

Memorandum

To: MPO Policy Board
From: Sandy Shackelford, Director of Planning and Transportation
Date: October 18, 2023
Reference: CA-MPO Socio-economic Data for Transportation Demand Model

The regional travel demand model is an analysis tool that helps us understand what future roadway conditions will be based on different project scenarios. The model provides information on roadway operations, and is generally used to assess where the volume of vehicular trips will exceed existing or planned roadway capacity. By modeling planned infrastructure improvements, the model can assess how effectively the improvement will mitigate estimated network failures. The model does not account for mode shift to bicycle or pedestrian trips, and it will only capture the estimated impacts of projects that add or significantly improve roadway capacity (for example, adding lanes or adding new roads/segments or major improvements to interchanges).

To do this, the MPO is divided up into smaller geographic areas, which are referred to as Traffic Analysis Zones (TAZs). Socioeconomic data is established for each of the TAZs to estimate the number of trips generated by and attracted to each of the TAZs. This data includes factors such as number of households, average number of school-aged children per household, university beds, number of jobs per sector, etc. that is then used to estimate the number of trips for each TAZ under existing and future conditions.

As part of the long range transportation plan, MPOs that have travel demand models are required to reference their travel demand models. In order to run the model and perform the analysis on our baseline and future no-growth system analysis, we first need the Policy Board to approve the data that is being used to generate the trip assumptions.

Through our conversations with the modeling staff at VDOT, we are recommending using data that has been interpolated from the model that was used in the previous long range transportation plan. There was a substantive effort by VDOT, locality, and MPO staff to update and revise the data for that model, and we believe that the assumptions that were used to develop that information is still valid. We have shared our methodology with locality staff and the MPO Technical Advisory Committee, who have confirmed that they support this approach.

The data is attached for reference, and VDOT has compared the outputs from this methodology to the Weldon Cooper Center's population data, and the data outputs are within the standard accepted threshold.

Recommendation:

MPO staff recommends that the Policy Board approves the use of the attached socioeconomic data for the purposes of running the model that will be used to assess transportation system capacity in the use of the 2050 long range transportation plan.