

DEVELOPMENT PLANS FOR THE GENERATION 3/NEXTGEN TPB TRAVEL DEMAND FORECASTING MODEL

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Overview

- Strategic plan for TPB model development
- Naming convention for models
- Possible future directions in modeling
- Proposed contracting approach
- Timeline
- Model requirements
- Next steps



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Status

- There have been some delays since January
- This presentation will update the subcommittee about the latest status

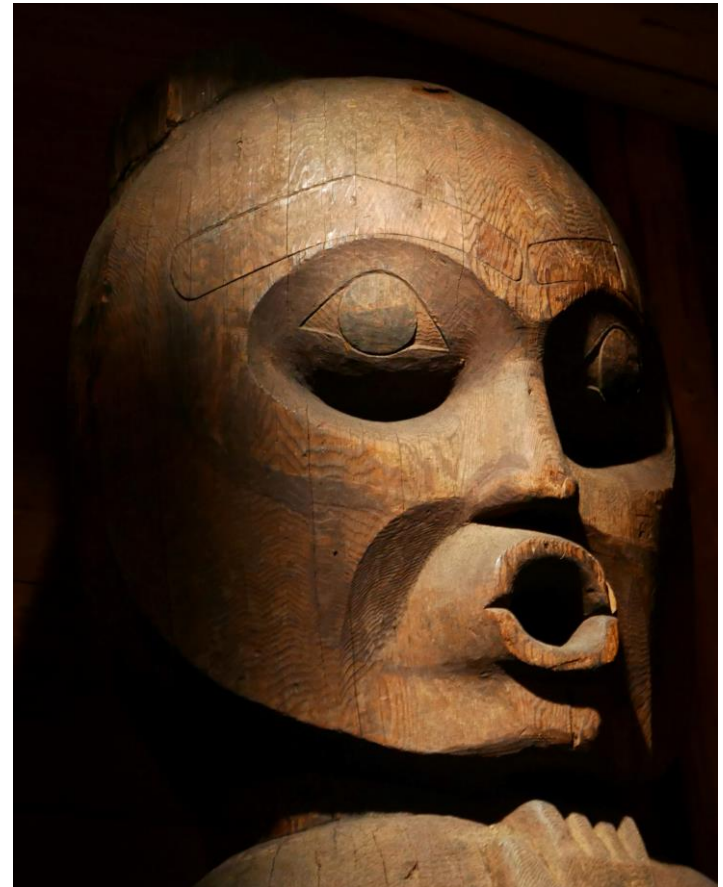


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Strategic plan for improving the TPB travel model

- Strategic plan, as amended in 2018: 3 phases over 8 years

Phase	Description	Duration (Years)	Fiscal Years
1	Updates to the existing four-step model (Gen. 2, Ver. 2.3 & 2.5)	3	2016-2018
2	Development of a Gen. 3 (NextGen) model with existing data	3	2019-2021
3	Development of a Gen. 4 model with new data*	2	2022-2023

* New household travel survey currently underway; To be ready for use in FY 2020.



TPB Travel Demand Forecasting Model: Model naming conventions

Model Role	Name	Unit of Analysis	Version Num.	Strategic Plan	Estimation Data*
Production use	TPB TDFM, Gen. 2	Trip-based	2.3.70	N/A	Existing
Developmental	TPB TDFM, Gen. 2	Trip-based	2.5	Phase 1	Existing
Developmental	TPB TDFM, Gen. 3 (NextGen)	Trip-, tour-, or activity-based? Hybrid?	3.0	Phase 2	Existing
Developmental	TPB TDFM, Gen. 4	Trip-, tour-, or activity-based? Hybrid?	4.0	Phase 3	New

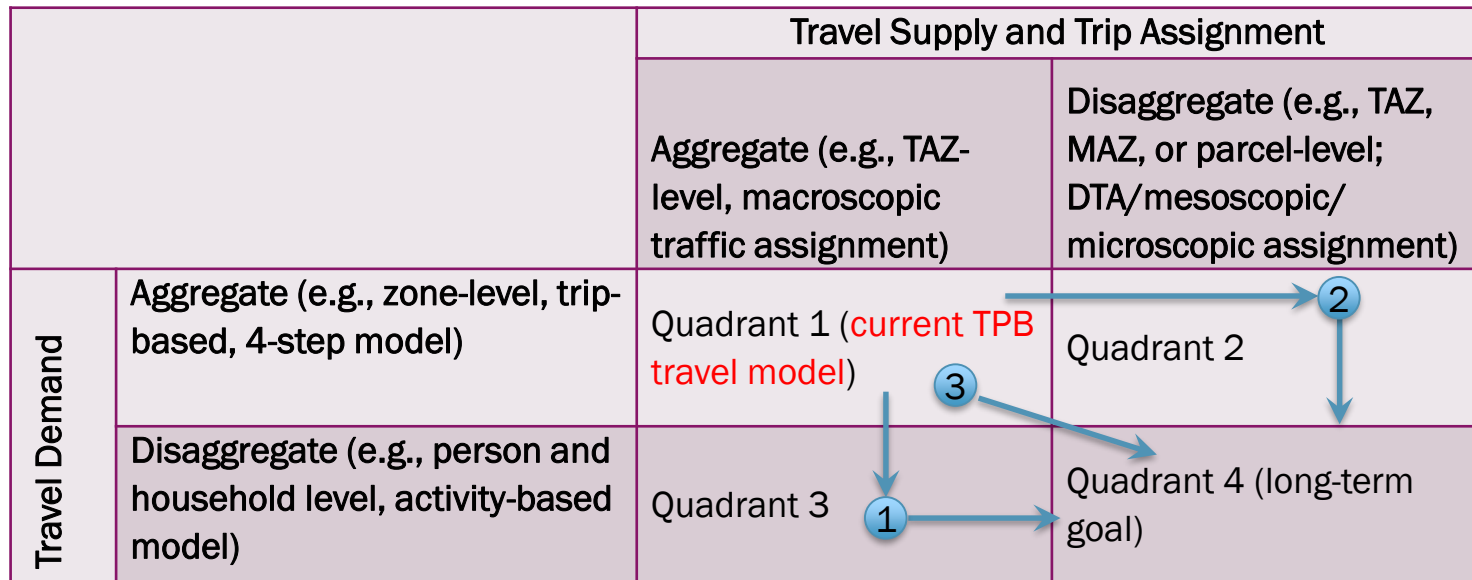
* Estimation Data:

Existing data = 2007/2008 COG Household Travel Survey and transit on-board surveys;

New data = 2017/2018 COG Household Travel Survey and transit on-board surveys
(expected to be ready for model estimation in 2019 or 2020);



Possible future directions in modeling



- Three possible paths between current model and long-term goal



Proposed contracting approach (1)

- First, Request for Information (RFI)
- Then, Request for Proposals (RFP)



Image credit: Artist, Gene Davis,
Smithsonian American Art Museum



Proposed contracting approach (2)

- Request for information (RFI)
 - Includes product requirement document (PRD)
 - **Goal:** To solicit input from interested vendors/consultants about their proposed solution to our modeling needs, as described in the PRD.
 - Meant to be an interactive, open-ended period, where TPB staff may follow up with one or more consultants about proposed solutions
 - Proposed review process
 - Before issuing RFI: Share PRD with TFS and get feedback (include consultants?)
 - After issuing RFI: Consultants submit proposed solutions. Consultants are free to provide feedback on the PRD that may be incorporated into a revised PRD, which may be referenced in the RFP
 - Consultant proposals submitted in response to RFI/PRD: Reviewed by TPB staff, but no one else



Proposed contracting approach (3)

- Request for Proposals (RFP)
 - Includes the scope of work (SOW) and may reference a revised PRD
 - Contents of the SOW (and revised PRD) guided by information obtained in the RFI process
 - Goal: To select a consultant to develop Gen. 3/NextGen travel model
 - We will follow COG's normal contracting procedures
 - Our contracts and purchasing manager sends all RFIs and RFPs to the Vendor Registration System on the MAPT website (www.midatlanticpurchasing.net)
 - Vendors interested in following RFIs/RFPs should go to this website and sign up for auto notifications about new postings
 - Ultimately, the RFI/RFP will appear on COG's Bids and RFP webpage (<https://www.mwcog.org/purchasing-and-bids/cog-bids-and-rfps/>)



Overview timeline

Step	Approx. Duration	Approx. Dates
Request for Information (RFI) and PRD	5 months*	Jan. to Jun. 2018
Request for Proposals (RFP) and SOW	2 months**	Jun. to Aug. 2018
Vendor selection	1 month	Sep. 2018
Start of contract		Oct. 2018
Investigations (consultant)	4 months	Oct. to Feb. 2019
Decisions (TPB staff)	3 weeks	Feb. to Mar. 2019
Development and implementation of NextGen model	16 months	Mar. 2019 to May 2020
Testing, sensitivity analyses, and updates	16 months	May 2020 to Aug. 2021
Final decision: Is NextGen model ready for use?		Aug. 2021
End of contract		Aug. 2021

* About 1.5 months between advertisement of RFI/PRD and vendor responses
 ** About 1 month between advertisement of RFP/SOW and vendor responses



Upcoming target dates

- Finish writing PRD: End of March
- TPB staff review: Early April
- Finish RFI: Early April
- Advertise RFI: April 30 to June 11 (though dates could slip)



Model requirements (1)

- Mandator or non-mandatory
 - Mandatory requirements must be met to have a satisfactory model
 - Non-mandatory items: Consultants may propose which requirements should be part of an updated travel model
- Priority
 - For non-mandatory requirements, TPB staff will rate each requirement as having one of three priority levels: High, medium, low.
 - Given limits on time and resources, consultants may need to propose an updated model that includes only a subset of the non-mandatory requirements.
 - The three priority levels will help consultants choose which requirements/updates to include in their proposal for the NextGen model



Model requirements (2)

- Functional requirements (example categories)
 - Minimum requirement
 - Model form
 - Travel modes represented
 - Modeling capabilities that span more than one model step
 - Model inputs
 - Socio-economic models
 - Trip generation
 - Trip distribution
 - Mode choice
 - Trip assignment



Model requirements (3)

- Usability requirements (examples)
 - Model run time
 - Usage by TPB staff
 - Usage by other local-area modelers (state DOTs, local governments, consultants)



Model requirements (4)

- Technical requirements (examples)
 - Hardware
 - Software
 - Version control system and bug-tracking software
 - Software to manage transportation networks used by the travel model
- Support requirements, including expectations about TPB staff and consultant support



Next steps

- Finish writing PRD and RFI
 - Internal COG/TPB review (early April)
 - TFS review of PRD (mid-April)
- Advertise RFI (end April to early June)
- RFI responses due (June 11)
- TPB staff review of responses (June)
- RFP (June – Aug. 2018)

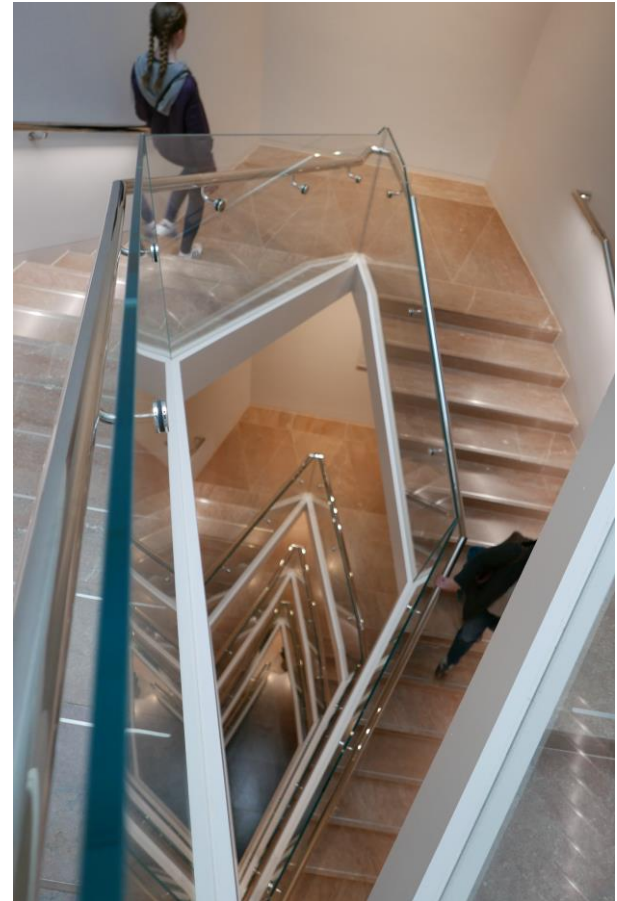


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Acknowledgements

- Ron Milone and Ray Ngo, for review of presentation and review of product requirements document (PRD), which is currently underway

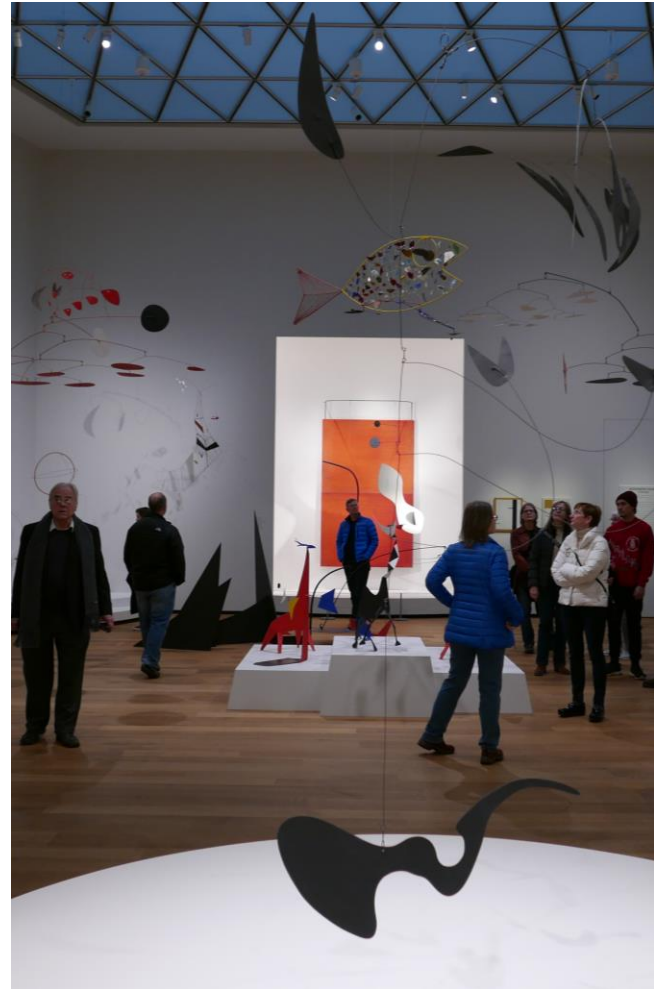


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