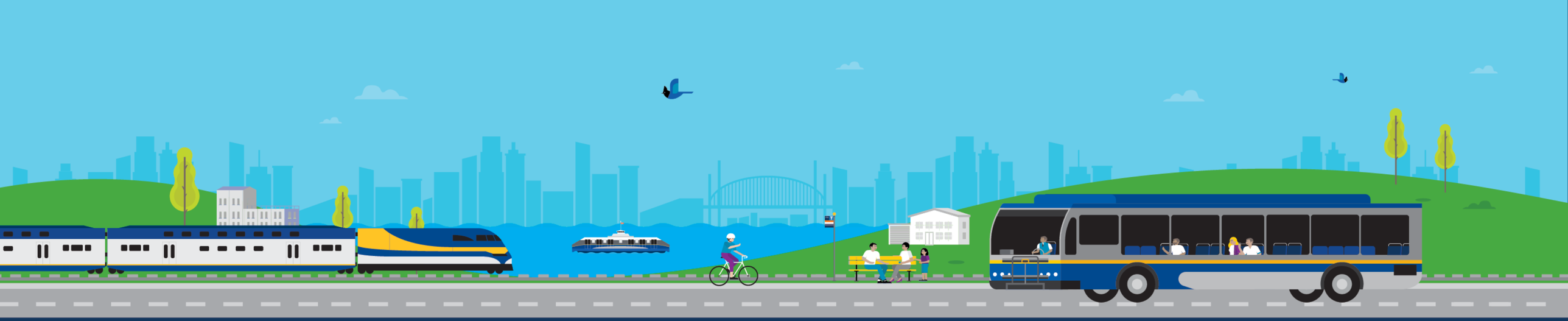


Overview of Current and Planned Model Developments

Together all the way

TRANSLINK

Content

- RTM 3.5
- Model upgrades
  - Population Synthesis
  - Long-term conditions
  - Short-term (daily) decisions

What's New in RTM3.5

- EMME Version 4.5 Update & Python 3.7 syntax
- Updated land use
- Bug fixes
- Model feature updates and upgrades
  - Congested minutes
  - Accessibility added to (some) purposes
  - Add transit boarding penalty options*
  - Mode choice model streamline
  - Changed assignment convergence criteria
  - Travel time reliability
  - Additional park and ride zones
  - Add CAV penetration model*
  - A transit select link tool

Planned RTM Development

- The RTM is an aggregate household model
  - Accuracy (aggregation bias)
  - Limited ability to model equity
  - Difficulties to model temporal behavior
  - Limited ability to model policies (e.g. discounts and caps)
- Investigating a phased shift to a disaggregated model

Phase 1 – Population Synthesis

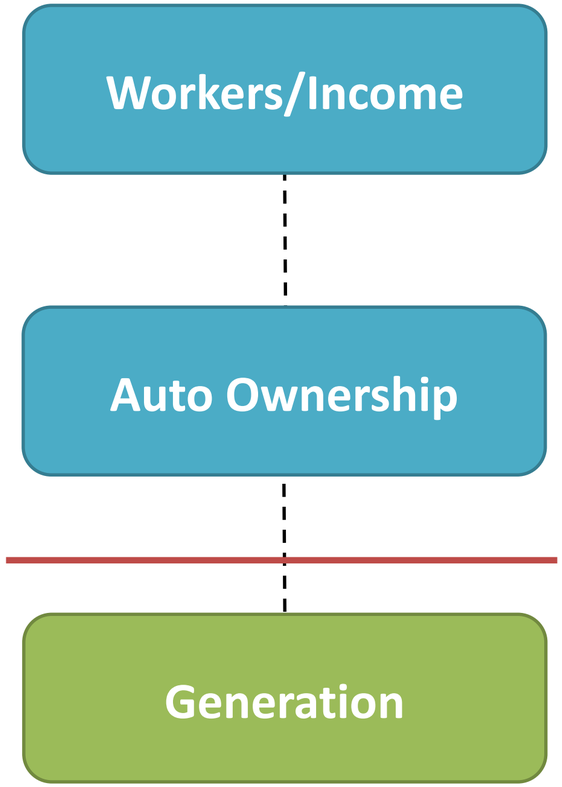
- Creating a list of people and households and their individual attributes
  - Age
  - Gender
  - Ethnicity
  - Education
  - Employment
  - Occupation
  - …
  - Home location
  - Household composition
  - Number of workers
  - Income
  - Dwelling type
  - Dwelling tenure
  - …
- Based on Trip Diary and Census data

Phase 2 Long-term Conditions

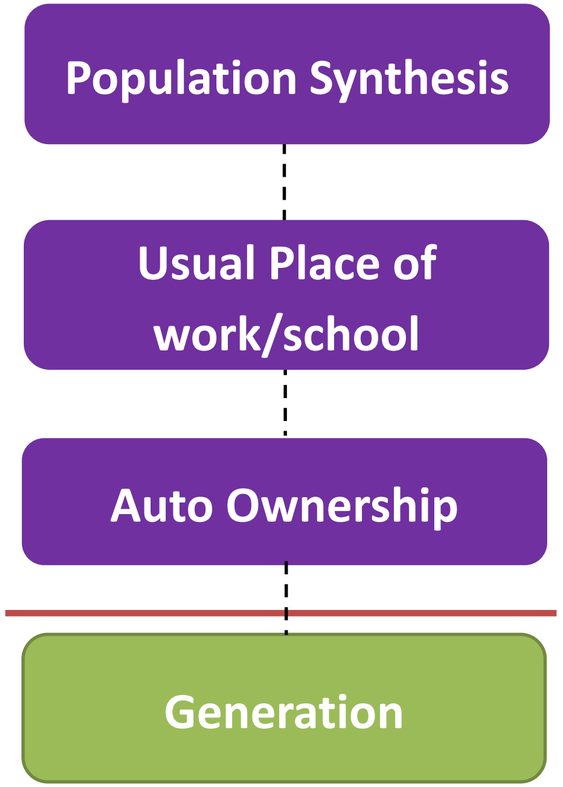
- Person/household conditions such as auto ownership or income
- Long-term conditions are modeled in aggregate
  - 100+ combinations of household size, workers, income & vehicles
  - Accuracy issues from aggregation bias
- Modeling of some long and medium-term decisions could be improved
  - Usual place of work or school
  - Ownership of a driver’s license or transit monthly pass

Long-term Conditions

Current Structure



Planned Structure



Phase 3* – Short-term decisions - Shift to Activity Based Model (ABM)

- Modeling individuals' and households' travel behaviour
  - Individual and combined activities
  - Individual and household schedule
  - High temporal resolution
  - Spaciotemporal constraints
  - Constraints on household resources
- Improved sensitivity to
  - Policies – e.g. fewer commute trips (WFH) could result in more other trips
  - Travel time – e.g. peak spreading
  - Travel cost – e.g. time differentiated charges and fares
- Improved ability to model and analyze
  - Equity implications
  - Discounts and caps

Substantial Trade-offs

- Complexity
- Run times
- Development resources
- Long-term model maintenance
- Risk of divergent model results
- Local knowledge and experience

Expected Timelines

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