceptable Ranges** | |
| **Existing Conditions** | **Future Conditions** |
| **Signal Timing Input Parameters** | | |
| **Cycle Length** | Use existing timing plans or field measurements | - Should be optimized in range from 60 to 240 seconds or otherwise outlined in M&A  document. |
| **Left-Turn Phasing** | Use existing timing plans or field observations | Based on TED Guidance for Determination and Documentation of Left-Turn  Phasing Mode |
| **Max Green Mode** | Use existing timing plans or field measurements | Based on existing timing plans or field measurements or otherwise documented in  M&A memo |
| **Max Recall** | Use existing timing plans | Based on existing timing  plans or otherwise  documented in M&A memo |
| **Minimum Green Time** | Use existing timing plans or field measurements | Based on existing timing  plans or field measurements  or otherwise documented in M&A memo |
| **Min Recall** | Use existing timing plans | Based on existing timing plans or otherwise  documented in M&A memo |
| **Offset Reference** | Use existing timing plans or field measurements | * Use HCS7 (TRANSYT-   7F) or Synchro time- space diagrams   * Should be documented in   M&A memo |
| **Yellow Time** | Use existing timing plans or field measurements | Based on guidance in the *Yellow Change Intervals and Red Clearance Intervals TED*  *Memorandum (TE-306.1)* |
| **Pedestrian Input Parameters** | | |
| **Flash Don’t Walk Time** | Use existing timing plans or  field measurements | Based on the latest guidance  in the MUTCD |
| **Walk Time** | Use existing timing plans or  field measurements | Based on the latest guidance  in the MUTCD |