



# Smart mobility

## Reducing congestion and fostering faster, greener, and cheaper transportation options

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**A**S new business models powered by the sharing economy converge with disruptive technologies in the transportation sector, alternative modes of commuting are changing how people get around in major metropolitan areas across America. Four of these modes hold considerable promise for easing gridlock at a far lower cost than traditional approaches to congestion reduction, and offer large individual and societal savings: real-time ridesharing, bike commuting, carsharing, and on-demand ride services (e.g., the ride services offered by Uber and Lyft).

To understand which major metropolitan areas stand to gain the most from better congestion reduction strategies, we analyzed commuter behavior data at the census-tract level to formulate estimates of the potential savings if commuters who could reasonably use alternative transportation modes were to do so. We found that:

- **Real-time ridesharing** has the potential to yield \$30.3 billion in annual savings, reduce annual traffic accidents by almost 23,000, and lower carbon dioxide emissions by 9.1 million metric tons annually.
- **Bike commuting**—perhaps surprisingly—offers almost as high potential savings: We estimate that it could yield \$27.6 billion in annual savings spread between commuters and cities, and reduce carbon emissions by 5.0 million metric tons annually.
- **Carsharing** can provide up to \$4.3 billion in annual savings in our estimation. It could lower annual accidents by more than 2,000 and carbon emissions by just shy of a million metric tons a year.
- **On-demand ride services** have the potential to substitute shared rides for some taxi trips, and could thereby reduce total taxi trip miles in some cities by 30 percent, though this potential is only beginning to be realized.

The potential benefits from these four modes are unevenly distributed across America's cities as well as within each city. Carsharing works best in dense urban cores. On-demand ride services have the greatest effects by extending taxi services to underserved portions of cities. Ridesharing will often provide the greatest returns in a ring 10 to 15 miles outside the city center, and bike commuting can provide benefits both in neighborhoods in the urban core and in "edge cities" clustered around suburban commercial centers.

Achieving these benefits won't be easy. Cultivating and expanding alternative mobility ecosystems will require us to rethink our transportation investments, shifting our focus

from simply maximizing vehicle throughput to moving users as efficiently as possible through any of a variety of modes.

In the report [Smart mobility: Reducing congestion and fostering faster, greener, and cheaper transportation options](#), we offer a series of detailed policy recommendations for each mode that can help policymakers and city planners begin to reap the benefits of these alternative commuting modes. To investigate the benefits your metropolitan area can reap from expanding shared transportation and bike commuting, we invite you to explore the [potential savings table](#) and the accompanying [map](#), which explore the mobility potential of individual neighborhoods within larger census tracts.

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## Explore our research on smart mobility

- *Smart mobility: Reducing congestion and fostering faster, greener, and cheaper transportation options:*  
<http://dupress.com/articles/smart-mobility-trends>
- Alternative transportation atlas (interactive map):  
<http://dupress.com/articles/smart-mobility-trends-interactive-map>
- Impact by metropolitan area (interactive table):  
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