

# MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 19-379 (project 514) | March 2019

## Impacts of Ridesourcing on VMT, Parking Demand, Transportation Equity, and Travel Behavior



### the **ISSUE**

Ride-hailing is changing how people travel. Despite assumptions that these services help our transportation system, there is little research on this topic. This report analyzes basic impacts of ride-hailing on transportation efficiency in terms of deadheading, vehicle occupancy, mode replacement, vehicle miles traveled, parking, and driver earnings.

### the **RESEARCH**

The transportation sector is currently experiencing a disruption with the introduction and evolution of technology and transportation services such as bikesharing, carsharing, on-demand ridesourcing (e.g. Lyft, Uber), and microtransit (e.g. Bridj, Chariot). As these new layers of technology-based transportation options begin to flourish, it is important to understand how they affect our transportation systems and society.



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North Dakota State University  
South Dakota State University

University of Colorado Denver  
University of Denver  
University of Utah

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University of Wyoming



### Lead Investigator(s)

Wesley Marshall, PhD, PE  
University of Colorado Denver  
wesley.marshall@ucdenver.edu

### Co-Investigator(s)

Bruce Janson, PhD  
University of Colorado Denver

### Research Assistant(s)

Alejandro Henao, GRA

### Project Title

Impacts of Ridesourcing  
on VMT, Parking Demand,  
Transportation Equity, and  
Travel Behavior

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## the FINDINGS

For this study, the conservative (lower end) percentage of deadheading miles from ride-hailing is 40.8%. The average vehicle occupancy is 1.4 passengers per ride, while the distance weighted vehicle occupancy is 1.3 without accounting for deadheading and 0.8 when accounting deadheading. When accounting for mode replacement and issues such as driver deadheading, we estimate that ride-hailing leads to approximately 83.5% more VMT than would have been driven had ride-hailing not existed.

The parking results suggest that just over 25% of ride-hailing is replacing driving trips and could reduce parking demand, particularly at land uses such as stadiums, airports, restaurants, and bars. Moreover, parking stress is one of the main reasons our respondents chose not to drive themselves in the first place. In other words, the relationship is bi-directional and reducing parking supply or increasing cost would influence more people to use ride-hailing.

## the IMPACT

This research starts to fill several gaps in the literature regarding ridesourcing services. The ultimate goal is to help cities and transportation organizations better account for the impacts of technology and evolving transportation services in their policies, planning, and engineering. We also hope to contribute to the conversation on how ridesourcing companies can help better achieve sustainable transportation goals including more VMT efficiency, better interconnectivity and integration with active modes of transportation, equity, and safety for both users and drivers. Although specific to the Denver region, this report provides insight into the potential benefits and disadvantages of ride-hailing.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=938>

For more information or additional copies, visit the Web site at [www.mountain-plains.org](http://www.mountain-plains.org), call (701) 231-7767 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.



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