

MOUNTAIN-PLAINS CONSORTIUM

PROJECT BRIEF | November 2015

Indian Reservation Safety Improvement Program: A Methodology and Case Study



the **ISSUE**

While fatal crashes across the United States have declined, they have continued to increase on Indian reservation roadways.

the **RESEARCH**

A methodology to address this challenge has been developed and successfully implemented on the Wind River Indian Reservation (WRIR). Key to the success of such a process is collaboration among safety stakeholders, namely the state departments of transportation, tribal leadership, Local Technical Assistance Program (LTAP), Tribal Technical Assistance Program (TTAP), Bureau of Indian Affairs (BIA), and local and tribal law enforcement.

Strategic Highway Safety Plans are used to help agencies determine effective safety improvements to their roadways. Crash data is important to properly identify strategies to accomplish their goals. The WRIR has successfully developed a strategic plan utilizing the available crash data, identified ways to improve reporting, and incorporated the safety improvement program into the overall strategic plan.



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North Dakota State University
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University of Colorado Denver
University of Denver
University of Utah

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University of Wyoming



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Project Title

Indian Reservation Safety Improvement Program:
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Wind River Indian Reservation

Wyoming DOT

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Statistical models can be used to determine related factors and identify countermeasures to improve roadway safety. This study analyzes crash severity for rural highway systems in Wyoming using a multiple logistic regression model. Four rural highway systems were analyzed for crash severity including the WRIR. Five main effects predictor variables were prevalent in all four crash severity models: crashes involving animals, driver impairment, motorcycles, mean speed and the use of safety equipment. These results validate the concerns of the Tribal communities.

the **FINDINGS**

Roadway safety on Indian reservations requires a comprehensive approach. This report identifies specific recommendations to accomplish this goal. Some of the recommended analysis was intentionally simplified to provide practical and usable applications for the tribes. As tribes apply the methodology and processes developed in this research, further research should follow to provide accurate assessment of the effectiveness of the implemented safety improvements. Finally, by understanding that improving roadway safety is a quality-of-life issue among Native Americans, livability programs can be developed to guide their decision making for all projects.

the **IMPACT**

The methodology developed in this project has been implemented at the Wind River Indian Reservation. It has been instrumental in helping the WRIR secure funding for multiple safety projects. The methodology has been presented at regional as well as national tribal conferences. The developed methodology has been implemented by several tribes in South Dakota and North Dakota. An effort is under way to implement it by a tribe in Montana.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=824>

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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