



TransLink Modeling & Forecasting Fall 2022 Update

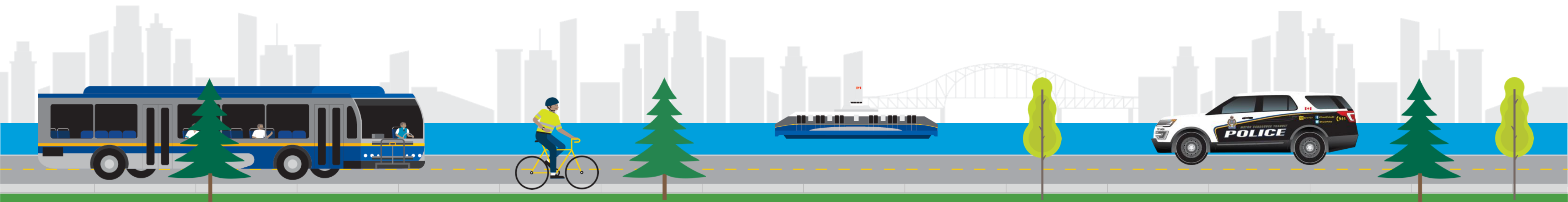


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Agenda

Arrival and Snacks	09:00	09:15
<i>TransLink Forecasting Fall 2022 Work Program Update</i> - Reid Keller, TL Forecasting	09:15	09:45
<i>Fall 2023 Trip Diary Update</i> - Sumit Bindra, TL Forecasting	09:45	10:00
<i>RTM 3.6 Overview</i> - Sumit Bindra, TL Forecasting	10:00	10:30
Break	10:30	10:45
<i>Metro Vancouver Land Use Forecasting</i> - Sinisa Vukicevic, Metro Vancouver	10:45	11:10
<i>Bus Service Types in the RTM: Capturing Differentiated Operating Characteristics</i> - Gaby Monagan, McElhanney	11:10	11:30
<i>A (brief) History of Regional Modelling</i> - Harvey Harrison, McElhanney	11:30	11:50
Networking	11:50	->



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Welcome

- Good to see everyone again!
- Last virtual meeting in May 2021
- Last in person meeting in October 2019
- First simulcast meeting



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Last Meeting May 2021

Expected Timelines

- RTM 3.5 is available
- RTM with disaggregated long-term conditions 2021/2022
- Full ABM 2023/2024



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Changing World, Changing Priorities, Changing Focus, New Tools

- Addressing changes in both travel behavior and policy focus
 - Long-term behavior change from COVID19 Pandemic
 - Shift to bus-based focus for transit expansion (T2050 and Ten-year plan (10YP))
 - Increased focus for analysis of individual characteristics (equity)



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Reflecting Long-Term Changes to Travel Behavior

- On-going forecasting with uncertainty analysis – Numerous Previous Presentations
 - Results of Covid recovery modeling to be shared shortly in a subsequent presentation
 - Proved effective in replicating new travel behavior
 - Need to address new travel behavior for current planning projects
 - **Take lessons learned from uncertainty analysis to use in RTM forecasting**



Change in Planning Focus

- Bus-based transit focus in T2050 and 10YP
 - Different bus service types have different characteristics and user preferences
 - Buses in RTM 3.0 – 3.5 all have the same service characteristics in the model
 - With exception of BRT option
 - Need to reflect new service types in planning these projects (subsequent presentation)



Best-practice disaggregate model

- On-going work with expert panel for development program
 - Limited benefit to have disaggregate modeling with trip-based daily activity
 - Out-dated trip-diary (pandemic behavior changes)
 - Increased focus on equity analysis
 - Decision to move directly to ABM



Updated Development Plan

- Short-term - Early 2023 - RTM 3.6
 - Optional input files to adjust for post-pandemic residual travel behavior changes
 - Additional features for Bus-Based Planning
- Long-term – Early 2024 and beyond – Activity-based Model (ABM) + Trip Diary
 - Disaggregate model with ability to summarize results by individual characteristics
 - More detailed aspects of travel-behavior
 - Trip Diary with new travel behavior



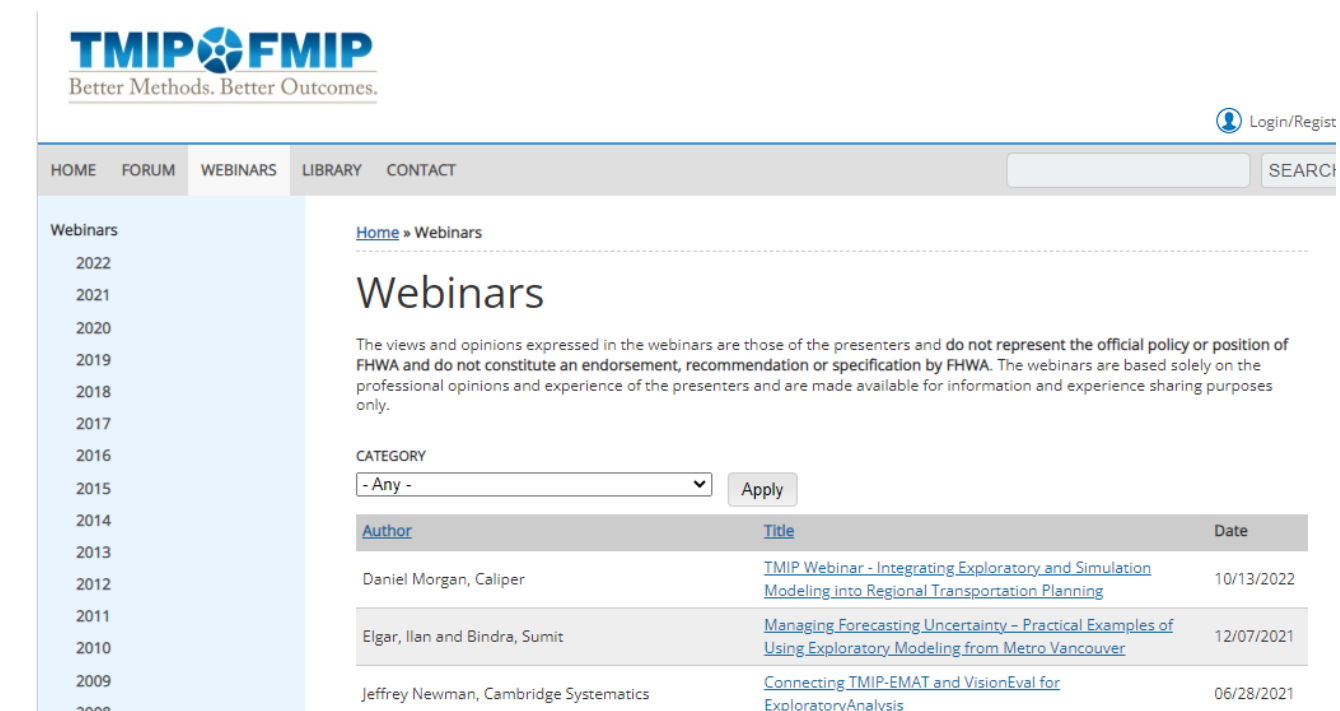
RTM 3.6: 2022 Base Year

- 2022 Networks
 - Updated road networks with newly completed projects
 - Update transit networks with current routes and headways
- Land Use Interpolated to 2022
 - per Metro Van
 - Will be checked against municipal totals
 - Census 2021 not yet available



RTM 3.6: Pandemic-Legacy Travel Behavior

- Uncertainty analysis to determine behavior change and level of response
 - 1 year ago transit at ~40% of pre-pandemic ridership predicted 82% currently ~80%
- Using this analysis to create set of input to adjust 2017 based RTM behavior to 2022
 - Default could be set to include or exclude
 - Can be updated as situation changes
 - Not clear if Fall 2022 is equilibrium or further changes coming
- Further validated/calibrated with recent data
 - Surveys
 - Counts (transit / auto)



RTM 3.6: Bus-based transit planning

- Increased sensitivity for specialty services that are the focus of T2050 and 10YP
 - BRT
 - Long-range commuter service
- Enhanced ability to code other bus features
 - BRT dedicated facilities
 - Bus Lanes (all buses)
 - Queue jumps



Now Have Two Regional Travel Models

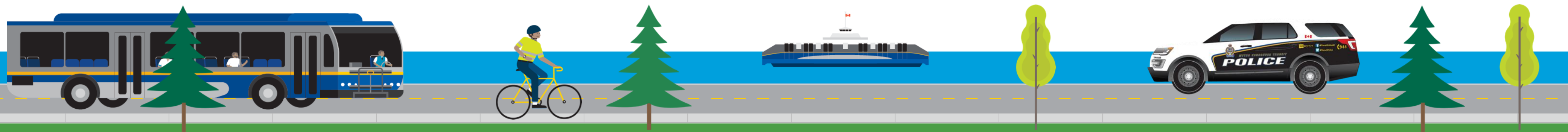
- RTM – Trip-based model currently in practical use
- <??> - As yet to be named activity-based model (ABM) under-development



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ABM: Development Stages

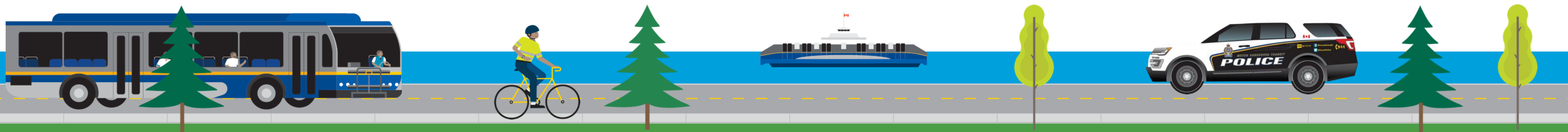
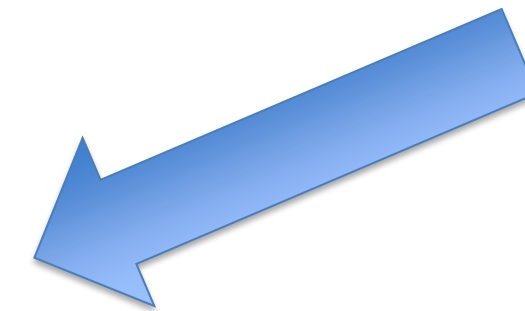
- ABM development happening in multiple stages
 - Decision to build ABM vs. expand RTM
 - Testing and selection of platform – three options
 - Development of population synthesis
 - Development of basic model with local data (make model that runs)
 - Confirm sub-modules
 - Development of local ABM with model estimated from 2017 trip diary
 - Validation and calibration of local ABM
 - Testing of ABM and use on internal projects
 - Refining models based on initial testing
 - Release to regional stakeholders
 - Re-estimate model with 2023 trip diary



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We are here



ABM: Transition Plan

- Initial completion late 2023/Early 2024
- Expect at least a few years with both ABM and RTM
- Documentation and support materials
 - User guides (being developed in parallel)
 - <https://github.com/RSGInc/SOABM/wiki>
 - <https://translinkforecasting.github.io/abm/latest/>
 - <https://rtmdoc.translinkforecasting.ca/>
 - Training sessions
 - Similar to RTM technical session from 2019
- On-going Support

Metro Vancouver's Activity-Based Model

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User Guide

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[SPA Data Processing](#)

[Synthesized Population](#)

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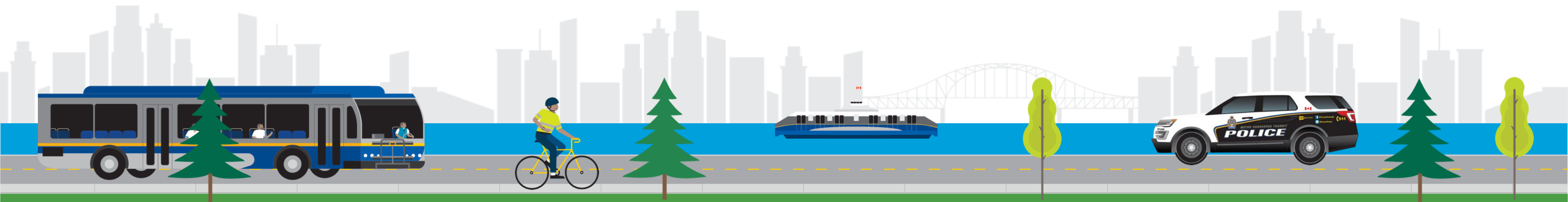
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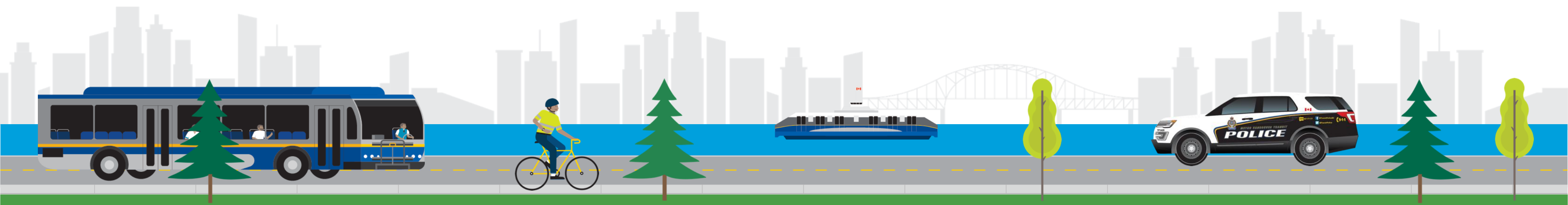
Guides

- [Getting Started](#)
- [RunModel bat file](#)
- [Networks and Zone Data](#)
- [Auto Network Coding](#)
- [VDF Definition](#)
- [Transit Network Coding](#)
- [Non-motorized Network Coding](#)
- [Editing Land Use Data](#)
- [Running the Population Synthesizer](#)
- [Input Checker](#)
- [Analyzing Model Outputs](#)
- [Commercial Vehicle Model](#)
- [External Model](#)



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Questions / Discussion



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