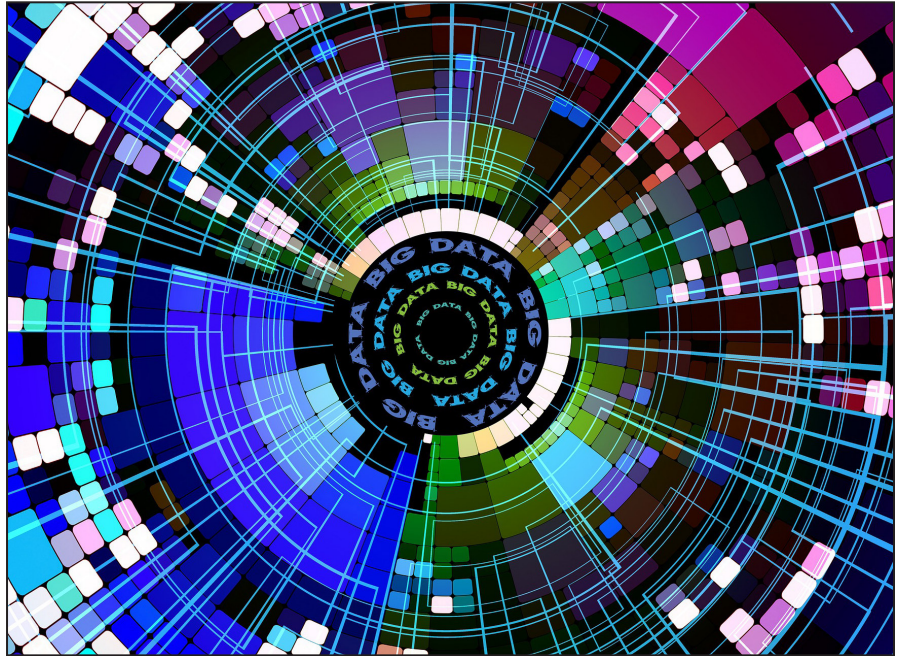


MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 22-482 (project 631) | September 2022

Enhancing Crash Data Reporting to Highway Safety Partners in Wyoming by Utilizing Big Data Analysis and Survey Techniques



the **ISSUE**

Providing the appropriate crash data to various groups is an efficient means of addressing road safety. Yet, gaps in road safety data reporting exist. The appropriateness of the frequency at which road safety data are provided to partner groups should be evaluated as well.

the **RESEARCH**

For this project, evaluating the data needs of partner groups and the appropriateness of the data provision frequency was achieved by disseminating a tailored survey to each group. In addition, more profound insights on the human factors that lead to crashes in the state were obtained to better address road safety. This was achieved by using big data analytical techniques conducted on the Wyoming Department of Transportation's crash data.

the **FINDINGS**

This project resulted in a series of recommendations for WYDOT regarding specific road safety data reporting requirements to the partner groups. In particular, the recommendations pertained to specific data elements to be reported, crash data reporting intervals, and appropriate formats for presenting the data. (continued)



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

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South Dakota State University

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University of Utah

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Project Title

Enhancing Crash Data
Reporting to Highway Safety
Partners in Wyoming by
Utilizing Big Data Analysis and
Survey Techniques

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Administration

the **FINDINGS** (continued)

Suggestions made for WYDOT include the provision of the following data for the Wyoming Highway Patrol, Wyoming Association of Sheriffs and Chiefs of Police, and Wyoming's counties:

- Crash statistics by crash type
- Crash injury severity level statistics by age/gender
- Seat belt use statistics
- DUI statistics
- Fatigued-driving-related crash statistics
- Distracted-driving-related crash statistics
- Traffic violation statistics
- Truck policy violation statistics
- Crash statistics by weather condition
- Crash statistics by lighting condition
- Crash statistics by day of the week
- Crash statistics by time of day
- Motorcycle crash statistics
- Hot spots by crash severity level and description (seat belt improper use or non-use, commercial motor vehicle-related, etc.)

Other noteworthy suggestions entail the planning for research studies relating to the following topics:

- Effectiveness of speed, seat belt use, and other violation enforcement policies
- Effectiveness of traffic safety educational campaigns
- Response times of emergency services, particularly for fatal, suspected serious injury, and suspected minor injury crashes

For the other groups—the Wyoming Seat Belt Coalition, Wyoming Transportation Safety Coalition, Governor's Council on Impaired Driving, Wyoming Bicycle and Pedestrian System Task Force, and the motorcycle groups—the recommendations are similar. Yet, they are tailored to seat belt use, truck safety, impaired driving, non-motorist safety, and motorcycle safety, respectively.

the **IMPACT**

Once WYDOT implements the recommendations outlined in this study, its partners will have access to comprehensive data delivered to them in a timely manner. They would have a more comprehensive understanding of road safety conditions, especially the human factors that contribute to crashes. This would enable the groups to propose effective measures to address road safety. The research also provides a strategy for conducting follow-up studies on several research topics such as the effectiveness of traffic safety campaigns.

For more information on this project, download the main report at <https://www.ugpti.org/resources/reports/details.php?id=1101>

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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