**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 “StochasticVolume” |
| **Auxiliary lane length** | Use existing field measurements | Based on existing fieldmeasurements or designplans |
| **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 toaccount for seeding and for a minimum of four 15-minute intervals |
| Use existing traffic count data | Based on projected trafficcount data |
| **Evaluations** | Use MOEs agreed upon during scoping |
| **Heavy Vehicle Percentages (Vehicle compositions)** | Use existing count data | Based on existing count dataif future vehicle mix is projected to be similar to existing vehicle mix or based on projected future vehiclemix (minimum of 2%) |
| **Link Length** | Arterial links should be broken at each intersection andfreeway links should be broken according to HCM “InfluenceArea” 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 becombined or set up as O-D |
| **Performance Measure****Intervals** | Report in 15-minute intervals unless otherwise specified inproject requirements |
| **Simulation Resolution** | Use a value of 10 in most models (Note: this value should notchange 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 baseVISSIM 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 signalemulator |
| Use existing timing plans or field observations | Based on existing timing plans unless otherwisedirected |

**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&Adocument. |
| **Left-Turn Phasing** | Use existing timing plans or field observations | Based on TED Guidance for Determination and Documentation of Left-TurnPhasing Mode |
| **Max Green Mode** | Use existing timing plans or field measurements | Based on existing timing plans or field measurements or otherwise documented inM&A memo |
| **Max Recall** | Use existing timing plans | Based on existing timingplans or otherwisedocumented in M&A memo |
| **Minimum Green Time** | Use existing timing plans or field measurements | Based on existing timingplans or field measurementsor otherwise documented in M&A memo |
| **Min Recall** | Use existing timing plans | Based on existing timing plans or otherwisedocumented 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 orfield measurements | Based on the latest guidancein the MUTCD |
| **Walk Time** | Use existing timing plans orfield measurements | Based on the latest guidancein the MUTCD |