Frequently Asked Questions about Modeling

The Consultant's work shall be compatible with Software maintained by the Cabinet. All Base condition Models will be reviewed and accepted by the Division of Planning, Multi-Modal Branch according structure, data used, calibration, and validation. Periodic checks must be approved prior to the development any future scenario(s).

Compatible software

Caliper's 32-bit TransCAD 5r4, or TransCAD 6r2
Caliper's 64-bit TransModeler 3r2
PTV's 32-bit VISSIM 5.40 version 8 or VISSIM 6 version 17 (in Suite V4-AA4)
HCS2010

Model Folder Structure for Base Condition and each Future Scenario

Input –Contains default and other support files used to feed the model stream
Including off-process spreadsheets. Collected data shall be in an electronic and editable format
GISDK- Contains the un-compiled versions of macros and other script files
Output – Contains intermediate files generated during the model's execution
Reports- Contains model output summaries, error logs, as well as documentation of process, any modifications, and conclusions made regarding the base or scenario runs

Model Data Used

Source, duration, time increment, & date of all field measured data
Population & Households, As reported by the Kentucky Data Center
Employment, Kentucky Beauro of Labor & Statistics
Land Use, Regional, County & City Planning Agencies
Itemize required Inputs not based on actual field measurements w/ source metadata
3rd Party data sources used including vehicle distribution, income, households, household size, workers, population, employment, student enrollment, grouped quarters, etc
Networks shall comply with the Cabinet's HIS database

TAZs shall match existing KYTC models. Any further divisions shall comply with 2010
Census Blocks

Model Calibration & Validation

RMSE shall be <35% using all available ADT count stations

RMSE shall be <60% using all available Class counts

XY scatter of model speeds versus documented speeds (state source)

Conform to NCHRP 365 acceptable RMSE by Volume group

Flow to Count sums and each screenline shall be within 10%

Periodic Checks & Milestones

All input files including off-process spreadsheets

All Socio-Economic/Demographic/Behavioral/etc in model file format

Calibrated Base Year Model

Match available travel time data to within 10%

Micro-simulation models require a much higher degree of input. In addition to the normal input data the following shall be included;

Volume, Class, and turning movements in 5 minute increments, 15-min max

Vehicle type, weights, accel/decal rates,and dimensions specific to area of study

Gap acceptance, reaction times, delay due to in-attention

Speed or observed travel time during time of study

When using a model developed by the Cabinet, the following shall apply:

- Executed user agreement limiting the model's use to the scope of work
- Provide data collected to calibrate model to base conditions in editable form
- Document any modifications made to model input for the base &scenarios

At the conclusion of the modeling work, all data and files shall be submitted in an editable format to the Division of Planning, Multi-Modal Branch