Updates

• Long Range Planning Division Re-Organization
• Forecasting Office Staff and Responsibilities
• Statewide Model Development
• Model Review Process
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Forecasting Office

- Statewide Transportation Planning
- Tennessee Statewide Model
- Tech support and review of TN MPO Travel Demand Modeling.
- Data analysis and technical support for the TDOT Divisions
- Develop a Land Use Database and document the processes for updating and maintaining the database.
• Development Completed, enhancements on the way
• Components
  – Short Distance
  – Long Distance
  – Freight
• Data Driven
  – ATRI GPS
  – Airsage Cell-Phone OD
  – Transearch
• Decent Performance
  – $R^2=0.9443$
  – RMSE= 36.5%
Model Review Stages

1. RFP/RFQ/Panel Review
   - TDM Model Design
   - Horizon Year, Interim year

2. Data Collection/Model Inputs
   - Network, TAZ review

3. Model Developments
   - Component Validation
   - Overall Validation
   - Land Use Model Inputs

4. Base Year Model / E+C Scenarios

5. Base Year, E+C Scenario Model Documents
   - Document review 1st TDOT Review

6. LRTP Scenario Development
   - Highway Deficiency Analysis Tool
   - Final model package Final TDOT Review
Guidelines and Check List

• Minimum Travel Demand Model Calibration and Validation Guidelines for the State of Tennessee - Updated 2016
  http://tnmug.utk.edu/documents/MinimumTravelDemandModel2016.pdf

• Check List
  – The check list should be filled out before the model is submitted to TDOT

• Guidelines
  – All the statistics, figures, and benchmarks in the guidelines should be utilized in the model document
  – For a good modeling practice, the “Preferred” standards should be utilized in the RFQ/RFP. No model should exceed the “Acceptable” standard without any justifications
  – Screenlines, cutline should always be utilized to evaluate the model performance at the subarea and the corridor level
  – Reasonable travel speed tests should be performed as well
TDOT Review

• When the model is submitted for TDOT Review (for both 1\textsuperscript{st} and 2\textsuperscript{nd} time), please include the following files
  – Model check list from the “\textit{Minimum Travel Demand Model Calibration and Validation Guidelines for the State of Tennessee - Updated 2016}’
  – Model Package
    • Compiled Model UI, Resource files
    • All model Inputs for all the scenarios
    • All model outputs
    • Loaded network files
    • Model Document/User’s guide
• For the model document
  – Please do not use the terms “refer to the previous model document” nor “the assumptions did not change”, please list the model assumptions used.
New Post Processor

- **RATIO TRAFFIC**: \( \text{RATIO} \times (\text{BASE TRAFFIC}) \)
- **DELTA TRAFFIC**: \( \text{DELTA} + (\text{BASE TRAFFIC}) \)
- **AVERAGE TRAFFIC**: \( \frac{((\text{RATIO TRAFFIC}) \times (2-\text{RATIO}) + (\text{DELTA TRAFFIC}) \times (\text{RATIO} - 0.5))}{1.5} \)
  - The idea is the closer the ratio is to 2, the more Delta Traffic value is used
  - The closer the ratio is to 0.5, the more Ratio Traffic is used
Tips for the Model Validation

• You can request the “archived” TRIMS files used in the HPMS report
  – Same functional classes as the HPMS report
  – Updates every year
  – Easier to estimate the HPMS VMT for partial counties

• “Model Ready” network can also be requested
  – All the model related attributes in one shape file, including some extra information like slopes, signal density, and pavement condition
  – Area type calculation based on a multinominal logit model
  – Dual carriageway link attributes still need to be populated
  – Some quality checks are still required