National Capital Region
Transportation Planning Board

TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE JULY 21, 2023, MEETING, HELD 9:30 AM TO 11:45 AM

Meeting was held virtually via web conferencing software. There was no on-site meeting.

MEETING ATTENDEES

MEMBERS, ALTERNATES, AND PARTICIPANTS

- Jonathan Avner (Whitman, Requardt & Assoc.)
- Samuel Brooks (DDOT)
- James Bunch (Mead & Hunt)
- Kevin Chai (Fairfax Co. DOT)
- Jilan Chen (SEMCOG)
- Yucong Du (Jacobs)
- Ramgiridhar (Giri) Kilim (VDOT)
- Anson Gock (DelDOT)
- Li Li (Whitman, Requardt & Assoc.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Cherry Liu (SEMCOG)
- Feng Liu (Cambridge Systematics)
- Marie Pham (Loudoun Co.)
- Akshaya Paudel (Virginia Tech University)
- Maggie Qi (Fairfax Co. DOT)
- Harun Rashid (NVTA)
- Andrew Rohne (RSG, Inc.)
- Abby Rosenson (RSG, Inc.)
- Rana Shams (MDOT)
- Bill Thomas (Michael Baker, Inc.)
- Malcolm Watson (Fairfax County DOT)
- Chris Wichman (AirSage)
- Jim Yang (M-NCPPC, Prince George's Co.)
- Yi Zhao (TRB)

COG STAFF

- William Bacon
- Tim Canan
- Anant Choudhary
- Joe Davis
- Nazneen Ferdous
- Cristina Finch
- Ken Joh
- James Li
- Mark Moran
- Ray Ngo
- Wanda Owens
- Jinchul (JC) Park
- Olga Perez
- Jane Posey
- Meseret Seifu
- Dusan Vuksan
- Feng Xie
- Zhuo Yang
- Jim Yin

This meeting of the Travel Forecasting Subcommittee (TFS) was chaired by Mark Moran, COG/TPB staff.

1. OPENING: MEETING ROLES, RULES, AND ROLL CALL OF PARTICIPANTS

Mr. Moran discussed roles of the meeting participants (e.g., chair, host, technical host, and note taking), meeting rules, and then performed a roll call of participants.

2. APPROVAL OF MEETING HIGHLIGHTS FROM THE MAY 19 MEETING

Mark Moran chaired the meeting since the current chair (Yi Zhao) no longer works at DDOT and DDOT has not yet selected a replacement chair. The highlights of the May 19, 2023, meeting of the TFS were approved without any changes.

3. HOUSEHOLD TRAVEL SURVEY STATE-OF-THE PRACTICE RECOMMENDATIONS

Dr. Joh presented this item to the subcommittee using a set of presentation slides. Since the last regional household travel survey conducted in 2017/2018 (Regional Travel Survey), travel survey methods have been evolving to address the need to capture regional travel patterns more frequently due to emerging technologies and shifts in travel behavior from the pandemic. To address these needs, TPB staff conducted a project to consider the approach and methodology to be used for future household travel surveys by researching the latest methods and approaches. Based on this research, Dr. Joh shared recommendations for the approach for COG's next regional household travel survey.

Mr. Moran commented that moving to more frequent household travel surveys is entering new territory and that policy makers will like the idea of getting more frequent updates and not having to wait every ten years to get the latest information. However, he noted that it may present some challenges for modeling. For example, would conducting the survey every three years provide a sufficient sample size for model estimation?

Mr. Bunch asked in the chat box why not consider continuous samples like the census does every year. Dr. Joh responded that in addition to staff considerations, more importantly, conducting the survey every year would yield sample sizes that are likely too small to be able to perform any meaningful statistical analysis, so they would have to be aggregated across multiple years. Another reason is that with the data that is collected, there is time that is required to perform post-processing such as weighting.

Ms. Yuanjun Li asked in the chat box whether the next household travel survey will include questions about emerging travel modes. Dr. Joh responded that, yes, emerging modes such as micro mobility will be included in the next survey.

4. REGIONAL COORDINATION OF TRANSIT ON-BOARD SURVEYS

Mr. Canan presented, using a slide presentation, TPB staff plans for coordinating the region's 25 transit providers to collect transit on-board trip information needed to estimate, calibrate, and validate TPB's travel demand forecasting model and to analyze the characteristics of transit trips in the region. The presentation included information on the purpose and benefits of a transit on-board surveys (TOBS), previous approaches taken in the region, TPB staff's proposed approach for the upcoming fiscal year, and services that can likely be provided to the region's transit operators by TPB. The approach proposed by staff entails TPB playing a coordinator role, supporting the region's transit operators conducting their own on-board surveys with TPB staff providing coordination and support, when needed. This will include processing data collected from the survey, developing a regional TOBS dataset, and performing data analysis that can be used by both TPB, its members, and other transit operators.

Mr. Bunch asked if this effort would include a universal regionwide GTFS feed to manage operator-to-operator transfers and patterns. Mr. Canan responded that, while this would be an interesting feature, it would not occur as part of the TOBS effort; however, it might be considered for future activities.

5. PRESENTATION FROM THE TRANSPORTATION RESEARCH BOARD INNOVATIONS IN TRAVEL ANALYSIS AND PLANNING CONFERENCE, INDIANAPOLIS, INDIANA, JUNE 2023: "SENSITIVITY TESTING OF ACTIVITY-BASED MODELS" (IN SESSION A2: UNCERTAINTY AND MODEL SENSITIVITY IN SCENARIO PLANNING AND FORECASTING

This presentation was first presented at the TRB Innovations in Travel Analysis and Planning Conference in Indianapolis, Indiana, June 4-6, 2023. This presentation provided an overview of the sensitivity testing process and sensitivity tests undertaken as part of the development process for three ActivitySim implantation projects: MWCOG, Metropolitan Council (Minneapolis & St. Paul, Minnesota), and SEMCOG (Detroit, Michigan).

Mr. Moran asked whether there are things that make sensitivity tests with activity-based models more challenging. Mr. Rohne said that ActivitySim is under continuous development, so there are new features added periodically and there is a learning curve to it. Many of the tests shown in the presentation can be done with a trip-based model, but the tests of travel behavioral are easier with an activity-based model compared to a trip-based model. By way of clarification, the updated mode choice logsum coefficients were re-evaluated by MWCOG with toll increases as well as with increased highway and transit times to verify that the model reacted as expected.

Regarding the Metropolitan Council's TNC fare subsidy test, Mr. Xie noted that COG's 2017/2018 Regional Travel Survey (RTS) data included a very small portion of TNC trips. So, regarding slide 12, he asked how reliable the Met Council test was. Mr. Rohne said that he would have to check their survey, but he thought that the TNC portion was reliable since the Twin Cities do not have a major taxi mode share like the DC metro area does. In general, TNC responses are a little more likely since being on the phone to hail a TNC vehicle means that the phone has location services activated and, as such, smartphone apps like rMove are far more likely to detect the trip.

Mr. Xie asked whether the TNC specification in the COG Gen3 Model. He also wondered whether the COG RTS has enough data to perform this sensitivity test. Mr. Rohne said that the specification has been added to the mode choice model files. Mr. Rohne added that he was unsure whether COG's RTS includes fare information but noted that the Gen3 Model does have fare set aside as a mode choice component.

A meeting attendee asked whether the TNC fare test (slide 12) caused a change in VMT/VHT. Mr. Rohne noted that RSG did not really look at VMT and VHT for that scenario, but he noted that there was a very small (2%) decrease in transit and rideshare trips are assigned to the network. Thus, it is unlikely that the TNC fare test would have changed VMT or VHT very much. Also, the current Met Council model does not represent deadheading with rideshare, so we would not have seen that increase.

Mr. Kilim asked if the data used in the sensitivity tests was pre-pandemic data, especially for the telecommuting sensitivity test, since VDOT is currently looking through pandemic data now. Mr. Rohne re-stated that all data is pre-pandemic data.

Mr. Moran stated that one of the challenges is COG/TPB staff develops models based on observed data, and historically, for regional travel demand forecasting models, that has meant the household travel survey, which is typically done every ten years. Transit on-board surveys are often done on a more frequent basis, but these on-board surveys are conducted more sporadically. As noted by Dr.

Joh, many agencies are looking at doing their household travel surveys on a more frequent basis, and that includes COG. However, in the case of the Gen3 Model, the household travel that was used was the 2017-2018 Regional Travel Survey, which was conducted pre-pandemic. Lastly, he noted that one can still use the Gen3 Model to test what's going to happen in the future, including testing various telecommute scenarios, but the underlying data in the model is pre-pandemic data. As an example of post-pandemic data, Mr. Canan noted that the 2023 Washington-Baltimore Air Passenger Survey will be conducted starting this October.

6. STATUS REPORT ON THE COG/TPB DEVELOPMENTAL, DISAGGREGATE, ACTIVITY-BASED TRAVEL DEMAND FORECASTING MODEL, KNOWN AS THE GEN3 TRAVEL MODEL

Andrew presented an update on the Gen3 Model validation, which concentrated on highway and transit validation compared to the Gen2/ Ver. 2.4 Model.

Mr. Xie noted that, although it's nice to show the comparison of transit validation metrics between the Gen3 Model and the Gen2 Model/Ver. 2.4 model for the same year (i.e., 2018), when RSG conducts the model calibration/validation, RSG should use the 2014 transit validation metrics as the benchmarks because Metrorail and Metrobus saw significant declines in ridership between 2014 and 2018. Mr. Xie noted that the COG travel model, which is mostly driven by demographic growth, was not able to capture the actual decline in transit ridership that occurred during this four-year period. Mr. Rohne said that he will make that change.

7. ROUNDTABLE DISCUSSION OF CURRENT MODELING EFFORTS AROUND THE REGION

Mr. Moran stated that at our last TFS meeting, Ms. Yuanjun Li announced that Eric Graye had retired from M-NCPPC. Mr. Moran noted that we would miss him at TFS meetings but added that we wish him well in retirement.

There were no updates of current modeling efforts.

8 OTHER BUSINESS

Mr. Xie announced the release of TPB's Gen2/Ver. 2.4.6 Travel Model for production use. He also announced that the model transmittal package is available for data requests as of July 21. Mr. Xie also stated that this model has not been used for an air quality conformity analysis, so it is being released as a production-use model, but not an "adopted" model. However, based on the evaluation by COG/TPB staff, the model is deemed ready for production use.

The next meeting of the TFS is scheduled for Friday, September 22, 2023, from 9:30 AM to 12 noon. After that, the next meeting is planned for Friday, November 17, 2023, from 9:30 AM to 12 noon.

At the September 22 meeting, we hope to have the following presentations:

- Round 10 of the Cooperative Forecasts of households, population, and employment (COG staff; requested, but not yet confirmed)
- Status report on the COG/TPB developmental, disaggregate, activity-based travel demand forecasting model, known as the Gen3 Travel Model (Joel Freedman, Senior Director, RSG)
- Presentations from the Transportation Research Board Innovations in Travel Analysis and Planning Conference, Indianapolis, Indiana, June 2023: "Measuring Racial Equity Geographically: What Works and What Needs Work (in Session B1: Capturing the Impacts of

Transportation Projects on Disadvantaged Populations)." (Brian Lee, Program Manager, Puget Sound Regional Council and Stefan Coe, PSRC)

TPB staff strives to have at least one external/non-COG presenter at each TFS meeting. At the current time, there are no scheduled non-COG presenters for the November meeting. People interested in making a presentation at a future TFS meeting are asked to contact Mr. Moran.

9. ADJOURN

The meeting adjourned at about 11:25 AM.