

# Seat Belt Use on North Dakota Rural Roads

North Dakota's rural roads provide vital social and commercial links for a widely dispersed population. The safety of these roadways is paramount in managing traffic assets to enhance the state's livability. Approximately 67% of the state's travel, in vehicle miles, takes place on rural roads. From a safety perspective, this poses an inherent challenge because the risk for serious injury and death on rural roads is relatively high compared to the risk on urban roads. This study is a continuation of efforts to measure seat belt usage for all occupants on rural roads in North Dakota.

A direct observation survey method was used for this study. The sampling was based on rural county populations and geographic representation of counties across four quadrants of the state. Within the sample counties (indicated in blue - Figure 1), sites selected for observation were based on local traffic knowledge, due to the fact that annual vehicle miles traveled, or traffic density, is not available for local roads.

## RESULTS

A total of 4,981 driver seat belt observations were collected at 140 sites across 24 rural counties. Highway seat belt use has increased from 55.2% in 2009 to 66.2% in 2012. In addition to statewide media efforts, local programs focusing on education and high visibility seat belt enforcement (such as the Click it Or Ticket campaign), individual agency campaigns, and multi-agency enforcement efforts, have likely played a role

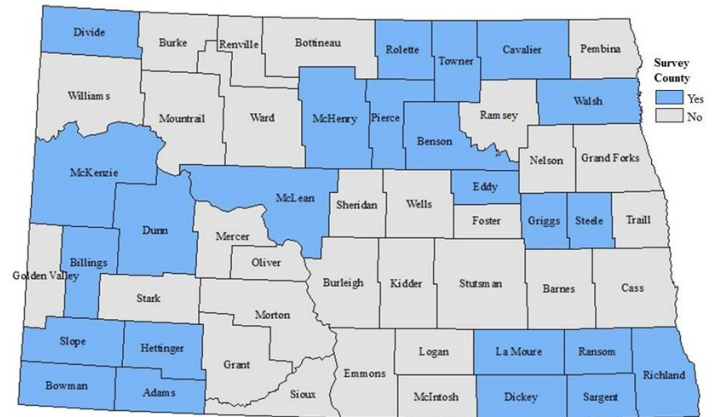


Figure 1: Rural Seat Belt Counties

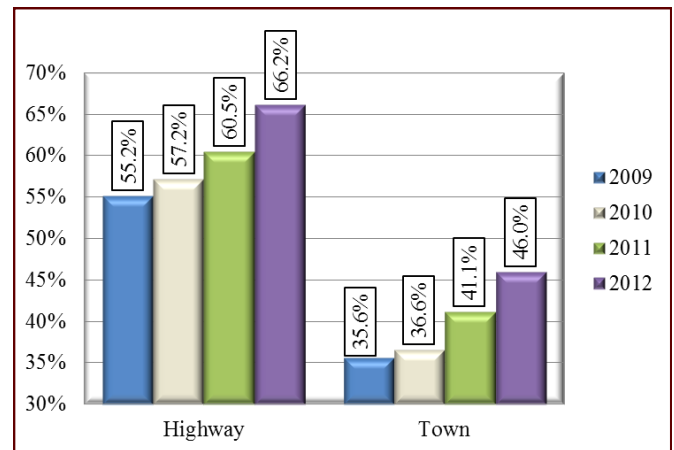


Figure 2: Driver Seat Belt Use by Road Type: 2009-2012 (Weighted)

in these increases. The observed seat belt use rate for drivers on rural highways, 66.2%, is significantly different than the use rate in rural towns at 46.0% (Figure 2).

Comparing usage rates by gender for road type, female use on rural highways was at 83.2% compared to 59.8% for males. In rural towns, the use rates are 60.3% for female drivers and only 38.4% for males. (Figure 3).

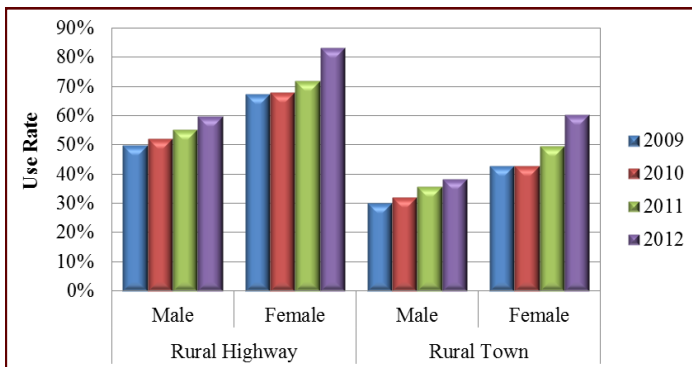
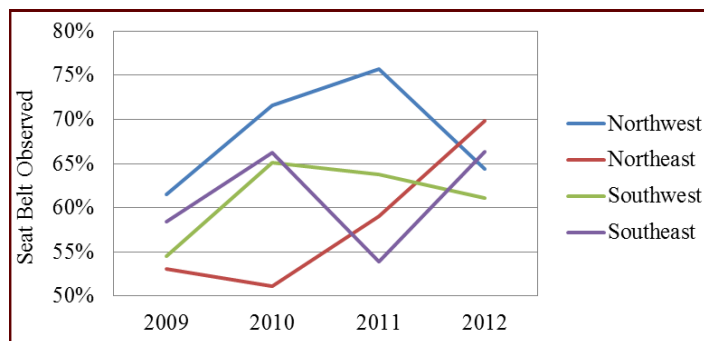


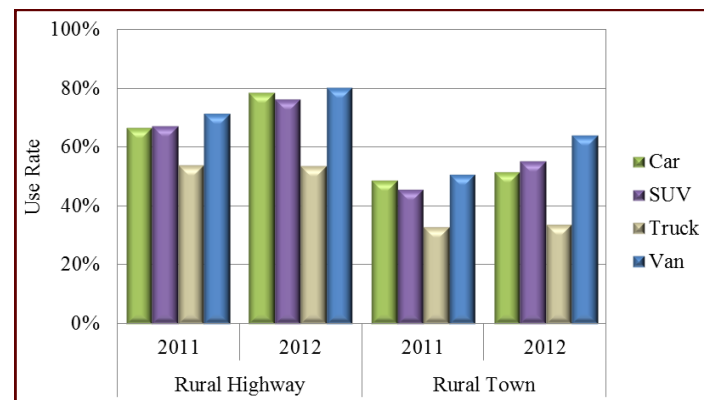
Figure 3: Driver Seat Belt Use by Gender and Road Type: 2009-2012 (Weighted)

Drivers in the northwest region have slipped from highest to third among the four quadrants in highway seat belt use – 64.4%. The highest use among regions was reported for the northeast region at 69.8%, followed by the southeast at 66.3%. The lowest seat belt use was found in the southwest at 61.1% (Figure 4). Both eastern regions saw increases in highway seat belt use from 2011 to 2012, while the western regions of the state saw declines.



**Figure 4: Highway Driver Seat Belt Use by Region: 2009-2012 (Weighted)**

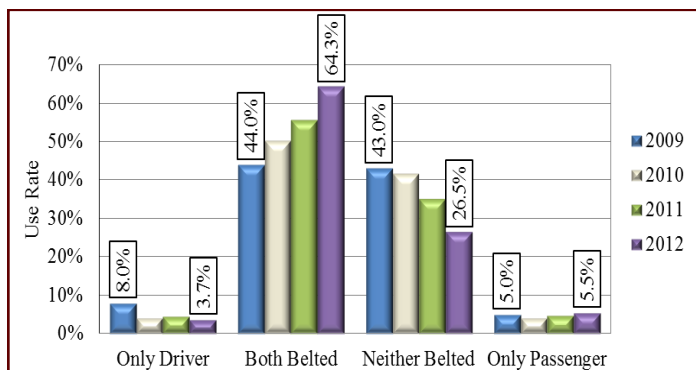
A significant variation in seat belt use is found across passenger vehicle types. Driver seat belt use in cars was 78.5% compared to 53.5% for pickup truck drivers. Sport utility vehicle and van drivers both had higher observed use rates at 76.2% and 80.2%, respectively (Figure 5).



**Figure 5: Driver Seat Belt Use by Vehicle Type and Road: 2011 and 2012 (Weighted)**

Passenger seat belt use was 75.5% on rural highways and 58.6% in rural towns. Both rural highway and rural town passenger seat belt use increased from 2011 to 2012. As with driver observations, gender was a significant characteristic in passenger seat belt use. Female passengers were using seat belts in 73.1% of the observations, compared to 67.0% for males. Both female and male passenger use increased from 2011 to 2012. Female passenger use rose from 71.5% to 73.1% and male passenger belt use increased, more substantially, from 45.1% to 67.0%.

Results also continue to show a strong relationship between driver and passenger seat belt use. Where observations were collected in shared seat belt behavior, both were belted in 64.3% of cases, while neither were belted in 26.5% of cases. (Figure 6).



**Figure 6: Seat Belt Use in Passenger Observation Cases: 2009-2012**

**CONCLUSION**

Rural roads account for 67% of annual travel and nearly 89% of fatal crashes and 71% of serious injury crashes. Seat belt use on the state’s rural roads was found to be significantly less than the commonly reported statewide seat belt use rate. The relative risk and significant difference in use rates between rural highways and towns should continue to be considered in research related to rural seat belt use. In addition, continued assessment of programs to increase local seat belt enforcement or awareness on rural roads is recognized.



For more information contact:  
 Rural Transportation Safety and Security Center  
 UGPTI, NDSU Fargo, ND 58105  
 Email: [rtssc@ugpti.org](mailto:rtssc@ugpti.org)  
 Phone: 701.231.7767

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