

STRIDE

Southeastern Transportation Research,
Innovation, Development and Education Center

Technology Transfer Final Report

STRIDE Project D5

Overcoming Barriers to Freight and Logistics Firm Collaboration with Urban Planning

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1. Project Overview

Urban freight delivery vehicles often must compete for curb space with other users, not only in large cities but in small to mid-sized urban areas as well. Curb space, however, is finite, and when a space is not available for a delivery vehicle to stand next to the destination, drivers must seek out alternatives. Such alternatives might include waiting for a space to become available, cruising the area to find a space further away, or parking in an unauthorized space. This competition, and its resulting effects on urban space and activity, are of interest to planners and logistics providers alike, given the demonstrated impacts on safety, traffic congestion, and shipping costs. These effects have only been amplified in recent years as the rise of e-commerce has sent more delivery vehicles into urban areas to perform “last mile” deliveries. What is more, the COVID-19 pandemic caused an unexpected and precipitous adoption of e-commerce, with US package volume rising from 14.7 billion packages in 2019 to 20.2 billion in 2020, and this trend is showing no signs of reversal.

Existing research has provided evidence that inadequate supply of freight loading spaces is a problem in the United States, that the practices for managing these spaces are often underdeveloped and vary widely, and that the resulting landscape produces several negative externalities for cities. Nevertheless, a missing component toward addressing these issues is an understanding of how drivers perceive and navigate them, a piece that would help craft effective solutions. This project pursues this component by examining commentary produced by urban delivery drivers to produce an understanding of what issues they view as most pressing and how they navigate these issues in their day-to-day work.

Through analyzing data collected from Reddit, an online content-sharing service, consisting of conversations between (mostly Amazon) delivery drivers, we examine driver perceptions of issues related to delivery routes in urban areas and the parking issues and practices they encounter and engage in.

2. Research Goals

We aimed to develop granular understanding of crucial issues that some drivers encounter while making last-mile deliveries in urban areas, with a special focus on parking issues and practices. This is important because solutions to issues like illegal parking and traffic congestion require understanding of the root causes of these behaviors.

3. Findings

We found that drivers generally dreaded downtown routes, mostly because of the time they took to complete, with parking, building access, and traffic contributing to these delays. We also examined parking strategies drivers used, which revolved around taking as little time as possible, sometimes parking further away, and delivering on foot, but quite frequently engaging in unauthorized parking. Commonly cited types of unauthorized parking included parking on the wrong side of the street, blocking the road, parking in a no parking zone, and parking on the sidewalk or curb. We also tracked the most discussed motivations for unauthorized parking, which included lack of available spaces, the time it would take to find an authorized space, and sometimes that drivers considered an authorized parking option less safe. Drivers also shared that parking enforcement tended not to bother them, acknowledging these practices are necessary to complete their routes. Additionally, we completed a scan of existing and emerging solutions designed to mitigate issues surrounding deliveries and delivery vehicle parking in urban areas.

4. Performance Metrics

Metric	# Completed
OUTPUTS	
Product(s): Number of new or improved tools, technologies, products, methods, practices, and processes created or improved	2 1) Qualitative analysis of online driver comments 2) Scan of urban freight policies and technologies
Technical Report: Number of client-based technical reports published	1 STRIDE Final Report
OUTCOMES	
Body of Knowledge: Number of trainings for transportation professionals	3
Professionals Trained: Number of professionals participating in trainings	68 (plus 52 YouTube views)
IMPACTS	
Stakeholders: Number of stakeholders you met with to encourage adoption or implementation of product(s)	2
Adoption/Implementation: Number of incidences outputs of research have been implemented or adopted	0

5. Products

Qualitative analysis of online driver comments

This product provides insight into the challenges, practices, and concerns of urban deliver drivers and the factors they encounter that contribute to phenomena like illegal parking. It is published in an open-access article, and therefore available for land use planners, transportation planners, municipalities, and last-mile shipping carriers (among others) and may help these groups to design effective interventions and policies to mitigate issues caused by delivery vehicles navigating urban spaces. Published in July 2022 in *Transport Policy*. (<https://www.sciencedirect.com/science/article/pii/S0967070X22001949>)

Scan of urban freight policies and technologies

This product catalogues policies, technologies, and interventions that either have been piloted, implemented, or could soon be piloted in urban areas to ease flows of urban freight in the last mile and reduce issues caused by last mile logistics. Published in August 2022 in *ITE Journal*. (<https://ite.ygsclibook.com/pubs/itejournal/2022/august-2022/live/index.html#p=27>)

6. Who benefits/will benefit from your products?

- land use planners
- transportation planners
- local businesses
- state transportation planners
- last-mile shipping carriers

7. Body of Knowledge & Professionals Trained

- 1) Iacobucci, E. and D. Magliola. Reports from the Battle for the Curb: Using Social Media to Understand Safety Challenges Faced by Urban Delivery Drivers. Collaborative Sciences Center for Road Safety (CSCRS) Research to Practice Bytes Series Webinar. March 2022. (48 participants, 52 YouTube views) Video available at: <https://www.youtube.com/watch?v=VYCKogP9HX4>
- 2) Goodchild, A. and N. McDonald. The Relationship between Freight Movements and Land Use in Urban Areas. Institute of Transportation Engineers (ITE) Webinar. April 2022.
- 3) Iacobucci, E. Reports from the Battle for the Curb: Using Social Media to Understand Challenges Faced by Urban Delivery Drivers. International Urban Freight Conference, Long Beach, CA, USA. May 2022. (20 participants)

8. Stakeholder Engagement

MEETING DETAILS		NARRATIVE DESCRIPTION
STRIDE rep.	Charles Edwards	Discussions with Greater Nashville Regional Council about urban freight issues in the community
Date of Activity	On-going	
Type of Activity	phone meeting	
Stakeholder(s)	Jessica Hill, GNRC	
STRIDE rep.	Evan Iacobucci	Introduced and shared progress on the research activities being performed as part of this project. Made plans for collaboration on 03/23 Webinar via CSCRS.
Date of Activity	03/09/2022	
Type of Activity	phone meeting	
Stakeholder(s)	Dana Magliola, Program Manager, Freight + Logistics, NCDOT Rail Division	

9. Adoption/Implementation

The products have not yet been adopted or implemented. The report and journal articles are available to practicing planners and other stakeholders who can use the products.

10. Broader Impacts

This project has increased awareness of the problems faced by delivery drivers in navigating urban areas as well as novel solutions that may be implemented to mitigate or relieve these problems. Additionally, this project has resulted in follow-on research about occupational hazards for urban delivery personnel.