National Capital Region Transportation Planning Board
Metropolitan Washington Council of Governments
777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290

Highlights of the September 19, 2014 meeting of the Travel Forecasting Subcommittee

Held at the Metropolitan Washington Council of Governments, from 9:30 AM to 12:00 PM
Status of highlights: Approved on 11/21/14

Meeting attendees

- James (Jim) Bunch (Sabra, Wang & Assoc.)
- Melissa Chow (WMATA)
- John (Jay) Evans (Cambridge Systematics)
- Dan Goldfarb (VHB)
- Eric Graye (M-NCPPC, Montgomery Co.)
- Eric Jenkins (M-NCPPC, Prince George's Co.)
- Robert Josef (VDOT)
- Dial J. Keju (Frederick Co.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics)
- Tom Masog (M-NCPPC, Prince George's Co.)
- Matthew Martimo (Citilabs, Inc.)
- Amir Shahpar (AECOM)
- Dan Stevens (Fairfax County DOT)
- Stephen Weller (CH2M HILL)

COG/TPB staff in attendance

- William Bacon
- Wanda Hamlin
- Charlene Howard
- Hamid Humeida
- Nicole McCall
- Andrew Meese
- Ron Milone
- Abdul Mohammed
- Mark Moran
- Erin Morrow
- Dzung Ngo
- Jinchul (JC) Park
- Jane Posey
- Wenjing Pu
- Clara Reschovsky
- Rich Roisman
- Meseret Seifu
- Daniel Sonenklar
- Kanti Srikanth
- Dusan Vuksan
- Jim Yin

The meeting was chaired by Dial Keju.

1. Introductions and approval of highlights from the July 18 meeting

Ron Milone introduced and welcomed Kanathur (Kanti) Srikanth, who became the Director of COG's Department of Transportation Planning on August 6. Mr. Srikanth briefly introduced himself, discussed his background, past experience, and professional interests.

The highlights from the July 18, 2014 meeting of the Travel Forecasting Subcommittee (TFS) were approved without change.

2. Status report on the consultant-assisted project for development of the COG/TPB travel demand model

Mark Moran reported that after the 30-day review, no comments were received from TFS or external staff on AECOM's draft FY 14 report. Nonetheless, COG/TPB staff had some minor edits, which were incorporated into the report, resulting in a final report dated August 18, 2014. Staff will follow up with AECOM in the near future about some questions regarding technical details of the modeling files that AECOM had sent to COG on June 30. Discussing the work in FY 2015, Mr. Moran said that COG/TPB staff would review the proposals by CS for task orders 15.2 and 15.3.

Regarding slide 5, which indicated that COG/TPB staff plans to convert its mode choice application program, from AEMS (Fortran) to ModeChoice (C++/TRANSIMS), Robert Josef asked whether COG is starting to move towards using TRANSIMS software, which is generally associated with running an activity-based travel demand model (ABM). Mr. Moran explained that the open-source ModeChoice program is only one program in the suite of programs that make up the TRANSIMS. COG/TPB staff does not have immediate plans to move to the other TRANSIMS programs, such as the population synthesizer, the traffic microsimulator, or the router, though staff remains committed to following the latest updates in the modeling field, including ABMs. He noted that one of the advantages of the ModeChoice program, compared to AEMS, is more flexibility in calibration and the fact that AEMS will have only limited support in the future.

3. Status report on the air quality conformity analysis

Jane Posey announced that the air quality analysis of the 2014 Constrained Long-Range Plan (CLRP) and the FY 2015-2020 Transportation Improvement Program (TIP) was complete. She said that the comment period on the results would be open until October 11, 2014. Ms. Posey emphasized that all mobile source emissions in the forecasted years were forecasted to be under the mobile emissions budgets. After approval by TPB, likely on October 15, the network and land use data will be made available to the models development unit, which will then prepare a standard transmittal memo for agencies requesting the model and associated data.

Eric Jenkins asked if the traffic assignment assumptions were the same in the 2014 CLRP and the 2013 CLRP. Ms. Posey and Dusan Vuksan confirmed that they were the same.

4. Ongoing analysis of AirSage Origin-Destination (O-D) cellular data for the TPB modeled area

Mr. Milone presented findings from an ongoing analysis of cellular O-D data that was purchased from AirSage in June. Staff intends to consider this type of data as basis for updating: 1) external and through trips and 2) visitor/tourist trips. Mr. Milone stated that the vendor transmitted an updated O-D file to COG in August. The updated file featured improved through (X-X) trip information. Mr. Milone provided comparisons of the O-D data with land activity, modeled trips and traffic counts. He said staff is currently analyzing the comparisons in greater detail and will report back in November.

Mr. Josef asked whether the AirSage data includes income distribution by cellphone users. Mr. Milone responded that the AirSage data does not include household income distribution. Matthew Martimo, (a former AirSage employee) responded that there is research on cellphone use by household size and household income. Mr. Martimo explained that when AirSage conducts it population expansion, it takes into account both the quality of data from different cellular devices and also the longitudinal nature of the survey data to help remove some of the bias in the data. He recommended that COG perform a comparison based on trip length, which would likely show that the short trips, such as non-motorized trips, are underreported in the AirSage data, due to issues of technology and cellular coverage. Mr. Milone indicated that staff did, in fact, perform comparisons based on trip length frequency, though these were not included in today's presentation. Nonetheless, Mr. Milone's presentation did include some trip length comparisons (e.g., slide 19), which showed that, overall, AirSage trips were slightly longer than modeled motorized trips.

Jay Evans said that the real benefit of the AirSage data would likely be the ability to develop special purpose models, such as for visitor travel or external travel. These are areas that traditional methods, such as household interview surveys, cannot adequately address. He added that the work COG is doing with AirSage data is important, especially given all the interest nationally in AirSage data. He suggested that COG staff compare modeled trip lengths and AirSage trip lengths for specific corridors (e.g., the I-95 corridor in Virginia) as a means of identifying possible biases in the existing trip distribution process.

Regarding slide 12, Mr. Vuksan noted that the home-to-home (H_H) purpose had the largest number of trips, and he asked for more detail about this trip purpose. Mr. Milone explained that home-to-home trips are short home-based trips (such as "serve-passenger" trips).

Regarding slide 17, Jim Bunch asked about the possibility that the signals of cellphones of high school students may be picked up as home-based work trips. Mr. Milone agreed that work-trips, as presently developed by AirSage, are likely inclusive of school trips.

Yuanjun Li asked about the minimum distance threshold for a movement to be picked up as a trip in the AirSage data. Mr. Milone said that there is, in fact, a minimum distance, but he could not recall the exact threshold. Ms. Li also questioned whether the travel mode can be determined from the speed of the trip. Mr. Milone responded that the travel mode is not currently identified in AirSage data.

5. Findings from the 2013 Regional Air Passenger Survey

Mr. Roisman presented findings of the 2013 Washington-Baltimore Regional Air Passenger Survey. He highlighted that regional air passenger boardings have been flat since 2005, but traffic has been shifting between BWI, Reagan National, and Dulles airports. He noted that regional air cargo volumes have been decreasing since 2007, but forecasts show future regional growth in both air passengers and air cargo. He stated that the final survey report and survey data files would be published the following week and the forecasts would be transmitted to the Models Development Team in the future for preparing the airport trip tables needed as a model input.

Regarding slide 32, Mr. Jenkins asked how the airport trip tables are updated in the model. Mr. Milone explained that the 2013 air passenger survey is used to develop daily auto-driver trip tables by purpose the Aviation Analysis one (AAZ) level. The survey trips are then extrapolated into the future using a Fratar-type extrapolation technique.[1]

6. Federal certification review

Mr. Milone informed the subcommittee about the upcoming Federal Certification Review of the National Capital Region MPO planning process, which includes questions on travel demand forecasting and models development. TPB staff will complete formal questions and then the certification meetings will occur on October 28-29. He noted that no action is required by the subcommittee. No questions were asked.

7. Prince George's County Planning Department's transportation forecasting model

Eric Jenkins and Tom Masog reported on the development of the travel forecasting model, known as TransForM 1.5, used by the Prince George's County Planning Department, Maryland-National Capital Park and Planning Commission (M-NCPPC). Mr. Jenkins highlighted various changes and enhancements to the model, which is currently being calibrated and validated to the year 2010 by AECOM. The current stopping criterion for traffic assignment is 250 user equilibrium iterations or a relative gap threshold of 10^{-5}, whichever comes first, and the model takes about 23 hours to run from a "cold start" (i.e., without prior information obtained from a previous run). They announced that the next version of the model, TransForM 2.0, would be a hybrid TransCAD and TRANSIMS model, which is planned for 2018. The following version, TransForM 3.0, is planned to be an activity-based travel model (though there is no projected date at this time).

Mr. Josef asked whether the Prince George's model starts with the COG Cooperative Forecast Round 8.3 land use data. According to Mr. Jenkins and Mr. Masog, for Prince George's County itself, they use a combination of COG data and zone build-out data for 2040, whereas, for the rest of the modeled area, they use the COG Cooperative Forecasts. The COG data is more constrained than the zone build-out data.

8. Montgomery County: Regional transportation Model Conversion to Travel/4 Model and Trip Generation Study

This item was presented Eric Graye, Yuanjun Li, and Dan Goldfarb. Mr. Graye and Ms. Li, of the Montgomery County Planning Department, M-NCPPC, began the presentation. They discussed the conversion of the regional transportation model to the Travel/4 model and mentioned that Vanasse Hangen Brustlin, Inc. (VHB) was updating networks and working on the comparison between Travel/3 and COG/TPB Ver. 2.3 model. The goal of the trip generation study is to update the trip generation rates

[1] See, for example, p. 41 of Ronald Milone et al., *FY-2010 Development Program for TPB Travel Forecasting Models: DRAFT* (Washington, D.C.: National Capital Region Transportation Planning Board, June 30, 2010), http://www.mwcog.org/uploads/committee-documents/Zl5YW1xW20100723120624.pdf.

used in traffic impact studies (TISs) that involve "smart growth" in transit-oriented development (TOD) sites. The next steps are to do calibration, validation, and sensitivity analyses.

Mr. Jenkins asked why Montgomery County added only 19 TAZs when it updated its travel model. Mr. Graye explained that 19 new TAZs were added to the current 376 TAZs in Montgomery County, which adds up to a total of 395 TAZs. Mr. Graye added that the county staff felt that the 395 TAZs was sufficient to meet the planning needs in the county. Ms. Li added that the County has a more detailed model which uses the output of the Travel/4 model as inputs for analyses at a sub-zone level. She noted that the county has another contract to perform an update on the sub-zone model. It was noted during the meeting that a reference in the presentation to the Ver. "2.3.58" model should have been to the Ver. "2.3.57" model.

In respect to the trip generation update project, Mr. Roisman asked whether Montgomery County has a plan to do its own independent data collection to get new trip generation rates. Mr. Goldfarb responded, "Yes." Mr. Roisman then asked if the Travel/4 Model would be used to study some of the county-wide BRT projects. Mr. Graye and Ms. Li replied that the new model might be used for such studies.

9. Vehicle Probe Data Users Group kick-off meeting

Wenjing Pu announced that the kick-off meeting of the new user group, called the Vehicle Probe Data Users Group, would be held at MWCOG from 9:30 to 11:30 AM on Thursday, October 9, 2014. Representatives of TPB member agencies are invited to attend.

10. Round-table discussion about current projects and activities in the region

Chair Dial Keju invited subcommittee members to share current projects or activities that might be of interesting to the subcommittee or TPB staff. Mr. Josef shared that VDOT was working with AECOM on the study of projects that will have a significant regional impact. The influence area for each project has been defined and has been sent to local agencies, such as counties, for review and comment. Small, sub-area networks will be imported to TRANSIMS for the evaluation and development of the measures of effectiveness (MOEs). It should take VDOT one to two months to review, then the consultant will begin the actual TRANSIMS analysis (using the microsimulator and router), and, in some cases, SYNCHRO. Regarding I-66 study, he mentioned that it has now been narrowed down to two scenarios for running and testing. The traffic and revenue portion of that analysis is ongoing in Richmond.

11. Next meeting date and other business

The next scheduled meeting of the TFS is Friday, November 21, 2014 from 9:30 AM to 12:00 noon.

*** The meeting highlights were prepared by Dzung Ngo, Mark Moran and Ron Milone ***