Understanding the use of the curb space and alley for unloading and loading operations: A Seattle Case Study

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Purpose

The increasing growth of e-commerce has been putting pressure on local governments to rethink how they manage street curb parking and alley operations for trucks and other delivery vehicles. Many studies state that the competition for space among road users and lack of adequate infrastructure force delivery drivers to either search for vacant spaces or park at unsuitable areas; which negatively impacts road capacity and causes inconvenience to other users of the road (Butrina et al.(2017); Dablanc & Beziat (2015); Aiura &Taniguchi (2005)).However, local governments often lack data about the current usage of the parking infrastructure, which is necessary to make well-informed decisions regarding freight planning especially in dense, constrained urban areas. For these reasons, the purpose of this research is to address the lack of information regarding the usage of the infrastructure at the public right of way used for freight and parcel load and unload operations.

Research Approach

The approach of this research is quantitative. The SCTL research team developed two independent data collection replicable methods to quantify the usage of (i) curb spaces and (ii) alleys in selected areas of Seattle's One Center City.

Findings and Originality

This research presents two case studies for selected areas in Seattle's One Center city area. The first one documents and analyzes the duration and types of curb spaces used by delivery vehicles in the surrounding area of five prototype buildings. We also considered all vehicles occupying on-street commercial vehicle load zones located in the study area. The second case study conducts an alley occupancy survey, looking into all parking activities (including trucks, vans, garbage collection vehicles

and passenger vehicles) in seven alleys. The total of twelve survey locations were monitored during 2-3 weekdays and 4-8 hours per day.

Research Impact

This research provides practical step-by-step methods to conduct occupancy studies of public parking for loading and loading operations, which helps to understand the current usage of a key piece of the infrastructure network. The results provide critical information to make well informed decisions regarding urban freight planning especially in dense, constrained urban areas.

Practical Impact

This research describes the steps required to develop an efficient and systematic data collection method to build a database that will provide evidence-based learning to Seattle local officials. By applying these quantitative methods, we provided decision support to pilot-test and potentially adopt solutions to improve the freight parking infrastructure performance.

References

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