

Snohomish County Travel Demand Model

The Snohomish county travel demand model is a refined version of the PSRC's trip-based four-county regional model. It includes detailed road (state highways, county and city arterials) and transit networks for all of Snohomish County and parts of adjoining counties. The original base-year (2012) and future year (2035) travel models were developed by Fehr & Peers Consultants which were used to support the 2015 Comprehensive Plan update.

There are approximately 1500 analysis zones in the model; this includes 699 micro analysis zones (MAZ) within Snohomish County. Population, households by income quartile, and employment by sector are compiled for the base year for each micro analysis zone in the travel model. These socio-economic and demographic parameters are inputs in the first step of the travel model: trip generation. This step results in productions and attractions by trip purpose (home-base work, home-base other, home-base school, etc.) for each analysis zone. The subsequent steps in the travel modeling runs include:

- trip distribution (estimates the trip interchange between micro analysis zones),
- mode choice (splits trips into travel modes), and
- trip assignment to the road and transit networks.

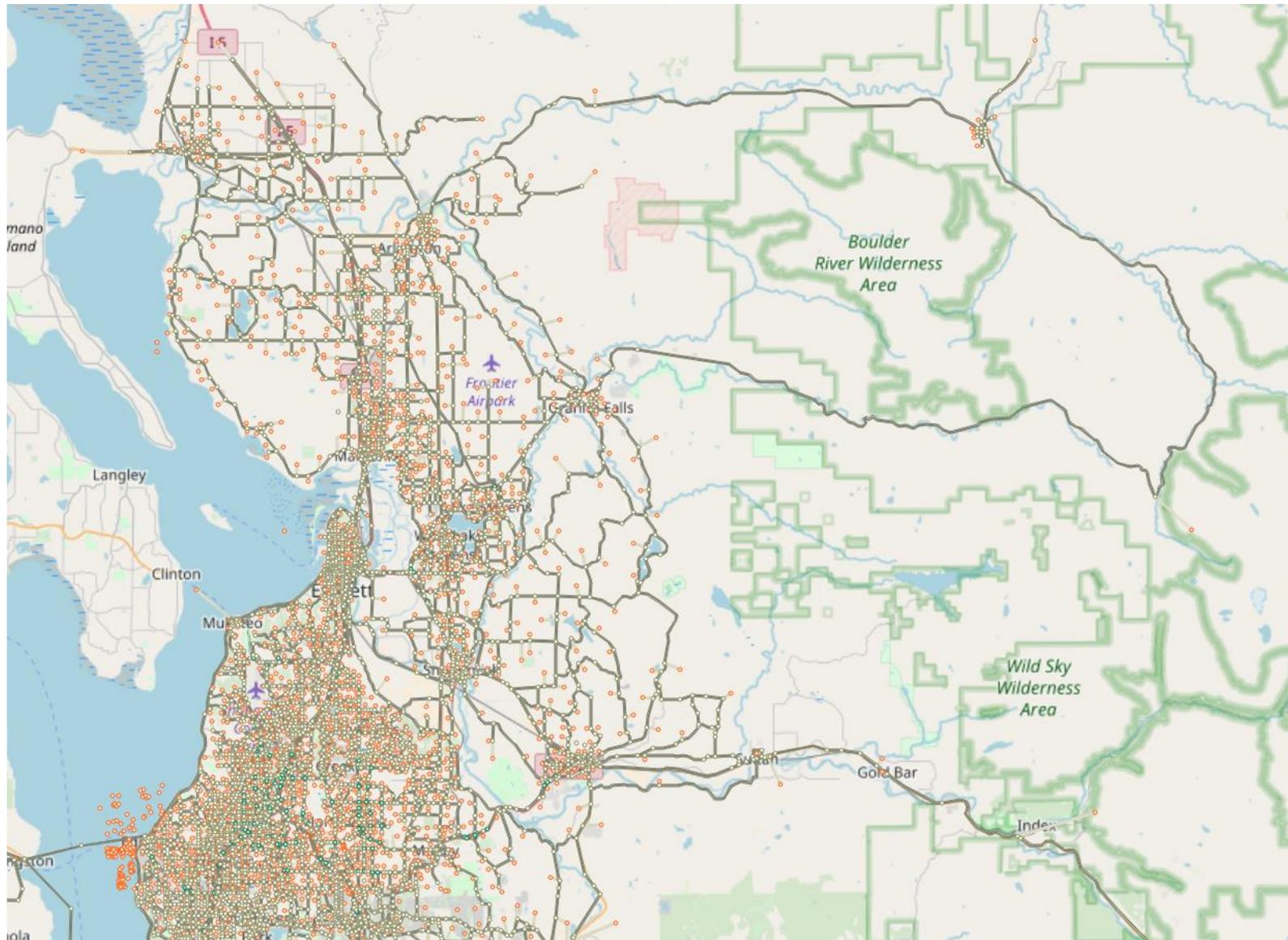
Model assignments for auto vehicles are output for 5 time periods of the day; PM period, AM period, Midday period, Evening period and Night period. Transit assignment is output for the AM and Midday periods only.

The trips assigned to the base-year road and transit networks were compared to existing traffic counts and transit ridership. This was performed to calibrate and validate the base-year model. This ensured that the base-year model provided a reasonable representation of travel on the existing transportation system.

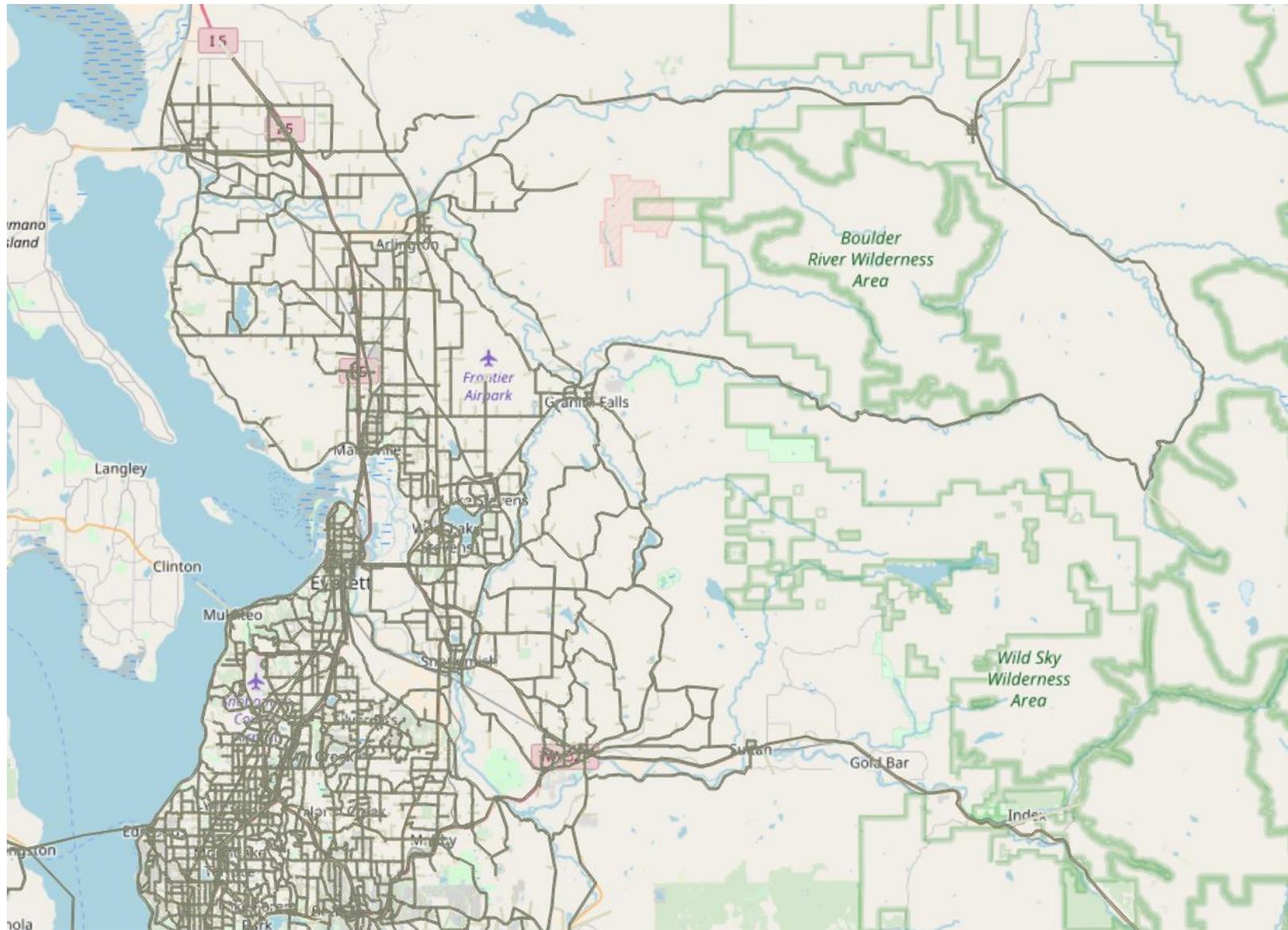
For the future-year travel model (2035), the base-year road and transit networks were updated to reflect anticipated roadway improvements for the county, state, and cities. Projected forecasts for population, household income quartiles, and employment targets for each micro analysis zone were used as inputs in the travel model to produce future year trips ends for assignment on the 2035 road and transit networks.

To support the county's roadway concurrency reviews, impact fee assessments and intersection turning volume estimations for roadway projects, a new base year model (Snoco2018) has been developed from the base model used for the Snohomish County comprehensive plan. The new model expands the original 1500-zoned model to 4000 analysis zones. It also defines and captures detailed turning movements for over 800 intersections within the county. Intersection delays have been enhanced to improve corridor travel speed estimation. Travel times have been calibrated to reasonable levels in the Snoco2018 model.

The Snoco2018 model does not include a transit or non-motorized component, but includes assignments for all auto and truck modes (SOV, HOV2, HOV3+, Vanpool and Trucks) for the AM period and PM period.



Analysis Zones in Snoco2018 – 4000-zoned Snohomish model



Links in Snoco2018 – 4000-zoned Snohomish model