National Capital Region
Transportation Planning Board

Approved

As of 5/17/2024

TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE MARCH 22, 2024 MEETING, 10:00 AM TO 11:35 AM

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

MEETING ATTENDEES

MEMBERS, ALTERNATES, AND PARTICIPANTS

- James Bunch (Mead Hunt)
- Kevin Chai (Fairfax County)
- Xiao Cui (VDOT)
- Manfredo Davila (M-NCPPC, Prince George's Co.)
- Anson Gock (Delaware DOT)
- Dan Goldfarb (ATCS)
- Keith Hangland (Teralytics)
- Tony Hoffman (Michael Baker)
- Feng Liu (Cambridge Systematics, Inc.)
- Li Li (Whitman, Requardt & Assoc.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics)
- Srikanth Neelisetty (Transurban)
- Marie Pham (Loudoun Co.)
- Meredith Milam (Fehr & Peers)
- Matt Miller (Insight Trans)
- Harun Rashid (NVTA)
- Andrew Rohne (RSG, Inc.)
- Amir Shahpar (VDOT)
- Rana Shams (MDOT)
- Lisa Shemer (MDOT)
- Malcolm Watson (Fairfax County DOT)
- Jun (Jim) Yang (M-NCPPC, Montgomery Co.)

COG STAFF

- Bill Bacon
- Tim Canan
- Anant Choudhary
- Joe Davis
- Nazneen Ferdous
- Charlene Howard
- Ken Joh
- Jan Mou (James) Li
- Mark Moran
- Ray Ngo
- Wanda Owens
- Jinchul (JC) Park
- Jane Posey
- Meseret Seifu
- Bahar Shahverdi
- Jessica Storck
- Dusan Vuksan
- Feng Xie
- Zhuo Yang

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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 MARCH 22 MEETING

This meeting of the Travel Forecasting Subcommittee (TFS) was chaired by Mr. Rashid. The highlights of the March 22, 2024 meeting of the TFS were approved without any changes.

3. MODEL INPUTS AND SCOPE OF WORK FOR THE AIR QUALITY CONFORMITY OF VISUALIZE 2050

This item was presented by Ms. Posey, who used a set of presentation slides. She outlined the on-going update to the region's Long-Range Transportation Plan (LRTP), Visualize 2050. Mrs. Posey discussed project inputs and the scope of work for the air quality conformity analysis associated with the LRTP update. She reviewed technical and policy inputs for the conformity analysis and shared the location of highway and transit project input information on the web. She provided the schedule for the conformity analysis and noted the date of when the National Capital Region Transportation Planning Board (TPB) will be asked to approve Visualize 2050 and the conformity analysis results. She noted that networks and travel demand files related to the conformity analysis would likely be available for request at the end of the summer of 2025. There were not questions.

4. STATUS REPORT ON THE COG/TPB GEN3 TRAVEL MODEL

Speaking from a set of presentation slides, Dr. Xie provided a status report on the development of COG/TPB's Gen3 Travel Model. COG recently completed the Phase 2 development of the Gen3 Model and has now started Phase 3, which, is being led by COG staff, with on-call support from the consultant, and will be focused on model usability testing and additional model updates. Dr. Xie also laid out next steps at the end of the presentation.

In response to questions from Mr. Rashid, Ms. Yuanjun Li, and Ms. Milam regarding the release timeline of the Gen3 Model, Mr. Xie indicated that, at the end of the Phase 3 development, if no major issues are found with the model from the usability testing, COG could release a beta version of the model to select requestors for testing. Mr. Vuksan pointed out that the modeling files associated with the Gen2/Version 2.4.6 Model runs for the upcoming Air Quality Conformity (AQC) analysis of Visualize 2050 would not be released until summer 2025. Dr. Xie added that the final release of the Gen3 Model needs to be coordinated with the Gen2 Model release schedule, though the Gen3 Model might not be available for several months after the release of the AQC modeling files. There is no firm release date for the Gen3 Model, since its release date will depend on how smoothly the usability testing goes, but the end of 2025 is one possible date. Ms. Li Li asked what would be checked when comparing the Gen2 and Gen3 model results. Dr. Xie replied that, in addition to comparing the standard travel statistics, COG staff will look at results from the LRTP performance analysis and the Environmental Justice analysis. Mr. Rashid also asked whether the Gen3 Model will be capable of testing dynamic tolling. Dr. Xie responded that the toll setting process integrated in the Gen3 Model uses the same heuristic toll searching algorithm as in the Gen2 Model to simulate the dynamic tolls set on the variably priced tolling facilities.

5. TERALYTICS STUDIO: INTRODUCTION AND NEW FEATURES

Mr. Clarke was unable to attend the meeting, so this item was presented by Mr. Hangland, who spoke from a set of presentation slides. Mr. Hangland said that the mission of Teralytics is to build a digital twin of human movement, focusing on transportation planning and modeling. He noted that Teralytics offers tools and capabilities to understand movement patterns, emphasizing collaboration, scalability, and user-driven development. Their process involves sourcing GPS data, interpreting it into trips and behaviors, and ensuring data representativeness through various sources like traffic counts and land use data. Teralytics strives to create human-scale models for different types of movements and provide tools for visualization, customization of data sets, and analytics. Key

features include a dashboard for navigation, data visualization tools like spider graphs (a.k.a. desire line plots) with origin-destination (O-D) information, and data set customization tools for specific areas or network segments. Analytics capabilities include core analysis to understand demand and network constraints and select-link analyses of specific locations and movements. They also provide export functionalities for model-ready data, facilitating seamless integration with modeling environments.

Regarding slide 5, which noted that the Teralytics data comes from a 10% to 15% sample of the U.S. population, Mr. Moran asked how representative the sample was of the population. Mr. Hangland said that representativeness has a lot to do with time period and location. Mr. Hangland noted that the major measure of representativeness is how well we can reproduce link volumes and movement. In general, we at Teralytics are quite happy with the output we see, though issues do turn up. We do a great job with auto travel since we have quite a bit of that. The challenge is with the smaller markets, such as pedestrian travel or bike travel.

Mr. Rashid asked whether Teralytics Studio includes transit data. Mr. Hangland said, not yet in the U.S., but we have done a lot of that in Europe.

Ms. Yuanjun Li asked how Teralytics validates the data. Mr. Hangland said that he is not the best person to talk about data validation, but he said that Teralytics uses some of the standard data validation techniques.

A meeting participant asked if Teralytics has validated their data to Census Journey-to-Work travel. Mr. Hangland recommended the person send him the question via email and then Mr. Hangland can get the Teralytics data team involved.

Ms. Yuanjun Li asked how one can verify that the sample set does a good job at representing all ages and income levels. She also asked if one can determine trip purpose. Mr. Hangland noted that Teralytics does have data sets that are constantly updated with demographic information, but feel free to follow up with him offline and he can engage with the technical team on that.

6. ROUNDTABLE DISCUSSION OF CURRENT MODELING EFFORTS AROUND THE REGION

Mr. Rashid announced the NVTA has launched study of potential deployment of Bus Rapid Transit (BRT) in Northern Virginia. As part of that study, NVTA will be enhancing its model, which is an aggregate, trip-based model derived from the COG/TPB Gen2/Ver. 2 Model. But, whereas the COG/TPB Gen2/Ver. 2 Model uses static traffic assignment, the NVTA model will use dynamic traffic assignment (DTA). We plan to enhance that model with a better representation of bus speeds in dedicated travel lanes. We plan to integrate DTALite within the Cube software. We hope to be able to share some of the modeling work from this study within a year.

Mr. Moran announced that VDOT has a new modeler, Xiao Cui, who is also now part of the TFS. Mr. Rashid extended a warm welcome to Ms. Cui.

7. OTHER BUSINESS

Mr. Moran announced an update of the Round 10 Cooperative Forecast land use data. Mr. Moran indicated that this land use data had been released in draft and, at various points, some anomalies were found with the data. So, COG and local land use planners went back and forth and agreed that they were discrepancies. Now that those discrepancies have been fixed, there is now a third and final release of the draft data. Like other similar data sets, this data set includes the employment definition adjustments to ensure that there is a consistent definition of employment throughout the modeled region, keeping in mind that the modeled region is larger than the COG member region. Thus, the updated data is now available for distribution. Mr. Moran noted that he had sent an email

to all TFS members on February 28 explaining the situation. Ms. Seifu started sending out the new updated land use to all TFS members and interested parties. Mr. Rashid confirmed that he had received the revised, draft Round 10 land use data.

Mr. Moran announced that the next TFS meeting will be held on May 17 at 9:30 AM. Mr. Moran also announced that we do not yet have any external presenters for the May, July, or September meetings [Editor's note: As of 5/9/24, we now have two external presenters for the May meeting]. Attendees are encouraged to propose presentation topics or reach out to Mr. Moran If they have ideas for external presentations. At the November TFS meeting, we are expecting a presentation from Prince George's Co. regarding their current modeling work.

In the Webex chat Ms. Yuanjun Li asked whether the draft, TAZ-level Round10 land use forecasts still include an employment adjustment for some jurisdictions Mr. Moran said that that was correct, adding that, every time we get the land use data from Paul DesJardin's Department of Community Planning and Services (DCPS), we make this adjustment to ensure that a consistent definition of employment is used throughout the modeled region. In the Webex chat, Mr. Bunch asked about whether COG/TPB staff was ready to release the exogenous travel data (e.g. external travel, through travel, visitor/tourist travel). Mr. Moran said that staff is aware of your data request for the exogenous travel data and we are working on updating those forecasts and hope to have the data ready in the next week or two.

8. ADJOURN

The meeting was adjourned at about 11:35 AM.

Attribution: This meeting summary was developed using a variety of sources, including notes from participants, a recording of the meeting, presentation slides, and a meeting summary generated by artificial intelligence (AI). Any sections of the meeting summary based on AI-generated content were reviewed and edited for accuracy by humans. The primary authors of the meeting summary were the meeting presenters, Joe Davis, and Mark Moran.