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## National Capital Region Transportation Planning Board

Metropolitan Washington Council of Governments  
777 North Capitol Street, N.E., Suite 300, Washington, D.C. 20002-4290

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# Highlights of the July 20, 2012 meeting of the Travel Forecasting Subcommittee

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Held at the Metropolitan Washington Council of Governments, from 9:30 AM to 11:40 AM

Status of highlights: Approved 9/21/2012

### Meeting attendees

- Michael Eichler (WMATA)
- John (Jay) Evans (Cambridge Systematics)
- Dan Goldfarb (VHB)
- Eric Graye (M-NCPPC, Montgomery Co.)
- Jamie Henson (DDOT)
- Bahram Jamei (Virginia DOT)
- Dial J. Keju (Frederick Co.)
- Brian Leckie (Prince George's Co.)
- Subrat Mahapatra (MD SHA)
- David Roden (AECOM)
- Leonard Wolfenstein (Fairfax Co.)

### COG/TPB staff in attendance

- Joe Davis
- Bob Griffiths
- Wanda Hamlin
- Hamid Humeida
- John Kent
- Martha Kile
- Mary Martchouk
- Nicole McCall
- Mark Moran
- Wenjing Pu
- Clara Reschovsky
- Rich Roisman
- Meseret Seifu
- Dusan Vuksan
- Feng Xie
- Jim Yin

The meeting was chaired by Bahram Jamei of VDOT.

### 1. Introduction and approval of meeting highlights

The highlights from the May 18 meeting of the Travel Forecasting Subcommittee (TFS) were approved without any changes.

### 2. Status report on the Version 2.3 Travel Model

Mr. Moran of TPB staff gave a brief overview of the status of Version 2.3 Travel Model. Mr. Moran informed the subcommittee that the Air Quality Conformity (AQC) assessment of the 2012 CLRP and FY 2013-18 TIP was approved by the TPB on July 18. From a policy perspective, this implies that the TPB has approved the AQC process and findings, as well as the CLRP and TIP. From a technical perspective, this implies that the TPB has approved inputs and assumptions to the Version 2.3 Travel Model, including the Round 8.1 land use. Mr. Moran mentioned that there were minor updates in the Version 2.3.39 model and the TPB staff is currently assembling a model transmittal package that will include model application files, inputs for the AQC analysis, and a memorandum listing files and control totals. If the attendees are interested in obtaining the transmittal package they should make a request to Ron Kirby,

as indicated on the COG/TPB website. TPB staff also asks that the model users provide feedback on how the model is being used and how it is performing. Mr. Moran concluded the presentation by informing the attendees that the next air quality conformity cycle of the 2013 CLRP and FY 2014-19 TIP will start in September.

There were no questions following the presentation.

### **3. Consultant contract for assistance with development and application of the TPB travel demand model**

This item was presented by Mr. Moran and David Roden of AECOM. Mr. Moran reminded the TFS that the model-scanning contract has been in place since FY-2006. At the previous TFS meeting, TPB staff presented a report documenting the TPB staff response to the consultant recommendations received during the first six years of this project. The report has completed its 30-day review and comment period, and is now a final report (available on the TFS website).

Mr. Roden began by distributing copies of AECOM’s draft FY 2012 report, which documented the work done by the consultant and its subcontractor, Stump/Hausman, over the last fiscal year. Although TPB staff had issued six task orders to AECOM in FY 2012, the report included nine chapters and an appendix, as shown below:

<b>Chap. #</b>	<b>Chapter</b>	<b>Task Order #</b>	<b>Previously presented to the TFS</b>
1	Introduction	None	
2	Meetings and Technical Assistance	1	no
3	Improving Mode Choice Modeling	2	yes
4	Transit Line Summaries and Access Considerations	3	yes
5	Model Performance Enhancements	4	yes
6	Begin Converting TRNBUILD to PT	5	no
7	Non-Resident Metrorail Trips	6	yes
8	Air Passenger Model	6	no
9	Summary of Recommendations	None	no
10	Appendix	6	

Mr. Roden’s presentation summarized the contents of the report, with a special emphasis on work that had not yet been presented to the TFS. For example, as part of Task Order 1 (chapter 2), AECOM tested the M-NCPPC/Prince George’s County travel model with a high level of traffic assignment convergence using TransCAD. Unlike TPB’s Version 2.3 model, which is executed using Cube Voyager, the M-NCPPC TransCAD model run did not show any abnormalities in the relative gap convergence (though the M-NCPPC model also lacked tolls, which are a part of the TPB model and which can make it more difficult to reach a converged state in highway assignment). Another part of this Task Order 1 involved AECOM making a presentation to the TFS regarding the WMATA transit modeling process. WMATA is currently using a post-processor to the TPB Version 2.3 model, which replaces the AEMS mode choice software with recalibrated models for three trip purposes in peak and off-peak periods. Some of the features of

the post-processor include parallel processing, a new Pedestrian Environment Factor (PEF) that eliminates geographic market segmentation, and Metrorail parking constraints. Another task completed by AECOM during FY-2012 concerned the beginning of a conversion from TRNBUILD transit path-building software to PT transit path-building software. AECOM provided TPB staff with guidelines on how to proceed with this conversion. Some of the tasks that need to be completed include adding all transit-only links and nodes to the highway network, converting TRNBUILD line files to PT line files, and converting 24 transit access files to be in PT format. In addition, there are a few issues that need to be addressed including combining blank mode files with non-blank ones, reconfiguring skim items, and rewriting the TPB access software or converting to PT GENERATE to remove multiple consecutive non-transit legs. AECOM proposed a work program to complete the conversion from TRNBUILD to PT which included the following steps:

- Phase 1: Network Preparation
- Phase 2: Path Building and Loading
- Phase 3: Transit Fares
- Phase 4: Mode Choice Calibration
- Phase 5: Advanced Applications

The last task completed by AECOM during FY-2012 (part of Task Order 6) consisted of estimating airport transit trips. AECOM and their sub-consultant, Stump/Hausman, chose to use an airport model that was developed by the Regional Planning Commission in New Orleans and converted to Cube by Baltimore Metropolitan Council. It consists of three steps including estimating total air passenger enplanements, allocating the originating passengers to the ground side, and estimating the mode used to travel between the airport and the ground side trip end.

To conclude his presentation Mr. Roden discussed the recommendations made by AECOM to the TPB. AECOM recommends performing a TransCAD assignment using the Version 2.3 Travel Model, as well as making some general improvements to the model. They also recommend considering some of the software tools developed for WMATA. Additionally, Stump/Hausman recommends developing a visitor travel model, revising the external trip model to estimate person trips instead of vehicle trips, recalibrating the airport model using the latest air passenger survey, and developing a partial airport choice model.

Following the presentation, an attendee inquired why WMATA continues to use the post-processor despite the nested-logit mode choice model incorporated in the Version 2.3 Travel Model. Mr. Roden responded that the use of the post-processor is necessary because WMATA models three trip purposes for both peak and off-peak times, which is different from the TPB's model. In addition, WMATA is interested in balancing trips to attractions rather than the productions for home-based trips because the main transit market is downtown. According to Mr. Roden the current model underestimates home-based-work downtown attractions by about 15% in 2040. Mr. Moran added that WMATA also uses a fixed trip table to evaluate alternatives.

Subrat Mahapatra of MDSHA inquired whether the TPB plans to incorporate peak spreading and departure time choice in the post-processor. Mr. Moran responded that there are currently no plans to

do this. Mr. Roden stated that for now there are other ways of addressing these issues including diversion curves. Mr. Jamei suggested that Mr. Mahapatra send a written document to the TPB that describes the peak spreading issues encountered.

#### **4. I-66 Multimodal Study**

This item was presented by John (Jay) Evans of Cambridge Systematics. Mr. Evans began by outlining the study overview and describing the path to recommendations that was taken, which consisted of developing mobility option elements, selecting mobility options, combining them into multimodal packages and then issuing the recommendations. The baseline assumptions for 2040 included I-66 restricted to Bus/HOV3+ in the peak direction, Silver Line built to Wiehle Avenue, Metrorail core capacity improvements including system-wide 8-car trains, and priority bus service on I-66, US 29, and US 50. Some of the mobility option elements that were screened out included Metrorail expansion beyond core capacity, Metrorail extension to Centreville, light rail on US 50, and a VRE extension. Based on the mobility options, four multimodal packages were developed. All the packages include bicycle/pedestrian projects, enhanced travel demand management, and integrated corridor management. The first multimodal package included converting the existing I-66 facility to a HOT-lane facility, where Bus/HOV3+ would not be tolled, while SOV/HOV2 would be tolled at all times. In addition, bus transit service would be improved to include more than 20% additional bus seats at cutlines. The second package was similar to the first, except I-66 would be widened to three lanes in each direction. In the third package, during the peak only, Bus/HOV3+ vehicles would be allowed in the peak direction and there would be one Bus/HOV2+ lane in the off-peak direction. In the off-peak, there would be no restricted lanes. In addition, bus improvements would result in over 30% additional bus seat at cutlines. The fourth multimodal package included enhanced bus service and bus service on the shoulder of US 50, as well as a 50%, or more, increase in the number of bus seats at cutlines. The measures of effectiveness used to evaluate the packages included congested VMT, PMT, travel time, Non-SOV mode share, cutline crossings, transit accessibility, and non-motorized travel. The recommendations were split into core, which were top priority, and package ones. The core recommendations included implementing the 2011 CLRP improvements as well as bus service from the 2009 VDRPT I-66 Transit/TDM Study and components of the WMATA Core Capacity Study. Package recommendations were long-term planning-level proposals and included completion of bicycle and pedestrian networks, integrated corridor management system, additions to the travel demand management programs, implementation of the best performing recommendations from package 4, implementation of HOT lanes on I-66, and the addition of a third lane on selected segments of I-66.

There were no questions following the presentation.

#### **5. Congestion-related findings from the draft 2012 Congestion Management Process Technical Report**

This item was presented by Wenjing Pu of TPB staff. Mr. Pu first provided some background on the congestion management process (CMP), which is a requirement for metropolitan long-range plans developed after July 1, 2007. The CMP report compiles congestion information and provides reliability analyses from the I-95 Corridor Coalition/INRIX data. Mr. Pu then showed a map of routes with available

INRIX data as of 12/31/2011. Then, he discussed the state of congestion on freeways from 2009 through 2011. Based on the available data, delays were found to decrease, congestion intensity and spatial extent of congestion was reduced in the peak periods, and travel time reliability improved between 2009 and 2011. Mr. Pu then showed maps of top 10 bottlenecks in 2011, top 10 most unreliable segments in 2011, and the changes in the most congested location from 2009 to 2011. Next, Mr. Pu discussed the 2010 INRIX scan of the arterials, which included 4,600 route-miles of arterials in the TPB member jurisdictions. The arterial data that was purchased included 15-minute average speed, average travel time, sample size, and standard deviation, as well as 5-minute average speed data. Based on the analysis performed for the arterials, more than a quarter of arterials were determined to be congested from 7 AM through 6:30 PM. It was also noted that the spatial extent of the congestion and intensity were not evenly distributed in the region, with DC experiencing the greatest extent and intensity. Lastly, Mr. Pu requested that the TFS subcommittee review the report and submit comments no later than August 20, 2012.

A subcommittee attendee inquired how congestion and reliability are defined. Mr. Pu responded that a roadway segment is considered congested when the Travel Time Index (TTI) exceeds 1.3. Reliability refers to the planning time index. The percent of system congestion refers to percent of lane miles with a TTI greater than 1.3.

## **6. Round-table discussion**

Dial Keju of Frederick County mentioned that the county is developing a modeling tool with assistance from Cambridge Systematics based on Version 2.2 model. Their focus is on a market area that has projects taking place in the next 10-15 years.

Michael Eichler of WMATA mentioned that WMATA is currently evaluating the RUSH+ service. He commented on the operational and modeling difficulties arising from alternating between the 6-minute and 12-minute headways for Yellow Line trains.

Leonard Wolfenstein mentioned that Fairfax County is currently in the early stages of transit validation at the county level using Version 2.3 model. Staff have gone through eight rounds of calibration and addressed some network changes that were not incorporated at the regional level. In addition, they are extending the horizon year to 2050.

## **7. Other business**

Mr. Moran described the new security procedures for the MWCOG building. Starting August 1, 2012 all visitors will be required to sign in at the visitor registration system and obtain a visitor's badge. Visitors should plan to arrive 10-15 minutes before the scheduled meeting time to allow for registration.

The next proposed meeting of the TFS is Friday, September 21, 2012 from 9:30 AM to 12:00 noon. The meeting adjourned at about 11:40 AM.

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The highlights were written by Mary Martchouk.