



Modeling 101

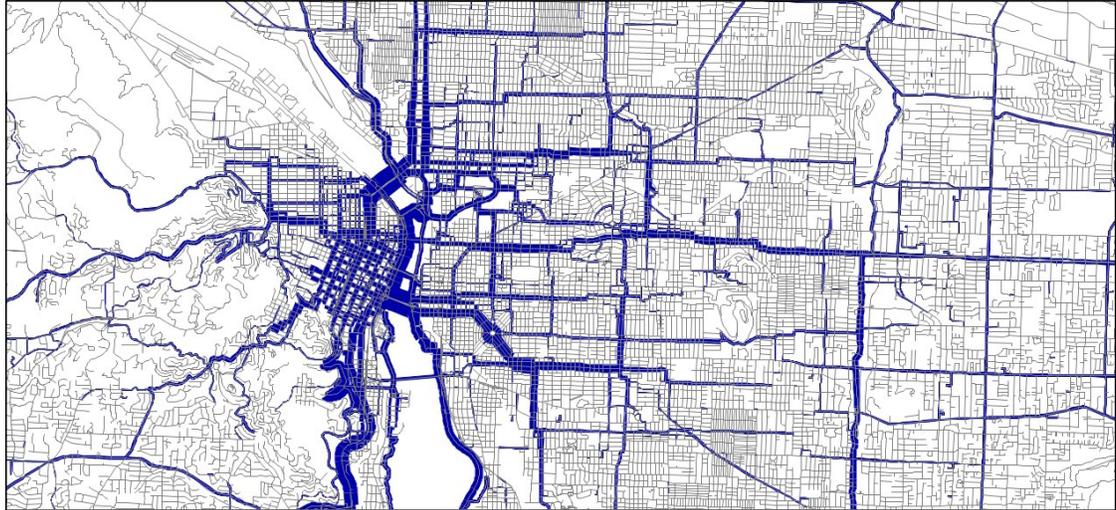
Bicycle modeling tool

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Developed in conjunction with Portland State University, our enhanced bicycle modeling tool considers a multitude of network attributes in assessing the relative desirability of bicycle travel between origins and destinations throughout the region.

How does it work?

At the core of the bicycle modeling tool is a dedicated bicycle network containing all streets and off-street paths in the region. A routing algorithm is used to determine the most logical path between each pair of zones, and the relative attractiveness of each path is then quantified according to a relative valuation of network attributes: distance, facility type, auto traffic volume, terrain, major bridge crossings, turn frequency, and intersection controls.

The resulting “route experience measure” is passed into the regional transportation model’s destination and mode choice models, which consider bicycling alongside all other potential modes to predict where and how people will travel. After mode choice, the number of daily bicycle trips between each origin-destination pair is known. This demand, which is separated into commute and non-commute categories, is subsequently assigned to the bicycle network to support visualization and further analysis.

Why does it matter?

Whereas in previous model forms, distance alone determined the desirability of a bike route, the bicycle modeling tool uses a dedicated network to consider a range of attributes that are known to directly impact the cyclist’s choice of routes. This results in a more thorough and accurate depiction of network service characteristics and their impacts on traveler behavior.

Thanks to this heightened level of network detail and increased sensitivity to facility quality, the bicycle modeling tool represents a more robust resource for use in the assessment of bicycle projects, policies, and network concepts. Furthermore, the network assignment constitutes an additional analytical layer that facilitates a range of useful graphics and network-based metrics.