

Module 8 - GDOT Vissim Review Checklists

Required Information

Model Name: Model Developer: Date Model Submitted:	Model Reviewer: Date Model Reviewed: GDOT Project Number:
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1. Required Information

Required information includes all information that should be submitted by the model developer as part of review.

Check List Item	Scenarios												
	AM No-Build			PM No-Build			Other			Other			
	Y	N	N/A	Y	N	N/A	Y	N	N/A	Y	N	N/A	
1.1 Documentation													The documentation highlighted in a. through h. may be in separate reports or may be elements within one or multiple reports.
a.	Scoping / Model Description, including model goals, study area, location map, existing conditions narrative, physical constraints, data collection, congestion locations, alternatives to be modeled, etc.												
b.	Model Methodology, including assumptions (general geometry coding, signals coding, use of conflict zones, use of speed reduction zones, vehicle composition, etc.), model data collection method (data collection points, travel time measurements, nodes, links, etc.), input intervals and routing, incorporation of peds, bikes, and transit, unique features (lane imbalances, parking, bus stops, etc.), etc.												
c.	Detailed description of model changes and updates between base/existing and build scenarios.												
d.	Field data collection summary, i.e., summary of field visits, observations, types of data collected, data summaries (including graphical format of at least speed, volumes, travel time), etc.												
e.	Calibration / validation report, including calibration targets, identifying data for calibration, guidelines for application of driving behavior models and parameters, etc.												
f.	Confirm MOEs to be used, e.g., speed, throughput, travel time, queues, density, LOS, etc.												
g.	Results - narrative of critical results with key graphics, observations, and discussion												
1.3 Field Data													Data collection should be agreed upon prior to model developments and outlined in the scoping documentation. The Vissim checklist is not intended to be comprehensive for all data that may be collected for a project.
a.	Volume / demands, including agreed upon schematics of balanced volume data, sources and sinks, etc.												
b.	Travel Times, including raw data and graphical representation												
c.	Measured / observed speeds, including raw data and graphical representation												
d.	Posted Speeds, including raw data and graphical representation												
e.	Queuing, including raw data and graphical representation												
f.	Intersection control (signalized vs unsignalized, placement of stop signs, existing of RTOR, permissive/protected left turn, etc.)												
g.	Signal timing (phase data, coordination data, detectors, etc.)												
h.	Lane schematics in graphical format												
i.	Ramp meters												
j.	Other												
1.4. Model													All model input files required to run the simulation on a GDOT computer must be provided.
a.	.inp file												
b.	.rbc file												
c.	.err file												
d.	other												
1.5. Output													Data and output files will be provided as agreed upon in the scoping documentation. Minimum expectation is typically speed, travel time, delay, and queuing data although additional project specific output requirements may be set. Graphs and Tables may be provided in the documentation in section 1.1.
a.	Vissim Data Files												
b.	Graphs / Tables of MOEs												
c.	Processed Data (.xls, etc.)												
1.6 Project Specific Checklists													Checklist may be found in the documentation in item 1.1, but at a minimum should include the following lists confirming the completion and submission of each item.
a.	Required Information												
b.	Initial Review												
c.	Detailed Review												

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Initial Information

Model Name: Model Developer: Date Model Submitted:	Model Reviewer: Date Model Reviewed: GDOT Project Number:
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2 Initial Review

Notes:

- 1) The initial review is a high level review, primarily reviewing the documents provided by the model developer and a careful viewing of the model animation. In addition, some critical parameters and features of the model are reviewed. A more detailed review of all model elements is found in the Detailed Review checklist.
- 2) It is recommended that checklists 2.5 through 2.9 be completed for no-build conditions under existing volumes, a low volume scenario (i.e., uncongested), and a high volume scenario (i.e., congested). The calibration procedure should account for each of these conditions. (See GDOT VISSIM Module 7 for additional discussion.)
- 3) Checklists 2.4 through 2.9 should be completed for all scenarios (no-build and build) using projected demands for build alternatives (i.e., it is not necessary to conduct sensitivity testing) and the no-build calibration for all models (i.e., the calibration should not change between alternatives.)

Check List Item	Scenarios				Comments / Notes
	Build	Build	Other	Other	
2.1 Scope (confirm model as defined in documentation)					
a. Project description, project location on map	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Network limits / study area (should include locations that will be impacted in build and future alternatives or have potential mitigation measures)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Time periods modeled are appropriate, at minimum covers peak periods or from uncongested to uncongested, which ever is longer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Scenarios contain other planned projects as appropriate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Collected field data matches scope	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.2 Model Run Parameters					
a. Vissim version same for all models	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Use appropriate vehicle fleet (e.g., North American fleet)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. Acceptable number of replicate runs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Change random seed each replicate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Sufficient warm-up period	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Evaluation does not contain results from warm-up	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g. Verify background image properly scaled	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
h. 10 time steps per second	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.3 Calibration Document					
					It is assumed prior to any calibration effort that the model has no errors and the model developer has conducted a detailed verification of the model, similar to the items in the Detailed Review Checklist.
a. Calibration targets clearly identified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
b. Critical locations and bottlenecks identified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
c. MOEs for calibration identified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
d. Selected calibration method documented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
e. Calibration covers existing conditions (AM, PM, off-peak)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
f. Calibration based on sufficient replicate trials (typically at least 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
g. All parameter changes (driver behavior, emergency stop, lane change, etc.) from default documented and justified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
h. Speed-contour plots reasonably match field conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
i. Speed calibration targets met, this includes general targets (e.g., 85% of links within acceptable speed, or GEH statistic, etc.) as well as ensuring critical points or bottlenecks sufficiently calibrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
j. Volume calibration targets met, this includes general targets as well as ensuring critical points or bottlenecks sufficiently calibrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
k. Travel time calibration targets met, this includes general targets as well as ensuring critical points or bottlenecks sufficiently calibrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
l. Delay calibration targets met, this includes general targets as well as ensuring critical points or bottlenecks sufficiently calibrated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
m. Capacity calibration acceptable at critical points and bottlenecks within the model	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
n. Queuing reasonably matches field conditions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

i	Reasonably matches field observations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	Free flow Speeds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.8 Visualization - Network																
a.	Demand enters / exits on all boundary links	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	Queuing does not reach model boundary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c.	No unexpected bottlenecks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d.	Bottlenecks as expected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e.	Reasonably matches field observations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2.9 Output																
a.	Data collection intervals as appropriate (typically 15 min or 1 hr.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b.	MOE (MOE as defined in scope) results aggregated over replicated trials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

