

MOUNTAIN-PLAINS CONSORTIUM

PROJECT BRIEF | MPC 16-308 | April 2016

Analysis of Risk Factors in Severity of Rural Truck Crashes



the **ISSUE**

Trucks are a vital part of the logistics system in North Dakota and the volume of truck traffic has increased exponentially with recent energy developments in the state. With the increased density of trucks in the traffic mix, it is reasonable to expect some increase in the number of crashes. However, analysis shows that the crash-injury risk associated with trucks cannot be explained solely by the increase in truck traffic.

the **RESEARCH**

Recent crash data has been analyzed to better understand characteristics and contributing factors in truck-involved crash events. Descriptive and multivariate regression analysis of truck-involved crashes provides insight about driver, vehicle, roadway, and environmental factors as contributors in severe injury events.



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

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Project Title

Analysis of Risk Factors
in Severity of Rural Truck
Crashes

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NDDOT Safety Division

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the FINDINGS

Results identify three to seven statistically significant risk factors from among 13 selected for the models. These included: seat belt use, alcohol/drug involvement, head-on collision impact, rollover event, failure to yield/stop, weather, intersection, curve, and multiple-truck involvement. Seat belt use was a significant predictor for severe injury likelihood in all models. Failure to stop or yield, rollover event, multiple truck involvement, curves and intersections were associated with increased likelihood for severe-injury to truck drivers. Severe injury to other drivers in truck-involved crashes was associated with alcohol or drug involvement, head-on and sideswipe collisions, rollover events, weather, and distracted driving.

the IMPACT

A sustained increase in statewide traffic and truck traffic is likely. Consequently, identifying factors associated with greater likelihood for severe injuries in truck-involved crashes is important for prioritizing and mobilizing resources for improved traffic safety. Truck-focused traffic safety interventions such as driver education programs and enforcement efforts for truck drivers and drivers who interact with trucks on the state's roads is critical to reducing severe driver injuries in the future. The results may also allow drivers and businesses to identify areas for safety performance improvement.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=845>

For more information or additional copies, visit the Web site at www.mountain-plains.org, call (701) 231-7938 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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