Recent Modeling Highlights & Analysis Tools

Model Users Group
January 15, 2024

Puget Sound Regional Council

We are leaders in the region to realize equity for all. Diversity, racial equity and inclusion are integrated into how we carry out all our work.

psrc.org/equity

SoundCast

SoundCast Is PSRC's Regional Travel Demand Model:

- Household's activity and travel patterns are simulated using an ABM (Daysim).

- Also includes a Truck Model, Airport Model & External Demand

- Used by PSRC for last two RTP cycles.

- Seeing adoption throughout the region.

Recent SoundCast Implementations

- BKRCast- SoundCast Implemented for Bellevue, Kirkland, Redmond.

- PierceCast- SoundCast Implemented for Pierce County.

- SeaCast- SoundCast implemented for Port of Seattle/ City of SeaTac.

Recent External SoundCast Projects

- WSP:
  - WSDOT I-5/SR-2 Study.

- Parametrix:
  - Black Diamond Comp Plan.
  - City of Kenmore.

- Fehr & Peers:
  - City of Seattle Comp Plan.
  - City of Everett Transportation Element
  - City of Tacoma Comp Plan (PierceCast).
  - Reconnect South Park.

Model Support & Analytical Tools

- Network Builder:
  - Python Application that converts transportation networks stored in a Geodatabase to Emme network files.

  - Supports scenario management, automates building of managed lanes(HOV network). Transit is always routed on managed network when available.

  - Use by PSRC, PierceCast, and SeaCast.

Model Support & Analytical Tools

- Soundcast Land-Use Scenario Builder:
  - Starts with Soundcast inputs, typically from an official forecast.

  - Users specify target number of Households and Employment at the zonal level. Typically for a city or sub-area.

  - Using marginal distributions from forecast, runs PopulationSim on zones with new HH control totals.

  - Allocates results to parcels & creates new land use input files for Soundcast.

Model Support & Analytical Tools

- Combine GTFS Feeds:
  - Python packages that merges GTFS feeds from multiple agencies into one feed.

- Transit Service Analyst:
  - Python package that provides tools to bootstrap transit service analysis using GTFS.

Model Development

- ActivitySim:

  - PSRC is one of 14 members of the ActivitySim consortium.

  - The mission of the ActivitySim project is to create and maintain advanced, open-source, activity-based travel behavior modeling software based on best software development practices...

  - Activitysim will replace Daysim, but not for this RTP.

  - Support contract with RSG.

Model Development

- BEAM-CORE, Lawrence Berkeley National Laboratory:
  - The Behavior, Energy Autonomy & Mobility Model
  - Comprehensive Regional Evaluator
  - Includes FAMOS: Freight Activity Mobility Simulator
  - "Agent-level modeling of entire chain of freight activities and interactions from shippers, receivers, households and carriers, to vehicles, and infrastructure impact"
  - Helping PSRC Implement this model as part of a DOE grant.