National Capital Region
Transportation Planning Board

Approved

As of 11/18/2022

TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE SEPTEMBER 23, 2022 MEETING

9:30 AM to 12:00 noon. 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.)
- Christine Sherman Baker (Arlington Co.)
- Nafisa Binti (Baseline Mobility Co.)
- Richard Brockmyer (Fehr & Peters)
- Jim Bunch (Mead & Hunt)
- Thomas Burke (Fairfax County DOT)
- Kevin Chai (Fairfax Co. DOT)
- Yucong Du (Jacobs)
- Austin Foster (MDOT)
- Joel Freedman (RSG, Inc.)
- Dan Goldfarb (MITRE Corporation)
- Scott Holcomb (Gannet Fleming)
- Erik Jensen (WMATA)
- George Kandathil (Tri County Council of Southern Maryland)
- Jaesup Lee (M-NCPPC-Montgomery Co.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics)
- Vahid Moshtagh (VDOT)
- Srikanth Neelisetty (Transurban)
- Caroline Pecker (MDOT-SHA)
- Marie Pham (Loudoun Co.)
- Gabe Pincus (WMATA)
- Mark Radovic (Gannet Fleming)
- Harun Rashid (NVTA)
- Andrew Rohne (RSG, Inc.)
- Rich Roisman (Arlington Co. DES)
- Elizabeth Scullin (Prince William Co.)
- Rana Shams (MDOT)
- Elham Shayanfar (MDOT)
- Lisa Shemer (MDOT-SHA)
- Rafey Subhani (Mead & Hunt)
- Aichong Sun (AECOM)
- Bill Thomas (Michael Baker International)
- Chris Wichman (AirSage)
- Jim Yang (M-NCPPC, Prince George's Co.)
- Yi Zhao (DDOT)

COG STAFF

- Mackenzie Bosco
- Tim Canan
- Anant Choudhary
- Joe Davis
- Nazneen Ferdous
- Yu Gao
- Daniel Gobeze
- Charlene Howard
- Ken Joh
- Martha Kile
- Sanghyeon Ko
- Nicole McCall
- Mark Moran
- Erin Morrow
- Ray Ngo
- Wanda Owens
- Jinchul (JC) Park
- Jane Posey
- Meseret Seifu
- Daniel Son
- Dusan Vuksan
- Feng Xie
- Zhuo Yang
- Yue Zhang

* All meeting participants attended the meeting remotely via WebEx.

This meeting of the Travel Forecasting Subcommittee (TFS) was chaired by Ms. Shemer.

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

First, a roll call was conducted. Next, the highlights of the September 23, 2022 meeting of the TFS were approved.

2. SCENARIO ANALYSIS FOR TRANSACTION-LONG-RANGE TRANSPORTATION PLAN UPDATE IN NORTHERN VIRGINIA

This item was presented by Mr. Rashid and Dr. Liu, who spoke from a set of presentation slides. The focus of the presentation was a set of recent scenario analyses conducted by the Northern Virginia Transportation Authority (NVTA). Mr. Rashid laid out the regional planning context of this analysis, the assumptions, and take-aways from the study. Dr. Liu focused on the updated NVTA modeling framework, including enhancements compared to TPB's Version 2.4 Travel Model, and shared results of the plan's no-build and build conditions. The presentation concluded with the following finding: Both the no-build and build conditions with scenario assumptions have the potential to improve mobility, accessibility, and resiliency, but many of these assumptions/policy directions are outside of NVTA's control (emerging trends in technology, pricing, land use, etc.).

Regarding slide 18 ("Transit Ridership"), Mr. Xie noted that, during the model validation, the estimated transit ridership appeared to be higher than the observed 2018/2019 ridership. He also noted that, since the pandemic began, transit ridership declined drastically and has been showing slower rates of recovery for certain sub-modes. Mr. Xie wondered whether the NVTA analysis considered these factors. Dr. Liu stated that trip rates in the NVTA model were estimated from the 2017/2018 Regional Travel Survey (RTS), which showed reductions in HBW trips over the previous household travel surveys. The NVTA mode choice model was calibrated using the 2017/2018 RTS. Transit ridership in the NVTA model was validated against the base year 2017. The pandemic impacts were part of the scenario modeling, included in the New Normal scenario. Mr. Xie also asked whether the study team adjusted trip generation rates according to the latest household travel survey data. Dr. Liu confirmed that that was correct. Thus, there was an 11% reduction in trips in general for home-based work (HBW) travel.

Mr. Xie asked how NVTA and the Northern Virginia Transportation Commission (NVTC) work together on transit planning in Northern Virginia. Mr. Rashid noted that NVTC's geographic footprint and funding sources are unique and different from those of NVTA. NVTA was created to analyze all travel modes in Northern Virginia. While NVTC was created to address transit issues in the WMATA compact

jurisdictions of Northern Virginia. For example, NVTC has a toll program, which provides funding for the I-395 and I-66 commuter choice programs. NVTC looks at a certain and limited set of transit projects, while NVTA looks at larger, regionally significant transit projects. So, NVTA coordinates on planning efforts for transit projects that extend beyond Norther Virginia (such as regional BRT), which is beyond the scope of NVTC.

Regarding slide 21 ("TransAction Performance Measures (2045 BD vs NB)") and the "F1: Emissions Reduction (w/ EV Improvements)" row of the chart, Mr. Vuksan noted that he was surprised to see such a large reduction (ca. 55%) in vehicle emissions for two scenarios representing the same year (2045). Mr. Vuksan asked whether, given the large reduction, some of the funding in the build scenario is tied to specific EV improvements. Dr. Liu stated that this large reduction in mobile emissions is related to the assumptions that we have put into the calculations. It has nothing to do with the projects themselves. Dr. Liu noted that, if one is using the current EV rates, one would expect to see a small increase in emissions (ca. 3%) because of the extra VMT related to the "build" scenario. But, in the "build" scenario where EV improvements are assumed (higher rates of EV ownership, more EV charging infrastructure), the model predicts a large decrease emissions, compared to the 2045 no-build scenario, which did not include these enhanced EV assumptions.

Mr. Kandathil had a question regarding slide 16 ("Traffic Assignment Validation" by screenline). Mr. Kandathil was having trouble finding a pattern in terms of which screenlines were under or over estimated. Dr. Liu noted that the travel model is well validated in the core area of the region, but is less well validated in the outer, exurban areas, which is understandable and expected for regional travel models. Dr. Liu noted that the planning area is represented by the inner jurisdictions and that the outer jurisdictions serve as a buffer between the TPB planning area and adjacent regions.

Mr. Moshtagh asked whether the set of 429 projects in TransAction would be ranked. If not, Mr. Moshtagh wondered, how will NVTA make investment decisions. Mr. Rashid noted that NVTA will neither rank nor prioritize the TransAction projects, which contrast with the Smart Scale process, where projects are divided into groups. Mr. Rashid noted that, for a project to be funded, it needs to be on this list, i.e., part of the NVTA long-range transportation plan, TransAction. Mr. Rashid noted that the projects will be ranked for the purposes of funding them and the number one metric is Congestion-Reduction-Relative-to-Cost (CRRC). In addition to CRRC, TransAction ratings will be derived that are based on performance in other measures, e.g., access to transit facilities, access to jobs, travel time reliability, etc. A set of qualitative considerations complement these metrics in the funding decision-making process.

3. TRANSPORTATION SURVEYS FOCUSED ON TRAVEL BEHAVIOR IMPACTS OF THE PANDEMIC

Dr. Joh presented this item to the subcommittee. The presentation focused on a literature review of travel surveys measuring the impacts of the COVID-19 pandemic on travel behavior. Dr. Joh discussed the key findings on survey design and methods from these surveys including sampling approaches and data items, in addition to key trends focusing on teleworking and work from home, travel mode, and grocery delivery and pickup.

Mr. Rashid commented that most of these findings are in line with NVTA's new normal scenario assumptions. He asked if any surveys or discussions of research talked about future or shifting land use patterns due to the pandemic. Dr. Joh responded that none of the surveys explicitly examined shifts in land use patterns but mentioned that there will likely be implications on land use patterns because of the pandemic.

Mr. Bunch asked in the chat box whether the surveys from 2020 should be discounted heavily based on his own personal life behavior shifting back to pre-pandemic patterns. Dr. Joh responded that

while during the early phase of the pandemic there was a dramatic shift in travel behavior which may be anomalous, the travel patterns that emerged during the latter phase of the pandemic are likely to be mirrored in a new post-pandemic normal, especially with teleworking and the emergence of hybrid work schedules. Dr. Joh also commented in the chat box that this project was conducted for two reasons: 1) to learn how the pandemic was being studied and what methods were being utilized; 2) to see what was observed in these surveys. This literature review was intended to examine lessons learned from these surveys which will help inform us about potential large shocks in the future.

Mr. Freedman commented in the chat box that food delivery services are down by a bit more than half of pre-pandemic levels in terms of market value, but still a lot higher than pre-pandemic levels. Dr. Joh responded in the chat box that he agreed with Mr. Freedman's observations and that it was an interesting finding.

Ms. Li asked in the chat box if shopping and teleworking behaviors are associated with household type. Dr. Joh responded in the chat box that it is likely that shopping and teleworking behaviors are associated with household type, but this was not examined in this presentation.

4. COG/TPB GEN3 TRAVEL MODEL: STATUS REPORT

This item was presented by Mr. Freedman of RSG, who spoke from a set of presentation slides. Mr. Freedman provided updates on Gen3 Phase 2 Model estimation, implementation, and calibration. Mr. Freedman showed diagrams of the Gen3 Phase 1 and Phase 2 models, indicating which model components were estimated in Phase 1 and which model components will be or have been estimated in Phase 2. Mr. Freedman provided an overview of the model estimation process and a status update on each model component. Mr. Freedman then showed some trip mode choice model estimation results. Mr. Freedman then moved on to provide an update on model implementation, including a description of the work undertaken by MWCOG to implement transit skimming and assignment in Cube's Public Transport (PT) module using multipathing. Mr. Freedman spent the bulk of the presentation describing the new vehicle-type choice model implemented in the Gen3 Phase 2 Model and the extension of the model to consider autonomous vehicles. Mr. Freedman concluded the presentation by discussing the status of Gen3 Phase 2 Model calibration, next steps, and provided an updated project schedule. There were no questions asked.

5. TESTING THE TPB'S TRAVEL MODELS AND MOVES MODELS ON AWS CLOUD SERVERS

Due to time constraints, this item was deferred to next meeting, to be held on November 18.

6. ROUNDTABLE DISCUSSION OF CURRENT MODELING EFFORTS AROUND THE REGION

Due to time constraints, this item was deferred to next meeting, to be held on November 18.

7. OTHER BUSINESS

7a. Snapshots of effects of COVID-19 on travel, available on COG website

Ms. Kile reported that COG/TPB staff continue to develop snapshots to illustrate how the COVID-19 pandemic is impacting travel in the Metropolitan Washington Region. The charts show changes in roadway traffic and enplanements as compared with pre-pandemic levels. The snapshots are available on the COG website (https://www.mwcog.org/documents/2021/07/16/covid-19-travel-monitoring-snapshot-traffic-monitoring/). The current snapshot includes data through June of 2022 and the snapshot through August 2022 will be available in the next couple of weeks.

7b. Planned presentations at upcoming TFS meetings

Mr. Moran provided an update on planned presentations at upcoming TFS meetings:

- Nov. 18 TFS meeting:
  - Recent updates to the Baltimore Metropolitan Council InSITE Activity-Based Travel Model (Charles Baber, BMC)
  - 2017-2018 Regional Travel Survey 7-Day Panel Evaluation (Ken Joh, COG/TPB staff)
  - Gen3 Model, status update (RSG staff)
- Jan. 27 TFS meeting
  - "Using Location-Based Services and Metro Data to Understand Our Market" (Kayleigh Campbell, WMATA)
  - Gen3 Model, status update (RSG staff)

Mr. Moran requested that people interested in making presentations to the TFS please contact him, so that he could schedule the presentation.

7c. Updated transmittal package for the Gen2/Ver. 2.4 Travel Model

Mr. Vuksan noted that COG/TPB staff regularly produce a transmittal package that includes the latest production-use travel demand forecasting model and the inputs to the travel model (e.g., TAZ-level land use forecasts and transportation networks, typically those associated with the latest air quality conformity analysis). The most recent model transmittal package is for the Gen2/Ver. 2.4 Travel Model and the model inputs associated with the air quality conformity analysis of the 2022 update of the Long-Range Transportation Plan (LRTP),[1] which included seven network years (i.e., 2017, 2021, 2023, 2025, 2030, 2040, and 2045). Unfortunately, COG/TPB staff recently found a coding error in the transit networks, which was associated with park-and-ride (PNR) and kiss-and-ride (KNR) access to some bus lines. This network coding error, referred to as the 15000-series node error, resulted in unneeded bus stop nodes in transit networks, which, in turn, resulted in reduced PNR and KNR bus trips in the travel model. This error, on the other hand, had a very marginal impact on the regional VMT (0.2%). We have completed the network corrections and have conducted a sensitivity test to determine the impact of this error.

For people who received the previous model/input file transmittal package (i.e., the 2020 update to the LRTP), dated March 17, 2021, that transmittal package did not have this error. However, for people who received the latest model/input file transmittal package (i.e., the 2022 update to the LRTP), dated June 15, 2022, that transmittal package does have this error. For this second group of people, based on our preliminary assessment, the network coding error should not be a factor if your study is focused on regional results or if you are doing project planning for a highway study. However, if you have that latest transmittal package and the focus of your study is on transit, especially bus, and especially at the project level, then you may want to get the update transmittal package, which we hope will be ready by mid-November. When the updated transmittal package is ready, COG/TPB

[1] See, for example, "Data Requests," Metropolitan Washington Council of Governments, Transportation, Modeling, June 28, 2022, https://www.mwcog.org/transportation/data-and-tools/modeling/data-requests/.

staff plans to contact people who had already received the latest transmittal package and give them the option to get the updated/corrected transmittal package.

7d. Next meeting scheduled for Friday, November 18, 2022

8. ADJOURN

The meeting adjourned at about 12:00 noon.