



TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE JULY 17, 2020 MEETING

Meeting time & location: 9:30 AM to 12:00 noon, **Web conferencing ONLY, due to COVID-19 precautions. There was no on-site meeting.**

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MEETING ATTENDEES

MEMBERS, ALTERNATES, AND PARTICIPANTS

- Jim Bunch (Sabra & Associates)
- Matt Cheng (NVTC)
- Zuxuan Deng (DDOT)
- Jeff Dumont (RSG Inc)
- Michael Eichler (WMATA)
- Nazneen Ferdous (Jacobs)
- Joel Freedman (RSG Inc)
- Dan Goldfarb (NVTC)
- Eric Graye (M-NCPPC, Montgomery Co.)
- Adam Groves (PTV Group)
- Tony Hofmann (Michael Baker Corp.)
- Chetan Joshi (PTV Group)
- Kyeongsu Kim (Connetics Transportation Group)
- David Kline (Fairfax County DOT)
- Li Li (Whitman, Requardt & Assoc.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Xuemei Liu (Cambridge Systematics)
- Krishna Patnam (AECOM)
- Mark Radovic (Consultant for MDOT-SHA)
- Harun Rashid (NVTA)
- Amir Shahpar (VDOT)
- Lisa Shemer (MDOT-SHA)
- Christine Sherman Baker (Arlington Co. DES)
- Howard Slavin (Caliper)
- Michael Trinh (VDOT)
- Carly VanDewark (Caliper)
- Steve Weller (Kimley-Horn & Assoc.)
- Jongsun Won (PTV Group)

COG STAFF

- William Bacon
- Tim Canan
- Anant Choudhary
- Yu Gao
- Charlene Howard
- Ken Joh
- Martha Kile
- Sanghyeon Ko
- Nicole McCall
- Mark Moran
- Ray Ngo
- Wanda Owens
- Jinchul (JC) Park
- Jane Posey
- Meseret Seifu
- Jackie Sellman
- Kanti Srikanth
- Dusan Vuksan
- Feng Xie

* All meeting participants attended the meeting remotely via WebEx.

This meeting of the Travel Forecasting Subcommittee (TFS) was chaired by Mr. Amir Shahpar.

1. INTRODUCTIONS AND APPROVAL OF MEETING HIGHLIGHTS FROM THE PREVIOUS MEETING

The highlights of the May 15, 2020 meeting of the TFS were approved without changes.

2. TBEST: A TRANSIT SERVICE PLANNING SOLUTION, DEMONSTRATION OF MODELING APPLICATIONS IN NORTHERN VIRGINIA

This item was presented by Mr. Cheng, who spoke from a set of presentation slides. Mr. Cheng presented the Transit Boardings Estimation and Simulation Tool (TBEST) and, discussed the model components and data structure necessary for TBEST's direct demand model estimation at the transit stop level, as well as some of the accessibility, equity analyses and operational analyses possible through TBEST's GIS-based interface. Mr. Cheng also previewed model ridership and graphical outputs produced within the TBEST tool from one of NVTC's studies for Fairfax Connector's Silver Line Phase II bus restructuring. In response to committee questions about NVTC's parcel land use methodology for non-reported and federal parcels, Mr. Cheng responded that for most federal complexes, the key trip generation variable for the TBEST model is internal building square footage or total parcel area, both of which can be acquired through real estate or GIS surveys. Mr. Cheng also received questions about TBEST's ability to model heavy rail and light rail, to which he acknowledged the weaknesses of TBEST as a direct-demand model, unable to account for passenger behavior through mode choice and trip assignment. However, Mr. Cheng concluded by emphasizing the strength of the TBEST model being its accessibility to planners in conducting simple ridership sensitivity analyses to service changes as well as providing a useful tool to conduct accessibility analyses on bus networks with a variety of customization features.

3. INVESTIGATION OF CUBE VOYAGER PUBLIC TRANSPORT (PT) TRANSIT MODELING SOFTWARE WITH THE TPB'S GEN2/VER. 2.3 TRAVEL MODEL

This item was presented by Mr. Xie, who spoke from a set of presentation slides. Mr. Xie presented the findings from a recent staff investigation of Cube Voyager Public Transport (PT) transit modeling software with the TPB Version 2.3 Travel Model. Mr. Xie first introduced the background and motives for this investigation. For the purpose of this investigation, PT was implemented in the Ver. 2.3 Model, resulting in two developmental Ver. 2.3.85 Models, one with PT and the other with TRNBUILD, the current software used for transit modeling. Mr. Xie then compared the two transit modeling programs using the two models, with a focus on model runtime, path-tracing results, region-level traffic-related statistics generated by standard model summary programs and transit ridership validation statistics. Based on the findings from this investigation, Mr. Xie discussed the strengths and limitations of PT relative to TRNBUILD. In the end, he proposed the next steps for this investigation.

Mr. Rashid asked if some of the low commuter rail ridership estimation issues were fixed in the Ver. 2.5 Model. In response, Mr. Xie noted that the Ver. 2.5 Model was never brought into production use, and that the goal was to address the underestimation of commuter rail ridership in the Gen3 Model. Mr. Vuksan added that that the year-2014 validation of commuter rail ridership has been significantly improved in the forthcoming Ver. 2.4 Model.

4. COG/TPB GEN3 TRAVEL MODEL

A. Gen3 Model Design Plan report

This item was presented by Mr. Freedman and Mr. Moran, who spoke from a set of presentation slides. Mr. Freedman described the Gen3 Model Design Plan report. In brief, RSG's central

recommendation is that COG should move from its current, aggregate, trip-based travel demand model to a disaggregate, simplified activity-based model (ABM), implemented in an open-source travel demand modeling software platform known as ActivitySim. The report has nine chapters, covering topics such as “Strengths and Weaknesses of the Current Travel Model,” “Introduction to ActivitySim,” “Model Development Plan,” and “Current and Future Data.” Mr. Freedman described the two proposed phases of development for the Gen3 Model:

- Phase I: Existing ActivitySim model
 - Includes core functionality and features contributed by other agencies
 - July 2020 through September 2021
- Phase II: Enhanced ActivitySim model
 - Includes COG-specific enhancements and locally estimated models
 - Fully calibrated, validated, documented
 - Training for COG and partner agencies
 - July 2021 through December 2022

Mr. Moran presented the COG/TPB staff perspective and the process for reviewing the report. He explained that COG/TPB staff generally agree with the broad lines of the RSG proposal. He also noted that any large software development project carries many risks, but, based on the experience of the consulting team, COG/TPB staff believes that the risks are manageable and that the benefits of the new model will outweigh the costs. There were three levels of review of the report:

- COG travel demand modeling staff (early May)
- Other COG staff (late May)
- Travel Forecasting Subcommittee (mid-June)

Mr. Moran concluded his section of the presentation by discussing the comments received from the TFS. He noted that three individuals, representing three agencies, had provided written comment (over 50 comments/questions in total). COG staff and RSG wrote a memo, dated June 30, responding to each comment/question. In many cases, feedback resulted in updates to the report, which improved the report.

There were no questions or comments.

B. Task Order 3, Development of Gen3 Model, Phase 1

This item was presented by Mr. Freedman, who spoke from a set of presentation slides. Mr. Freedman described the Gen3 Phase 1 scope of work, which consists of seven tasks:

- Project Management
- Population Synthesis
- Data Development
- Phase I ActivitySim Deployment
- Phase I Model Estimation
- Calibration and Validation
- Sensitivity Testing

Mr. Freedman described that the purpose of the Phase I model development is to implement an initial version of ActivitySim, prepare observed data, generate a synthetic population, estimate tour mode and destination choice models, calibrate and validate the model system to observed data, and perform sensitivity testing. Mr. Freedman described the project schedule, which started July 1, 2020 and targets completion by October 2021.

C. Re-weighting of the 2017-18 COG Regional Travel Survey (RTS)

This item was presented by Mr. Dumont, who spoke from a set of presentation slides. Mr. Dumont described the reweighting of the Regional Travel Study, including:

- The methodology used to reweight the survey data;
- A comparison of the new weights against the population targets used;
- A comparison to the previous weights.

Mr. Dumont also gave a short introduction to PopulationSim tool and how to use it to generate survey weights.

5. NEXT MEETING DATE AND OTHER BUSINESS

A. 2017-2018 Regional Travel Survey: Status report

Dr. Joh provided a brief status update on the Regional Travel Survey (RTS). The trip file data is almost complete. Final editing is focused on additional checks of consistency and quality control regarding anomalies in the data, such as extreme values with speeds, departure and arrival times, and time of trips. This processing of the trip file should be completed by July 2020. Staff will begin to run tabulations on the RTS trip file and will share initial findings.

B. Big Data Evaluation

Mr. Canan updated the subcommittee on the status of the Big Data Evaluation. The consultant delivered the final report to be reviewed by COG staff. Once the review process is completed, information and interpretation of findings will be discussed with COG staff, followed by any potential acquisition of data.

C. Roundtable discussion on traffic counts in the time of COVID-19

Mr. Shahpar started this open discussion focusing on using traffic count data during COVID-19 pandemic conditions, which was continued from the previous meeting. He commented that big data, such as StreetLight Data, is being considered to enrich the data and find more reliable traffic counts. Mr. Rashid noted that NVRTA had conducted a recent scenario analysis of the reduction in highway traffic in Northern Virginia, using big data traffic counts provided by VDOT.

D. Scheduling TFS presentations for CY 2020

Mr. Moran noted that TPB staff try to schedule at least one external/non-COG presentation at each TFS meeting. More than one non-COG presentation can be scheduled at a given meeting, time permitting, but long-term scheduling assumes only one per meeting. He noted that there are scheduled non-COG presentations for all the upcoming TFS meetings, from September 2020 through March 2021 [Editor's note: As of August, due to a schedule conflict, there is now an opening for the non-COG presentation at the September TFS meeting]. He encouraged anyone who would like to propose a presentation for an upcoming TFS meeting to contact him so their item can be added to the list of potential future presentations.

6. ADJOURN

The meeting adjourned around 12:00 noon. The next meeting is scheduled for Friday, September 18, 2020 at 9:30 A.M.