

**Item #8**

**Briefing on  
Transportation Research Board  
Review of TPB Modeling  
Procedures  
and TPB Staff Comments**

**June 16, 2004**

# BACKGROUND

- Increased interest by policy-makers and stakeholder groups in travel forecasting procedures in recent years
  - Data inputs
  - Model structure, calibration, and validation
  - Emissions post-processing
  - Presentation and interpretation of model outputs
  - Public access to models and data
- Greater scrutiny by federal oversight agencies of regional and corridor level analyses used for decision-making

# OVERVIEW

- 1) Letter of May 8, 2002 from TPB Chairman Phil Mendelson to TRB requesting an “arms-length” review of TPB procedures
- 2) COG/TPB contract with TRB effective January 1, 2003:
  - ❖ Review the performance of TPB’s Version 2.1 travel model and mobile emissions post-processor
  - ❖ Provide guidance on future model upgrades, survey and other data needs, and detail (grain) of travel analysis
  - ❖ Contract for \$130K over calendar year 2003, extended through May 2004
  - ❖ First TRB letter report dated September 8, 2003; second and final letter report dated May 10, 2004
  - ❖ TPB staff comments on the first letter report dated September 8, 2003, and on the second and final letter report dated May 13, 2004

# REVIEW PROCESS

- 1) Committee of seven from outside the Washington Region:
  - ❖ Chair, David Forkenbrock (University of Iowa)
  - ❖ Two Academics, Two Consultants, Two MPO Practitioners
  - ❖ Supported by TRB Staff
  
- 2) Meetings:
  - ❖ February 27-28 at TRB in Washington, DC:  
Committee, TRB Staff, TPB Staff, Stakeholder Groups
  - ❖ March 31 Teleconference: Committee, TRB Staff, TPB Staff
  - ❖ April 11 in Denver: Committee, TRB Staff, TPB Staff by Teleconference
  - ❖ April 28 Teleconference: Committee, TRB Staff
  - ❖ September 12 Teleconference: Committee, TRB Staff, TPB Staff
  - ❖ December 8: Some Committee Members, TRB Staff, TPB Staff
  
- 3) Documentation Provided by TPB Staff
  - ❖ Regular TPB Documentation on Travel Models/Post-Processor
  - ❖ Additional Detail as Requested by the Committee
  - ❖ Detailed Proposed Work Elements for TPB Models  
Development Program for FY2004 through FY2008, dated December 24,  
2003

# FIRST LETTER REPORT AND TPB STAFF COMMENTS

- 1) Letter dated September 8, 2003 provides eleven “Observations” by TRB Committee with accompanying discussion
- 2) TPB staff comments dated September 8, 2003 based on brief review of advance copy of TRB Committee letter:
  - ❖ Agree with five observations – no further attention required
  - ❖ Agree that three observations offer improvement potential that TPB staff can address
  - ❖ Believe that remaining three observations require further information and discussion

# SECOND TRB LETTER REPORT

## 1) Contract called for Second TRB letter report to address:

- ❖ TPB's proposed direction of future travel demand model upgrades
- ❖ Travel survey and other data needs
- ❖ Detail (grain) of travel analysis zones for future model upgrades

## 2) In response, second TRB letter report:

- ❖ Includes TPB Work Program Document of December 24, 2003 as Attachment 4, and discusses responses provided in the Document to the six topics identified in the first letter report as offering improvement potential
- ❖ Provides overall observations on the state of travel demand modeling practice and the availability of documentation on current practices throughout the U.S.

# TOPICS ADRESSED IN SECOND TRB LETTER REPORT

- 1) Discussion of how the six topics identified in first letter report are addressed in the TPB December 24, 2003 Work Program:
  - ❖ Improving model validation
  - ❖ Truck and commercial vehicle travel
  - ❖ Bus network characterization
  - ❖ Use of adjustment factors
  - ❖ Speed feedback incorporating mode choice
  - ❖ Traffic speed and volume estimation for air pollution emissions estimation
  
- 2) Responses to questions posed by TPB staff in December 24, 2003 Work Program concerning
  - ❖ Nested Logit Models in Mode Choice
  - ❖ Alternatives to the four-step model
  - ❖ Grain size in travel modeling
  - ❖ Travel surveys and other data for travel modeling

# TRB STAFF COMMENTS ON TRB SECOND LETTER REPORT

- 1) TPB staff letter of May 13, 2004
  - ❖ Reviews TPB work program activities related to each of the six topics discussed in the TRB letter
  - ❖ Comments on responses to questions posed to TRB Committee by TPB Staff
  - ❖ Provides overall observations on the TRB review
  - ❖ Comments on further work recently initiated by federal oversight agencies related to the TRB review



# NEXT STEPS

- 1) Review and refinement of December 24, 2003 Work Program Document outlining activities for the TPB Models Development Program for FY2004-2008 in light of the completed TRB review and available planning funds
- 2) Recommendations on refinements to the Work Program Document presented to the TPB Technical Committee on July 9, and to the TPB on July 21

# OVERALL OBSERVATIONS

- 1) TRB review has been a very productive and valuable undertaking
- 2) While use of the Version 2.1C model was approved by federal agencies in February 2004 for the 2003 CLRP update and FY2004-2009 TIP, some refinements to the Version 2.1C model recommended by the TRB Committee are being incorporated into the Version 2.1D model to be used for conformity analysis for the 2004 CLRP and FY2005-2010 TIP
- 3) Other refinements will be incorporated into future versions of the TPB model as time and resources permit
- 4) Review has helped stimulate the U.S. Department of Transportation to fund TRB to conduct a national synthesis of travel demand modeling practice, and to support other short-term workshops on specific topics of particular interest to TPB, including pricing and peak-spreading