POLICY BRIEF

UNIVERSITY OF CALIFORNIA Berkeley
Transportation Sustainability RESEARCH CENTER

ITS Berkeley Institute of Transportation Studies

Impacts of Shared Mobility

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KEY TAKEAWAYS

Understanding the impacts of shared modes can aid policymakers in leveraging the positive impacts and taming negative impacts to achieve public policy goals.

The impacts of shared mobility vary depending on service model, local attributes, and time of day. More research is needed to understand full impacts.

TOPIC/ISSUE

Shared mobility modes have reported a number of environmental, social, and transportation-related impacts. Several studies have documented the reduction of vehicle usage, ownership, and vehicle miles traveled (VMT). Cost savings and convenience are frequently cited as popular reasons for shifting to a shared mode. Shared modes can also extend the catchment area of public transit, potentially playing a pivotal role in bridging gaps in existing transportation networks and encouraging multi-modality by addressing the first-and-last mile issue related to public transit access (1). Shared mobility is also thought to provide economic benefits in the form of cost savings, increased economic activity near public transit stations and multi-modal hubs, and improved access by creating opportunities for new trips not previously possible via traditional public transportation and by enabling new one-way (or point-to-point) service options that were previously unavailable. They have also been shown to compete with other modes (e.g., public transit, taxis, private auto) in different environments.

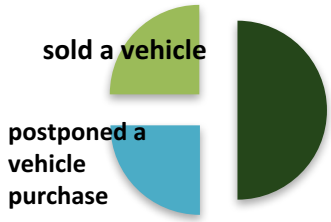
RESEARCH FINDINGS

A number of academic and industry studies of shared mobility, predominantly based on self-reported survey data, have collectively shown the following policy-related outcomes (1):

- Sold vehicles or delayed or foregone vehicle purchases in the case of carsharing;
- Increased use of some alternative transportation modes (e.g., walking, biking);
- Reduced VMT when bikesharing, carsharing, and ridesharing (carpooling/vanpooling);
- Increased access and mobility for formerly carless households;
- Reduced fuel consumption and greenhouse gas (GHG) emissions when using bikesharing, carsharing, and ridesharing; and
- Greater environmental awareness.

"California's climate action planning has raised awareness among public agencies about shared mobility services as a transportation strategy and its impacts on the transportation network."

Impacts of Roundtrip Carsharing (2, 3)



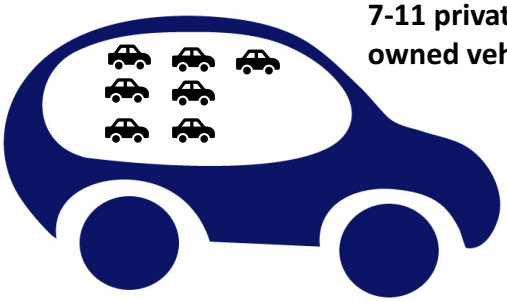
1 carsharing vehicle replaces 9-13 privately owned vehicles

Reduction of GHG emissions per year for one household	Reduction of VMT per year for one household	Monthly household savings per US member after joining carsharing
34 – 41%	27 – 43%	$154 – 435

RESEARCH FINDINGS (continued)

Impacts of One-Way Carsharing (4)

1 carsharing vehicle replaces 7-11 privately owned vehicles



Average reduction of GHG emissions per household	Average reduction of VMT per househould
4 – 18%	27 – 43%

Impacts of Bikesharing (5)

- **Large cities:** Bikesharing members rode the bus less due to reduced cost and faster travel
- **All cities:** Increased bus use due to improved access to / from a bus line

- **Small cities:** Increased rail use
- **Large cities:** Decreased rail use due to faster travel times and cost savings of bikesharing

5.5% Bikesharing members sold or postponed a vehicle purchase

58% Bikesharing members increased cycling

50% Bikesharing members reduced personal vehicle use

APPROACH

Research on shared mobility can aid policymakers and public agencies in understanding the impacts of shared modes on public infrastructure and policy. However, differences in service models, data collection, and study methodologies can produce inconsistent results due to limited survey samples and aggregate-level analyses (often attributed to proprietary issues). Thus, it can be challenging to provide a comprehensive and unbiased picture.

While automated traveler activity data can offer a rich understanding, these data typically do not capture changes in auto ownership, travel behavior across all modes, and respondent perceptions over time. While self-reported travel behavior surveys may have validity issues—including respondents exaggerating travel behaviors, underreporting the extent or frequency of travel, or reporting inaccurately as well as sample bias—they can offer another source of behavioral understanding.

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CONCLUSIONS AND RECOMMENDATIONS

The **California Legislature** should consider the following policies:

- **Collect data** on the usage of individual shared modes as part of the California Household Travel Survey.
- **Require private sector data sharing** (protected repository) as a condition for operating on public rights-of-way.
- **Develop a statewide repository for public and private sector transportation data** and exempt personal traveler data from release under the California Public Records Act to protect privacy and proprietary data.
- **Fund ongoing research on:**

1) The types of policies and government reforms needed to foster transportation innovations.

2) The net state gross domestic product impacts of monetizing underused resources versus the potential impacts of reduced vehicle ownership, higher vehicle turnover (due to fleet usage), and measuring the potential economic impacts of future transportation technologies.

3) Development of a statewide strategy for information and communications technologies (ICT) to build the fiber optics and other digital infrastructure needed to advance the State's transportation network into the 21st century and beyond. This assessment should identify ICT infrastructure performance, as well as current and future ICT capacity needed for the deployment of emerging and future transportation technologies (e.g., connected and shared automated vehicles).

References

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