Gen3 Model Development Project

Travel Forecasting Subcommittee Meeting
May 15, 2020

IN PARTNERSHIP WITH

BASELINE MOBILITY

Metropolitan Washington Council of Governments

Task Order 1: FY20 Program Administration (through June 30, 2020)

1. Attend meetings and prepare summaries: In progress
    - Bi-weekly conference calls
    - TFS briefings
2. Prepare Project Management Plan: Completed February 11, 2020
3. Provide training to COG staff
    - 1.5 day activity-based model training held May 12-14, 2020
4. Respond to on-call requests: In progress

AB Model Training Agenda – Day 1

- Welcome, Opening & Introductions, agenda review
- What is an AB model?
- Logit Model Primer (logit math, Monte Carlo simulation, elasticities, calibration)
- Population Synthesis (Input data, algorithms, outputs)

AB Model Training Agenda – Day 2

- Long-term & Mobility Models (ActivitySim work and school location choice models, auto ownership model, optional models)
- Day-Pattern Models (ActivitySim Day-pattern model, tour generation models, joint tour participation, destination choice models, and time-of-day choice models)
- Tour and Trip Models (ActivitySim tour mode choice model, intermediate stop model, and trip mode choice model)

AB Model Training Agenda – Day 3

- Tour and Trip Models continued
- Implementation (ActivitySim implementation software, Python pandas)
- ActivitySim Enhancements
- Q&A, Discussion, and Wrap-up

Task Order 2 Deliverables

- Draft Model Assessment and Model Specification Report
  - Draft delivered May 4
- Presentation slides on the various design alternatives/model features
  - "Treatment of Space" webinar held April 2, 2020
  - "Pricing and Reliability" webinar held April 2, 2020
  - "Special Travel Markets" webinar held April 14, 2020
  - "Transit Path Finding and Transit Capacity Restraint" webinar held April 15, 2020

Model Assessment and Model Specification Report Review Schedule

- COG staff review through May 25
- RSG responses to COG comments May 27 through June 3
- TFS review June 4 through June 11
- COG review of TFS comments June 11-13
- RSG review and finalization June 15-19

Task Order 2 Draft Report
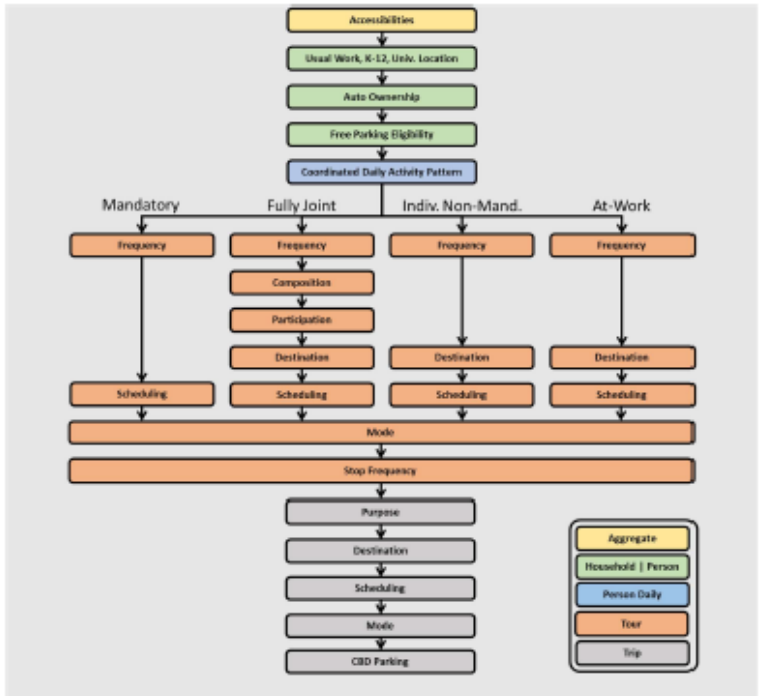
FIGURE 3: EXISTING ACTIVITYSIM MODEL DESIGN
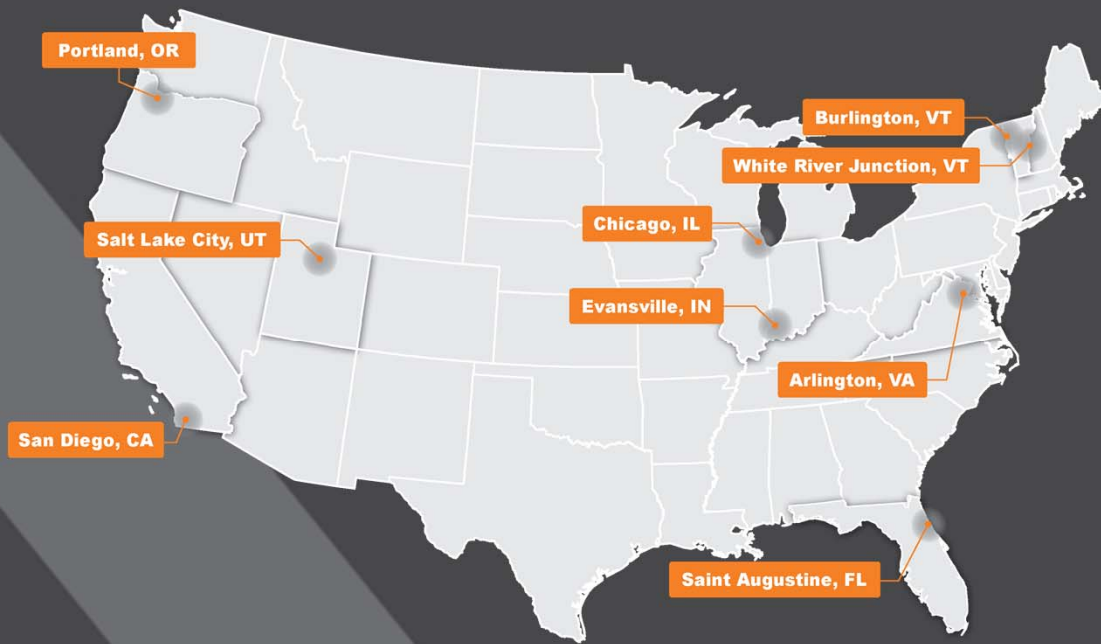
ActivitySim represent all internal travel made by residents of the MWCOG region. The decision-makers in the model system include both persons and households. These decision-makers are created (synthesized) for each simulation year and land-use scenario based on Census data and forecasted distributions of households and persons by key socio-economic categories. The decision-makers are used in the subsequent discrete-choice models in a microsimulation framework where a single alternative is selected from a list of available alternatives according to a probability distribution. The probability distribution is generated from a logit model which considers the attributes of the decision-maker and the attributes of the various alternatives. The application paradigm is referred to as Monte Carlo simulation, since a random number draw is

Task Order 2 Draft Report Chapters

1.0   Introduction

2.0   Overview Of Gen3 Product Requirements

3.0   Strengths And Weaknesses Of The Current Travel Model

4.0   Introduction To ActivitySim

5.0   Model Development Plan

6.0   Current And Future Data

7.0   Traffic And Transit Assignment

9.0   Software Approach

10.0   Quality Control And Quality Assurance (Qc/Qa)

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