

# TPB'S PRODUCTION-USE TRAVEL DEMAND FORECASTING MODEL

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## Status Update

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TPB Travel Forecasting Subcommittee  
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# Agenda

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- TPB's current production-use travel model: Gen2/Ver. 2.3.78
- TPB's next production-use travel model: Gen2/Ver. 2.4



# Current Production-Use Model

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- Gen2/Ver. 2.3.78 Model became the adopted, production-use model on March 18, 2020, as the TPB approved the Air Quality Conformity (AQC) analysis of the 2020 Amendment to Visualize 2045.
- Gen2/Ver. 2.3.78 Model/network transmittal package became available for data requests on April 16, 2020.
- Between April 16 and now, TPB staff has handled four data requests for the Ver. 2.3.78 Model (two from local government; two from consultants)



# Contents of Transmittal Package

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- Model inputs for each scenario year: TAZ-level land use and transportation networks
  - 2017, 2019, 2021, 2025, 2030, 2040, 2045
  - 2017, though not part of air quality conformity analysis, was included to provide base-year network inputs
- Model scripts and batch files
- Model documentation
  - Network documentation
  - Travel model user's guide
  - Transmittal memo
- Model outputs are not included in transmittal package, due to large size (10 GB per scenario => 70 GB)



# What's New in Transmittal Package?

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- Very minor technical fixes to the previous adopted, production-use model
  - No changes in model results, 2.3.78 vs. 2.3.75
- Updated network inputs
  - Changes to network coding that reflect project updates in the Long-Range Plan (2020 Amendment to Visualize 2045 vs. Visualize 2045).
  - Fixes to minor network coding errors
- Updated land use inputs
  - Adjustment of employment data for some jurisdictions to ensure a consistent definition across the entire modeled area (Round 9.1A vs. Round 9.1)



# Next Production-Use Model: Gen2/Ver. 2.4

- TPB staff is re-running all of the model years in the recent AQC and reviewing model results to determine if any final updates need to be made
- TPB staff is preparing a transmittal package for Ver. 2.4
- Ver. 2.4 Model expected to become next production-use model in one of two ways:
  - An off-cycle AQC analysis (if one occurs at a date that fits the release plans). TPB takes action on AQC => adopted model
  - By conducting our own tests and deeming that the model is ready for production use. TPB takes no action => TPB staff declares model ready for production use
- Currently planning for fall release of model
- Gen2/Ver. 2.4 will be used until Gen3 Model is ready



# Preparation of Transmittal Package

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- Re-run all the model runs for each scenario year
  - Use the same land use and network inputs as in the Ver. 2.3.78 transmittal package
  - Re-estimate tolls
- Summarize model outputs for final QC/QA
- Update documentation
  - Major updates to travel model user's guide
  - Update to network document
  - Update to transmittal memo



# What will be New in Transmittal Package

- Major model refinements implemented between Ver. 2.3.78 and Ver. 2.4 (equal to Ver. 2.3.86):
  - More accurate representation of external trip travel patterns
  - Improved modeling of commuter rail trips
  - Re-calibrated nested logit mode choice model
  - Overall improvement of highway and transit validation
  - Ability to handle extended node ranges for jurisdictions
- Possible updates to model inputs in the transmittal package:
  - If the Ver. 2.4 Model is used for an off-cycle AQC analysis and becomes an adopted, production-use model with a TPB action on the AQC, model inputs will be consistent with those to the AQC analysis
  - If the Ver. 2.4 Model is declared by TPB staff for production-use without a TPB action, the transmittal package will include the same network and land use inputs as Ver. 2.3.78 but updated toll files





# Acknowledgements

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- Mark Moran, Director of Travel Forecasting and Emissions Analysis Team
- Model Development Group: Meseret Seifu, Jim Yin, Ray Ngo, Sanghyeon Ko
- Model Application Group: Dusan Vuksan, Jane Posey, Anant Choudhary
- Contractor: Ron Milone



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