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Pooling Passengers and Services

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POLICY BRIEF

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Pooling Passengers and Services

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KEY TAKEAWAYS

Shared mobility services often represent a novel use of vehicles for passenger and goods movement, but they do not benefit from many supportive policy levers.

New forms of pooled services, either with distinct users sharing rides or with passenger and goods movement services bundled, can support higher utilization efficiency.

Understanding the feedback between shared mobility adoption and incentive/disincentive strategies could be key to unlocking higher vehicle occupancy.

"Investigations into how pioneering services will interface with rights-of-way access and pricing strategies is critical as we plan for, and adapt in the future."

TOPIC/ISSUE

In the past ten years, passenger and goods movement transportation systems have evolved rapidly. Shared mobility providers are filling gaps in service and creating new markets for delivery; vehicle fleets continue to electrify; and pooled services are increasing vehicle occupancy. The uptake of innovative pooled services, as well as automation, promise to continue the trend of transformative change. As the private sector continues to advance, there is a great need for institutional flexibility in managing and coordinating all users of transportation infrastructure, particularly on the State highway network and urban arterials.

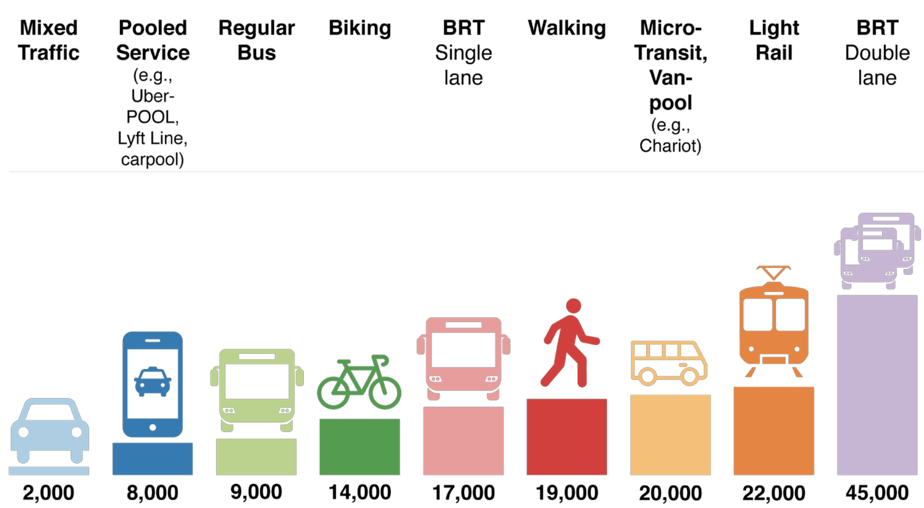
Recently, political will has shifted, with policymakers demonstrating interest in exploring more adaptive forms of current transportation user fees, along with innovative funding mechanisms via partnerships. Additionally, private mobility providers have expressed interest in direct user fees and incentivizing higher occupancy travel (e.g., Lyft, Uber, trucking industry). However, planners and policymakers currently do not have a method for distinguishing between private vehicles and shared services when envisioning the current and future transportation ecosystem. As such, investigations into how pioneering services will interface with access to rights-of-way and pricing strategies is critical as we plan for and adapt in the future.

THE EVOLVING TRANSPORTATION ECOSYSTEM

As new forms of shared services mature, and others develop, it is important to understand how these modes differ from current ones. Only with complete information can decision makers develop comprehensive strategies that can target specific outcomes.

Corridor *maximum* capacity of urban transport modes
[persons per hour in both directions]

Source: GIZ, TU Delft, and author's calculations



Maximum corridor capacity calculations for the pooled service, microtransit, and vanpool categories use a linear scaling factor based upon passenger capacity (i.e., four passengers for every five seats in a sedan; 12-14 passengers for every 15 seats in a larger van). These vehicles can maneuver similarly to a standard sedan in mixed traffic; however, researchers remained conservative given time spent for pick-up and drop-off.

APPROACH

UC Berkeley researchers employed primary source analysis, literature reviews, and expert interviews to develop a suite of potential policy strategies at local, State, and Federal levels. Examples include fixed fees, access tolls, sales taxes, excise taxes, mileage-based user fees, and prioritized access to curb space and parking, among others. Using network models and sample populations, the effects of each policy or combination of policies on the transportation ecosystem are analyzed, as applicable. Using cost-effectiveness analyses, the long-term sustainability and efficiency of the policies are examined using potential future scenarios (e.g., increased occupancy, electric drive vehicle adoption, automated/connected vehicle adoption, cleaner internal combustion engine standards, etc.).

CRAFTING POLICY TO ACHIEVE TARGETED OUTCOMES

Once a clearer picture of the transportation ecosystem is developed, stakeholders will be empowered to craft targeted policy to move California toward its future environmental and societal goals. At present, our research has shown:

- Private industry stakeholders from the goods movement and shared mobility sectors have expressed interest in pricing strategies (e.g., Lyft, Uber, trucking industry).
- Re-distribution of collected funds via innovative pricing mechanisms is an issue that stakeholders currently do not agree upon.
- At present, long-term revenue viability is a goal for public agencies.
    - This could lead to short-sighted solutions, if we do not account for future changes in traveler behavior.
- Prioritizing infrastructure access for more efficient transportation modes should be a priority.
- For goods movement, infrastructure access policies that emphasize efficiency can decrease externalities in urban areas (double parking, congestion, idling, etc.), particularly due to the lower elasticity of demand to delivery fees.
- Understanding the required data format to produce results is important when structuring partnerships and evaluation strategies.

Due to the long time horizon, and many uncertainties involved in phasing in access and pricing policies, there is an opportunity to develop more flexible policies. The table below presents a framework for prioritizing access based upon vehicle occupancy, type, and propulsion. Curb and access policies are more suited to a local scale, as the built environment greatly influences outcomes, whereas pricing strategies could be instituted at both State and local/regional scales. Partnerships with mobility providers via pilot projects could provide beneficial empirical data and understanding.

Potential Access and Pricing Policy Framework

	Vehicle Type		Vehicle Propulsion		Vehicle Occupancy	
Curb/Parking Access	Car: Bus: Light-Rail: Bike/Walk: Medium-Duty Vehicle: Heavy-Duty Vehicle: Shuttle:	Low High High High Med. Med. Med.	Internal Combustion: Natural Gas: Hybrid: Electric: Fuel Cell:	Low/None Low Medium High High	20% 40% 60% 80% 100%	Low Med. Med. High High
Pricing	Car: Bus: Light-Rail: Bike/Walk: Medium-Duty Vehicle: Heavy-Duty Vehicle: Shuttle:	$$$$ $ $$ Free $$$ $$$ $	Internal Combustion: Natural Gas: Hybrid: Electric: Fuel Cell:	$$$$ $$$ $$ $ $	20% 40% 60% 80% 100%	$$$$ $$$ $$ Free Free

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