



UNIVERSITY OF CALIFORNIA *Berkeley*
Transportation Sustainability
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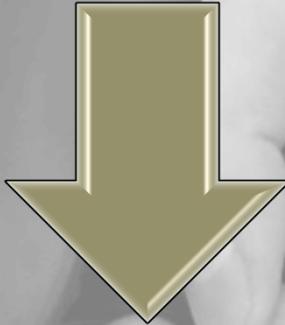
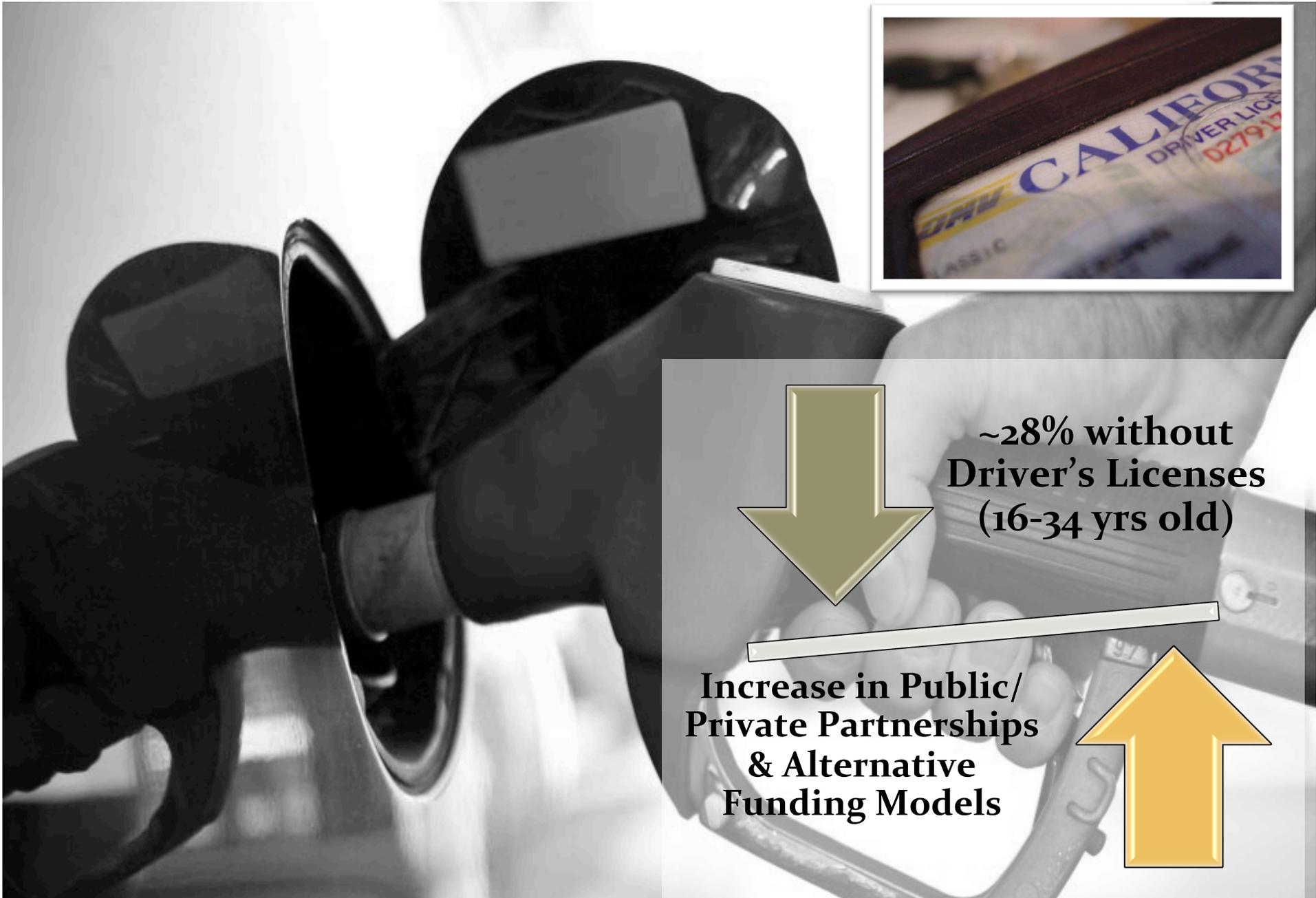
MOBILITY & THE SHARING ECONOMY: AN INTRODUCTION

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Overview

- Key Trends
- What is Shared Mobility?
- Forms & Understanding
- Key Policy Takeaways
- Summary
- Acknowledgements





**~28% without
Driver's Licenses
(16-34 yrs old)**



**Increase in Public/
Private Partnerships
& Alternative
Funding Models**



U.S. Trends

Declining revenues, licensed drivers

Decline In Traditional Ownership Model Of Material Goods Rise In Renting, Subscription & Pay-Per-Use



New Models

Subscription & Membership vs. Ownership



Users are looking to transportation to meet multiple needs beyond getting to their destination



User Behaviors & Preferences

Convenience & Cost First, Green Is A Perk



A New Direction

Our Changing Relationship with Driving
and the Implications for America's Future

U.S. PIRG
Education Fund

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A New Way to Go

The Transportation Apps and Vehicle-Sharing
Tools that Are Giving More Americans
the Freedom to Drive Less



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Recent U.S. Studies

Changes in Driving & Role of Apps, Sharing



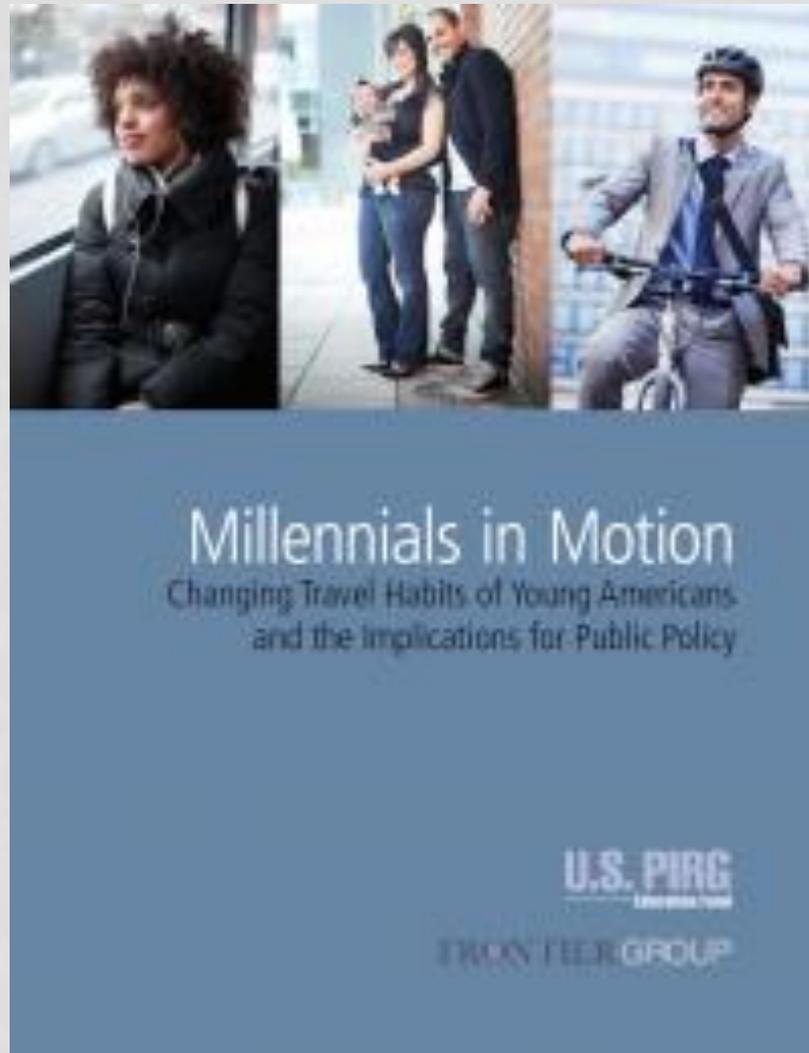
MILLENNIALS & MOBILITY:

UNDERSTANDING
THE MILLENNIAL
MINDSET



TCRP J-11 Study

Understanding Millennials Living in Urban
Areas



Latest Study

Millennials Shifting Away from Driving

Shared-use mobility: Mobility services that are shared among users including:



Traditional public transportation services, such as buses and trains;



Vanpools, carpools, shuttles, ridesourcing/TNCs;



Carsharing, bikesharing, scooter sharing in all its forms; and



Flexible goods movement

→ Can be b2c and p2p



Roundtrip Carsharing:
A fleet of autos used for round trips that require users to pay by hour or mile.



Peer-to-Peer Carsharing:
Shared use of private vehicle typically managed by third party



One-Way Carsharing:
A fleet of autos used for point-to-point trips, facilitated by parking agreements

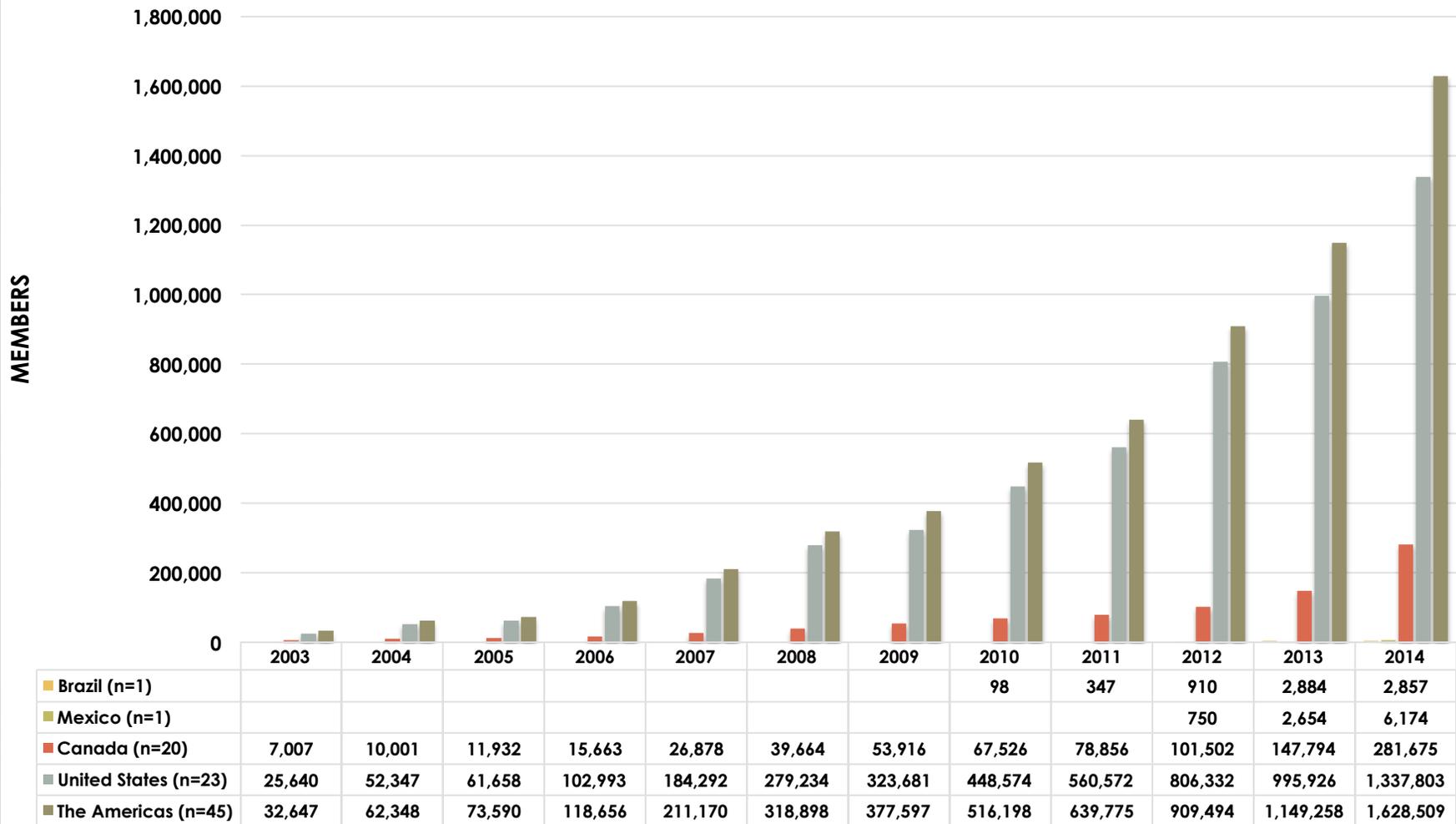


Fractional Ownership Carsharing:
Individuals sublease or subscribe to a vehicle owned by a third party

Carsharing

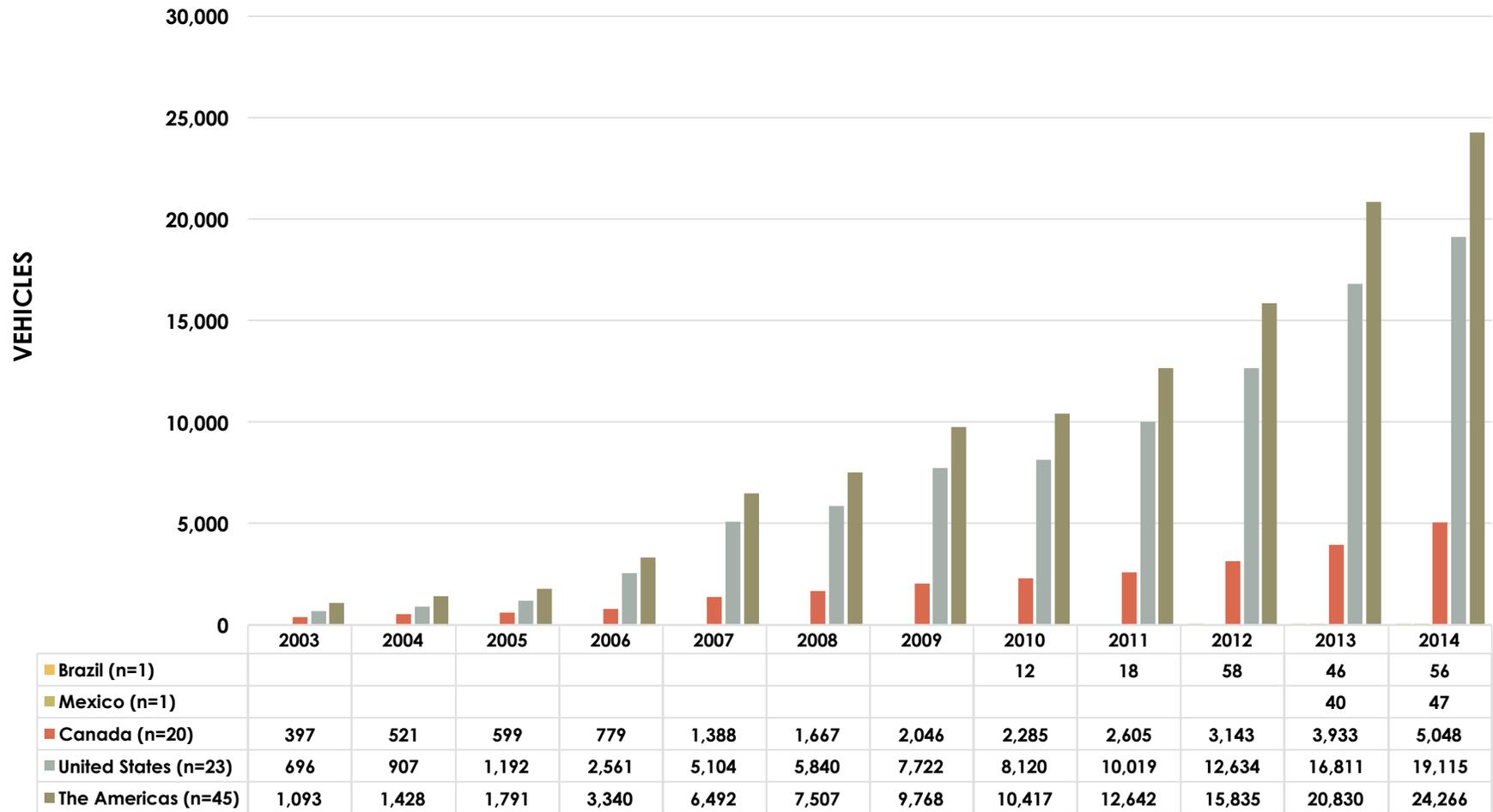
Many forms of carsharing

Carsharing Membership Growth: Americas



Shaheen and Cohen, 2014

Carsharing Vehicle Growth: Americas



Shaheen and Cohen, 2014

N.A. Vehicle Holdings: Key Findings

- Between 9 to 13 vehicles removed, including postponed purchase
- 4 to 6 vehicles/carsharing vehicle sold due to carsharing
- Most shift due to 1 car households becoming carless
- Second largest shift, 2 car households become 1 car households
- 25% sell a vehicle; 25% postpone purchase
- Net CO₂ reduction of 27% observed and 43% full impact (average)



N. American Carsharing Report



transweb.sjsu.edu/project/1029.html



Scooter Sharing:
An operator-owned fleet of motorized scooters made available to users by the hour or minute

Scooter Sharing

Fills niche between cars and bicycles



Public Bikesharing:
Fleet of bicycles for short, point-to-point trips
usually found at stations



Closed Community Bikesharing:
Campuses and closed membership, mainly
roundtrip



Peer-to-Peer Bikesharing:
Rent or borrow hourly or daily from
individuals or bike rental shops

Bikesharing

Exponential growth in urban areas

Worldwide & US Bikesharing:

October 2014

- **772 cities/communities** with IT-based operating systems
 - ✓ **815,000 bikes**
 - ✓ **Over 37,500 stations**
- **US: 62 cities** with IT-based systems
 - ✓ **22,000 bikes**
 - ✓ **Over 2,000 stations**



Source: Russell Meddin, 2014

Bikesharing Statistics: North America

as of January 1, 2013

	United States	Canada	Mexico	North American Total
Number of programs	22	4	2	28
Total Number of users	884,442	197,419	71,611	1,153,472
Number of members	41,695	53,707	71,611	167,013
Number of casual users, 1-30 Day	842,747	143,312	0	986,059
Number of bicycles	7,549	6,115	3,680	17,344
Number of kiosks	800	492	307	1,599
Number of docks	12,955	10,506	7,487	30,948

Shaheen et al., 2014



Carpooling:
Grouping of travelers into a privately owned vehicle, typically for commuting



Vanpooling:
Commuters traveling to/from a job center sharing a ride in a van



Real-time ridesharing services:
Match drivers and passengers, based on destination, through app before the trip starts

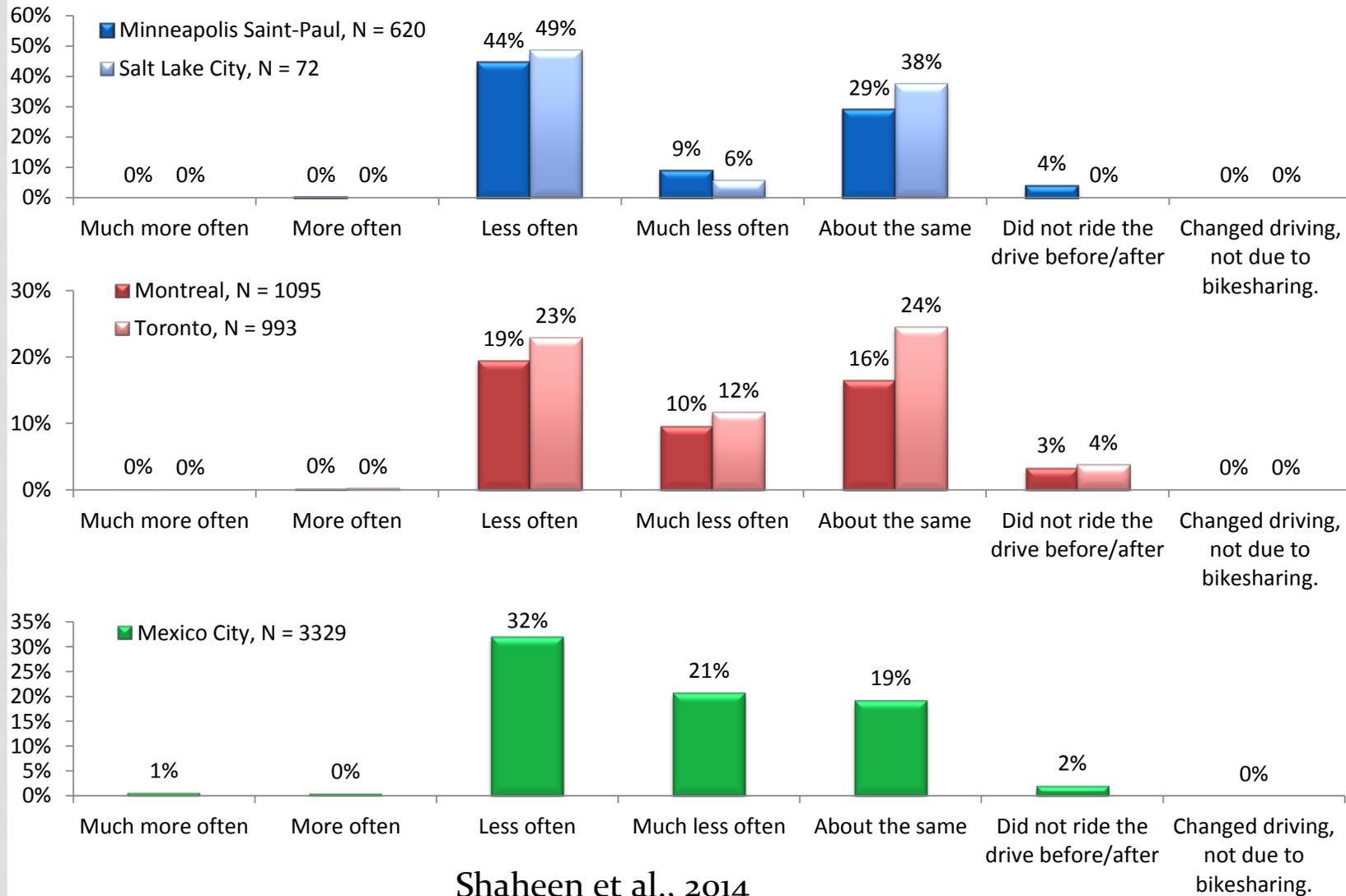
Ridesharing

Evolving system of services and operators

Change In Driving

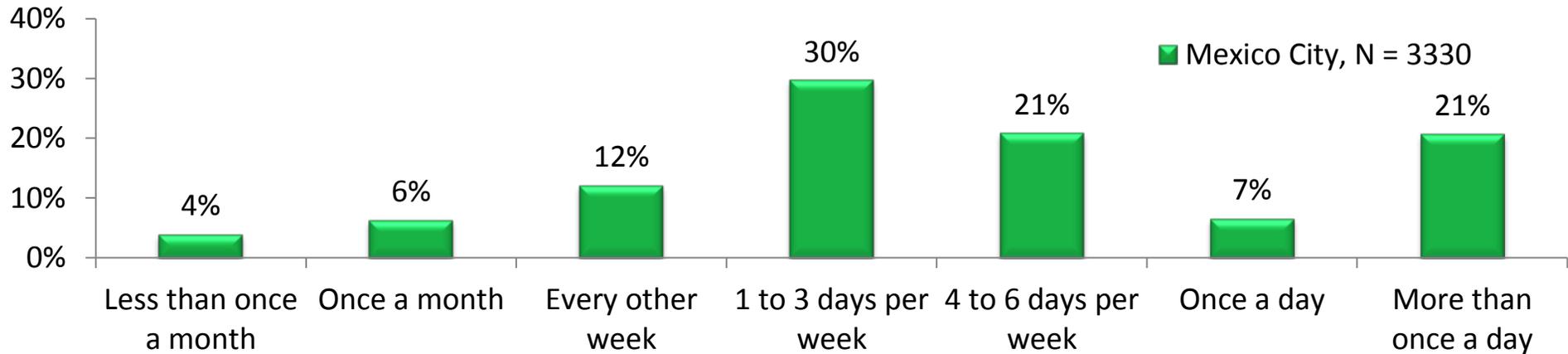
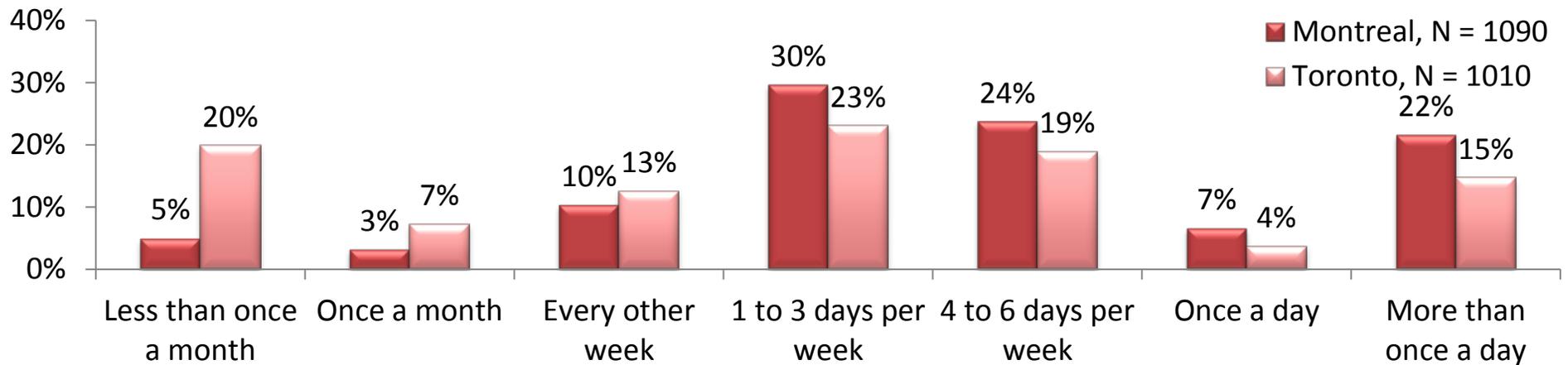
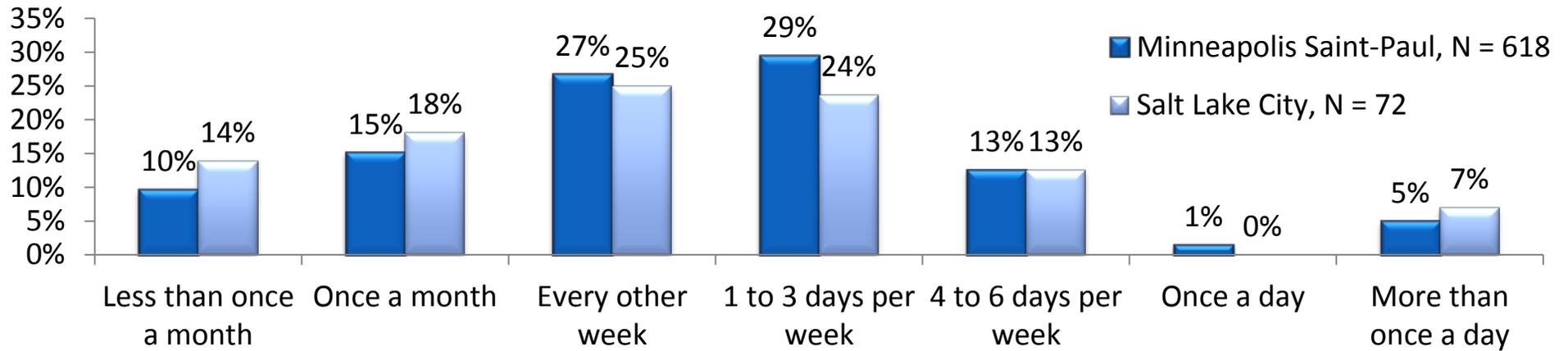


As a result of my use of bikesharing, I drive a personal vehicle (e.g., car, SUV, etc.) ...

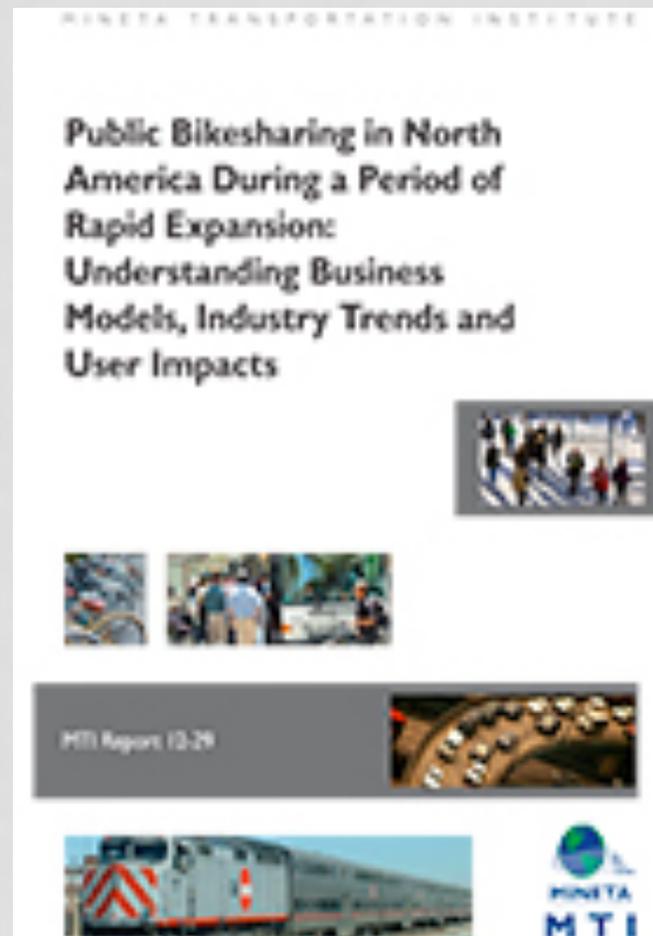


Shaheen et al., 2014

Currently, how often do you check out a bikesharing bicycle?



N. American Public Bikesharing Report

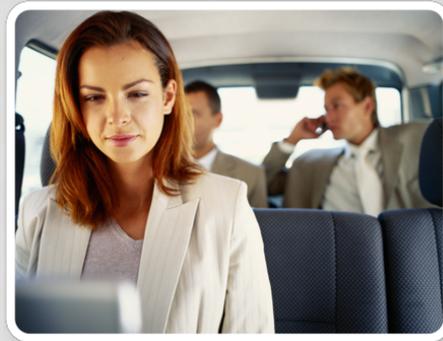


Just Released!

<http://transweb.sjsu.edu/PDFs/research/1131-public-bikesharing-business-models-trends-impacts.pdf>

Ridesharing in North America: A Snapshot (July 2011)

- 612 carpooling services
- 153 vanpooling services
- 127 services offer both carpooling & vanpooling
- Includes both online and off-line programs



Chan and Shaheen, 2011



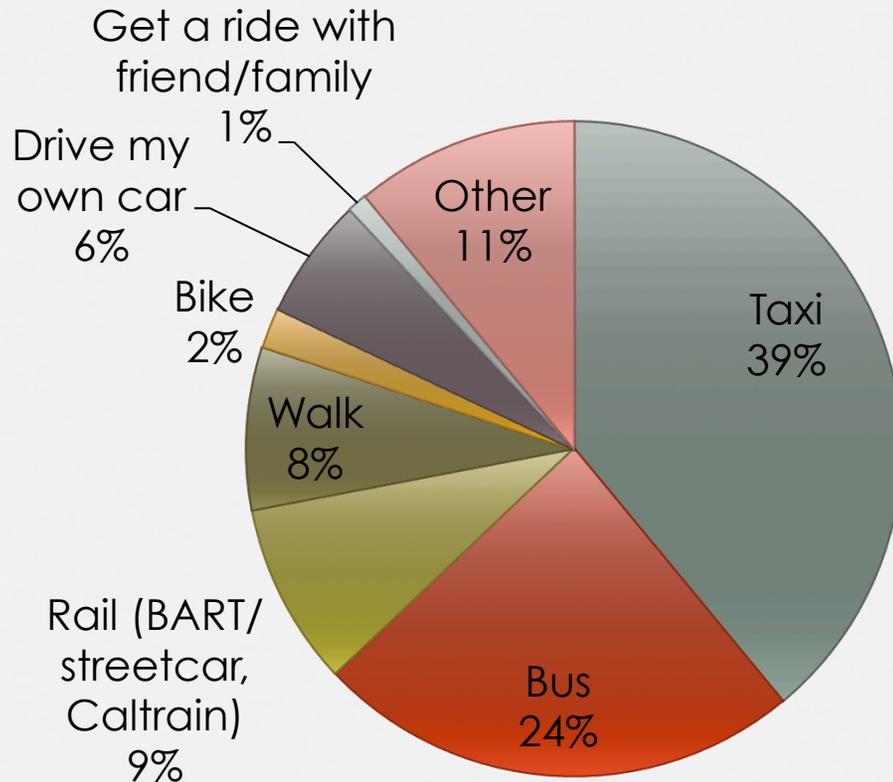
Ridesourcing/TNCs:
A service that allows passengers to connect with and pay drivers who use their personal vehicles for trips facilitated through a mobile application

Ridesourcing/TNCs

New category of services; need for study

Key Findings: Modal Shift

How would you have made this trip if Uber/Lyft/Sidecar were not available?



- 92% would have still made the trip
 - 8% induced travel effect
- 33% would have taken public transit (bus or rail)
- 4% named public transit station as O/D, suggesting some use ridesourcing to access transit
- 20% avoided driving after drinking

Rayle et al, 2014

Key Findings: Wait Times

About how long did you wait for your ride (from the time you made the request to the time the vehicle arrived)?

Percentages of wait times less than or equal to 10 minutes:

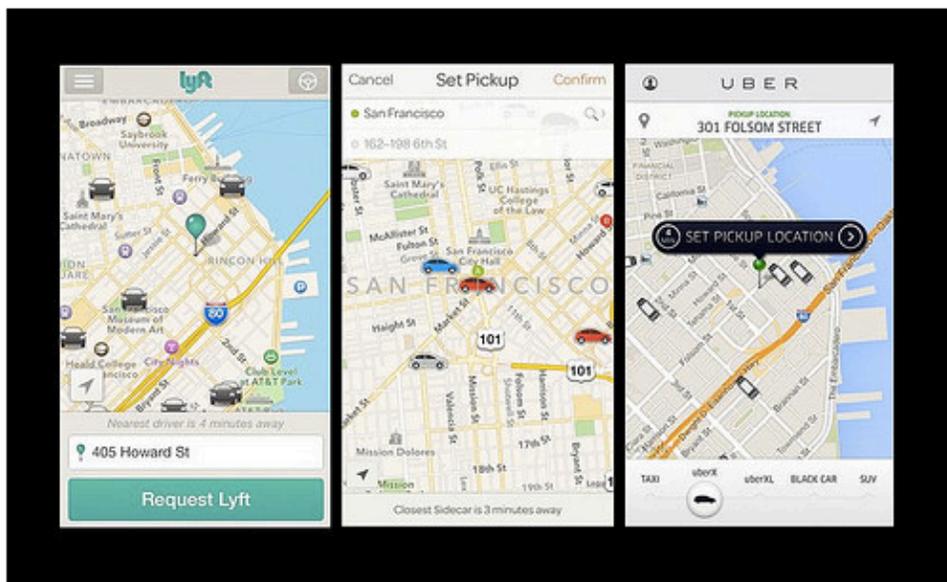
Wait Times	Ridesourcing	Taxi (Phone)	Taxi (Street Hail)
M-F 4am-6pm	93%	35%	39%
M-F (6pm-4am)	92%	16%	33%
S-Su	88%	16%	25%

Rayle et al, 2014

Ridesourcing White Paper

What's the difference between people who use taxis and people who use ridesourcing in SF?

Submitted by Kendra K. Levine on Thu, 2014-08-28 17:00
in [Articles](#) [Data](#) [Planning](#) [Travel Behavior](#)



Released This Summer!

www.uctc.net/research/papers/UCTC-FR-2014-08.pdf



Corporate Regional Shuttles:
Employer-funded regional transit, closed systems, limited stops



Local Shuttles:
Employer or development agreement service, door-to-door, closed systems, workplace to transit hub

Shuttle Services

Growing system of local and regional shuttles

Key Policy Takeaways



Consistent shared-use definitions and standards

- Confusion
- Lack of a consistent policy framework
- Further social & environmental benefits understanding needed

Public funding for shared-use mobility

- Dollars likely to continue to decrease before they increase
- Other means to generate capital and ongoing revenue
- Dialogue should shift from politically-charged discussion toward: *job creation, increased efficiency, and economic growth*

Key Policy Takeaways (Cont'd)

- **Public transit integration**
 - Better linkages through multi-modal connections & technology
 - Commuter tax break for shared-use modes
 - Create *more flexible* platforms for integrated mobility
 - Hurdles: equity, competition, data privacy, logistics (splitting revenues)
 - Need: joint-fare payment, updated policy framework, and improved relationships with elected officials



Other Key Issues Identified

- Social equity—system planning and business model development
- “Scaling”—Challenges exist to mainstreaming
- Parking and insurance remain obstacles
- Must balance open data sharing with privacy (individual and industry levels)
- Preparing for the future (e.g., autonomous vehicle, data aggregation, models, etc.)



Source: Google, 2014

Summary



- Shared-use mobility services are continuing to grow
- Challenges remain (e.g., equity, scaling the market, blurring lines, inconsistent policy framework, parking/insurance)
- New services emerging that can help to integrate shared-use mobility modes (e.g., RideScout and TransitScreen)
- More public transit integration needed
- Need to balance open data with privacy
- Prepare for the future (modeling, AVs, etc.)

Acknowledgements



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www.tsrc.berkeley.edu