

Identifying Opportunities for Equitable Transportation Mode Shift

Trading in traditional travel demand models for StreetLight's bike and pedestrian data, Jacobs projected equitable mode shift for a new bike and pedestrian bridge in Portland, Oregon.

EXECUTIVE SUMMARY

- The traditional Portland metro area model did not provide enough detail about pedestrian and bicycle activity.
- StreetLight's O-D metrics captured the nuances needed to support bike/ped planning and funding.
- Measuring social equity impact ensured the new bridge could benefit low-income individuals and communities of color.

Tualatin Hills Park & Recreation District, the largest special park district in Oregon, secured funding to design and build a pedestrian/bicyclist bridge crossing U.S. Highway 26. The Parks and Rec District asked Jacobs to help them understand the existing conditions to support a trail and bridge facility to meet the needs of the community and encourage mode shift away from vehicles.

Mission: Understand Bike/Ped Travel Patterns

Instead of time-consuming surveys and outdated travel demand models, Jacobs used StreetLight InSight® to analyze recent travel behavior throughout the area. StreetLight's O-D Metric gave Jacobs the ability to layer on demographic details to assess equity impact.

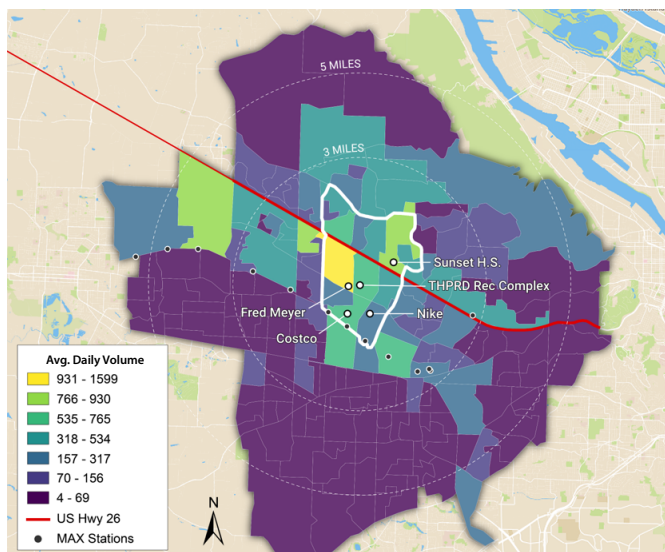
Although their subscription focused on O-D analyses for eight zones, analysts and planners were able to run some additional analyses for those zones (and Census blocks within a five-mile radius) to gain a wider perspective on the region. Going "out of scope" was an additional benefit of StreetLight's on-demand platform which allows for unlimited analyses.

"StreetLight gave us the advantage of learning what has happened recently and what's happening now to make decisions for what is happening next."

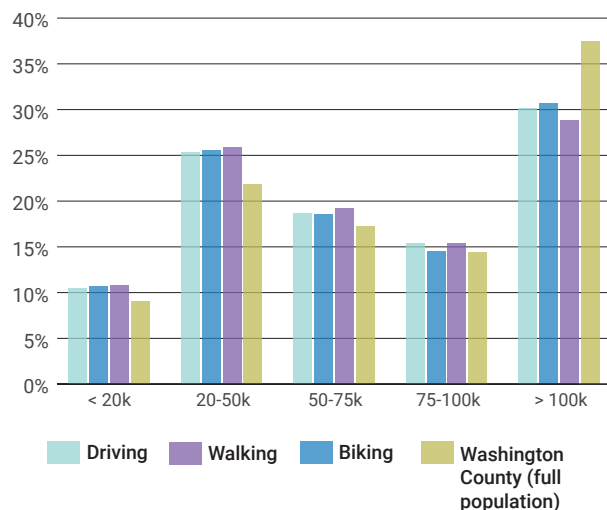
SARAH JENNIGES

Jacobs





Jacobs analyzed the amount of motor vehicle trips that begin on one side of U.S. Hwy 26 and end on the opposite side of the highway (within five miles) to understand potential mode shift.



Income distribution of regional trips to the target zone, by mode (compared to county as a whole).

Analysis: Pinpoint Current and Future Active Transportation Activity

StreetLight allowed the Jacobs team to examine key metrics for vehicle, bicycle, and pedestrian trips:

- Origins and destinations
- Travel time and distance
- Average daily trip percentages by project zone and Census block groups
- Metrics by time of day and days of week

To identify current demand, analysts looked at bike/ped trips to or from each zone in the target area, along with the percentage of bike/ped trips crossing the highway that began and ended on opposite sides of the highway.

To estimate potential demand, the team looked at how many people were driving into the target area from a bikeable distance of five miles or less, and how important destinations within each zone (e.g. schools, shopping areas, etc.) related to existing travel trends and demographics in the area. This StreetLight O-D by Trips to or from Pre-Set Geography Metric allowed the Jacobs team to understand how many people could potentially shift from driving to biking or walking, something they found challenging to analyze in other transportation modeling platforms.

Results: Support Mode Shift With Data Findings

The analyses highlighted a significant number of trips under five miles, confirming that the proposed bridge could make bike/ped trips a more attractive option for those who need to cross the highway but lack a safe route and proper infrastructure. And although there are also many bike/ped trips in the study area, and significantly more pedestrians than cyclists, very few of them cross U.S. Hwy 26. Even with low cross-highway traffic overall (due to the absence of safe active transportation infrastructure), the data indicates significantly more pedestrian trips between two of the southern neighborhoods, Five Oaks and Marlene Village, and three of the northern neighborhoods, W. Oak Hills, Oak Hills, and Sunset High School. This suggests that the new bridge could provide a more direct route for some of these trips.

People with income below \$50K and people of color have a higher share of walking and cycling trips in that area than driving trips. From a social equity perspective, the proposed bicycle and pedestrian bridge has the potential to make biking and walking a viable transportation option for a disadvantaged population.