

Update on the 2010 TBI Regional Travel Demand Model

Transportation Committee: 03/09/2015



Travel Behavior Inventory

Surveys/Data

- Household travel (diary)
- Household travel (GPS)
- Transit on-board
- Special generators- MSP and Mall of America
- External Origin/Destination
- Highway Speed

Model Development

- Data Processing
- Specification
- Estimation
- Calibration
- Validation
- Testing

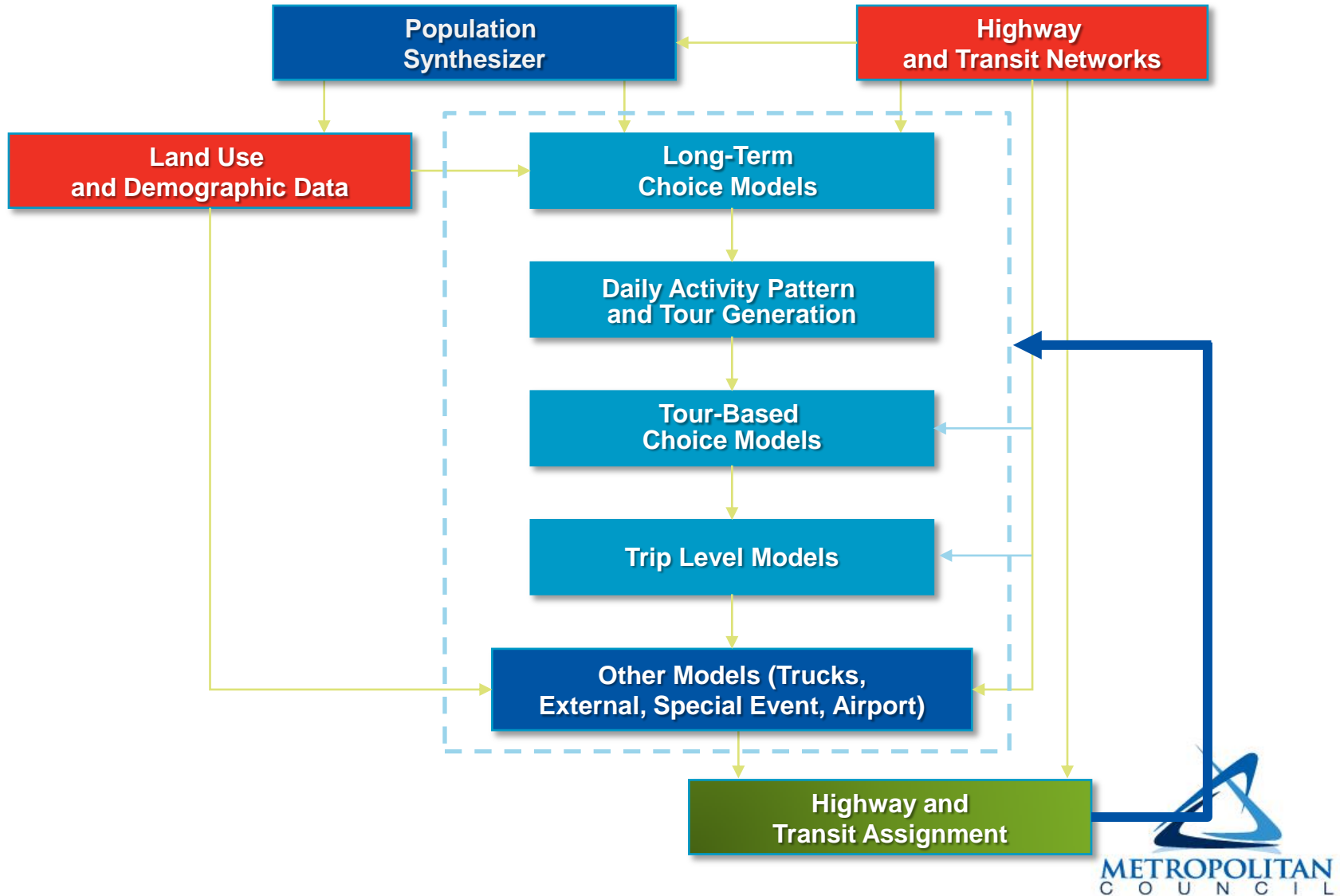
Forecast Model Purpose

- Regional planning, scenario analysis
- Emissions modeling
- Highway/transit project forecasts
- Travel market insight

New in the Model

- All estimation based on 2010 TBI
- New transportation analysis zone (TAZ) system
- New highway, transit, non-motorized networks
- New model structure/theory

An Activity-Based Model



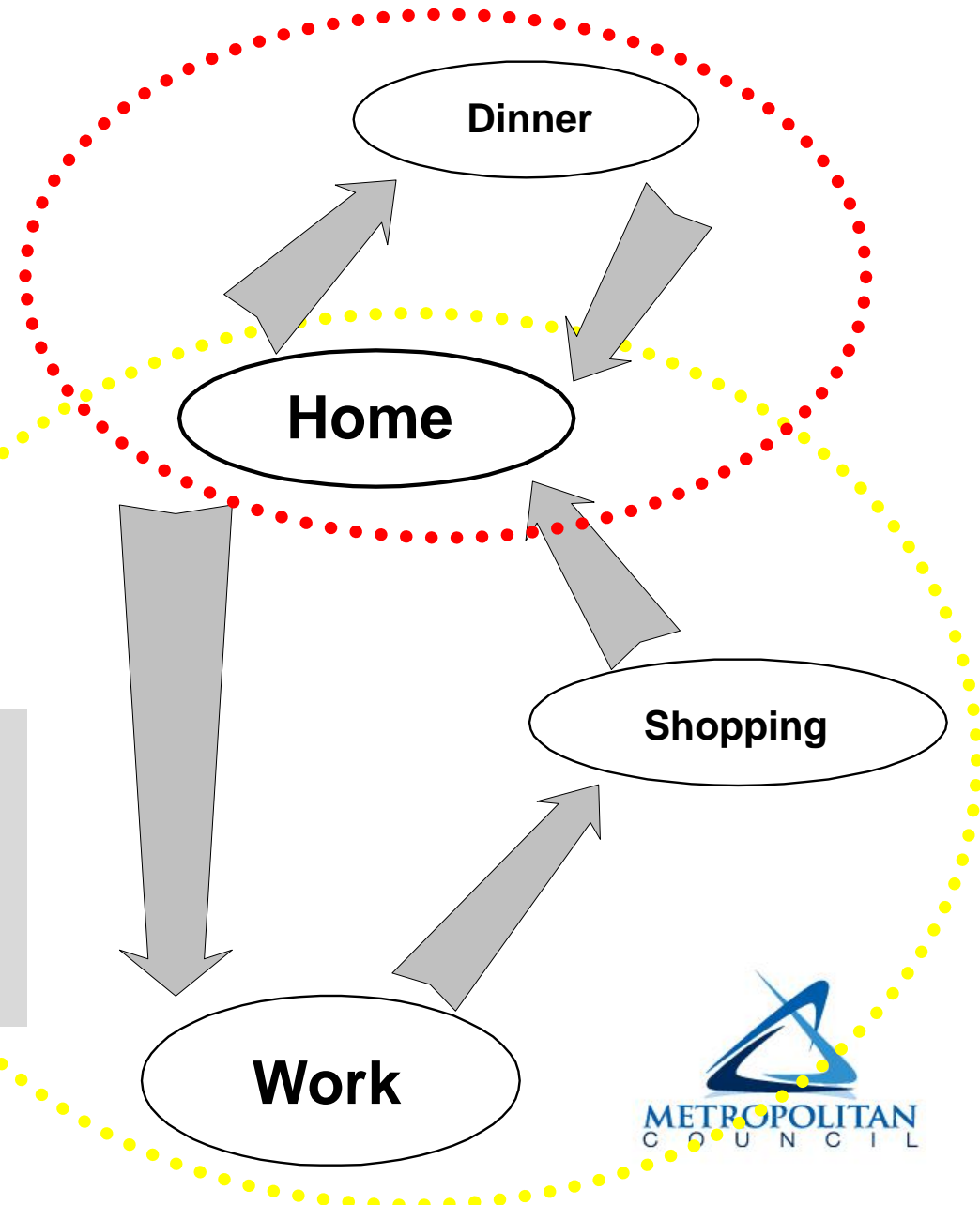
Tour Example

Secondary Tour

After the PM peak,
travel for dinner (other)

Primary Tour

AM peak travel to work
with one intermediate
stop in the PM peak



Theoretical Advantages

- Modeling for activities rather than travel
- Explicit modeling of time-of-day
- Consistency of trips in a tour, household
- Household coordination
- Characteristics of individuals

Analytical Advantages

- Effects on specific population segments can be isolated and analyzed directly (e.g.: environmental justice)
- Better sensitivity to congestion, time of day
- Better sensitivity to pricing
- Reduced aggregation error

Current progress: Validation

- Best practice approach to validation:
 - Examination of each model and sub-model
 - Validation at each stage
 - Overall results: highway volumes/speed and transit ridership

Next Steps (through mid-2015)

- Complete validation
- Internal forecast sensitivity testing
- Training
- Coordination with FHWA, FTA, EPA
- Distribution

Fall 2015: expect to recommend use of the new model for comprehensive plans and new project-level forecasts

Questions