Travel Demand Model Development and Application

New FY 2010 Tasks

presented to

MWCOG/TPB Travel Forecasting Subcommittee

presented by

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Task 7 – Further Investigation of Convergence in User Equilibrium Traffic Assignment and Speed Feedback

- Address questions from TPB staff on the OUE algorithm
  - » Feedback from MPOs currently using/testing TransCAD's OUE
  - » Further Q&A with Caliper regarding algorithm capabilities
  - » Limitations of OUE algorithm with respect to select link/zone analyses

- Review of other "quick convergence" methods
  - » Q&A with other software vendors (including Citilabs, INRO, PTV)

- Investigate possibility of using a hybrid OUE/Frank-Wolfe assignment methodology

- Additional analysis of speed feedback convergence metrics

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Task 8 – Trip Purposes and Special Generators

- Discussion of expanding the number of trip purpose categories in the model

  » Split the nonhome based trip purpose

  » Split home-based school/university trips from home based other trips

  » Special generator models

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- Discussion of special generator models
  - » Commercial airports
  - » Universities
  - » Regional shopping centers
  - » Military bases
  - » Group quarters
  - » Special events
  - » Visitors

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Task 9 – Short-Term Model Enhancements

- Analysis of time-of-day models

  » Discussion of the benefits of time-of-day models, including congested pricing issues

  » Determine data requirements for validation and calibration

  » Discussion of the potential use of INRIX data for time-of-day model development

  » Detail the appropriate use of currently available time period assignment results

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- Analysis of Queuing Delay Function

  » Survey of other MPOs using queuing delay functions

  » Analysis of how the queuing delay function affects link speeds and volumes

- Investigate other alternative methodologies for avoiding overloading highway links

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Task 9 – Short-Term Model Enhancements (continued)

- Discussion of procedures for streamlining the two step HOV/HOT assignment

- Discussion of experiences with Citilabs' Application/ Scenario Manager

  » Potential improvements compared to current batch file implementation

  » Complications or unintended consequences of implementation

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Task 10 – Transit Related Enhancements

- Review representation of complex transit fare systems
  - » Survey how are they represented in other MPO models
  - » Develop recommendations for how they could best be represented in MWCOG's model

- Discussion of how fare subsidy programs can be captured in the model

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Task 10 – Transit Related Enhancements (continued)

- Discussion of bus speeds

  » Discussion of how bus speeds are determined in the MWCOG model

  » Review state-of-the-practice for bus speeds in regional models

- Discussion of the statistical estimation of mode choice logit model parameters

  » Review of relevant FTA guidance

  » Analysis of statistical estimation of parameters versus setting values and manually adjusting nesting coefficients

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