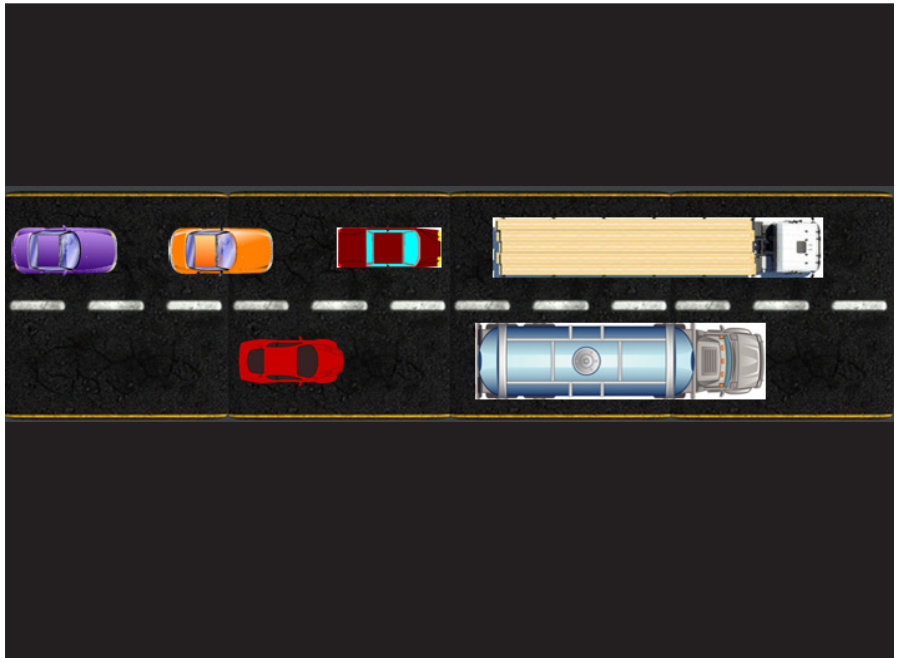


MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 19-396 (project 519) | August 2019

Operational and Safety Analysis with Mitigation Strategies for Freeway Truck Traffic in Wyoming



the **ISSUE**

Challenging roadway characteristics and high truck percentages create operational and safety concerns on I-80 in WY. High crash frequencies and delays are observed every year. WYDOT is looking for potential mitigation strategies to alleviate those problems.

the **RESEARCH**

Researchers performed operational and safety analyses along I-80, with a focus on high truck percentages and climbing lanes as the most promising countermeasures for steep vertical grades. The operational analysis was performed through microsimulation and a creation of shock-wave based models, while the safety analysis included descriptive statistics, and cross-sectional and propensity-scores models to estimate the safety effectiveness of climbing lanes.



A University Transportation Center sponsored by the U.S. Department of Transportation serving the Mountain-Plains Region. Consortium members:

Colorado State University
North Dakota State University
South Dakota State University

University of Colorado Denver
University of Denver
University of Utah

Utah State University
University of Wyoming



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Project Title

Operational and Safety
Analysis with Mitigation
Strategies for Freeway Truck
Traffic in Wyoming

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Administration

the FINDINGS

Climbing lanes have a potential to improve traffic conditions for passenger cars by reducing delays and increasing speeds. Less platooning is observed, as well as larger headways between vehicles. Climbing lanes can also reduce the total and truck-related crashes between 6%–34% and 1%–16% respectively.

the IMPACT

Findings from this study are expected to help transportation managers and policy makers decide on management strategies for highway facilities carrying a large percentage of trucks. The benefits for WYDOT, as well as other agencies that face similar problems on their freeway network, are in the detailed assessment of traffic conditions along the corridor, as well as the timeline of improvements that would create the most benefits as the traffic increases in the future years.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=961>

For more information or additional copies, visit the Web site at 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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