National Capital Region
Transportation Planning Board

TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE MARCH 25, 2022 MEETING

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

MEETING ATTENDEES

MEMBERS, ALTERNATES, AND PARTICIPANTS

- Jonathan Avner (Whitman, Requardt & Assoc.)
- Christine Sherman Baker (Arlington Co. DES)
- Richard Brockmyer (Fehr & Peters)
- Kevin Chai (Fairfax Co, DOT)
- Yucong Du (Jacobs)
- Joel Freedman (RSG, Inc.)
- Dan Goldfarb (MITRE Corporation)
- Eric Graye (M-NCPPC, Montgomery Co.)
- Scott Holcomb (Gannet Fleming)
- Ruochang Huang (Jacobs)
- David Kline (Fairfax County DOT)
- Li Li (Whitman, Requardt & Assoc.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics)
- Vahid Moshtagh (VDOT)

- Srikanth Neelisetty (Transurban)
- Krishna Patnam (AECOM)
- Caroline Pecker (MDOT-SHA)
- Larry Pesesky (WSP, Parsons Brinkerhoff)
- Mark Radovic (Gannet Fleming)
- Ian Rainey (Northeast Maglev)
- Harun Rashid (NVTA)
- Jonathan Rodgers (DDOT)
- Andrew Rohne (RSG, Inc.)
- Rana Shams (MDOT)
- Elham Shayanfar (MDOT)
- Lisa Shemer (MDOT-SHA)
- Rafey Subhani (Mead & Hunt)
- Aichong Sun (AECOM)
- Malcolm Watson (Fairfax County DOT)
- Jim Yang (M-NCPPC, Prince George's Co.)

COG STAFF

- William Bacon
- Mackenzie Bosco
- Tim Canan
- Anant Choudhary
- Joe Davis
- Paul DesJardin
- Nazneen Ferdous

- Charlene Howard
- Ken Joh
- Sanghyeon Ko
- James Li
- Mark Moran
- Ray Ngo
- Wanda Owens

- Jinchul (JC) Park
- Meseret Seifu
- Kanti Srikanth
- 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 January 28, 2022 meeting of the TFS were approved.

2. FORECASTING TRAVEL DEMAND FOR THE BALTIMORE-TO-WASHINGTON MAGNETIC LEVITATION TRAIN SERVICE

This item was presented by Mr. Rainey and Mr. Pesesky, who spoke from a set of presentation slides. Mr. Rainey stated that The Northeast Maglev (TNEM) is proposing to deploy Japanese superconducting maglev technology for rail service between Washington, D.C. and New York City, with an initial segment between D.C. and Baltimore. With a cruising speed of 311 mph (500 kph), a trip between D.C. and Baltimore could be done in about fifteen minutes. There are two proposed routes between Baltimore and D.C., and both routes would have a stop at BWI Airport. Regardless which route is selected, 80% of the route will be tunneled. The Federal Railroad Administration (FRA) has placed the Environmental Impact Statement (EIS) on pause to evaluate further project details. Once this pause is lifted, TNEM will continue to work with FRA, the Maryland Department of Transportation (MDOT), and other stakeholders to prepare a final EIS. Once the final EIS is prepared, TNEM would move to final design. Construction is estimated to take at least 7-10 years.

Regarding slide 35, Mr. Vuksan asked why SCMAGLEV commuter trips purposes comprise a lower share of trips and a higher percentage of non-business trips than MARC trains carry between Baltimore and Washington. Mr. Pesesky responded that the expected fares for SCMAGLEV, which would be roughly comparable to Amtrak Acela fares between Baltimore and Washington, would be attractive to those commuter trips that are time sensitive. Much of the non-business travel is expected to be tourist travel with tourists willing to spend more on travel to get the most out of their vacation time.

In the chat window, Mr. Patnam asked the presenters to discuss the travel time difference between SCMAGLEV and other modes. Mr. Pesesky said that riding MARC is roughly is about 50-60 minutes between D.C. and Baltimore. Amtrak Acela is about 25-35 minutes. And, SCMAGLEV would be about 15 minutes, including the stop at BWI. The auto time between Baltimore and Washington is about 50-60 minutes.

Mr. Xie asked whether the study did a sensitivity analysis, and, if so, which alternatives were evaluated? Mr. Rainey said that we did do a fare sensitive, however the project sponsor did not make the sensitivity analysis available for the DEIS. Alternatives evaluated, in addition to the No-Build, included two similar Build alternative alignments and two station options in Baltimore.

Mr. Canaan asked what zone system was used for both the Washington and Baltimore regions, and what conversion table or methodology was documented in the EIS to forecast household income. Mr. Pesesky said he didn't have an answer for the question, but he could find out and get back with you so you could share the information with the subcommittee. Ms. Shemer asked whether the trips shown on slide 33 were annual trips or daily trips. Mr. Pesesky said they were annual trips.

In the chat window, Ms. Li asked where the proposed location of the station in DC is, and will the station be planned to connect to the airports. Mr. Rainey said that the DC station will be underground at New York Ave., just east of Mount Vernon Square with several entrances. Mr. Rainey said the only airport connection at this point would be BWI.

Mr. Moran asked why the proposed DC station was not planned for DC's Union Station. Mr. Rainey responded that connecting to Union Station requires a curve in the alignment and the curve affects acceleration which also affects time. Also, he noted that planned development at Union Station, e.g., the new concourse and possible future high-speed rail service, would present construction challenges for the SCMAGLEV service. Mr. Rainey also noted that WMATA had expressed concerns about MAGLEV overloading the Red Line at Union Station. Lastly, he said that the Mount Vernon Square area is the center of Downtown DC, between three Metro stations that collectively serve all lines. Mr. Moran asked if it was it challenging to get ridership data from Amtrak for the study. Mr. Rainey said that Amtrak did not provide any data not already available to the public.

In the chat window, Mr. Rashid asked how much the one-way fare would be. Mr. Rainey stated that civil infrastructure costs are in the DEIS, and other costs are being developed separately from the DEIS.

In the chat window, Ms. Yuanjun Li asked how SCMAGLEV compares to high-speed rail (HSR). Mr. Pesesky said that HSR travels up to 225 mph, while SCMAGLEV travels at 311 mph. The right-of-way footprints are roughly the same. Lastly, SCMAGLEV noise is more instantaneous, while HSR noise is higher on a time-weighted basis. In the chat window, Ms. Yuanjun Li asked about maintenance costs, operational costs, life span, fares for end users, and the environmental impact of SCMAGLEV. Mr. Pesesky said that with SCMAGLEV technology, there is much less friction. So, maintenance wise, there are different considerations between comparing MAGLEV to HSR. Mr. Pesesky noted that, due to the time, he could not respond to all the issues. Ms. Yuanjun Li noted that perhaps the U.S. could learn some lessons from China.

Ms. Shemer asked where the proposed station would be in Baltimore. Mr. Rainey said, the sponsor's preferred location is Cherry Hill because it is above ground with transit-oriented development opportunity, while the Camden Yards location has cost and constructability issues. Both locations are presented in the DEIS, and FRA and MTA do not have a preferred location.

In the chat window, Mr. Zhao noted that slide 33 shows that, according to the study, about 11,380,467 annual auto trips would be diverted to SCMAGLEV, which corresponds to diverting about 30,000 car trips per day, or about 4,000 for the peak hour. He asked for more information about how this number was estimated. Mr. Pesesky said that the model predicts diversions based on people's value of time (VOT). Mr. Moshtagh aske whether the model used an average VOT or a distribution of VOT. Mr. Pesesky said that VOT varied by trip purpose.

3. COG/TPB GEN3 TRAVEL MODEL: STATUS REPORT

This item was presented by Mr. Freedman of RSG and Mr. Xie of MWCOG, who spoke from a set of presentation slides. Mr. Freedman began the presentation by describing Gen3 Phase 1 Model sensitivity testing results. Mr. Freedman explained that the purpose of sensitivity testing is to better understand model sensitivity across a range of potential policies and inputs. Mr. Freedman explained that the sensitivity testing would also be used to inform the scope of work for Gen3 Phase 2 Model development and to transfer knowledge on how to set up and run the model and summarize results from RSG to COG staff. Mr. Freedman noted that sensitivity testing will be repeated in Phase 2. In all, five sensitivity tests were run for Phase 1 with titles of each sensitivity test as follows: 1) Increased Auto Operating Cost; 2) District of Columbia Increased Telecommuting; 3) Arlington Memorial Bridge Closed to Auto Traffic; 4) Frequency of All High-Capacity Transit Service Doubled; and 5) Peak-Period Toll Rates Increased by 50%. The first two sensitivity tests were run and summarized by RSG and Baseline Mobility Group (BMG), and the last three sensitivity tests were ran and summarized by COG staff. Mr. Xie presented the results of the COG sensitivity tests. Each test was described, along with expected outcomes and actual model outcomes. Mr. Freedman and Mr. Xie reported that overall, the model results were reasonable.

Mr. Freedman also reported on the Gen3 Phase 2 Model development scope of work and project schedule.

In the chat window, Ms. Yuanjun Li asked whether the auto operating cost test affected only auto, or whether it also affected transit fares. Mr. Freedman noted that fares were not changed as a part of the test.

Mr. Srikanth asked whether any of the model responses surprised staff. Mr. Freedman answered, yes, we were surprised when we ran the increased telecommuting frequencies scenario, we saw, as a result of the feedback in the model system, more workers choosing to work in DC. Because of the decrease in congestion, it made the work-location-choice model reflect more accessibility to DC. So, more workers choose to work there, even though the test did not include any changes to DC employment. So, that is something to take a closer look at in Phase 2. Mr. Freedman noted that we do have a mechanism in the model that tries to match the number of workers and work locations to the employment in every zone, but it is not perfect. We are working on an improvement to that model for the ActivitySim consortium. Hopefully, it will be done in time to pull into the Gen3 Model as a part of the next phase of work.

In the chat window, Mr. Moshtagh asked if the TPB staff have any plans to 1) assume a higher long-term level of telework, accelerated by the pandemic; or 2) assume any other changes, such as changes in diurnal travel patterns. Mr. Moran said that TPB staff is still looking into that. Mr. Freedman noted that a lot of agencies are struggling with these issues right now. Mr. Canan stated that COG is currently preparing for Round 10 of the Cooperative Forecast, including how higher levels of telework could affect the land activity forecasts, such as due to changes in the use of commercial real estate. Mr. Srikanth noted that COG's State of the Commute Survey, which occurs every three years, is underway right now and could help with some of these issues.

Mr. Freedman said that he has seen some sensitivity tests, run with CT-RAMP for Southern Oregon a couple of years ago. He noted that he could try to find those, if anyone is interested. Ms. Yuanjun Li noted that she would like to learn more about the new features of the Gen3 Model, such as the inclusion of non-motorized travel modes. This could be at a future TFS presentation. Mr. Freedman then briefly described how non-motorized modes are included in the Gen3 Model.

As follow up, Mr. Moshtagh what happens with the non-motorized trips that are estimated in the Gen3 Model. For example, do they get assigned to a non-motorized network? Mr. Freedman said we do not currently assign non-motorized trips. But we create trip tables for them. And they are in the disaggregate trip list. So, you could do further analysis on who is making them and look at the O-D pairs. Assignment of non-motorized trips could a future enhancement.

Mr. Xie presented results and findings from three sensitivity tests that COG staff conducted for the Gen3, Phase 1, Model, including the Arlington Memorial Bridge Closure Test, the Increase High Capacity Transit (HCT) Frequencies Test, and the Increase Variable Toll Rates Test. For each sensitivity test, Mr. Xie laid out expected outcomes and compared them to the actual outcomes based on the sensitivity testing results. At the regional level, Mr. Xie found that the directionality of model responses was generally reasonable although the magnitude of them were usually small. At the sub-regional or sub-modal level, Mr. Xie noted some unexpected model changes that may warrant an in-depth analysis in the Gen3 Model, Phase 2, development. Mr. Xie concluded that the actual outcomes of the three sensitivity tests generally aligned with COG staff's expectations. In the end, Mr. Xie shared the next steps for the Gen3 Model, Phase 2, sensitivity testing. Mr. Xie did note that one test (Peak-Period Toll Rates Increased by 50%) resulted in less model sensitivities than expected. This test will be further investigated in Phase 2.

Mr. Srikanth asked if Mr. Xie was surprised about the magnitude of model changes. Mr. Xie responded that COG staff did pay attention to the magnitude of the model changes in the sensitivity tests. For example, staff noticed that in the Bridge Closure test, the magnitude of model responses at the regional level was quite small, which is consistent with what COG staff found in the same sensitivity test for the Gen2 Model. In addition, Mr. Xie noted that the magnitude of the model changes is also dependent on the geography of analysis. While the Phase 1 sensitivity analysis was focused on the modeled area, staff could also look at smaller subareas in Phase 2, for which we may see more significant model changes. Mr. Vuksan stated that the findings from these sensitivity tests are not very different than those from the prior Long-Range Plan Task Force (LRPTF) study and a Federal Highway Administration (FHWA) Arlington Memorial Bridge planning study. Mr. Vuksan also suggested that while the Gen3 Model can provide more details on travel behaviors, the magnitude of the regional model impact is similar to that from our trip-based model. Mr. Moran noted that while gas prices had doubled from $2 per gallon to $4 per gallon in the last two years, traffic volumes had not significantly decreased. So, it is possible that some larger changes in the model inputs may not move travel metrics as much as you might think.

4. ROUNDTABLE DISCUSSION OF CURRENT MODELING EFFORTS AROUND THE REGION

Ms. Shams noted that MDOT is putting together a connected and automated vehicle (CAV) survey, which is supposed to be distributed on April 4. This survey has received approval from the MDOT secretary. The purpose of this survey is to understand behaviors and acceptability of a fully level-5 autonomous vehicles. The survey asks about existing vehicle availability and any kind of limitations on their usage. The survey also asks about how long they would be willing to wait on an Uber or Lyft. This survey should help us identify what proportion of the population (in Maryland) would be unwilling to take a CAV. It is hoped that some of the survey findings could be useful in determining the best way to represent CAVs in travel demand modeling. Ms. Shams said that 20,000 postcards would be sent out with a QR code and a call-in number. MDOT hopes that everyone could start spreading the word and getting as many participates as possible. The current plan is a June cut-off date.

5. OTHER BUSINESS

B. Planned guest presentations at upcoming TFS meeting

Mr. Moran noted for the May 20 meeting, we do not currently have a scheduled non-COG staff presentation, so he urged anyone who was interested in making a presentation at the May TFS meeting to please contact him. In terms of the COG presentations at the May 20 meeting, we plan to have a presentation of the results from the current air quality conformity analysis as well as a discussion about the latest performance analysis of the Long-Range Transportation Plan (LRTP), both of which will be discussed at the April Technical Committee and TPB meetings. We will also give a status report on the Gen3 Model development, as we have been doing at many recent TFS meetings. We are also considering having a presentation on staff's review of using Bentley Cube's Public Transport (PT) module to do multi-pathing for transit assignment, as opposed to the current single, best path approach that is used in the Gen3 Model, Phase 1.

Mr. Moran noted that, for the July 22 TFS meeting, we have a presentation planned on the Maryland Statewide Travel Model (MSTM), by MDOT SHA staff. For the November 18 TFS meeting, we are planning to have a presentation from the Baltimore Metropolitan Council (BMC) on their activity-based travel model, InSITE.

C.   Next meeting scheduled for Friday, May 20, 2022

6.   ADJOURN

The meeting adjourned at about 12:00 noon.