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 January 20, 2012 meeting of the Travel Forecasting Subcommittee

Held at the Metropolitan Washington Council of Governments, from 9:30 AM to 11:45 AM
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Meeting attendees

- Dan Goldfarb (Cambridge Systematics)
- Jamie Henson (DDOT)
- Bahram Jamei (Virginia DOT)
- Tony Hofmann (Michael Baker Corp.)
- Dial J. Keju (Frederick Co.)
- David Kline (Fairfax County DOT)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Subrat Mahapatra (MD SHA)
- Alek Pochowski (Kittelson & Associates, Inc.)
- David Roden (AECOM)
- Phil Shapiro (STC)
- Dan Stevens (Fairfax County DOT)

COG/TPB staff in attendance

- William Bacon
- Elena Constantine
- Joe Davis
- Charles Grier
- Bob Griffiths
- Wanda Hamlin
- Charlene Howard
- Hamid Humeida
- Ron Kirby
- Mary Martchouk
- Ron Milone
- Mark Moran
- Jinchul (JC) Park
- Jane Posey
- Wenjing Pu
- Clara Reschovsky
- Rich Roisman
- Meseret Seifu
- Daniel Son
- Dusan Vuksan
- Feng Xie
- Jim Yin

The meeting was chaired by Bahram Jamei of VDOT.

1. Welcome new chair, introductions, and approval of meeting highlights

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

2. TPB Version 2.3 Travel Model: Status report and final documentation

This item was presented by Ron Milone of TPB staff. Mr. Milone reminded the attendees that the Version 2.3 model has been adopted and is being used in the air quality conformity work and SIP planning. It is also being used by local agencies including Virginia for the I-66 Multimodal Study and TransAction 2040, and Maryland for Veirs Mill study. He then mentioned that since November, some minor updates were made to the scripts and batch files, but no fundamental differences exist between

Version 2.3.38 and Version 2.3.36 presented at the prior TFS meeting. He also noted that the Version 2.3 transmittal package includes summary programs that were not a part of the previous Version 2.3 transmittal and the attendees can find more information regarding them in the user's guide. Mr. Milone then discussed the calibration report and user's guide that are now finalized. A copy of these documents was made available to the attendees at the meeting. Some of the new components of the user's guide include details on setting the Windows PATH environment variable so that the Cube Voyager and Cube Cluster do not have to be launched manually prior to a model run, model run crash tips, and a utility to convert DBF to CSV files. Mr. Milone concluded the presentation by mentioning that all the relevant references to the Version 2.2 model on the TPB website will soon be updated to Version 2.3 model and the TPB staff appreciates any feedback that the model users might have. He also noted that the TPB staff met with Citilabs, Inc. in December to learn more about the capabilities of Cube Cloud Services.

A subcommittee attendee commented that Cube Cloud Services have the potential to get expensive if the agency does many model runs. The attendee then inquired whether during the discussion with Citilabs, the issue of different VMT results obtained when running the model with and without Cube Cluster was discussed. Mr. Moran responded that during the last conversation, Colby Brown of Citilabs stated that the different results arise due to rounding in Cube Cluster and that is just the nature of the Cube Cluster software. Mr. Moran indicated to Citilabs that this information should be added to the Cube user's guide. Mr. Moran also mentioned that in addition to the issue of obtaining different VMT, the TPB staff discussed the fact that, in the highway assignment, the value of the gap parameter sometimes drops to zero, which should never occur. Citilabs staff responded that they are testing the TPB model setup because they believe that this phenomenon may be occurring due to the implementation of the VDF as a lookup table as opposed to a continuous function. Lastly, the attendee inquired whether the TPB has migrated to Cube 6. Mr. Moran responded that when Cube 6 was installed on one of the TPB's servers and the TPB staff attempted to run the model, it crashed, so there are currently no immediate plans to migrate to Cube 6.

3. Consultant contract for assistance with development and application of the TPB travel demand model: Status of current work activities

Mark Moran of TPB staff presented the details concerning this consultant contract. Mr. Moran reminded the attendees of the FY 2012 task orders that AECOM is currently working on, which include Task 2 (recommendations for improving mode choice modeling in the TPB Version 2.3 Travel Model) and Task 4 (reducing model run times in the TPB Version 2.3 Travel Model). He then discussed the progress of Task 4. In November, AECOM sent the TPB staff parallelized batch files and scripts that would reduce model run times. Prior to AECOM's suggestions, the travel model included Intrastep Distributed Processing (IDP) in the highway assignment step, fare development, time of day processing, and preparation for traffic assignment. AECOM added Multistep Distributed Processing (MDP) to trip distribution, highway assignment, and highway skims and IDP to trip distribution and highway skims. In addition, they parallelized transit skims and mode choice using Windows command windows and combined the HOV and non-HOV runs for the AM and PM periods (i.e. removed that "two-step assignment"). Upon testing the new parallelized structure, the TPB staff noted that the model run times were reduced by about 40%, however, the model produced different VMT. Mr. Moran mentioned that the TPB staff is

continuing to review the work done by AECOM in order to decide whether to use the parallelized model and the combined HOV/non-HOV assignments. Next, Mr. Moran discussed the progress made on Task 2. AECOM transmitted a memo to TPB staff on December 1, which the TPB staff responded to with some questions and comments. AECOM responded to the additional questions and comments and the TPB staff is reviewing the suggestions. The TPB staff needs to make decisions regarding how similar or different the TPB mode choice model should be compared to WMATA's mode choice model, whether to move from the 20 geographic market segments to using the Pedestrian Environment Factor (PEF), and how the low transit ridership in Virginia can be addressed in the mode choice model. In addition, the TPB staff is considering the switch from Citilabs TRNBUILD to Citilabs Public Transport (PT).

During the presentation, a subcommittee member asked what the scale of the VMT difference with and without parallelization was. Mr. Moran responded that the TPB did not complete a detailed comparison of model results yet. (For a year-2007 analysis, regional VMT dropped 1.85% or 2.9 million VMT).

4. Consultant contract for assistance with development and application of the TPB travel demand model: Status report of TPB staff review of six years of consultant recommendations

The item was presented by Mr. Moran. He briefly discussed the past scans of best modeling practice, which were carried out by VHB and Cambridge Systematics. Then, he mentioned that while the TPB has considered the suggestions made over the course of the past six years, no official report that documents staff response has been released. The TPB staff is currently working on such a report, which should be available in March. This report will break down the consultant recommendations by topic area and will document the TPB's current practice and their response to the consultant recommendations. Proposed topic areas include the following:

- Data collection and surveys
- Inputs to the travel model
- External trip forecasts
- Socio-economic models
- Trip generation, including special generators
- Trip distribution
- Mode choice
- Time-of-day/peak spreading
- Traffic assignment
- Speed feedback in the travel model
- Modeling HOT/managed lanes
- Modeling transit
- Modeling trips to/from the airports
- Modeling non-motorized (walk and bike) trips
- Tour-based & activity-based models (ABMs)
- Calibration, validation, sensitivity testing
- Miscellaneous topics

5. Status of ongoing refinement activities for the Version 2.3 Travel Model

This item was presented by Meseret Seifu of TPB staff. Ms. Seifu mentioned that with the help of Shapiro Transportation Consulting, TPB staff has been comparing the base-year network coding with aerial photography to update any inconsistencies in area-type codes, link facility-type codes, and placement of centroid connectors. She explained that the refinement is necessary because the area-type codes are mechanically assigned to zones and all the facilities within the zone based on floating employment and population densities. This may result in illogical discontinuities in the area-type designation along a corridor. Next, Ms. Seifu mentioned that the facility-type codes are derived from the Federal Functional Classification (FFC) system maps. However, when the TPB staff added links to the 3,722-TAZ network, many were simply assigned to the collector facility-type, which may not be accurate. She also added that the FFC system maps currently used by the TPB are dated (2001) and the TPB would appreciate any updated information that the states may be able to provide. Ms. Seifu then showed some maps of facility-type miscodes. She also showed some examples of area-type coding inconsistencies. Lastly, she pointed out two locations with too many or too few centroid connectors. Ms. Seifu concluded her presentation by mentioning that the TPB staff continues to work on rectifying the inconsistencies in facility-type and area-type coding as well as checking the centroid connectors.

At the end of the presentation Mr. Milone added that lower level facilities need to be coded accurately for developing mobile emission estimates. These facilities operate at lower speeds and thus account for a substantial portion of mobile-source emissions.

A subcommittee member asked how the facility-type code is updated in the future, in response to a facility change such as a widening. Mr. Milone responded that TIP submissions are evaluated on a project-by-project basis. The analyst determines whether or not a change in facility type is warranted on a given network link, on the basis of standardized project information submitted to TPB staff by local transportation agencies. Next, there was a brief discussion regarding how the categorical nature of the area type definition can sometimes result in large changes in traffic volumes (particularly on freeways), which can be undesirable.

6. Status report on Geographically-Focused Household Travel Surveys

Mr. Bob Griffiths presented this item to the TFS. Mr. Griffiths mentioned that the geographically-focused add-on to the Household Travel Survey (HTS) is aimed to collect household travel data in specific sub-areas of the region in order to provide local planners socio-economic data that is no longer available from the Decennial Census. The seven areas that were surveyed in the fall of 2011 include the 14th St. NW corridor, White Flint area, Purple Line International corridor, Largo area, City of Frederick, Reston area, and Woodbridge area. Next, Mr. Griffiths presented some preliminary results of the survey including the number of completed households, number of persons, vehicle ownership, and number of unlinked trips. He also provided draft calculations of the number of vehicles per household, number of persons per household, and number of unlinked trips per household. He stated that the preliminary results should be released in March 2012. Next, Mr. Griffiths outlined the areas which will be surveyed in spring of 2012 including Friendship Heights, New York Avenue corridor, St. Charles area, National Harbor, Beauregard corridor, East Falls Church and West Falls Church areas, and Dulles North area. In

the fall of 2012, there are six areas that are to be surveyed, including Federal Center/Southwest/Navy Yard, H St. NE corridor, Silver Spring, US1/Green Line, City of Fairfax, and City of Manassas. Mr. Griffiths concluded his presentation by mentioning that the design of the geographically-focused surveys makes it an ideal follow-on to the CNT Housing and Transportation Cost Study. The housing and vehicle cost data could be combined with the household travel patterns to provide community-level comparisons between geographic areas.

7. Demonstration of preliminary Regional Transportation Data Clearinghouse web viewer

This item was presented by Charles Grier of TPB staff. No handouts were provided. Mr. Grier demonstrated the Regional Transportation Data Clearinghouse web viewer tool using Internet Explorer. He first pointed out the different layers available in the tool, including daily and hourly traffic counts, average weekday transit ridership, Metrorail station boardings and alightings, and co-operative forecast data at the TAZ level. He also showed how to use the enhanced search "widget" (i.e., the search tool), which allows the user to select all the information for a given entity within a layer (for example a highway route) and export it to CSV. Instead of selecting the entire entity, the user can also delineate the area of interest graphically and obtain the information from any of the layers. Mr. Grier also pointed out that data can be selected using "search by attribute" function via an SQL query. The web viewer also includes the identify tool similar to the one in ArcMap that can be used to browse data. The last widget that Mr. Grier discussed allows the user to extract and download data. The user can outline an area of interest, select the layers they would like to include and export to geodatabase or ESRI shapefile.

A member of TPB staff inquired what the latest available data is. Mr. Grier responded that the transit ridership data is available through June 2010, while the traffic data is available through the end of 2010. Mr. Milone inquired what transit ridership data is available. Mr. Grier responded that the transit data includes the average weekday ridership by transit route, including bus, Metrorail, VRE, and MARC. Mr. Milone asked how this data is geocoded. Mr. Grier stated that it is geocoded using the TPB's 2009 network. An attendee asked whether the hourly traffic counts are available for the full 24-hour period. Mr. Grier responded that both the program and permanent count stations provide hourly volumes for a 24-hour period, not just the peak-hour period. At the end, there was a discussion about whether the daily person throughput for a corridor could be calculated and incorporated into the tool. An attendee responded that it would be difficult to obtain transit volumes for a specific link since only the total route ridership is available.

8. Round-table discussion

Subrat Mahapatra started the discussion by mentioning that the MDSHA is currently using the new travel model for the Veirs Mill Rd. BRT study.

Bahram Jamei mentioned that VDOT is about to start evaluating 11 options of alternatives for the I-66 Multimodal Study. He mentioned that the final report should be released in June. Mr. Milone inquired about the evaluation criteria used in this process. The attendee responded that for the first screening process, congested VMT and person trips are evaluated. More extensive evaluation will be performed later and will include evaluation of trip tables, congestion levels, and passenger throughput in the

corridor. Next, Mr. Milone asked who will be doing the evaluation. Dan Goldfarb of Cambridge Systematics responded that the Participating Agency Representative Committee (PARC) members guided by Cambridge Systematics will review the results. He added that mobility options have been presented to the public in December and VDOT received feedback. He also mentioned that a market research survey has been conducted about people's transportation choices, likelihood of carpooling, their view of tolling, and value for HOT lanes.

9. Other business

There was no other business. The next proposed meeting of the TFS is Friday, March 23, 2012 from 9:30 AM to 12:00 noon. The meeting adjourned at about 11:45 AM.

The highlights were written by Mary Martchouk.