National Capital Region
Transportation Planning Board

Approved
As of 3/15/19

TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE NOVEMBER 30, 2018 MEETING

Meeting time & location: 9:30 AM to 11:45 AM, Metropolitan Washington Council of Governments

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MEETING ATTENDEES

MEMBERS, ALTERNATES, AND PARTICIPANTS

- Bill Allen (Citilabs) *
- Justin Antos (WMATA) *
- Yohan Chang (Connetics Transportation Group)
- Zuxuan Deng (DDOT)
- Kwasi Donkor (Fehr & Peers)
- Charles Freeman (Frederick Co. Planning)
- Eric Graye (M-NCPPC, Montgomery Co.)
- Adam Groves (PTV)
- Kyeongsu Kim (Connetics Transportation Group)
- David Kline (Fairfax DOT)
- Jaesup Lee (M-NCPPC, Montgomery Co.)*
- Li Li (Whitman, Requardt & Assoc.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics)
- Tim Padgett (Kimley-Horn) *
- Krishna Patnam (AECOM) *
- Harun Rashid (NVTA)
- Aichong Sun (AECOM)
- Jiaxin Tong (Kimley-Horn) *
- William Woodford (RSG)

COG STAFF

- William Bacon
- Anant Choudhary
- Joe Davis
- Greg Grant
- Ken Joh
- Martha Kile
- Sanghyeon Ko
- Arianna Koudounas
- James Li *
- Jessica Mirr
- Mark Moran
- Ray Ngo
- Wanda Owens
- Jinchul (JC) Park
- Jane Posey
- Daniel Son
- Dusan Vuksan
- Feng Xie

* An asterisk indicates that the person attended the meeting remotely via WebEx.

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

1. INTRODUCTIONS AND APPROVAL OF MEETING HIGHLIGHTS

The highlights of the September 21, 2018 meeting of the TFS were approved with one update: The name "C. Patrick Zilliacus" was listed twice on p. 1, in the list of "COG staff."

2. PERFORMANCE ANALYSIS OF THE CONSTRAINED ELEMENT OF VISUALIZE 2045, THE TPB'S LONG-RANGE TRANSPORTATION PLAN

Since Mr. Ritacco was unable to attend this meeting, this item was presented by Mr. Vuksan, who spoke from a set of presentation slides, which were distributed to the subcommittee. Mr. Vuksan briefed the committee on the performance analysis of the Constrained Element of Visualize 2045, the TPB's Long-Range Transportation Plan (LRTP). He focused on the plan performance with respect to estimated travel demand, comparing today's conditions to two future scenarios: 2045 without the LRTP ("No Build") and 2045 with the LRTP ("Planned Build"). In describing the performance of the LRTP, Mr. Vuksan discussed several measures, including mode choice, transit and highway accessibility, vehicle-miles of travel (VMT), and highway congestion.

Mr. Freeman asked why the plan performs better than the previous plans with respect to congestion. Mr. Vuksan noted that TPB staff did not study individual projects in isolation, but he noted that several new projects could result in a reduction in congestion, including MDOT's Traffic Relief Plan, the removal of the Metrorail constraint to and through the regional core, the US 301 expansion in Maryland, and the Montgomery County BRT expansion.

Mr. Rashid asked whether the increases in employment and population near high-capacity transit (HCT) were also related to land use growth in activity centers, and whether focusing growth in activity centers was a policy. Mr. Vuksan stated that the growth in activity centers had an impact on the percentage of population and jobs near HCT. He also noted that this is a result of both COG and local policies encouraging growth in activity centers.

Mr. Donkor asked whether the 3% decrease in VMT per capita considers the recent emergence of Transportation Network Companies (TNCs). Mr. Vuksan noted that the analysis does not explicitly take into the account the TNCs, as the model used in the analysis was based on the 2007/2008 Household Travel Survey (HTS). He also added that the future versions of the model based on the ongoing 2017/2018 Regional Travel Survey will reflect the presence of TNCs on our roadways. Finally, Mr. Vuksan concluded that despite that omission, recent comparisons of estimated and observed VMT at the regional level provide reasonable matches between estimated and observed VMT.

3. AIR QUALITY CONFORMITY ANALYSIS OF THE CONSTRAINED ELEMENT OF VISUALIZE 2045

This item was presented by Ms. Posey, who spoke from a set of presentation slides, which were distributed to the subcommittee. She noted that the air quality conformity analysis was for the financially constrained element of Visualize 2045. She listed the analysis years. She discussed the changes since the 2016 Constrained Long-Range Plan (CLRP) MDOT/VDOT off-cycle amendment conformity analysis, mentioning updates to the land activity data, the vehicle fleet information, the travel demand model, and project inputs. Ms. Posey told the group about the removal of the Metrorail constraint in the travel model. She displayed a copy of the conformity project input table and noted that the document is available online. She listed the pollutants analyzed and reviewed the emissions graphs, describing how the emissions levels are below the mobile budgets. She pointed out that the conformity report is available on the COG website.

There were no questions.

4. STATUS REPORT ON THE TPB'S PRODUCTION-USE TRAVEL DEMAND FORECASTING MODEL

This item was presented by Mr. Moran, who spoke from a set of presentation slides, which were distributed to the subcommittee. COG/TPB staff maintains at least two regional travel demand models: an adopted, production-use model and one or more developmental models. This presentation was about the production-use model, known as Generation-2/Ver. 2.3.75, which was adopted by the National Capital Region Transportation Planning Board (TPB) on Oct. 17, 2018, and which is a member of a family of models known as Ver. 2.3. The latest update to the Ver. 2.3 family of models (Ver. 2.3.75) was used for the most recent air quality conformity (AQC) of the LRTP. COG/TPB staff is currently finalizing the Ver. 2.3.75 model user's guide and transmittal package, both of which should be ready by early December. Mr. Moran also discussed the differences between the Ver. 2.3.75 model and its predecessor, Ver. 2.3.70, which was used for last year's AQC analysis.

Ms. Li Li asked for more information about a new feature in the model that checks for disconnections between the highway network and rail stations. Mr. Moran explained that, in the past, if a station was disconnected from the highway network, there would be no overt indication of this fact (it would be discovered only by examining station usage and realizing that there was no drive access to that station). Now, the model will produce an error message and stop running if any station is disconnected from the highway network. Mr. Freeman asked if TPB staff could send an email to the TFS when the Ver. 2.3.75 model transmittal package is ready. Mr. Moran said that he could do that.

5. STATUS REPORT ON THE TPB'S DEVELOPMENTAL TRAVEL DEMAND FORECASTING MODELS

This item was presented by Mr. Moran, who spoke from a set of presentation slides, which were distributed to the subcommittee. Mr. Moran's presentation covered two main areas: 1) the strategic plan for improving the TPB travel model; and 2) the TPB's two current developmental models: Generation-2/Ver. 2.5, which is undergoing testing by TPB staff, and Generation-3, whose development is about to begin soon.

The strategic plan was developed in 2015 with consultant assistance and has been modified since then to reflect schedule changes. The strategic plan has three phases:

1. Updates to the existing aggregate, trip-based, "four-step" travel demand model (essentially updating Gen2/Ver. 2.3 to Gen2/Ver. 2.5). Planned duration: FY 2016 to FY 2019.
2. Development of a next-generation (Gen3) model with existing household travel survey and transit on-board data. Planned duration: FY 2019 to FY 2022.
3. Development of a Gen4 model with new data, including the 2017-2018 Regional Travel Survey. Planned duration: FY 2023 to FY 2024.

Regarding the Gen2/Ver. 2.5 model, Mr. Moran discussed

- The model timeline (slide 6).
- The four enhancements that had been sought from Ver. 2.5 and which of those enhancements were achieved (slide 7). One of these enhancements has been achieved, but the other three have been only partially achieved.
- A summary of the recent model validation efforts (slide 8).
- Current issues, concerns, and status (slides 9-10).

Regarding slide 7, Mr. Donkor asked how the TPB staff validated the non-motorized model. Mr. Moran said that TPB staff neither calibrated nor validated the non-motorized model, since that work was done by the consultant. The estimation/calibration of the non-motorized model is discussed in in

Chapter 3 of the consultant report.[1] The validation is covered in Chapter 7. According to the report, the non-motorized model was validated to data from the household travel survey and the American Community Survey (ACS).

Regarding the Gen3 model, Mr. Moran discussed the revised schedule, including the following planned dates:

- Request for Proposals (RFP) advertisement period: Jan. to Feb. 2019
- Vendor selection: Feb. to Mar. 2019
- Start of contract: Apr. 2019

Regarding the type of model to use for the Gen3 model (trip-based, tour-based, activity-based, or hybrid of these), Mr. Donkor asked whether TPB staff will direct which type of model is to be used for Gen3, or let the responding consultants decide. Mr. Moran said that that is still to be determined. Any such specification would appear in the upcoming RFP. Mr. Patnam asked whether the start of the RFP advertisement period would be before or after the TRB Annual Meeting. Mr. Moran said that the start of the advertisement period would occur after the TRB Annual Meeting.

6. STATUS REPORT ON THE 2017-18 COG/TPB REGIONAL TRAVEL SURVEY

Dr. Joh presented this item and distributed presentation slides to the subcommittee. He provided an update on the 2017-2018 Regional Travel Survey, a once-in-a-decade household travel survey for the National Capital Region that launched on October 3, 2017. He provided an update on the recruitment and completion rates to date. Dr. Joh also gave an update of the Hispanic and Latino outreach for the survey and the survey schedule.

An attendee asked when a good time would be to conduct the next survey. Dr. Joh responded that regional household travel surveys have been conducted every ten years, because it is a substantial effort to plan for the survey and due to its large budget (e.g., $2.5 million for the 2017/2018 Regional Travel Survey).

Ms. Yuanjun Li asked what the “in” and “out” designations mean for jurisdictional strata on Slide 4. Dr. Joh responded that “in” refers to COG-designated activity centers within the jurisdictional strata which are higher density, mixed used areas that were oversampled in the survey, while “out” are non-activity centers.

7. PARTICIPANT STATISTICAL AREAS PROGRAM (PSAP) FOR CENSUS 2020

Ms. Kile presented this item and spoke from a set of presentation slides which were available in electronic format. She provided a brief history of the past small-area delineation programs. In the past, local jurisdictions were asked to delineate Census Block Groups and Census Tracts. This was a population-based delineation where each block group had to meet a population or household minimum. The MPOs were asked to delineate Census Transportation Analysis Zones (TAZs), these boundaries are created with more of an emphasis on land use and, to the extent possible, followed the boundaries of the TPB TAZs. Census data were released by the Census TAZ geography for Census tabulations including the Decennial Census, the American Community Survey (ACS) and Economic Censuses. These tabulations provided MPOs with journey-to-work origin and destination data, residential and workplace demographic attributes, and land use forecasting inputs.

Beginning with Census 2020, the Census Bureau will no longer provide data by Census TAZ. Census TAZ/PSAP will be one process. The Census Bureau is currently finalizing the rules for the delineation process. The proposed delineation rules will allow for the delineation of special-use block groups

[1] Cambridge Systematics, Inc. and Gallop Corporation, “FY 17 Task Orders,” Final Report (Metropolitan Washington Council of Governments, National Capital Region Transportation Planning Board, June 30, 2017), https://www.mwcog.org/file.aspx?&A=YiUe54YhmPVA0q1lahkVpmf4CjB%2fkVfhr3mZDJJ1ACM%3d.

which would have very little or no population. Special-use block groups allow for separation of high employment zones from high population zones resulting in more accurate data for travel models.

COG/TPB staff are planning to form a working group with the PSAP Primary Participation Organization (PPO) staff from each of the local jurisdictions to encourage block group delineation that will be consistent with TPB TAZ geography. The goal is to delineate block groups that would be equal to, nesting to, or nesting from TPB TAZs. Nesting Block Groups and TAZs provides a common and persistent geography by which to analyze trends. Without nesting, unnecessary approximations are needed to allocate data to the correct zone.

The Census Bureau is still finalizing the PSAP rules and the participant list. Once these are finalized, the working group will meet to determine the next steps.

Mr. Moran asked if any population is allowed in a special-use block group. Ms. Kile explained that population data will be suppressed for any of the special-use block groups, so the goal is to delineate special-use block groups that have as little population as possible. Ms. Yuanjun Li asked if there was a way to use a combination of employment and population to delineate a block group. Ms. Kile explained that when the decision to eliminate Census TAZs came out, a group of MPOs proposed using a combination of employment and population criteria to delineate block groups, but the Census Bureau decided to use special-use block groups instead.

8. NORTHEAST MEGAREGION TRAVEL DEMAND AND INVESTMENT MODEL

This item was presented by Mr. Moran, who spoke from a set of presentation slides, which were distributed to the subcommittee. Mr. Moran's presentation summarized what he had learned about the Northeast Megaregion Travel Demand and Investment Model from a one-day workshop that he attended on November 9 in Philadelphia. The Northeast Megaregion extends from southern Maine to central Virginia, an area covering 12 states (and the District of Columbia), 50 million residents, and 38 MPOs. The study is being conducted by John Landis, a professor at the University of Pennsylvania, under the aegis of the University Transportation Center for Cooperative Mobility for Competitive Megaregions (CM2). The model is to have three main components (slide 7):

- One inter-metropolitan, multi-modal travel demand model covering passenger trips greater than 50 miles for the following modes: auto, rail, air travel, and possibly bus.
- Four intra-metropolitan travel demand models covering four areas: 1) Boston-Providence-Worcester; 2) Greater New York City; 3) Greater Philadelphia; 4) Baltimore-Washington-Richmond. These models would cover person travel greater than 5 miles, considering automobile, bus, subway and light rail, and commuter rail modes.
- One national-scale freight travel demand model for modeling truck, rail, and air freight flows in and out of major metropolitan areas in the Northeast Megaregion.

Slide 11 showed the status of each of these three main components. Mr. Moran concluded with some TPB staff observations and questions (slide 13).

Mr. Kim asked how the University of Pennsylvania plans to handle modeling bus travel. Mr. Moran noted that there are two types of bus travel: inter-city bus travel, such as Megabus, and within-city bus travel. MPO models typically include the second type, but not the first. Mr. Moran noted that the University of Pennsylvania planned to model within-city bus (and other transit) travel using GTFS data. As for inter-city bus travel, there is paucity of data and the one-day workshop did not really address that topic. Ms. Yuanjun Li asked what type of data will be used to validate the mode choice model(s). Mr. Moran said that he did not recall that subject being discussed at the workshop. She also asked if there is a website for the project. Mr. Moran said that he did not know of one. Mr. Kim said that he had worked with a firm that had analyzed high-speed rail in the Northeast corridor. He noted two data challenges that they had encountered: inter-city bus data and getting inter-city rail data from Amtrak.

9. ANNOUNCEMENT OF NEW CHAIR FOR 2019

The chair of the TFS generally rotates on a calendar-year basis between Maryland, the District of Columbia, Virginia, and WMATA. The last meeting of the year for the TFS is typically in November, so that is generally the time when the outgoing chair is thanked, and the incoming chair is announced (even though the actual date of the rotation is January 1). According to the rotation schedule, 2018 was Maryland's turn to serve as chair, and Ms. Yuanjun Li, from the Montgomery County Planning Department, Maryland-National Capital Park and Planning Commission (M-NCPPC), served as the 2018 chair of the TFS. Mr. Moran thanked Ms. Li for her service to the TPB and the people of the region, and he presented her with a certificate of appreciation, signed by the current chair of the TPB, Charles Allen.

Mr. Moran then noted that, according to the rotation schedule, 2019 would be the District of Columbia's turn to serve as chair. Over the last few weeks, Mr. Moran had coordinated the choice of chair with the District Department of Transportation (DDOT). Today, Mr. Moran announced that DDOT had selected Mr. Zuxuan Deng to be the next chair of the TFS. Mr. Deng introduced himself to the TFS and indicated that he looked forward to serving as the TFS chair in 2019.

10. ROUNDTABLE DISCUSSION OF CURRENT MODELING EFFORTS AROUND THE REGION

Mr. Freeman indicated that Frederick County, MD is developing a county-based model based on the COG model, and he would like to make a presentation to the TFS once the model is completed. Mr. Moran agreed with that idea.

11. NEXT MEETING DATE AND OTHER BUSINESS

The next meeting is scheduled for Friday, January 25, 2019 at 9:30 AM (4th Friday).

Editor's note: As of mid-December 2018, TPB staff is considering cancelling the January meeting due to issues regarding scheduling and staffing. If that is the case, TPB staff would send the TFS an email indicating: 1) the cancellation of the January meeting; and 2) Any updated information that should be transmitted to the subcommittee about current work tasks.