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Creative Reallocation of Curbs, Streets, Sidewalks Accelerated by the Pandemic May be Here to Stay

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Issue

Curb space has been traditionally designed for private vehicle parking, public transit, and passenger and commercial loading. However, in recent years, a growing number of new services and activities have increased the demand for limited curb space, including passenger pick-up and drop-off; last-mile delivery (e.g., courier network services, personal delivery devices)²; electric vehicle (EV) charging; micromobility parking and use (e.g., personally owned and shared bikes and scooters); and carsharing services. The curb serves a variety of functions such as vehicle and device storage (including personally owned and shared vehicles and devices), outdoor dining and retail, greenspace, and other uses. These changes are contributing to a notable shift in how people access and use the curb, and how public agencies plan, prioritize, and manage curbside interactions.

To better understand the changing needs for curb space management and how to meet these needs, we interviewed 23 individuals representing public, private, and non-profit sector perspectives, and employed a survey of 1,033 curb users and 241 taxi, transportation network company (TNC), and public transportation drivers. The interviews and surveys were conducted between September 2019 September 2020.

Key Research Findings

The pandemic prompted innovative strategies for reallocating access and use of sidewalks, streets, and the curb. These strategies typically fall into two categories: i) quick fixes or low-cost approaches entailing relatively temporary infrastructure installations (e.g., cones, A-frame signs) that are used to communicate new use of existing spaces; and ii) capital investments that include more capital-intensive

infrastructure projects (e.g., installing bike lanes). Table 1 provides examples of quick fixes and capital investments local governments used during the pandemic.

Some strategies implemented as pilot demonstrations (i.e., short-term trials) during the pandemic became permanent policy changes. For example, in May 2020 the City of Los Angeles (LA) introduced the temporary LA Al Fresco program that allocated space on sidewalks and/or streets in front of restaurants and cafés for outdoor dining. This is now a permanent program, and the city streamlined its outdoor dining permitting process. Over 2,500 restaurants have participated since the program's introduction. In San Francisco, the city/county passed Shared Spaces legislation in July 2021 establishing a process for retailers and community groups to use public spaces (e.g., sidewalks, parking lots, parks) for commercial and retail activities, including converting parking spaces into dining areas and/or greenspaces (often referred to as parklets). During the pandemic, over 2,100 parklets were constructed as part of the program.

Considerations for Implementation

To help public agencies plan and manage curb access and use, we developed the MARVEL framework that consists of the following steps:

- 1. Make a Plan:** Develop a plan that guides how new and existing curbs are designed, including considerations such as land use and social equity.
- 2. Allocate Curb Space:** Use a competitive or non-competitive process to allocate curb space to different modes and users.
- 3. Regulate Curb Space Access:** Leverage management strategies (e.g., permits, flex zones) that can determine access

by mode (e.g., bike, TNC, bus, car), operator, and/or operational characteristics (e.g., parking, loading zones).

4. Value Curb Space: Use strategies to monetize the curb and charge for access to manage demand and raise revenue.

5. Enforce Curb Space Use: Employ different strategies to ensure that the curb is used as designated (e.g., human, sensors, cameras, and automated enforcement).

6. Learn from Curb Space Use: Use tools, such as performance metrics and data, to observe and evaluate existing curb space use to support local goals.

References

Shaheen, S., Martin, E., Cohen A., Broader, J., and Davis, R. (2022) Managing the Curb: Understanding the Impacts of On-Demand Mobility on Public Transit, Micromobility, and Pedestrians. Mineta Transportation Institute: San Jose. <https://doi.org/10.31979/mti.2022.1904>.

	Strategy	Description	Curb User		
			Active Transportation ²	Shared Micromobility	Retail
Quick Fixes	Corrals	Designated spaces where micromobility devices can be parked and stored on the street or sidewalk		X	
	Digital Infrastructure and Geofencing	A virtual geographic boundary defined by GPS, remote frequency identification (RFID), or other technology that enables software to trigger a response (e.g., user alert) when a mobility device enters or leaves a particular area	X	X	
	Docks	Specially designed racks that securely store shared micromobility devices		X	
	Flex Zones	A designation for how the curb can be used and who can access it throughout the day	X	X	X
	Healthy/ Slow Streets	A designation for streets or corridors as shared spaces for bicycle, pedestrian, scooter, vehicle, and wheelchair travel	X	X	
	Pick-Up Zones	Dedicated pick-up zones for retail and restaurant locations that encourage to-go orders and limit parking/loading zone dwell time in brick-and-mortar locations			X
Capital Investments	Bike Lanes	Delineated lanes for bikes, which may be an addition to streets and/or part of a connected network, that include various designs (e.g., shared vehicle lanes, buffered lanes, and separate and protected bike lanes)	X	X	
	Linear Parks	Parks that are longer than they are wide located on public land running along canals, rivers, streams, defensive walls, electrical lines, or highways and shorelines, and typically contain a curb or multi-use path for active transportation	X	X	
	Parklets	Repurposed parking stalls or sidewalk space that provides areas for dining, recreation, and other uses.			X

Table 1. Curbside Infrastructure and Management Policies

¹**Courier Network Services (CNS)** A commercial for-hire delivery service for monetary compensation using an online application or platform (e.g., website, smartphone app) to connect freight (e.g., packages, food,) with couriers using personal, rented, or leased vehicles, bicycles, or scooters.

Personal Delivery Devices (PDD): A commercial for-hire delivery service for monetary compensation using an online application or platform (e.g., website, smartphone app) to connect freight (e.g., packages, food) with small driverless robots. Depending on the size, speed, and policy, PDDs may operate in the curb space, bike lanes, or street.

²Active transportation includes walking, cycling, bikesharing, and scooter sharing.

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