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Seattle Tests Passenger Load Zones for Ride-Hail Vehicles

UW Study Shows Promise for Curbing Ride-Hail Traffic Conflicts on South Lake Union Streets

SEATTLE, Wash., Sept. 5, 2019 — Today the University of Washington Urban Freight Lab released the results of a pilot study supporting easier and less disruptive passenger pick-ups and drop-offs for ride-hail app vehicles like Uber and Lyft, also referred to as transportation network companies (TNCs). The study tested the traffic impacts of providing more passenger load zones (PLZs) paired with in-app geofencing technology that guided drivers and riders to designated load/unload locations. While limited to a very specific sample, the results indicate that creating a designated space for passenger loading can discourage double-parking and reduce traffic conflicts.

Key findings from this study area indicate that:

1. **Adding designated loading zones and geofencing increased driver compliance in stopping at the curb.** A significant percentage of ride-hail vehicles stop to pick-up and drop-off passengers in the travel lane. Those in-lane stops appear connected to the lack of available designated curb space. Adding designated loading zones and geofencing reduced driver stops in the travel lane to load and unload passengers. But it was not lack of curb space alone that influenced driver activity: between 7 percent and 10 percent of drivers still stopped in-lane even when the zones were empty.
2. **Combining passenger load zones and geofencing reduced the average amount of time drivers stopped to load and unload passengers.** For example, 90 percent of drop-offs took less than 1 minute 12 seconds, which is 42 seconds faster than the average time with the added load zones alone.
3. **Passenger satisfaction increased when curb space was designated for pick-ups and drop-offs.** In the study, the percentage of riders rating their curb experience as very good or excellent went up by 5% for pickups and 34% for drop-offs.

The University of Washington Urban Freight Lab collaborated with the Sustainable Transportation Lab and the Seattle Department of Transportation (SDOT) to design a data-driven research methodology that combined video analytics, ground observations, user surveys and existing city data to assess a new approach to curbside management in a congested urban environment. SDOT installed additional passenger load zones and coordinated with the service providers to institute a geofence in the area. Data was collected over the course of six weeks on three block faces along Boren Avenue in the South Lake Union neighborhood, an area with

considerable congestion and TNC use. This non-arterial side street has 25 mph speed limits, stop signs at each intersection, and high levels of pedestrian activity.

The pilot was sponsored by the Mobility Innovation Center with funding from the Seattle Department of Transportation, Amazon, King County Metro, Sound Transit, and Challenge Seattle. Geofence implementation support was provided by Uber and Lyft.

Like all major cities, Seattle is grappling with how best to manage curb use, mobility, safety and congestion associated with the increasing use of ride-hailing services. According to a 2018 Seattle Times analysis, TNC ridership in the Seattle region has grown to more than five times the level it was in the beginning of 2015, providing, on average, more than 91,000 rides a day in 2018 with the majority of trips concentrated heavily in the city's densest neighborhoods.

A second phase of the study has been proposed to test the geofence and PLZ strategies in a high traffic, transit corridor so transit managers can learn and compare between the two environments.

Participant Quotes

"This research uses a data-based approach to experiment with potential solutions aimed at improving traffic flow while accommodating changing traveler demands. We are proud to provide robust analysis to support this collaborative approach to problem solving; where the public and private sector work together on shared regional challenges." --- Anne Goodchild, PI, Director, Supply Chain Transportation & Logistics Center, Professor of Civil and Environmental Engineering, UW

"We're pleased to partner with the City to make it safer, quicker, and easier for riders and drivers to find each other and be safely on their way. We believe a combination of in-app features, physical signage, and innovative curb design will help us offer a better curb experience for riders and drivers," said Allison Wylie, Uber Transportation & Mobility Policy Manager. "We will continue to explore ways to improve downtown traffic flow by making the pick-up and drop-off experience more seamless and efficient."

"This study provides data to help us make informed decisions about managing space and reducing conflicts on crowded Seattle streets," said SDOT Manager of Curbside Management Mike Estey. "Ride-hail apps are still a new and evolving industry with a very big impact on our transportation system. We'll consider how this approach could reduce conflicts, especially around stadiums and popular nightlife hotspots."

“We really value this research and the partnership with Seattle as it works to manage all the elements of the transportation system while also making our bus service operate better. These relationships are key to keeping our buses moving and customers prioritized, and ensuring innovative services operate safely within an integrated network.” – Daniel Rowe, King County Metro Supervisor of Research and Innovation.

“This study provides useful insights to help us better understand the changing needs of our customers,” said Brian Brooke, Deputy Director of Innovation and Performance at Sound Transit. “We look forward to the next phase of this research as we plan how we can best manage curb use to enhance system performance.”

About the Mobility Innovation Center: A partnership between Challenge Seattle and the University of Washington, the Mobility Innovation Center tackles specific transportation challenges affecting the Puget Sound region, using applied research and experimentation. Housed at CoMotion, UW’s collaborative innovation hub, the multi-disciplinary center brings together the region’s leading expertise from the business, government, and academic sectors to use technology and innovation to find transportation solutions. Challenge Seattle is a CEO-led, private-sector initiative working to address issues that will determine the future of our region.

About the Urban Freight Lab: The Urban Freight Lab (UFL), housed at the Supply Chain Transportation & Logistics Center at the University of Washington, works to improve the management of the urban goods delivery system by bringing together public and private stakeholders to design and test solutions.

About the Sustainable Transportation Lab: The Sustainable Transportation Lab studies how to make our transportation system more economically viable, environmentally benign, while ensuring access to opportunities for all.

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