



TDOT Forecasting Office Update

10/19/2016

Updates

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



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Long Range Planning Division Re-Organization

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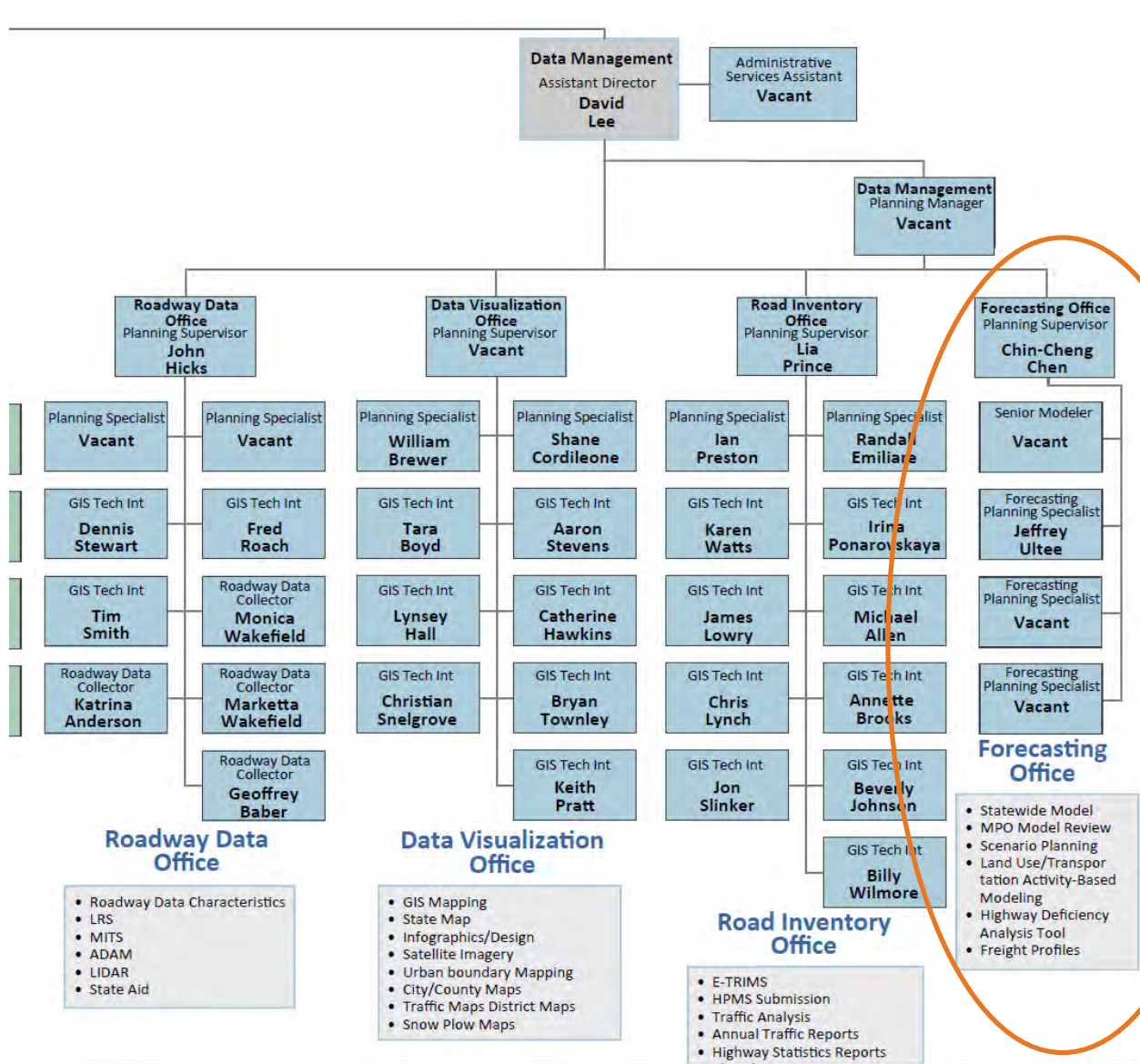
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Forecasting Office

Forecasting Office



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.



Statewide Model Development

- 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

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 1st and 2nd time), please include the following files
 - Model check list from the *“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: $\text{RATIO} * (\text{BASE TRAFFIC})$
- DELTA TRAFFIC: $\text{DELTA} + (\text{BASE TRAFFIC})$
- AVERAGE TRAFFIC: $((\text{RATIO TRAFFIC}) * (2 - \text{RATIO}) + (\text{DELTA TRAFFIC}) * (\text{RATIO} - 0.5)) / 1.5$
 - 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

[illegible]

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 multinomial logit model
 - Dual carriageway link attributes still need to be populated
 - Some quality checks are still required

Questions?



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