

Transportation Planning, Travel Demand Modeling and Traffic Simulation

ISE's staff have developed, maintained, adopted, and enhanced travel demand models (TDMs) to forecast traffic at metropolitan and statewide levels for more than 20 years. ISE has developed the capability of conducting all essential modeling activities in-house, including the **adoption, calibration, validation, and application of models as well as writing and executing model scripts**. ISE also assists clients in adopting more sophisticated traffic forecast approaches in the travel demand modeling framework, providing decision-makers with better tools. In this regard, ISE team has experience in complex simulations of transportation projects, which aid in studying operational efficiency, analyzing traffic impacts, and providing support for stakeholder presentations. We have experience utilizing **macroscopic, mesoscopic, microscopic, and hybrid models** to perform advanced planning services for **TxDOT, NTTA, CDOT, FDOT, VDOT, ...** We have hands-on experience in application and model development in TDM platforms such as **CUBE, TransCAD, and VISUM** and simulation platforms of **TransModeler, VISSIM, and Avenue**.

ISE's team members have had lead role for more than 10 years on developing traffic projections for seven TXDOT districts of **Dallas, Pharr, El Paso, San Antonio, Austin, Amarillo and Laredo and private developers** following **TxDOT/TPP methodology**. ISE staff are well-versed in utilizing the travel demand models for many MPOs in Texas, including Amarillo, Austin, Brownsville, El Paso, Laredo, Dallas/Fort Worth, Houston and San Antonio. ISE staff also has hands-on experience using the Texas Statewide Analysis Model (SAM) in different traffic forecasting projects.

ISE follows the TxDOT/TP&P standard operating procedures (SOP) to develop traffic projections using historical growth rates available through TxDOT's STARS II traffic count system. ISE follows the TxDOT-preferred methodology for developing IAJs (TxDOT Memo dated October 19, 2018). This guidance focuses on performing the now-superseded FHWA 8-Point policy in addition to the two new policy points (as of May 22, 2017), which focus more on the safety and operational benefits of projects and Engineering Acceptability and Constructability.

In addition to the development of the traffic projections, ISE staff has helped TxDOT to evaluate the feasibility of a toll concept, and the model assisted in analyzing the costs and benefits of short term, mid-term, and long-term projects. ISE staff has experience utilizing Mesoscopic on top of regional model to determine the **prioritization of regional projects** for inclusion in MPO's short and long-range transportation programs.

All our traffic projections cover:

- Full adherence to TxDOT/TP&P's approved methodology

- Average Daily Traffic for opening year and 20- & 30-year forecast periods

- Traffic Analysis for Highway Design tabulations for air and noise analysis

- Travel Demand Modeling (via TransCAD) implemented to capture the effects of:

- Network improvements
- Land development
- Socioeconomic growth

