



Alternative Transportation Futures

Methodology Overview

Project Background

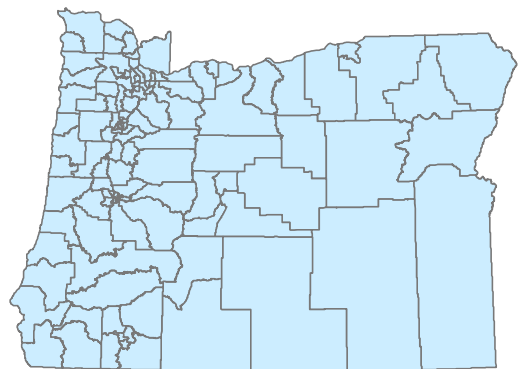
Population in the Willamette Valley will continue to grow and is expected to nearly double over 1990 levels by 2050. This growth will have a significant impact on how efficiently people, goods, and services move around. Since this is related so closely to our prosperity and quality of life, the Willamette Valley Livability Forum (Forum) is taking a long-range look at growth and transportation to see what could be done to make the Valley's transportation future better.

The Forum's project uses Oregon's Integrated Statewide Model—the first statewide application of this type of model in North America. Working with the Oregon Department of Transportation, the Forum evaluated seven scenarios to examine the effects of various land use and transportation policy changes on city-to-city highway congestion and travel behavior. The policy changes involved the amount of urban land available for development, investments in highway and transit infrastructure, and the cost of driving.

What is the Statewide Model?

Oregon Department of Transportation, in collaboration with its metropolitan planning organizations and state agency partners, developed this tool to better understand the relationships between Oregon's economy, land use patterns, and transportation system

The model, calibrated with Oregon data, simulates changes in behavior (i.e., economic activity, land use, travel) as a result of changes in policies and other influences. The model's 122-analysis zone structure covers the entire state of Oregon and Clark County, Washington. While not high-definition, the model can simulate the effects of various land use and transportation policy options.



The model's 122-zone resolution lends itself to regional and city-to-city levels of analyses, rather than evaluations of short-distance trips.

Modeling Approach

The modeling was conducted in two rounds with each scenario modeled to the year 2050 using the same state-wide population and employment forecasts. The first round examined five scenarios, varying one policy element per scenario. This helped to validate the model and develop hybrid scenarios. The second round examined two hybrids, combining elements of the five previous scenarios, in recognition that a single policy change is unable to solve mobility and congestion issues.

Scenarios Modeled

No-Action

- Urban expansion about the same rate as now
- No major highway or transit expansion

Compact Development

- Urban expansion that achieves density targets in comprehensive plans
- No major highway or transit expansion

Highway Expansion

- Urban expansion about the same rate as now
- New lanes to congested state highways. Maximum limits: ten-lane freeways in metropolitan areas; eight-lane freeways outside metropolitan areas; six-lane for other major thoroughfares

Transit Expansion

- Urban expansion about the same rate as now
- No major highway expansion
- Major transit expansion:
 - Commuter and frequent city-to-city rail
 - City-to-city bus
 - Light rail in Portland
 - Bus rapid transit in Eugene-Springfield

Increase Cost of Driving

- Urban expansion about the same rate as now
- No major highway expansion
- Represented by 20 cents/mile tax on autos and trucks traveling in the Willamette Valley

Hybrid 1

- Compact development
- Full transit expansion
- Expansion of rural highways
- Graduated mileage tax: 10 cents/per mile in 2005; 20 cents/mile in 2025

Hybrid 2

- Compact development
- Partial highway and transit expansion
- Graduated mileage tax: 5 cents/per mile in 2005; 10 cents/per mile in 2025

