National Capital Region
Transportation Planning Board

Approved
as of 9/20/24

TPB TRAVEL FORECASTING SUBCOMMITTEE

HIGHLIGHTS OF THE JULY 12, 2024 MEETING, 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

- Katie Brinson (Bentley Systems, Inc.)
- Kevin Chai (Fairfax County DOT)
- Xiao Cui (VDOT)
- Dan Goldfarb (ATCS)
- Tony Hoffman (Michael Baker)
- Li Li (Whitman, Requardt & Assoc.)
- Yuanjun Li (M-NCPPC, Montgomery Co.)
- Feng Liu (Cambridge Systematics, Inc.)
- Vipul Modi (Bentley Systems, Inc.)
- Srikanth Neelisetty (Transurban)
- MiYoung Park (Transurban)
- Harun Rashid (NVTA)
- Andrew Rohne (RSG, Inc.)
- Evandro Santos (Prince William Co.)
- Malcolm Watson (Fairfax County DOT)
- Kevin Wyrauch (Prince William Co.)

COG STAFF

- William (Bill) Bacon
- Tim Canan
- Anant Choudhary
- Nazneen Ferdous
- Yu Gao
- Ken Joh
- Mark Moran
- Ray Ngo
- Jane Posey
- Meseret Seifu
- Bahar Shahverdi
- Jessica Storck
- Dusan Vuksan
- Feng Xie

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

Mark 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. This meeting of the Travel Forecasting Subcommittee (TFS) was chaired by Harun Rashid.

2. APPROVAL OF MEETING HIGHLIGHTS FROM THE PREVIOUS MEETING

The highlights of the May 17, 2024 meeting of the TFS were approved without any changes.

3. RECENT DEVELOPMENTS AT BENTLEY SYSTEMS, INC. REGARDING OPENPATHS AND STUDIO

This first part of this item, on OpenPaths, was presented by Vipul Modi, Senior Product Specialist, Bentley Systems, Inc., who spoke from a set of presentation slides. Vipul indicated that Bentley recently announced the release of the OpenPaths brand, which unifies products such as CUBE, EMME, AGENT, DYNAMEQ, and CityPhi, under a single brand available with two license options: OpenPaths Advanced and OpenPaths Ultimate. CUBE, EMME and CityPhi are available under the Advanced edition. The Ultimate edition includes everything under the Advanced edition, plus AGENT and DYNAMEQ. With OpenPaths, users now have the capability to apply any type of travel demand model from an aggregated model to an activity-based model. OpenPaths AGENT eliminates the costly model developing efforts by bringing its automated model calibration features and the ability to use Big Data with ease. OpenPaths also brings a new version of CUBE, OpenPaths CUBE 2024, which brings new file structures, new file formats, new Python-based modelling support and integration with OpenPaths AGENT. The new GIS editor mapping engine brings faster loading to the maps and introduces new expressions for data-driven rendering. The new CUBE API, CubePy, brings Python support for network editing and matrix editing. Other features include a new cluster process, new table and matrix editors and a new run monitor. Users with catalog-based models must convert their models to a project-based model using the included importer and users with script-based models can continue to run the same model as earlier except for some changes in cluster keywords. Bentley invites all modelers to try OpenPaths and enhance their models. Please contact Vipul.Modi@Bentley.com for further information.

Ray Ngo asked about any performance enhancements in OpenPaths, especially with transit skimming and highway assignment. Vipul noted that Cube Voyager remains the same in OpenPaths, so there are no new changes in network assignment itself (highway or transit). With the new CUBE API, there is a possibility to move some of the model components to Python scripts for more efficient travel model runs.

Ray asked whether there would be changes to the pricing of the software maintenance plan, given that users now have additional options (e.g., CUBE users can now access EMME). Vipul said that he could not provide pricing information, so he recommended that users contact Bentley via the webstore for information on annual subscription pricing of the Advanced and Ultimate editions.

Feng Xie asked how COG models can be moved to OpenPaths 2024. Vipul noted that Voyager remains mostly the same, although there are some changes in cluster keywords. Consequently, the transition should be straightforward. However, if the model includes calls to Cube TRNBUILD, then they must be changed to Cube Public Transport (PT), as TRNBUILD is no longer supported in a clean install of OpenPaths.[1] The networks need to be moved to new formats as well so that they can take advantage of new GIS editor for editing/visualization.

Feng noted that COG is developing a new activity-based model that uses ActivitySim, and he asked whether OpenPaths AGENT could still be useful to us. Vipul said that, given that COG's model is a script-based model, it can continue to run as it is however MWCOG can try moving their model components to OpenPaths AGENT and change the workflow as needed.

This second part of this item, on Studio, was presented by Katie Brinson, Senior Sale Representative, Bentley Systems, Inc., who spoke from a set of presentation slides. She indicated that Teralytics

[1] If a user installs OpenPaths on an existing version of Cube which contains TRNBUILD (such as Cube 6.5.1), then OpenPaths will continue to allow the usage of TRNBUILD.

Studio US is now a part of Bentley Systems. The technical team and strategic partnerships will continue to develop a mobility data platform that is purpose-built for transportation planners. She said that there are many DOTs, MPOs, and county-level users leveraging the Studio platform to enhance in-house data availability, usability and shareability through robust and flexible analytical tools. The Teralytics team is available for training and demonstrations on demand by simply contacting Katie (katie.brinson@bentley.com).

Mark asked whether Studio is now owned by Bentley Systems. Katie said yes, Studio US has been purchased by Bentley Systems fully. Mark asked if Katie is the representative for COG? Katie said yes and she provided her email address.

Mark asked whether Studio is included in Bentley subscriptions. Katie noted that Studio is a separate product in the Bentley family that requires an annual subscription. There may be opportunities to include Studio in existing Bentley contracts as an additional line item. The 2019 data in Studio will continue to be available at no cost.

Harun asked whether anyone with an OpenPaths subscription can utilize Studio. Katie said yes, the 2019 data is fully available, while 2022 and beyond requires an active subscription. Harun asked whether interested users should contact her via email to gain access. Katie said yes, and they should email her directly.

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

This item was presented by Feng Xie, who spoke from a set of presentation slides. Feng provided a status report on the Phase 3 development of the Gen3 Travel Model, which is being led by COG staff with on-call support from RSG and Baseline Mobility Group (BMG). Feng went over recent updates to the Gen3 Model, including model enhancements and bugfixes. In particular, he talked about the recent investigation of the mishandling of negative values in the model inputs and the effects of the subsequent fix on modeling results. He also provided a status report on the preparation of model inputs for the upcoming Gen3 Model sensitivity testing. He concluded his presentation with next steps for the Phase 3 development. There were no questions at the end of his presentation.

5. BRIEFING ON THE COG/TPB 2023 WASHINGTON-BALTIMORE REGIONAL AIR PASSENGER SURVEY

This item was presented by Ken Joh, who spoke from a set of presentation slides. He reported that the 2023 Washington-Baltimore Regional Air Passenger Survey (APS) was conducted in October at the three regional airports -- Baltimore/Washington International Thurgood Marshall Airport (BWI), Ronald Reagan Washington National Airport (DCA), and Washington Dulles International Airport (IAD) -- under the oversight of the TPB Aviation Technical Subcommittee. Ken shared the results from the 2023 APS, focusing on weighted tabulations and longitudinal trends from previous surveys, including passenger characteristics, ground access, and preferences and behavior of surveyed air passengers.

Feng asked how much of the changes from 2017, 2019, and 2023 in the airport survey data can be attributed to the impacts of the COVID-19 pandemic, for example, the decrease in business trips, and whether these trends are likely to stay. Ken responded that there are some trends that may be reflective of the pandemic, such as business travel, which has declined especially after the pandemic as more business meetings are being conducted virtually. Ken added that whether these patterns will hold in the long term will be made clear in the next regional air passenger survey, but in the near future, some of the residual effects of the pandemic (like teleworking) are likely to stay.

Xiao Cui noted that the conclusion is that there was a drop in the percentage of business trips. However, she wondered if the drop in percentage could have been accompanied by an increase in the number of business trips in 2023. Ken responded that although he does not have the weighted

enplanements specifically for business and non-business travel, it is likely that both the number of trips and percentage of business travel declined in recent years.

Yuanjun Li asked about ground access modes and wondered how combined modes are considered in the analysis, for example, if one drives to a hotel and then takes the hotel shuttle to the airport. Ken responded that, in the survey, the respondent was asked to select the primary mode of access. Yuanjun also asked whether the survey asked only departing passengers or included arriving passengers. Dr. Joh responded that only departing passengers were surveyed since the survey was focused on ground trips from home and non-home locations to the airport.

Harun noted that the share of non-resident passengers was higher than the share of resident passengers but noted that the ground trip origins were higher for residences than other locations. He asked if this could be explained by family visiting residents in the area. Ken agreed that ground trips to the airport, starting from home locations, may include residents as well as visitors (e.g., family or friends) to the region. Harun also asked when the next regional air passenger survey will take place. Ken responded that the timing for the next survey is not confirmed yet, but typically it has been conducted on a two-year cycle, so, based on that, the next survey will likely take place in 2025.

6. AADT COMPARISON BETWEEN BIG DATA AND TRAFFIC COUNTS

This item was presented by Yu Gao, who spoke from a set of presentation slides. He presented findings comparing traffic counts measured in Average Annual Daily Traffic (AADT) from StreetLight Data and Replica with the latest 2023 traffic counts from the District of Columbia's continuous counting stations and short-term counts. Yu reported on the background of the AADT data from StreetLight, Replica, and the District of Columbia. He explained that, for this evaluation of these Big Data datasets, representative locations for each functional classification group were selected across the District of Columbia.

Yu presented his key findings. He noted that the 2023 AADT estimates from both the StreetLight Data AADT module and the Replica AADT dataset appeared to be reasonable. Particularly the Replica estimates seemed to be accurate. He indicated that the year-to-year AADT comparison from StreetLight Data was tricky for 2023 and the year-to-year AADT comparison from Replica was questionable, especially for the higher functional classification roadway group. Additionally, the StreetLight Data Day of Week and Month of Year traffic pattern did not seem very reasonable, and Replica does not have traffic data for each season of the year and each day of the week. Yu will perform more evaluations in the future and is scheduled to present an update at the September 20 TFS meeting.

Harun asked about the penetration rate of StreetLight Data and suggested requesting more transparency regarding sample size expansion methods from the data provider. Yu responded that StreetLight Data was not very transparent with this information, but he will contact them and find out. He added that, as Mark had suggested, Yu will share his findings with Replica and StreetLight Data and will report the obtained feedback at the next TFS meeting.

7. ROUNDTABLE DISCUSSION OF CURRENT MODELING EFFORTS AROUND THE REGION

Harun asked if any agencies had any planning studies or modeling updates to provide to the subcommittee. But there were no subcommittee updates offered. Harun highlighted ongoing work by the Northern Virginia Transportation Authority on a preliminary bus rapid transit study, with a planned six-to-nine-month modeling effort and mentioned that he plans to get back to this group to share the findings.

8. OTHER BUSINESS

Mark noted that the next planned TFS meeting is scheduled for Friday, September 20, 2024, from 9:30 AM to 12:00 noon.

Regarding planned presentations at upcoming TFS meetings, Mr. Moran noted the following:

- Sep. 20
  - COG/TPB Gen3 Travel Model: Status report (Feng Xie)
  - AADT comparison between StreetLight Data and traffic counts: Additional work since July (Yu Gao)
  - Origin-destination analysis of two big data providers: Replica and StreetLight Data (Zhuo Yang)
- Nov. 22
  - COG/TPB Gen3 Travel Model: Status report (Feng Xie)
  - An update on the status of Travel Demand Modeling in Prince George's County (Manfredo Davila, M-NCPPC, and Krishna Patnam, AECOM)
- Jan. 2025
  - Meeting dates have not yet been finalized for 2025.
  - There are no external presenters planned for the Jan. TFS meeting. Mark encouraged anyone who is interested in making a presentation to contact him.
- Other items

Mark informed the subcommittee about the two job openings available in the DTP, Travel Forecasting & Emissions Analysis (TFEA) Team:

- Transportation Engineer, air quality and climate change, and
- Transportation Engineer, model development and network development.

He mentioned that currently COG is receiving applications and interviews are under way for both positions. He encouraged anyone interested to go on the MWCOG job listings website (https://www.mwcog.org/about-us/human-resources/job-listings/) to see the details and submit an application.

9. Adjourn

The meeting was adjourned at about 11:32 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), via Webex and ChatGPT. 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, Meseret Seifu, and Mark Moran.