Municipal Adaptation to Changing Curbside Demands: Findings from Semi-Structured Interviews with Ten U.S. Cities

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Motivation

Emerging mobility services (e.g., ridehailing, e-commerce, micromobility, etc.) are generating rapidly growing demands to use the curb, with impacts on mobility, energy consumption, and related outcomes.

This presents both opportunities and challenges to municipal agencies responsible for managing the curbside space.

We employed a semi-structured interviewing approach to establish how municipalities are adapting to these new curbside pressures. We interviewed senior staff responsible for the curbside of ten large U.S. municipalities, with populations ranging from ~250,000 to ~5,000,000 (and the majority of which are the central city of their metropolitan region).

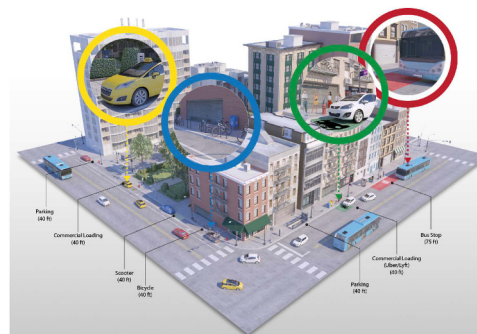Table 1. Characteristics of Interviewees' Municipalities

City ID	Division of Interviewee's Organization	Position Title of Interviewees	# of Staff in Interviewee's Division	Population of Municipality	"Emerging Mobility" Operators	Census Region
A	Parking and Mobility	Manager of Curbside and Parking	25–35	500K–1M	Transportation Network Company (TNC), Bikeshare (Dockless)	West
B	Transportation	Assistant Director for Parking Services	35–45	500K–1M	TNC, Bikeshare (Docked), Scooters	Midwest
C	Parking within Transit and Mobility	Strategic Advisor to Parking	25–35	500K–1M	TNC, Bikeshare (Dockless)	West
D	Transportation	Mobility Project Manager	15–25	< 250K	TNC, Bikeshare (Dockless), Scooters	South
E	Parking and Ground Transportation	Curbside Manager; Management Planner	5–15	500K–1M	TNC, Bikeshare (Docked, Dockless), Scooters	South
F	Transportation	Transportation Planners	5–15	< 250K	TNC, Bikeshare (Docked)	West
G	Parking Management	Assistant Director	65–75 (Including Field Staff)	1M–2.5M	TNC, Bikeshare (Docked)	South
H	New Mobility Team	Program Director, Planner	200–250 (Including Enforcement)	500K–1M	TNC, Bikeshare (Docked, Dockless)	Northeast
I	Parking	Parking Services Manager	45–55 (Not Including Enforcement)	500K–1M	TNC, Bikeshare	West
J	Parking Meters Division	Senior Transportation Engineer, Transportation Engineer	35–45	2.5M–5M	TNC, Bikeshare (Docked, Dockless), Scooters	West

Key Findings

- There is a trend of formally including curbside management teams or increasing team members staffing.

- Operational failures at the curbside have impacts on safety, capacity, and emergency vehicles; impact is highly concentrated spatially and temporally (e.g. late evenings in nightlife districts)

- Data flows between operators and municipalities are highly diverse

- Interviewees generally seek more real-time data on curb activity and noted a desire to have an ability to manage the curbside dynamically.

Table 2. Summary of Selected Findings, Organized by City ID ("✓" for Yes; "-" for No; "?" for Unknown)

	A	B	C	D	E	F	G	H	I	J
Theme #1: Organization Structure										
Increased staffing during past five years	✓	✓	✓	✓	✓	✓	-	✓	-	✓
Municipality has staff who regulate TNCs	-	✓	✓	?	-	-	✓	-	-	-
Theme #2: Current Curbside Activity										
Rapid growth in TNC usage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TNCs are regulated on the state level	✓	✓	?	?	✓	-	✓	✓	✓	✓
Theme #4: Relationships with Industry										
Collaboration with private passenger and freight mobility companies	✓	✓	✓	✓	✓	-	-	✓	✓	✓
TNCs regularly share data with municipalities interviewed	-	-	✓	✓	-	-	-	-	-	-
Municipalities provide data to private passenger and freight mobility companies	✓	?	✓	?	?	-	-	-	-	-
Tensions reported between TNCs and interviewee municipality	✓	✓	?	✓	✓	-	?	-	?	-
Theme #5: Curb Management Pilot Projects										
Curb management pilot project	✓	✓	✓	✓	✓	-	-	✓	✓	✓
TNC curb management pilot project	✓	-	✓	✓	✓	-	-	?	✓	✓
Freight curb management pilot project	-	-	✓	-	-	-	-	?	-	✓
Micro-mobility curb pilot project	✓	-	✓	?	?	-	-	?	✓	✓
Monetary charges for using curbspace	-	-	-	-	-	-	-	-	-	-
Theme #7: Trends in Parking Revenue										
Decline in municipal parking revenues	-	-	-	-	-	?	-	?	-	✓
Theme #8: Data Used to Manage the Curb										
Parking meter payment data	✓	✓	✓	✓	✓	-	✓	-	✓	✓
Manual observations	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Theme #9: Research Needs and Envisioned Future of the Curb										
Additional curb-related data	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Data aggregation and visualization tools	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Digital curb inventory	✓	-	-	-	✓	✓	-	✓	-	✓
Capability to manage the curb dynamically	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Autonomous vehicles expected to have future impacts	-	-	✓	-	✓	✓	✓	✓	✓	✓

Table 3. Summary of Data Provided by TNCs to Interviewees' Municipalities

City ID	Data Sent from TNC Operators to Interviewee Municipalities
A	None. Operator agreed to provide pilot-related pick-up/drop-off data, but the data was ultimately not shared with the city
B	None. Interviewee noted that TNC operators active in the municipality are "reluctant" to provide data
C	Unknown
D	Heat maps of pick-up and drop-off locations for the pilot
E	No data provided directly from TNCs. Interviewee municipality uses SharedStreets platform to access pick-up and drop-off data
F	No data provided directly from TNCs. Interviewee municipality uses StreetLight data to understand origins and destinations of trips for geography of interest
G	Heat maps of pick-up and drop-off locations for the pilot
H	None
I	Heat maps of pick-up and drop-off locations for the pilot
J	None. Interviewee city reported having requested detailed pick-up/drop-off data for a pilot project, but the request was not fulfilled. Interviewee city subsequently accessed SharedStreets platform.

Further Work

- In conjunction with this study, we have developed a quantitative framework for modeling the curb; paper available from authors (just ask for a hard copy)

- Based on priority themes, we plan to refine the curbside modeling approach to implement real-world case studies. We are also extending the framework to include dynamic curbside, pricing, and urban freight deliveries.

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