**MoDOT Reviewer’s Checklist for Transportation Impact Analyses**

June 2020

Every SIDRA model submitted to MoDOT will be reviewed by a member of MoDOT staff using the following checklist. The purpose of sharing this checklist is to assist those submitting models to MoDOT in reviewing their own work prior to submitting.

When using this checklist to review a model, a checkmark () should be used to signify items the reviewer deems acceptable. If an item does not apply to the model being reviewed, the reviewer should leave a checkmark in the “N/A” column. If an item applies to the model being reviewed but is deemed unacceptable or in need of adjustment, the reviewer should leave the check boxes next to that item blank and should address the issues with that item in their comments at the end of the checklist.

The items in this checklist accompany **Section 5.2.2** in MoDOT’s *TIA Guidance Manual*. Modelers and reviewers should refer to this section if they need clarification on MoDOT’s best practices regarding SIDRA. The checklist assumes that the basic guidance from the manual is followed; however, if deviations from the guidance were agreed upon by the project team, these supersede what is written in the checklist.

**MoDOT SIDRA Model Reviewer’s Checklist**

Project Name: Click or tap here to enter text.

Modeler/Agency-Consultant: Click or tap here to enter text.

Model Reviewer/Agency-Consultant: Click or tap here to enter text.

Date of Model Submittal/Review: Click or tap here to enter text.

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| **SIDRA Review** | | | |
| **Model Element** | **Description** | **Check** | **N/A** |
| Settings | “US HCM (customary)” should be selected in the Settings tab of the ribbon at top of the SIDRA interface before a roundabout is created. This can be verified in the SIDRA “Site Properties” menu by right clicking on the site name and then selecting “Properties.”  **Important Note:** If this setting is determined to be incorrect, then the model developer must re-develop the SIDRA site from scratch to ensure that this setting is fully implemented into the SIDRA model. |  |  |
| Intersection Dialog Box | Verify that the site data, approach geometry, and approach data settings are correct |  |  |
| The “Program” setting is sufficient if there is no traffic signal on an approach within 2,600’ of the roundabout. Otherwise, verify that the Extra Bunching Percentages are:   * **[Same as “Program”]** 0% if no traffic signal on approach within 2,600’ of roundabout * 5% if signal on approach within 2,000’ to 2,600’ of roundabout * 10% if signal on approach within 1,300’ to 2,000’ of roundabout * 15% if signal on approach within 700’ to 1,300’ of roundabout * 20% if signal on approach within 350’ to 700’ of roundabout * 25% if signal on approach less than 350’ from roundabout |  |  |
| Movement Definitions | Ensure that the appropriate vehicle classes desired to be analyzed are selected (standard default is for light vehicles and heavy vehicles, though other options such as buses and bicycles can be added). |  |  |
| Check that the appropriate origin-destination movements are enabled (e.g., check that a SB right turn is prohibited if that’s how it is in the field or add U-turn movements to the roundabout). |  |  |
| Lane Geometry | Lane configuration, discipline, and data attributes should match design files and/or field conditions |  |  |

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| **SIDRA Review (Continued)** | | | |
| **Model Element** | **Description** | **Check** | **N/A** |
| Lane Movements | The Lane Movement dialog box is typically left unchanged. Verify the reasonableness of the values if anything other than SIDRA default values are used. Verify the following:   * If there is an approach with multiple exit lanes, check that the flow proportions of the other approaching lanes are reasonably distributing the traffic to the two different exit lanes (relative to available data). * If there is a blockage calibration factor other than 1.0 (SIDRA standard), then review the assumptions made to verify that this is appropriately representing the effect of downstream lane blockage. |  |  |
| Roundabouts Dialog Box (“Options” Tab) | **Roundabout Capacity Model:** Ensure the “SIDRA Standard” model option is selected. |  |  |
| **Roundabout LOS Method:** Select the “Same as Sign Control” option. |  |  |
| **Delay Model:** Uncheck both “HCM Delay Formula” and “Exclude Geometric Delay.” |  |  |
| Roundabouts Dialog Box (“Roundabout Data” Tab) | Verify that the number of lanes circulating around the roundabout match field data and/or design plans. |  |  |
| **Circulating Width:** verify that circulating width matches field data and/or design plans or that a single-lane roundabout is 20’ and that a multi-lane roundabout is 15’ per lane. |  |  |
| If the inscribed diameter has been manually input, verify that it matches field data and/or design plans. |  |  |
| Ensure that the island diameter is correct relative to the following equation (might not apply if the inscribe diameter was program calculated):  Island Diameter = (Inscribed Diameter) – 2 x (Circulating Width) |  |  |
| Entry Radius matches field data and/or design plans or is 65’ for a single-lane roundabout or 100’ for a two-lane roundabout. |  |  |
| The entry angle matches field data and/or design plans or is 30 degrees |  |  |

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| **SIDRA Review (Continued)** | | | |
| **Model Element** | **Description** | **Check** | **N/A** |
| Roundabouts Dialog Box (“Roundabout Data” Tab) | Verify that the environmental factor is:   * 1.1 for single-lane roundabouts where drivers are generally familiar with roundabouts * 1.2 for locations where drivers are unfamiliar with roundabouts and for multi-lane roundabouts   Ensure that the determination of this decision is justifiable and has been documented in the analysis report. |  |  |
| Pedestrians | **Pedestrian Movement Definition:** If including pedestrian data as part of analysis, check that “Staged Crossing” as the “Main Crossing” type is selected. Ensure that data was entered separately for both stages of the crossing. |  |  |
| **Pedestrian Walking Speed:** Verify that the pedestrian walking speed has been set to 3.5 feet/second |  |  |
| Volumes | Verify that the unit time for volumes is set to 60 minutes and that the peak flow period is set to 15 minutes. |  |  |
| Ensure that traffic volumes and heavy vehicle percentages match count data or available traffic estimates / forecasts. |  |  |
| Check that the Peak Flow Factor (PHF equivalent) either matches traffic data or uses 0.92 |  |  |
| Vehicle Movement Data | Approach and Exit Speeds: Check that the speeds selected use either the speed data of vehicles (as collected in the field) or a speed that represents the speed limit or safe, legal speed anticipated. |  |  |
| Parameter Settings | Check that the “Delay & Degree of Saturation (SIDRA)” setting is selected among the “Site Level of Service Method” options available. |  |  |
| Verify that the “Exclude Geometry Delay” and “HCM Formula Delay” checkboxes are unchecked. |  |  |

**Reviewer’s comments:**