Fresno COG Activity-based Model Update

Scope of Work

The scope of work to be performed by the consultant is to update Fresno COG's ABM and provide training to COG's modeling staff. It is expected that after the model is developed, the ABM can be operated and maintained in-house for COG planning activities where modeling is needed. Although Fresno COG's ABM was developed at parcel level in the first phase, the ABM will be updated to micro-zone (census block) level in order to reduce run time and data maintenance efforts.

TASKS

Task 1 Update the synthetic population to 2014 base year. Fresno COG will provide TAZ level socio-economic data as control reference, which was used in the 4-step model update. Micro-zone level socio-economic data can also be made available if needed.

Task 2 Re-estimate and re-calibrate the ABM with the 2010-2012 California Household Travel Survey(CHTS) and other available public data sources. Re-estimation using the 2010-2012 CHTS was performed for the 4-step model update, and the results could be provided for reference.

Task 3 Validate the ABM to 2014 counts. Fresno COG maintains an extensive traffic monitoring program and will provide traffic counts for the validation. Screen line counts will also be provided.

Task 4 Develop assignment for biking and walking trips. Fresno COG will provide the 2014 bike/sidewalk/trail network as well as the future planned bike/pedestrian network. Bike/ped counts were collected at select locations throughout the county and will be provided for reference.

Task 5 Conduct sensitivity tests for the ABM.

Task 6 Other updates that are deemed necessary by the consultant team.

Task 7 Provide training to Fresno COG staff. Training may include but is not limited to: an overall introduction of activity-based modeling, the major components of the ABM, the overall model system, how to extract desired summary reports from the ABM, running the model, future year forecasts, special analyses such as social equity analysis, etc. Training sessions could be conducted online or on-site. At minimum, one in-person training at Fresno COG is required after the model is completed. Multiple training sessions are expected to enable COG staff to operate the model effectively.

Task 8 Provide a user guide and model documentation. The model documentation should include a description of all the major components of the ABM, the coefficients applied in these components, the entire model system, the calibration and validation results, etc. If the validation results do not meet federal- or state-recommended thresholds, possible causes that lead to such results should be documented. The user guide should provide step-by-step instructions on how to operate the model, including instructions on how to extract certain desired summary reports such as VMT summary for SB375 and conformity purposes.