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BMC Synthetic Population Generator

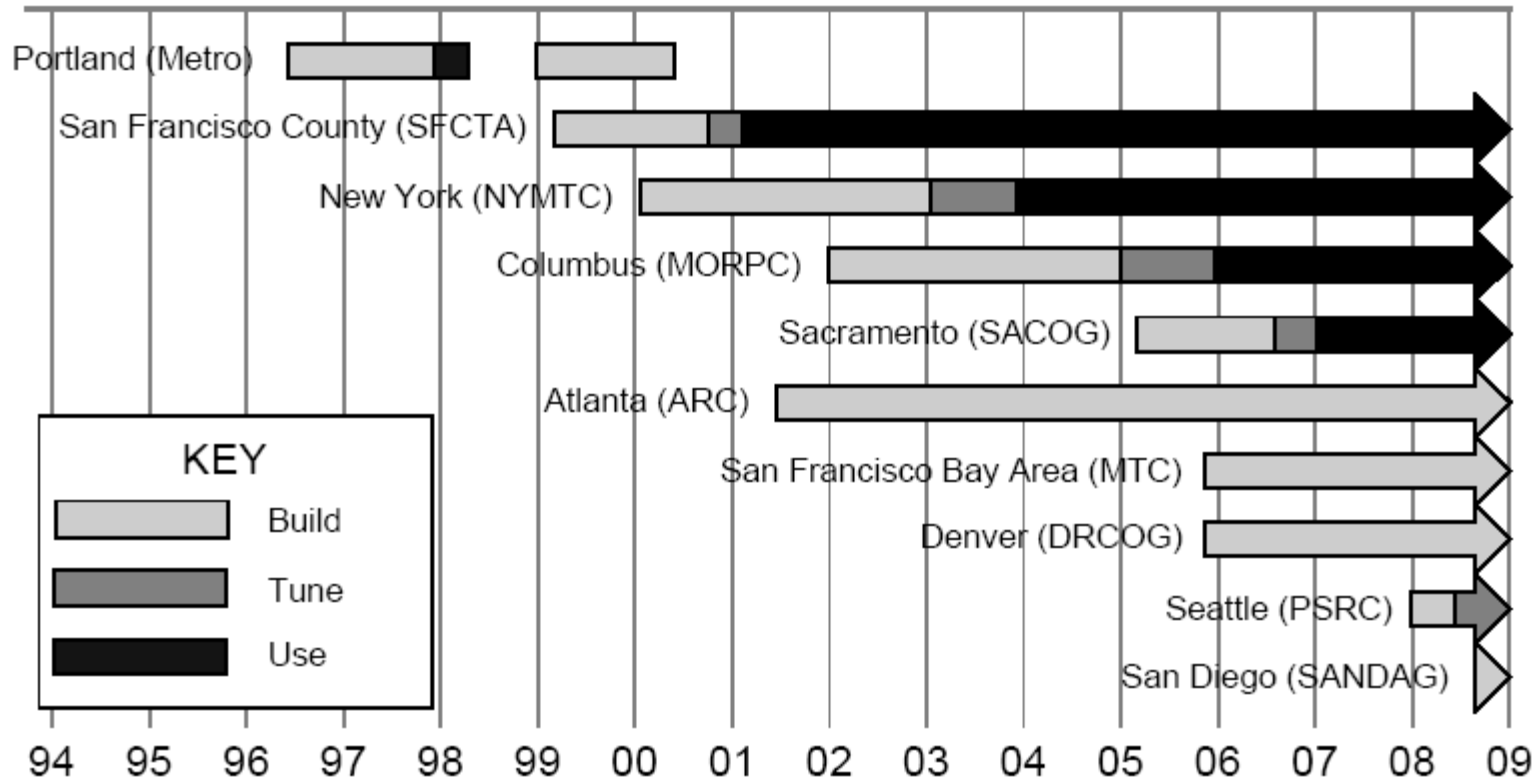
Activity-based Models in Practice

Prepared for:
Baltimore Metropolitan Council

November 10, 2010

History of Activity Based Models in Practice

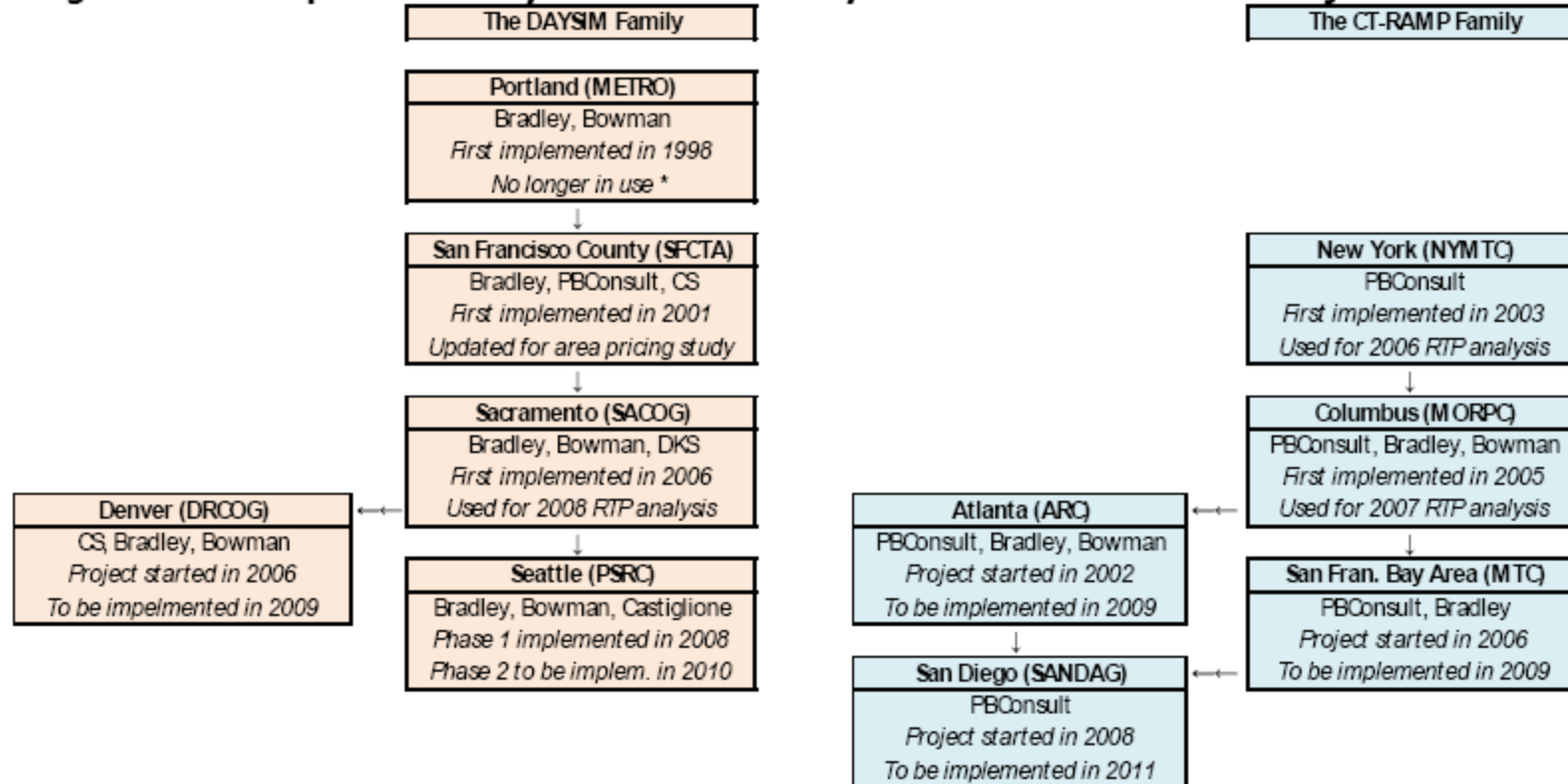
Figure 1: Timeline of Activity Based Model Implementations in the United States



Source: Mark Bradley and John Bowman, SCAG Strategy for Activity-based Model Development, June 2009

Activity-based Model Families

Figure 2: Development History of the Two Activity Based Model Families in Major US Cities



* Was used for a congestion pricing project and adapted for use with TRANSIMS, but not continued as part of TRANSIMS

Source: Mark Bradley and John Bowman, SCAG Strategy for Activity-based Model Development, June 2009

CT-RAMP

Coordinated Travel Regional Activity-Based Modeling Platform

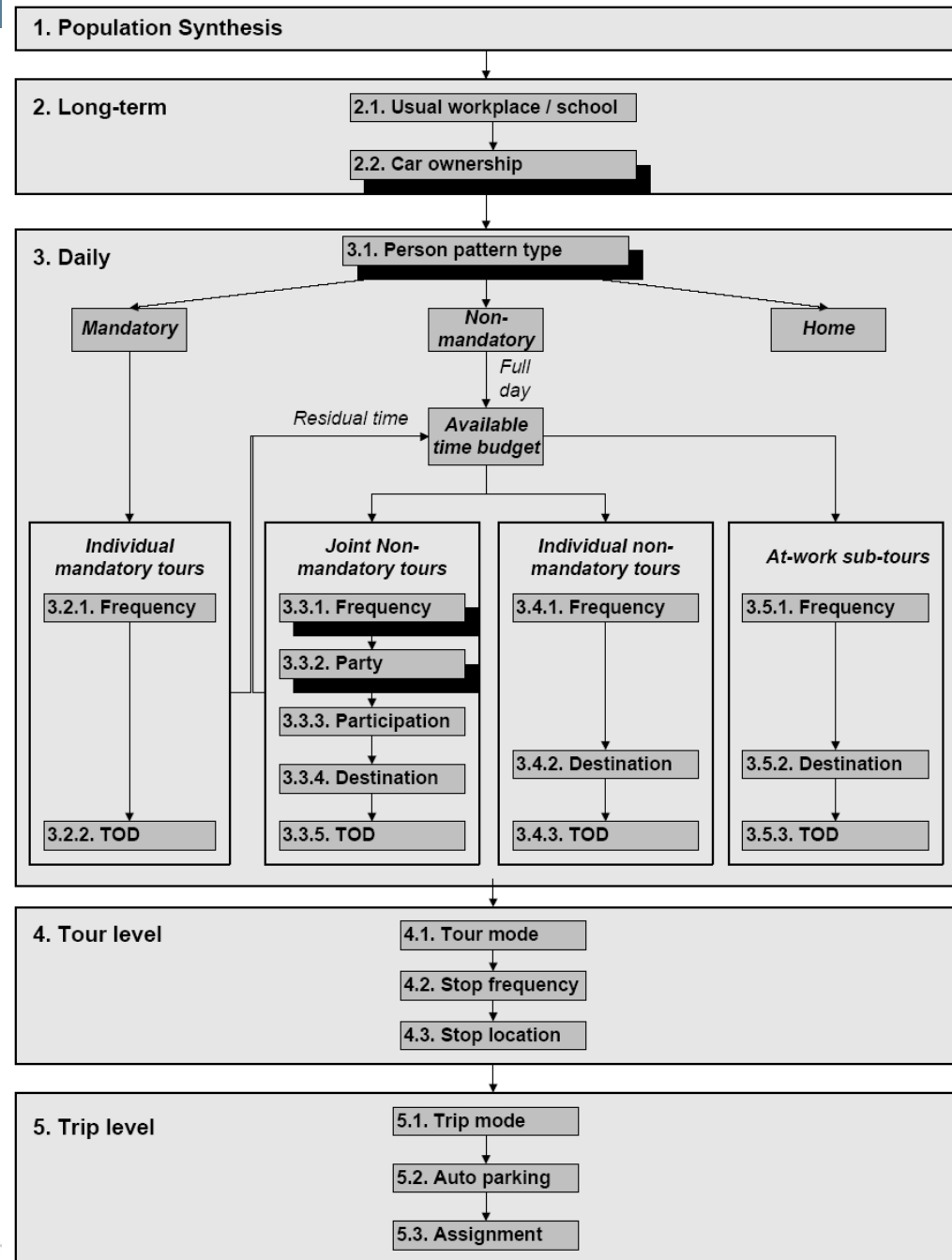
Features

- Simulates 24-hour itineraries
- Zone-level spatial resolution
- 30-60 Minute temporal resolution
- Tour-based / trip-chaining
- Joint travel and intra-household interactions
- Stops generated at the daily level

Source: PB, ARC Model Flow Chart, <http://www.atlantaregional.com/transportation/travel-demand-model>

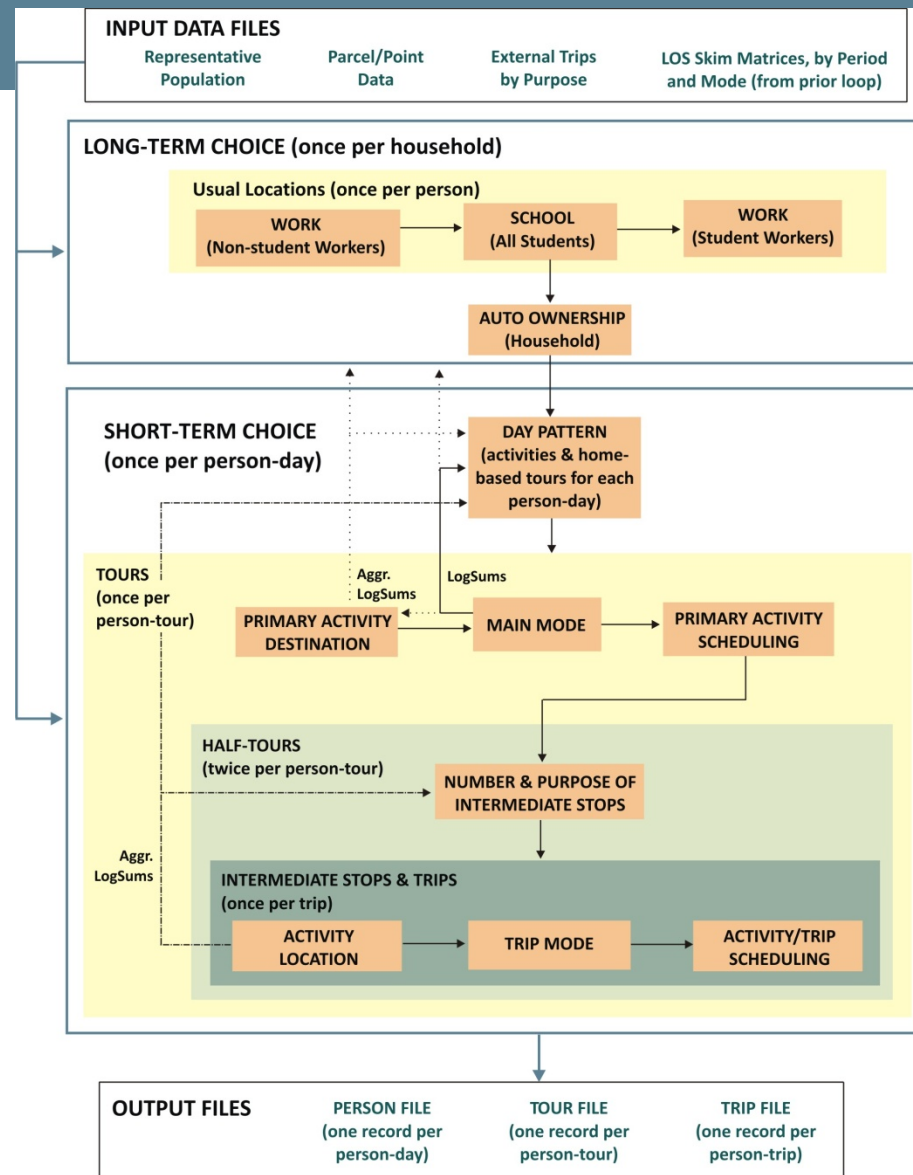


Figure 2: Basic Model Design and Linkage between Sub-Models



DaySim

- Day Activity Pattern
- Open source
- Features
 - Simulates 24-hour itineraries
 - Parcel-level spatial resolution
 - 30 Minute temporal resolution distributed to minute-by-minute
 - Tour-based / trip-chaining
 - Joint travel and intra-household interactions being developed in Seattle model
 - Stops generated at the daily and tour levels

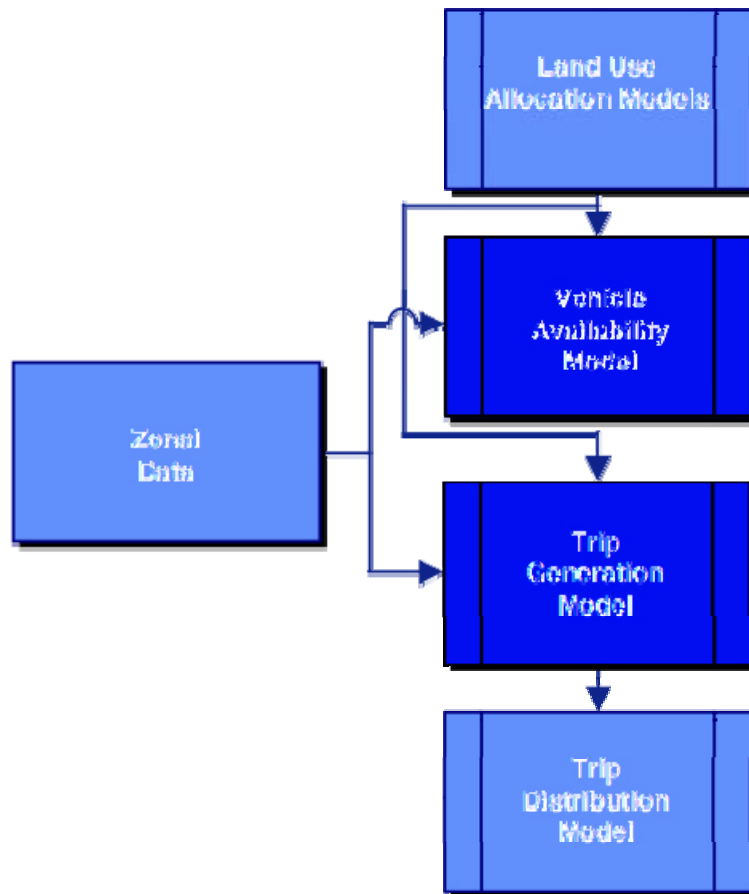


Source: RSG, SHRP 2 C10 Expert Task Group Meeting, Nov 2009

A Phase Approach to Developing Activity-based Models

Puget Sound Regional Council Example

PSRC Hybrid Activity-Trip Model

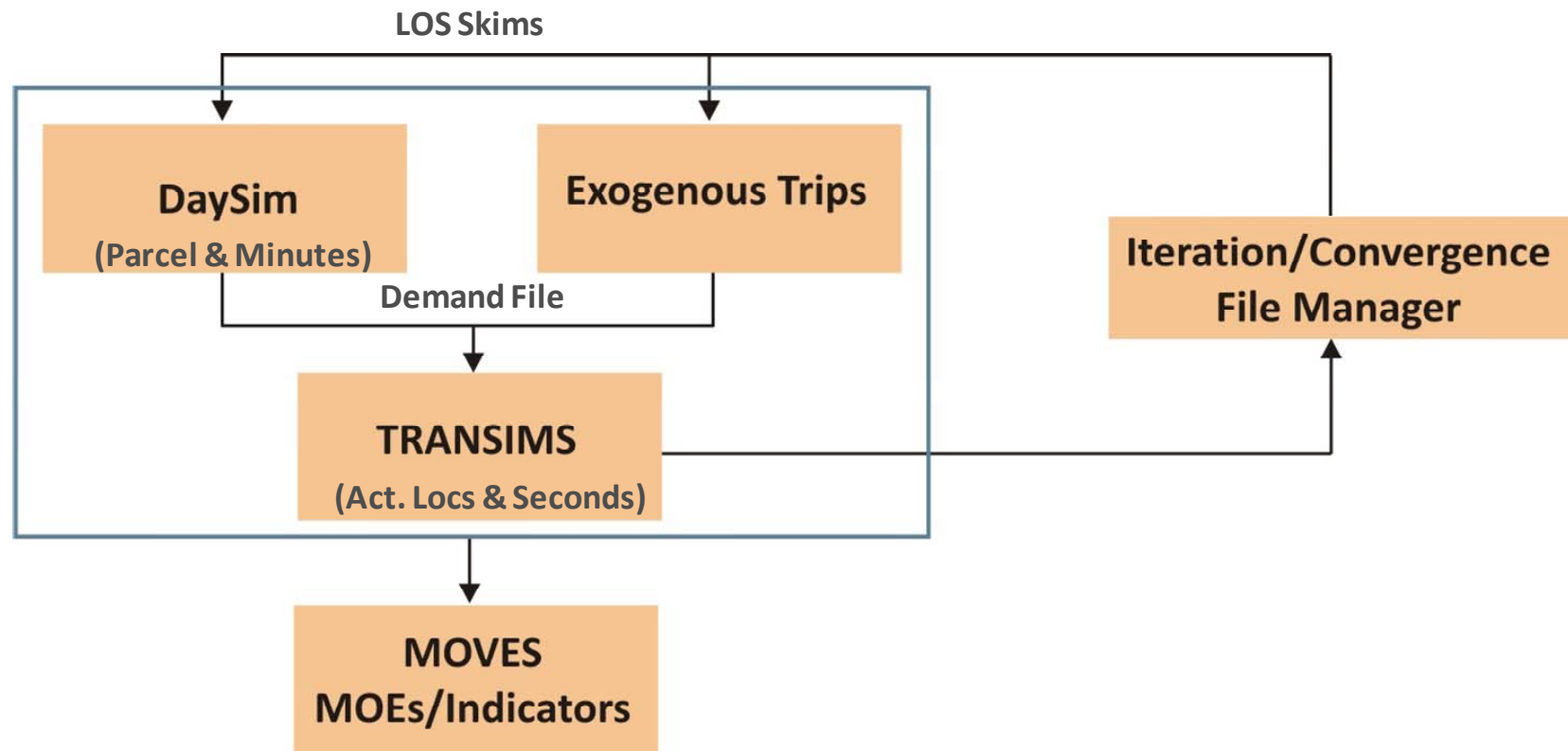


- Land Use Allocation (Urbansim)
 - Synthetic population
 - Usual workplace location
- Daily Activity Patterns
- Merged with Trip Distribution, Mode Choice and Assignment
- Applied for Alternatives in Long Range Plan

Integrating Activity-based and Dynamic Traffic Assignment Models

SHRP 2 C10 Project in Jacksonville and Burlington

Integration: DaySim - TRANSIMS - MOVES



- DaySim: Provides detailed estimates of travel demand
- TRANSIMS: Provides detailed estimates of network performance
- MOVES: Provides detailed estimates of air quality

Questions?

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