



Highlights of the January 23, 2015 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 3/20/15

Meeting attendees

- Don Bryson (VHB)
- Melissa Chow (WMATA)
- Chris Conklin (VHB)
- James Davenport (Prince William Co.)
- Shweta Dixit (Loudoun Co. DTCL)
- Michael DuRoss (DelDOT)
- John (Jay) Evans (Cambridge Systematics)
- Dan Goldfarb (VHB)
- Zachary Horowitz (Kittelson & Associates)
- Manish Jain (Transurban)
- Anxi Jia (Kittelson & Associates)
- Wendy Jia (WMATA)
- Claudy Joinville (DelDOT)
- Robert Josef (VDOT)
- David Kline (Fairfax County DOT)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics)
- Tim Padgett (Kimley-Horn & Assoc.)
- Krishna Patnam (AECOM)
- Daniel Reese (FAMPO)
- Sonali Soneji (VRE)
- Jiaxin Tong (Kimley-Horn & Assoc.)
- Michael Vitek (Parsons)
- Ryan Westrom (DDOT)

COG/TPB staff in attendance

- William Bacon
- Joe Davis
- Wanda Hamlin
- Charlene Howard
- Hamid Humeida
- Ron Milone
- Jessica Mirr
- Abdul Mohammed
- Mark Moran
- Dzung Ngo
- Jane Posey
- Clara Reschovsky
- Rich Roisman
- Meseret Seiff
- Dusan Vuksan
- Feng Xie
- Jim Yin

The meeting was chaired by Mr. Westrom.

1. Introductions and approval of highlights from the November 21 meeting

After introductions, the highlights from the November 21, 2014 meeting of the Travel Forecasting Subcommittee (TFS) were approved without change.

2. Overview of the FY 2016 Unified Planning Work Program (UPWP) activities and budget

Mr. Milone discussed the draft FY 2016 UPWP which essentially outlines the envisioned TPB staff activities between July 1, 2015 and June 30, 2016. The proposed work program will be presented to the

TPB in February and will be submitted for adoption in March. He mentioned that the proposed FY 2016 work program reflects changes necessitated by recent initiatives including MAP-21 planning requirements and COG's renewed interest in addressing the climate change issue. He noted that although the overall budget for the draft UPWP has not changed since last fiscal year, there has been a shift of about \$460,000 from technical assistance to the core program. Mr. Milone also pointed out specific changes affecting TFS-related activities:

- Funding of the Models Development activity (4C.) has been increased by \$100,000, from \$1.115M to \$1.215M. The increase will support the implementation of the strategic travel modeling improvement plan that is currently under formulation.
- Funding of the Travel Surveys and Analysis activity (5C.) has been increased by \$300,000, from \$734.8K to \$1,034.8K. The increase will be used to fund a future household travel survey (HTS). The next HTS will include about 11,000 households and will cost about \$3M. Funding for the HTS will need to be accumulated over three years, with data collection beginning in FY 2017.

Mr. Josef asked whether Technical Assistance funds (slide 7), set up for the three states (DC, MD, and VA) and WMATA, can be used for local counties. Most technical assistance requests from local agencies can be readily serviced by COG staff without state DOT involvement. However, some requests require substantial TPB staff effort. For these instances, TPB staff will provide a cost estimate and will ask local planning agencies to coordinate with the state DOTs to gain authorization for technical assistance charging. The timeliness of responses to special requests is subject to the demands of regular work program activities.

3. Network report associated with the 2014 CLRP

Ms. Seifu briefed the subcommittee on the draft report of the 2014 CLRP network inputs to the currently adopted Version 2.3.57 Travel Demand Model. She highlighted some changes to the report, such as 1) the modification of the designated node number ranges for light-rail transit (LRT), bus rapid transit (BRT), and streetcar stations/stops, and 2) the updating of the cost deflation factor to reflect a 2013 base year. Ms. Seifu welcomed feedback on the draft report and said the report would be uploaded to the TFS webpage after the meeting.

Referring to the designated node number ranges for transit stops/stations shown in slide 5, Mr. Westrom asked why streetcar is grouped with BRT, but not with LRT. Mr. Milone and Mr. Moran explained that the node number ranges shown in slide 5 are arbitrary designations that do not affect how the transit modes are actually represented in the model.¹ Ms. Posey noted that the numbering ranges are based, in part, to the fact that LRT tends to operate mostly on exclusive right-of-way, while BRT and streetcar route often include large segments that operate in mixed traffic. Ms. Jia indicated that WMATA is interested in a clearer distinction in the way the travel model represents these three transit

¹ See, for example, Ronald Milone, Mark Moran, and Meseret Seifu, *User's Guide for the MWCOG/NCRTPB Travel Forecasting Model, Version 2.3, Build 57: Volume 1 of 2: Main Report and Appendix A (Flowcharts)* (Washington, D.C.: Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board, October 17, 2014), 161–165.

sub-modes (LRT, BRT, and streetcar). COG/TPB staff noted that this issue (the way the model represents these three sub-modes) will be taken into consideration as part of the new strategic plan for models development.² Mr. Moran indicated that COG/TPB staff is ready to meet with WMATA regarding the issues raised in Mr. Kannan's 10/30/14 letter about model improvements. Mr. Moran re-iterated that the changes to node number ranges shown on slide 5 will have no effect on how the model treats these three modes, and noted that even within a mode group, such as LRT, route speeds may be coded with widely different speeds. Mr. Jain, formerly of AECOM, clarified that when AECOM developed mode 10, it was designed to be used for any new mode, including BRT and streetcar. However, Mr. Jain noted that, when coding a new transit service, one should allocate the new service to the appropriate mode code to ensure the model sees realistic headways, not simply code the new mode to mode 10. For example, if a new BRT service is coded on an arterial road that also carries heavy bus service, if one wants the model to compute combined/effective headways for the two services, then they should both be coded in the same mode code, such as mode 1 for local bus. In terms of restructuring the model to have more fine-tuned representations of these transit sub-modes, Mr. Evans warned about unintended consequences that could occur, due to the fact that we do not have much observed data to inform calibration of a mode choice model that explicitly represents all of these modes. Mr. Westrom asked what the deadline was for any comments on the report. Mr. Milone requested that comments be submitted to staff in the next 30 days. Ms. Li commented that policy makers often want to know how BRT compares to other transit modes, to make decisions about making investments in BRT, but the current model may not be able to give the policy makers the information they are seeking.

4. Project submission for the 2015 CLRP

Mr. Austin presented proposed additions and changes to projects for inclusion in the Air Quality Conformity Analysis of the 2015 update of the Constrained Long Range Plan (CLRP). The CLRP, which includes six major projects or changes to existing projects, submitted by VDOT and DDOT, is open for comments until February 14, 2015. Mr. Austin said that the CLRP includes the assumption that, by 2020, the required HOV threshold, which is HOV2 now, would move to HOV3. He said the TPB will be asked to approve the projects on February 18 for use in the air quality conformity analysis and the performance analysis of the CLRP.

Regarding the improvements to I-66 inside the Beltway (slide 8), Ms. Jia asked whether the conversion to a managed express lanes facility would apply to all lanes and whether VDOT would be the only owner and operator of the project. Mr. Austin said that it would. Thus, there would be no general purpose lanes or un-tolled access to I-66 inside the Beltway during peak periods. Mr. Westrom asked whether the peak period has been defined. Mr. Roisman said that he did not believe the VDOT proposal specified the definition of the peak periods. Regarding the improvements to I-66 outside the Beltway (slide 9), Mr. Milone asked whether the HOT lanes would be expanded in both directions and operated by a private company. Mr. Austin said that it would. There was also discussion about when the region-

² COG/TPB staff has tasked Cambridge Systematics, Inc. (CS) to develop this new strategic plan for models development.

wide HOV criteria would jump from HOV2 to HOV3 and how that would coincide with the two dates (2017 and 2022) associated with the I-66 improvements.

Regarding slide 3, Mr. Westrom asked what percent of spending was on bike and pedestrian projects, and how that percentage has changed historically. Mr. Austin responded that one could obtain the cost of bike and pedestrian projects in the Transportation Improvement Program (TIP), but this figure would underestimate the total, since it would include only those projects identified as exclusively bike and pedestrian projects (some road projects include ancillary bike and pedestrian improvements). Also, many bike/pedestrian projects are not even included in the TIP, since they are neither federally funded nor considered regionally significant. Mr. Griffiths noted that TPB had approved the bike and pedestrian plan. The total funding needed to implement this plan is about \$6 billion, but most of the projects are unfunded. Responding to Mr. Westrom's question on how expenditures have changed over time, Mr. Austin and Mr. Griffiths said that the change is insignificant, noting that system preservation and maintenance costs have increased over time, as expansion spending has decreased. Mr. Griffiths noted that COG had finished a report on the infrastructure maintenance cost in 10-15 years. Mr. Westrom asked why spending on expansion accounts for such a large proportion (27%) of total highway spending. Mr. Griffiths explained that a large part of the highway expansion spending was due to big projects, such as the I-270 corridor in Montgomery County and the Express Toll lane down I-95. There was a discussion about funding for WMATA and the effect this could have on which projects make it into the CLRP and TIP. Related to this, Mr. Griffiths indicated that the Metrorail constraint to and through the regional core would still be included in the upcoming air quality conformity analysis (until there is a funding agreement that would result in its removal). Mr. Austin also discussed the TPB-initiated project to develop a list of unfunded transportation projects, which are not included in CLRP. COG/TPB staff will send out a request to all the COG jurisdictions to provide transportation projects that should be on this list of unfunded projects.

5. Briefing on regional travel trends 2007-2013

Mr. Griffiths presented some key findings on regional travel trends for the Washington, D.C. metropolitan area between 2007 and 2013. For example, while the population increased 11.2% and employment increased by 1.8%, daily VMT decreased 0.2% over the seven-year period. Furthermore, VMT per capita regionally decreased by 10%. In terms of transit travel, weekday Metrorail and Metrobus ridership increased by 1%, but local bus ridership and commuter rail increased 16% and 18%, respectively. Lastly, the commute mode share for single driver and carpool trips decreased.

Ms. Jia noted that slide 6 shows that VMT has been flat for the last seven years and slide 7 shows a decrease in VMT per capita over the same time period. She asked which parts of the region are showing the largest decreases in VMT per capita. COG/TPB staff was uncertain, but indicated that the issue could be further investigated. In terms of reduction in travel at external stations, Mr. Griffiths said the largest decreases were seen at the West Virginia external stations (the other ones were down about 3%). He also mentioned that the VMT of the District and Arlington County is down, in spite of their population increases. Mr. Griffiths said he would like to use the survey data to track VMT of the household based on the home location. Next, there was a discussion about VMT decreases and possible causes. A meeting

participant asked what percentage of VMT was due to commercial vehicles. Staff said it is about 8%.³ Mr. Jain asked how the recent recession affects the modeling assumptions. Mr. Griffiths shared that there has been a reduction in federal employment, businesses, and professional services in the DC area. He said that many economists have forecasted a sturdy, but slower, pace of growth in the coming years.

Mr. Griffiths noted that this presentation has been presented to the Technical Committee and he has now been requested to make this presentation to the TPB.

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

Mr. Moran gave a status report on the consultant-assisted project for development of the COG/TPB travel demand model. The focus of his presentation was on Task Order 15.2: Develop a strategic plan for COG/TPB models development. The deliverables for this task order will be three reports: 1) Potential shortcomings of the current travel demand model and opportunities for improvement; 2) Status report on the use of activity-based models (ABM) and dynamic traffic assignment (DTA) at peer MPOs; and 3) the strategic plan itself. He discussed the effort to solicit input from users (“stakeholders”) of the COG/TPB model, which would be conducted through a web-based survey and an in-person meeting at COG on Feb. 27. And he discussed a survey of 23 peer MPOs, which will be used for the second report. Regarding carry-over work from FY 14, Mr. Moran said that COG/TPB staff continues to review and test the revised HOT-lane modeling scripts with Ver.2.3.57 model. Staff and Cambridge Systematics, Inc. (CS) will determine the best use of the \$49K that has not yet been allocated to a task order.

Regarding questions that might be part of the survey of peer MPOs, Mr. Patnam suggested that we might want to ask whether it has been easy for various agencies and consultants in each region to use the adopted ABM, since he has heard of some reports where an agency adopts an ABM, but other stakeholders are not able to run the adopted ABM. Mr. Moran said that one of the key requirements for the TPB is that it uses and adopts modeling methods that can be used by all modeling stakeholders in the DC area. Mr. Milone added that another key consideration for the strategic plan is data – We need to have the data to support any recommended model. Mr. Jain noted that there are studies in the region using DTA on the TPB/COG travel model, such as the White House Area Transportation Study and the evaluation of transportation projects in the Northern Virginia Transportation District using TRANSIMS (HB 599). Mr. Jain asked if these would be discussed in the review of DTA. Mr. Moran said that this had been discussed with CS, and the plan was to have the report address one or both of these uses of DTA. Mr. Evans commented that, since the term DTA is applied in many different ways, the report must define what is meant by DTA. Ms. Jia indicated that WMATA staff would be interested in meeting with COG/TPB staff regarding the modeling improvements in the 10/30/14 WMATA letter, and would also like to participate in the stakeholder outreach efforts. Mr. Moran suggested that WMATA staff propose a meeting date for the first meeting (the one regarding issues raised in the WMATA letter). Regarding obtaining input from stakeholders of the COG/TPB regional travel model, Mr. Moran said that

³ William G. Allen Jr., *Development of a Model for Commercial Vehicle Trips* (Washington, D.C.: Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board, May 4, 2007), 8.

COG/TPB staff and CS will decide on the specifics of the web-based survey and the in-person meeting, and then, at that point, staff would reach out to stakeholders to solicit input.

7. Status report on the on-going analysis of cellular O-D data

Mr. Milone provided an update on the COG/TPB staff analysis of origin-destination data derived from mobile phones and other devices using cellular networks. Since the last TFS meeting, there were two main developments. First, staff asked AirSage to reformulate the O-D data using reconfigured (fewer and larger) external travel sheds. Second, in response, AirSage transmitted a new data set to COG/TPB staff on January 19, 2015. He said the larger external sheds appear to produce improved matches with ground counts, particularly in the Baltimore area. Mr. Milone noted a persistent underestimation of external crossings at external stations near West Virginia. He said staff would continue working on the datasets.

Mr. Milone asked Mr. Josef about VDOT's use of AirSage data for an I-66 study. Mr. Josef said that VDOT has not yet received analysis results from their consultant. Mr. Westrom asked how reliable the traffic count data was. Mr. Milone said he has a high degree of confidence in the traffic counts since they are based on HPMS program counts and he has been observing these counts over time to detect any unusual patterns. Mr. Westrom also asked whether the substantial increase in the external trips coming from Baltimore was due to transit travel, since the AirSage data does not implicitly differentiate between travel modes. Mr. Milone agreed, noting that one reason why the AirSage trips from Baltimore appear to be larger than the traffic counts is because AirSage may pick up cellular data from both highway and transit trips. Mr. Evans added that the Commonwealth of Virginia is pursuing a state-wide purchase of AirSage data, with a resolution of about 1,100 TAZs, including the external stations. Mr. Josef noted that the data was purchased by the Central Office of VDOT in Richmond. Mr. Milone said that he received lots of calls from people interested in the COG's use of the AirSage data, but he also indicated that some agencies using the AirSage data have faced significant challenges. Mr. Griffiths said that he had attended a big-data session at the 2015 TRB Annual Meeting, where he heard about a small metropolitan area in Texas that compared O-D data coming from both AirSage and INRIX. He said that, according to the presentation, the advantage of the AirSage data is its large sample size data. By contrast, the presentation noted that INRIX data has a bias toward commercial fleet vehicles. In another TRB presentation, Mr. Griffiths said that TomTom says that its use of in-vehicle navigation systems allows TomTom to get the data needed to estimate mobile emissions.

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

Ms. Jia asked how the recent flattening of VMT and decline in per-capita VMT is going to be reflected in the regional travel demand model. Mr. Milone said that one needs to be careful when updating the model regarding this issue, since some influences on VMT patterns may be temporary. It is important to monitor VMT changes and to conduct household travel surveys on regular intervals. Mr. Griffiths added that demographic inputs to the travel model could be causing overestimated VMT. He also said that, in 2015, COG would begin a major new round of the regional land activity forecasts. Known as Round 9 of

the Cooperative Forecasts, this effort would reconsider all economic and demographic assumptions, and would extend forecasts to the year 2045. Mr. Milone asked whether Round 9 would be benchmarked to the 2010 Census. Mr. Griffiths said that it would. Mr. Westrom noted that he doubted any models in the recent past, such as those developed in the 1990s, were predicting the VMT leveling off that has been seen over the last several years. Mr. Vuksan noted that, although it is hard to find a model that would have predicted a leveling off of VMT, given increasing population, our current model, Version 2.3, does predict a reduction in VMT per capita from 2015 to 2040, even with increasing population.

9. Next meeting date and other business

The next scheduled meeting of the TFS is Friday, March 20, 2015 from 9:30 AM to 12:00 noon. The meeting adjourned around 12:15 PM.

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