
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 March 23, 2012 meeting of the Travel Forecasting Subcommittee

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

Status of highlights: Approved, 5/18/12

Meeting attendees

- Jamie Henson (DDOT)
- Zachary Horowitz (Kittelson & Assoc., Inc.)
- Bahram Jamei (Virginia DOT)
- Eric Jenkins (M-NCPPC, Prince George's Co.)
- Wendy Jia (WMATA)
- Vaibhavi Kamdar (Prince William Co.)
- Dial J. Keju (Frederick Co.)
- David Kline (Fairfax County DOT)
- Rick Kiegel (Maryland Transit Admin.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Arefeh Nasri (University of Maryland)
- David Roden (AECOM)

COG/TPB staff in attendance

- William Bacon
- Joe Davis
- Yu Gao
- Greg Goodwin
- Charles Grier
- Bob Griffiths
- Charlene Howard
- Hamid Humeida
- Martha Kile
- Mary Martchouk
- Ron Milone
- Mark Moran
- Jane Posey
- 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 January 20 meeting of the Travel Forecasting Subcommittee (TFS) were approved without any changes.

2. Version 2.3 Travel Model: Status report and use in project planning studies

This item was presented by Ron Milone of TPB staff. Mr. Milone first reviewed the schedule for the 2012 CLRP/FY-2013-18 TIP Air Quality Conformity Determination, pointing out that, between March and May, TPB staff will prepare the modeling inputs and execute the travel demand model and mobile emissions model. In July, the draft CLRP/TIP and Conformity Assessment will be presented to the TPB for adoption. A subcommittee member inquired whether the 2012 Air Quality Conformity Assessment will be completed using the Version 2.3.38 model or a newer version. Mr. Milone responded that Version 2.3.38 will be used for this year's conformity analysis with possible minor revisions. More substantial

updates to the travel model will likely be incorporated in next year's air quality conformity analysis. The updates will involve improvements now in development with the assistance of AECOM, and will also be informed by 2010 model validation work that will occur over the next several months.

Mr. Milone then discussed the use of the model in the Metrorail parking demand study in Loudoun County, which involved retrieving estimated PNR demand for two end-of-line Silver Line stations for 2025 (from model runs conducted previously). Upon examining the Metrorail trips by access mode, summed for the two stations, TPB staff found that the modeled demand for parking at these two stations was about equal to, though slightly less than, the PNR capacity. Staff also compared the Version 2.3 estimated Silver Line ridership to that in the Final Environmental Impact Statement (FEIS) noting that the overall estimated ridership was surprisingly consistent between the two sources.

Next, Mr. Milone discussed the evaluation of the Orange Line Extension to Centreville, completed as part of the I-66 Multimodal Study - Inside the Beltway. This VDOT-funded study is currently in progress, with the assistance of Cambridge Systematics, Inc. TPB staff was asked to assess the impact of a 9-mile extension of the Orange Line on traffic congestion on I-66. TPB staff modeled three year-2040 scenarios:

- Base scenario: standard execution of Version 2.3 model with speed feedback and no transit constraint
- Alternative Scenario 1: Standard Version 2.3 model with Orange Line extension with speed feedback and no transit constraint
- Alternative Scenario 2: Fixed person trip table (i4) execution of only mode choice, time-of-day, and traffic assignment

Running the model without speed feedback (i.e., with a fixed trip table) can be viewed as an approach for assessing short-term impacts of transportation system changes (e.g., the isolated impact of a mode diversion from auto to transit when transit service is improved). By contrast, running the model with speed feedback captures both short- and long-term effects of a system change (e.g., the impact of changes in regional travel patterns that occur after auto trips are removed from the system). Both approaches are used in transportation planning, depending on the study needs and requirements. Travel modeling work for FTA New Starts projects generally requires running the model without speed feedback, whereas work done for air quality conformity analyses generally requires running the model with speed feedback.

Both alternative scenarios yielded an increase in transit trips, as would be expected with the service improvement (a 12,300 increase for Alt. 1 and an 8,200 increase for Alt. 2). However, staff noticed the Alt. 1 reduction in VMT was much less than that for Alt. 2 (24,000 vs. 151,000). TPB staff's analysis of I-66 traffic volumes (both Alt.1 and Alt. 2) indicated that the Orange Line extension would not substantially affect traffic volumes. In addition to studying the changes in trips by mode, TPB staff analyzed changes in screenline crossings for the two alternatives. Since the Orange Line extension increased transit service in a radial direction, one would expect the largest decreases in traffic to occur on circumferential screenlines in Virginia. In Alternative 2 (no speed feedback), the circumferential screenlines showed a very slight drop in traffic (1,700 to 4,900 vehicles per day) as one might expect.

By contrast, in Alternative 1 (with speed feedback), staff noted smaller decreases, and some small increases, in traffic crossing circumferential screenlines (the Potomac River screenline, for example). Staff determined that the increased screenline crossings were due to trip distribution changes brought about by the speed feedback process. As drivers traveling from Virginia to the District were removed from the system because of the transit improvement, accessibility for drivers from Maryland to Virginia was improved. Mr. Milone felt that this analysis was useful in that it demonstrated the differences that result from the travel model when it is applied with and without speed feedback. The analysis pointed out an example of how the speed feedback process might offset benefits indicated when running the model without a speed feedback linkage.

An attendee commented that it is unclear how converged the model is after the four speed feedback iterations and thus some of the changes in volumes observed at screenlines may be a result of the lack of convergence. Mr. Milone expected that the degree of convergence attained after four speed feedback iterations was reasonable for a regional travel model, but he could not quantify the degree.

Another attendee inquired whether the increase in Metrorail ridership is due to persons previously traveling to Vienna and then using Metrorail. Mr. Milone responded that some of them may be previous bus/Metrorail riders or commuter rail passengers, however, the extension also attracted some new riders drawn from the auto mode.

3. Version 2.3 Travel Model: Developing the accessibility process

This item was presented by Mr. Milone. TPB staff has been working in recent months to forge an accessibility analysis tool specifically designed for Version 2.3 standard model outputs. The information provided by the tool will be used as one of several evaluation measures to assess the CLRP. Mr. Milone then presented detailed background on the definition and features of accessibility, as it is developed by TPB staff. Mr. Milone concluded his presentation by mentioning that the process for developing the Version 2.3 model accessibility is currently under review. Accessibility results are planned for release in September as part of the next CLRP update report. The report will address the performance of the 2012 CLRP, which is anticipated to be adopted in July.

An attendee proposed that instead of calculating the number of jobs accessible from each TAZ, it may be more useful to calculate how many persons can access the jobs. Mr. Milone agreed that type of accessibility “weighting” can be considered in the future. TPB’s previous accessibility reporting has been based on “unweighted” accessibility. Another TPB staff member commented that accessibility from a TAZ with no population to jobs may still be of interest for future development. Another idea that was proposed was to determine accessibility to non-job opportunities such as schools, entertainment centers, and activity centers. Mr. Milone responded that currently TPB staff calculates accessibility to the three regional airports and hence this process could be extended to other opportunities.

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

This item was presented by Mark Moran of TPB staff. Mr. Moran first reviewed the current status of six FY-2012 task orders that have been assigned to AECOM:

Task Order 1: This task consists of attending meetings, providing “on-call” advice, and responding to technical ad-hoc requests. The task is ongoing.

Task Order 2: This task has been completed, with AECOM transmitting a memo that contained mode choice improvement suggestions and some information on the work conducted for WMATA.

Task Order 3: This new task (authorized on March 7) involves updating the LineSum transit summary program, including creating a more aggregated summary of boardings and alightings by access mode at Metrorail stations and differentiating between walk-access and bus-access to Metrorail.

Task Order 4: This task has been completed and AECOM has transmitted a set of “parallelized” scripts and batch files as well as draft documentation. TPB staff are currently testing the scripts and reviewing the documentation.

Task Order 5: This new task (authorized on March 13) involves the beginning of a migration from TRNBUILD to PT. Some of the tasks include upgrading ArLineSum program to facilitate plotting and displaying transit line volumes, converting primary transit files, designing coding techniques to compensate for differences between TRNBUILD and PT, and developing a work plan for the work needed to complete the conversion.

Task Order 6: This new task (authorized on March 16) involves improving the ability of the model to represent transit travel in three markets: external (XI/IX) travel, airport passenger travel to the region’s three airports, and visitor/tourist travel. This task order will be completed by the subcontractor Stump/Hausman, which proposed narrowing the focus from all transit in these markets to primarily Metrorail transit (although the external model would also include commuter rail). Stump/Hausman also proposed two phases of work: Phase 1, which would be conducted in the last three months of FY 2012 and Phase 2, which would be conducted in FY 2013. Only the Phase 1 work has been authorized.

Regarding the air passenger model, a subcommittee attendee inquired whether only Metrorail trips would be modeled, noting that only one of the three commercial airports (Reagan National) is accessible via Metrorail. Mr. Moran responded that the consultant plans on using an existing airport access model and calibrating it for the TPB region, adding that the consultant proposal for Phase 1 mentions only Metrorail transit. By contrast, the model being developed for external transit travel is planned to include both commuter rail and Metrorail, though the focus would be on Metrorail. A TPB staff member inquired whether transit trips from Baltimore to Union Station would be represented in this model. Mr. Moran confirmed that is an example of a travel market that should be included in the new model.

Next, Mr. Moran discussed the TPB staff review of six years of consultant recommendations. This report will include a summary of consultant findings and recommendations, a discussion of both consultant recommendations and TPB’s current procedure, and TPB staff response to the consultant recommendations. At the present time, only the summary of consultant recommendations has been completed and TPB staff hopes to have the final report by the May TFS meeting. A TPB staff member asked whether the consultant recommendations included an estimate of implementation costs. Mr. Moran responded that, in most cases, implementation cost was not discussed when the consultants

recommended something, although there were exceptions, such as for activity-based models. He added that the costs will be discussed internally when TPB staff are making decisions regarding what recommendations to implement. Mr. Milone added that, in addition to considering the budget, TPB staff will look at the data availability, as well as which topics are of interest to the TPB members before finalizing future work programs.

5. Round 8.1 land use forecasts from the COG Cooperative Forecasts: Comparison to Round 8.0a

This item was presented by Clara Reschovsky of TPB staff. Ms. Reschovsky first mentioned the various jurisdictions that have submitted the Round 8.1 Cooperative Forecast. She then explained that the forecast includes land activity from 2010 through 2040, in five year increments, and is expected to be adopted in July 2012. Some significant updates to the base year of 2010 in Round 8.1 include an increase in the average household size in Prince George's County, a 28,000 increase in total employment in Arlington County, primarily in Crystal City; and a reduction in employment by 44,000 in Frederick County. Next, Ms. Reschovsky showed the overall growth forecasts for the region, as well as growth by different areas including central jurisdictions, inner suburbs, outer suburbs, outer ring MD, and outer ring VA & WV, from 2010 to 2040. The greatest percent growth in population is expected in the outer suburbs and outer ring VA & WV while the greatest gains in employment are anticipated in inner suburbs and outer suburbs. Ms. Reschovsky then described the technical procedure used to prepare the land use inputs for use with the Version 2.3 model. This procedure includes applying the CTPP employment adjustments to land activity, creating year-specific files, developing interpolated land use activity for "off-years," and conducting analyses between years and between different rounds of the Cooperative Forecast. Lastly, Ms. Reschovsky compared the Round 8.1 and Round 8.0a forecasts. The number of households in Round 8.1 was found to be slightly lower than the Round 8.0a, with the difference persisting for all years from 2010 to 2040. The number of jobs in Round 8.1 was slightly lower in the early years and slightly higher in the later years, which is a result of the economic downturn lasting longer than originally anticipated.

A subcommittee member inquired whether the model accounts for the fact that the jobs are anticipated to grow faster than households and, in 2030, there will be more jobs in the region than can be filled by residents. Mr. Milone responded that the TPB staff is aware of the growing job-to-household ratio that is indicated by the Round 8.1 Forecasts. Staff is also aware of the need to monitor the balance of productions and attractions over time, particularly with regard to the work purpose.

A subcommittee attendee asked whether any large shifts in land use were observed between the two rounds of the Cooperative Forecast. Ms. Reschovsky responded that there were large changes in Arlington County and Frederick County, mentioned previously, due to the counties conducting a more thorough review of their employment numbers. Mr. Griffiths also added that the state of Maryland will soon be providing access to a database that contains employment at the individual establishment level, which will allow TPB staff to look at more detailed TAZ-level numbers for employment.

Another subcommittee member requested that the changes between the two rounds of the forecast be calculated for activity centers, such as the Tysons Corner area. An attendee inquired whether there is a

plan for creating the Aspirations land use scenario. Mr. Griffiths responded that it will be done once the Region Forward process has verified the accuracy of the activity centers.

6. Round table discussion

Wendy Jia, from WMATA, mentioned that the 2012 Metrorail passenger survey will be conducted in April and WMATA expects to release the results to TPB for geocoding in September. She mentioned that, for the first time, the survey will be conducted online and will include a question regarding the respondent's income. Ms. Jia also mentioned that, as a result of WMATA's work with AECOM, they noted that Silver Line projections made in the 2006 EIS are too high and the 2004 EIS ridership is more reasonable. She also commented that WMATA has observed skewed Metrorail boardings and alightings for downtown stations that are coming out of the model. The reason may be that the Metrorail location is not coded close to the intersection, where the entrance is actually located. In order to match the observed boardings and alightings, WMATA has made some network coding improvements for the core stations. Mr. Moran asked whether WMATA has any documentation describing the coding improvements. Ms. Jia responded that upon completion of the work, AECOM will write a memo that WMATA can then share with TPB staff.

7. Other business

There was no other business. The next proposed meeting of the TFS is Friday, May 18, 2012 from 9:30 AM to 12:00 noon. The meeting adjourned at about 11:45 AM.

The highlights were written by Mary Martchouk.