

VER. 2.5 TRAVEL DEMAND MODEL DEVELOPMENT

Status Report

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TPB Travel Forecasting Subcommittee
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Ver. 2.5 Model: History

- Envisioned to replace the existing Ver. 2.3 Model
- Model was initially delivered at the end of FY 2017
- Includes added features to the currently adopted Ver. 2.3 trip-based model:
 - Updated transit network path-building software
 - Refined non-motorized mode treatment
 - Simplified transit choice set in mode choice model
 - Enhanced transit and highway assignment



Goals for Ver. 2.5 Model adoption

1. Familiarity & comfort with model application
2. Superior performance relative to Ver. 2.3
3. Acceptable sensitivity test findings
A fairly rigorous validation/testing list has been prepared
4. Reasonable running time
Ideally, an “overnight” timeframe
5. Documentation
PT-based network documentation is needed
User’s guide, validation report



Recent staff development activity (during past 2 months)

Most recent model reference: **Ver. 2.5.13A**

1. Jurisdictional person-trip P/A adjustments modified in trip generation step
2. Staff discovered/rectified a disconnect between highway-assigned speeds and transit network building
3. Further analysis of Ver. 2.5 mode choice results
 - Jurisdiction-level comparisons
 - Modal trip tables: 2014 estimated vs. 2007/08 observed (HTS)
 - Modal trip tables: 2014 estimated vs. 2045 estimated



Recap of the Ver. 2.5 Model development

Recurring themes reported to the TFS over the past 21 months:

- Model running times are excessively long
 - 1.8 x Ver. 2.3 running times
- Highway performance metrics of Ver 2.5 are comparable to those of Ver. 2.3
- Transit boardings are underestimated in total
 - Metrorail slightly over-estimated
 - Non-Metrorail boardings are substantially underestimated



Conclusion

- Ver 2.5 Model development not yet completed
- Immediate path forward:
 - Reformulate transit targets used in the Mode Choice validation
 - Calibrate MC model to reformulated targets
 - Transit assignment performance should be analyzed in conjunction with the MC model calibration



Conclusions, continued

- Ver 2.5 Model development not yet completed
- Staff acknowledges more work is needed beyond performance:
 - Sensitivity testing
 - Ver. 2.5-compliant toll setting procedures
 - Streamlining application to reduce running time
 - Documentation
- Staff acknowledges the imminent Gen-3 model development effort will compete for staff resources during FY 2020



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