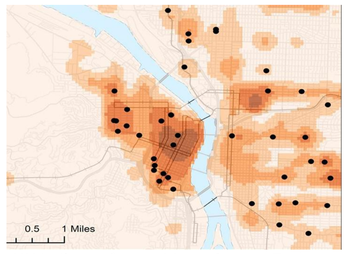


ULI Indicator for the Metro Context Tool

Using Data to Improve Multimodal Transportation Planning and Policy Decision-Making in Metropolitan Areas

Strategies to increase biking, walking and transit ridership help metropolitan areas reduce energy use and emissions from surface transportation. However, multimodal data are needed to support better planning and policy decision-making are lacking. The Oregon Transportation Research and Education Consortium (OTREC) researchers have worked closely with metropolitan agencies to examine aspects of biking, pedestrian, and transit data to better support multimodal planning and policy decision-making.

OTREC Members: Portland State University, University of Oregon, Oregon State University, Oregon Institute of Technology

Predicting Transit Ridership at the Stop Level: The Role of Services and Urban Form

Authors: Jennifer Dill, Marc Schlossberg, Liang Ma, Cody Meyer

Objective: to better understand the relative and combined influence of transit service characteristics and urban form on transit ridership at the stop level.

Method:

- Three metropolitan regions in Oregon with differing urban forms
- Regression analysis to understanding how land use, connectivity, new transit placement, or transit enhancements influences ridership.
- Stop-level ridership data from 8,964 transit stops in Portland , Eugene-Springfield, and Jackson used as a dependent variable
- Independent variables included: socio-demographics; transit service characteristics; land use; and transportation system.

	Portland (TriMet)	Lane County (LTD)	Rogue Valley (RVTD)
Adjusted R^2	0.69	0.62	0.53
Socio-Demographic Variables	24%	11%	14%
Transit Service Variables	41%	46%	24%
Transportation Infrastructure Variables	1%	1%	1%
Land Use Variables	4%	5%	17%
Unexplained by the model	31%	38%	47%

Findings:

- The final model results indicate that the TriMet model is best explaining the variation in ridership at the stop-level.
- Land use characteristics around transit stops do have significant effects on transit ridership, though less than the effects of transit level of service.

- The land use characteristics have much smaller effect in a large urban area than a small urban area.
- Socio-demographic characteristics seem to have a larger effect on ridership in the large urban area than small urban areas .

Where do Cyclists Ride? A Route Choice Model

Authors: Jennifer Dill, Joseph Broach, John Gliebe

Partners: Robert Wood Johnson Foundation; Metro

Objective: to provide data on cycling preferences, as well as the effect of traffic control devices and topography on route decision.

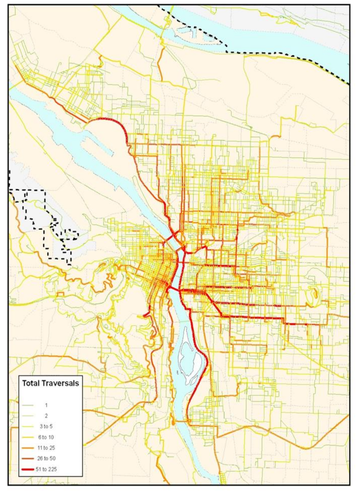
Method:

- Equipped 164 bicyclists in Portland, Ore. with GPS units that recorded their trip routes for 1 week
- Downloaded trip data were verified by cyclists who were also surveyed about their trip decisions
- GPS traces were matched to network links to map route choices
- Network characteristics were added to trip map.

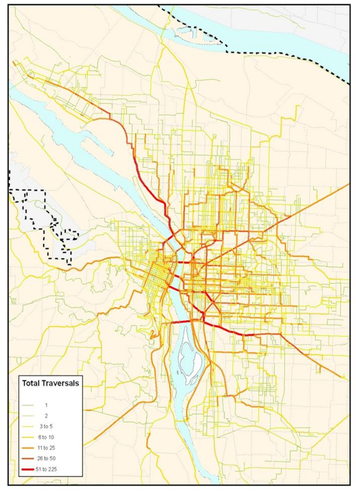
Network Characteristics:

- Traffic volumes
- Bicycle facilities
- Turns
- Street slope
- Grade Separations
- Traffic Controls
- One way restrictions

Actual Trip



Shortest Path



Cyclists will detour from their non-commute trip…	To use or Avoid
7.4 percent…	To avoid additional turns
72.3 percent…	To avoid an uphill slope of 2 to 4 percent
10.4 percent…	To avoid unsignalized crossings with cross traffic 10-20k vehicles per day
17.9 percent…	To use a bike boulevard
26.0 percent	To use an off-street bike path

Findings:

- Cyclists are sensitive to the effects of distance, turn frequency, slope, etc.
- Cyclists are willing to bike longer routes for specialized facilities, including separated paths, bike boulevards or low-traffic neighborhoods streets.

Contextual Influences on Trip Generation

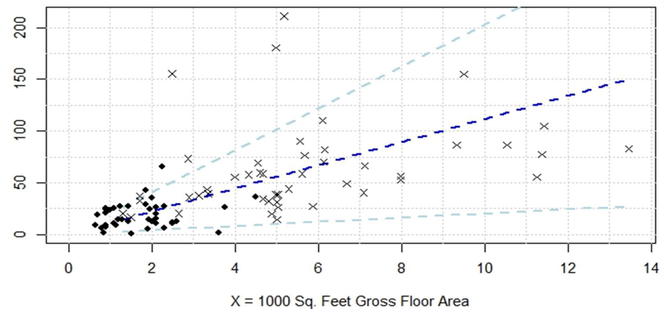
Authors: Kelly Clifton, Christopher Muhs, Kristina Currans

Objective: to develop a method to adjust ITE Trip Generation Handbook rates to better reflect the relationship between land use, transportation and travel in an urban setting.

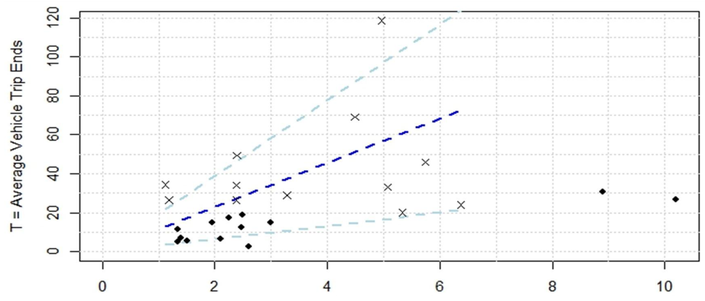
Method:

- Person and vehicle counts were collected during weekday PM peak hour (5-6 pm) at 78 establishments
- Visitor intercept surveys were also conducted at those locations
- Vehicle trip rates observed were compared to ITE handbook estimates for same land use type and establishment size
- Regression analysis was run to determine the built environment measure.

High-Turnover (Sit-Down) Restaurant (LU 932)



Drinking Place (LU 925)



Convenience Market (Open 24-hours) (LU 851)