

Rural Traffic Safety in the Northern Rocky Mountain Region Revisited

Andrea Huseth
Mark Berwick
Kimberly Vachal

Rural Transportation Safety and Security Center
Upper Great Plains Transportation Institute
North Dakota State University

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ABSTRACT

This report seeks to update and expand upon a 2007 (Vachal and McGowan) report by determining changes in traffic safety policy that may have occurred in each of the Northern Rocky Mountain Region (NRMR) states (Montana, North Dakota, South Dakota, and Wyoming) between 2006 and 2010. The report will ascertain what affect those policy changes have had on specific traffic safety issues, and compare each of the NRMR states with one another, with the NRMR region as a whole, and with the United States overall. In general, NRMR State Highway Safety Plan/Highway Safety Plans continue to focus on aggressive driving/speeding, impaired driving, seat belt use, graduate driver licensing, motorcycle safety and pedestrian safety. Traffic fatalities have declined in this region. There have been few changes made to NRMR state traffic safety policies from 2006 to 2010, so the likelihood that these declines resulted from changes in state law is low. Future research is needed to explain the decline in traffic fatalities in the NRMR.

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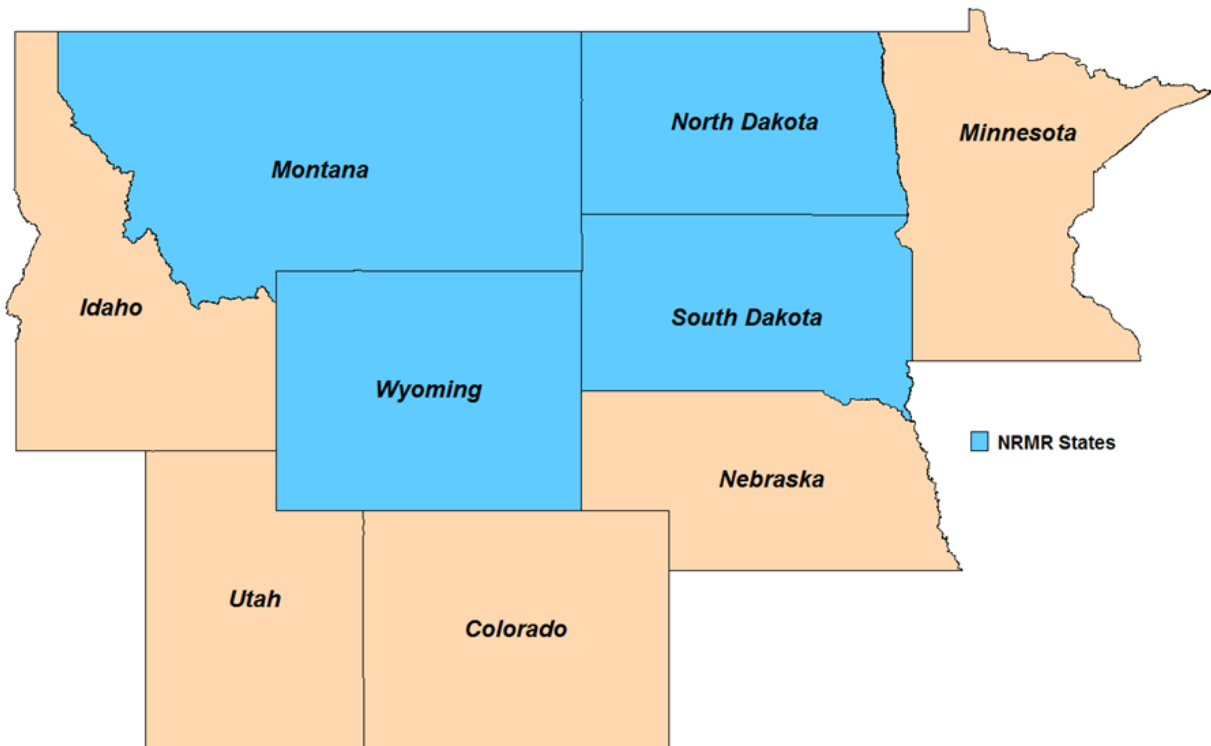
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INTRODUCTION

The Rural Transportation Safety and Security Center (RTSSC) at North Dakota State University was created in 2007 as a resource for regional pursuit of a safer, more secure rural transportation system. Traffic safety is one of the most important aspects of the region’s transportation system. A safe transportation system contributes to quality of life in addition to reducing resource demands and victim costs (UGPTI, 2006). This research consolidates some existing knowledge regarding traffic safety while addressing prominent traffic safety issues in the Northern Rocky Mountain Region (NRMR) of the United States.

A research report by Vachal and McGowan at the Rural Transportation Safety and Security Center at the Upper Great Plains Transportation Institute “Understanding Driver and Occupant Dynamics in Rural Traffic Safety” was compiled in 2007 to examine traffic safety in rural states. The report compiled safety statistics and supplied new information to provide perspective in addressing traffic safety issues in rural America. States identified as the focal point for RTSSC activities include the Northern Rocky Mountain Region states of Montana, Wyoming, and North and South Dakota (Figure 1). These states were chosen as the geographic focus based on shared socio-economic and traffic characteristics including low-density population, energy and agriculture industries, tourist travel, and extensive rural roads systems.

Figure 1. Northern Rocky Mountain Region (NRMR) States in Perspective



Many changes have been made across the United States in the area of traffic safety since 2006. This report seeks to update and expand upon a 2007 (Vachal and McGowan) report by determining changes in traffic safety policy that may have occurred in each of the NRM states between 2006 and 2010; ascertaining what affect those policy changes have had on specific traffic safety issues; and comparing each of the NRM states with one another, with the NRM region as a whole, and with the U.S. overall.

NORTHERN ROCKY MOUNTAIN REGION (NRMR)

Earlier work focused on behavioral issues that exist in road traffic safety for the NRMR. In addition, geography and demographic characteristics of the NRMR were highlighted. Populations and population demographics are fluid, so the descriptors are used to give a more accurate, up-to-date picture of the NRMR states.

NRMR Rurality and Demographic Features

Rurality continues to be an issue in traffic safety. Fatal crash rates are higher in rural areas as compared to urban areas (NHTSA 2010). Fatal rural crashes involve the following characteristics more often than those in urban areas: (1) male driver; (2) alcohol use; (3) truck involvement; (4) higher speeds; (5) vehicle rollover; and (6) ejected person due to seatbelt non-use (NHTSA 2010; Kmet and Macarthur 2006). Many reasons have been explored for the increased fatal crash rate in rural areas such as road design elements, proximity to medical care, and increased mileage of rural drivers (NHTSA 2006). Because of these rural issues, exploring and reexamining traffic safety in the NRMR is important.

In terms of population, the NRMR comprises nearly 11% of the total land area in the United States, but contains 1% of the population (Table 1). The NRMR had an 8.8% population increase from 2000 to 2010, as compared to 9.7% in the U.S. as a whole. While the states did see increases in population, most of the growth occurred in and around the metro areas (i.e. Cass County, ND; Minnehaha County, SD), while more rural counties lost population. Although overall population per square mile for the NRMR states increased, they are still the least densely populated states in the United States, with the exception of Alaska.

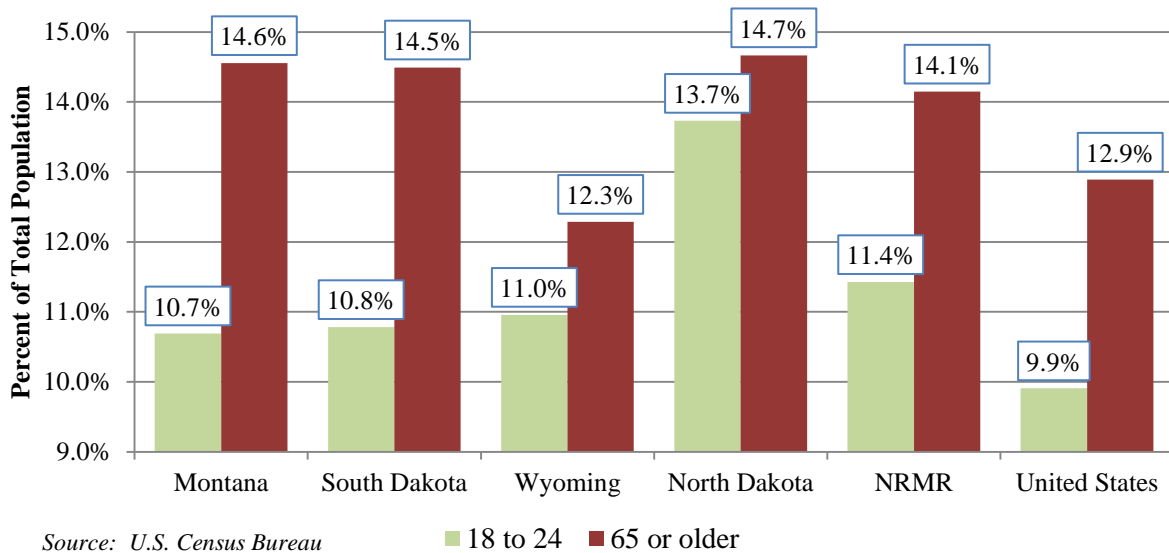
Table 1. Population and Land Area

Geography	Population (1)			2010 Pop as % of Total U.S.	Land Area (Sq Miles)	Land Area as % of Total U.S.
	2010	2000	% Change 2000-2010			
<i>Montana</i>	989,415	902,195	9.7%	0.3%	145,211	4.1%
<i>North Dakota</i>	650,193	622,439	4.5%	0.2%	68,994	2.0%
<i>South Dakota</i>	814,180	754,844	7.9%	0.3%	75,896	2.1%
<i>Wyoming</i>	563,626	493,782	14.1%	0.2%	97,105	2.7%
NRMR	3,017,414	2,773,260	8.8%	1.0%	387,206	10.9%
U.S.	308,745,538	281,421,908	9.7%	100.0%	3,537,438	100.0%

(1) Source: U.S. Census Bureau

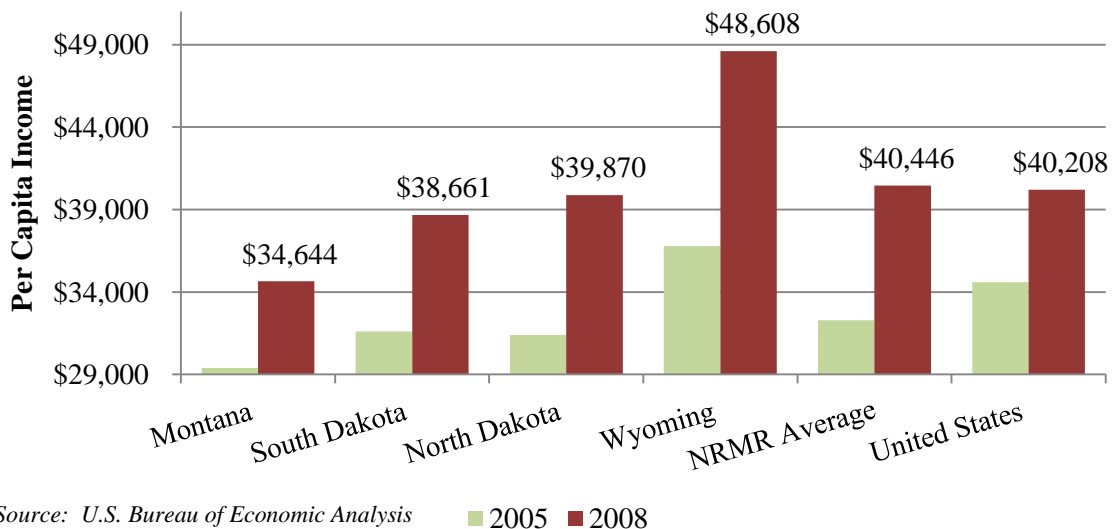
Age distribution for the NRMR has not changed since the previous report – with higher proportions of the population aged 18 to 24 and 65 or older (Figure 2). These age groups are prone to be higher risk in regards to traffic safety issues (McCartt et al. 2009; Eberhard 2008).

Figure 2. Age Estimates by Geography: 2009



As of 2008 per capita income for the NRMR was on par with the U.S. average, whereas previously it had been below the national average (Figure 3). All NRMR states have seen increases in per capita income, with Wyoming seeing the largest increase – 32% between 2005 and 2008. Wyoming’s large increase in per capita income growth is due mostly to the increase in higher paying oil and natural-gas industry jobs coupled with little population growth (Hunsberger 2010). Research has shown an inverse relationship between per capita income and traffic fatalities in the United States overall – with rises in traffic fatalities seen as per capita income declines (Kopits and Cropper 2005; Bishai et al. 2006; Anbarci et al 2009).

Figure 3. Per Capita Income by Geography: 2005-2008



The NRMR states have the most rural lane-miles of all states, 95.7% compared to the 71.4% for the United States overall (Table 2). When examining funds available for traffic safety projects, the gross state product figures provide insight (Table 3). The most current year for gross state product per lane mile is 2008. NRMR states range from 13.3% of the national median in North Dakota to 45.2% of the national median in Wyoming. Overall, the NRMR gross state product per lane mile is approximately 19% of the national median demonstrating the need for these states to use their available transportation safety funds prudently.

Table 2. Lane Miles: 2005-2009

Geography	2005 (1)			2009 (1)			% Change			Rural Lane Miles as % of Total	
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total	2005	2009
North Dakota	171,693	4,113	175,806	171,786	4,190	175,976	0.1%	1.9%	0.1%	97.7%	97.6%
Montana	142,868	6,295	149,163	143,620	6,505	150,125	0.5%	3.3%	0.6%	95.8%	95.7%
South Dakota	164,784	6,149	170,933	162,017	7,342	169,359	-1.7%	19.4%	-0.9%	96.4%	95.7%
Wyoming	52,110	5,701	57,811	52,475	5,912	58,387	0.7%	3.7%	1.0%	90.1%	89.9%
NRMR	531,455	22,258	553,713	529,898	23,949	553,847	-0.3%	7.6%	0.0%	96.0%	95.7%
U.S.	6.1 mil	2.3 mil	8.4 mil	6.1 mil	2.4 mil	8.5 mil	-0.2%	5.8%	1.4%	72.6%	71.4%

(1) Source: FHWA - Highway Statistics

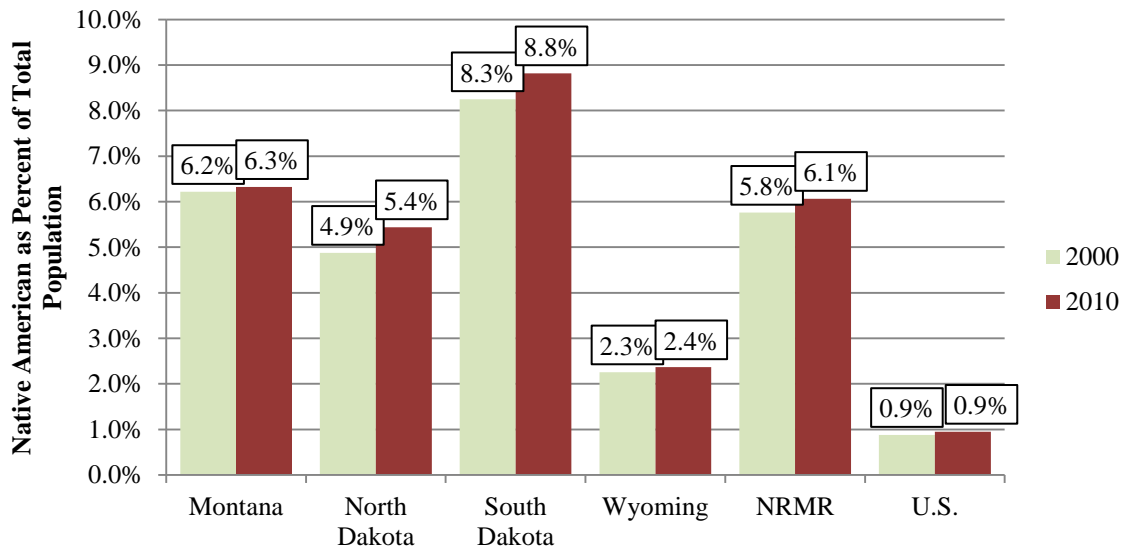
Table 3. Gross State Product per Lane Mile: 2005-2008

Geography	Gross State Product Per Lane Mile (1)		% Change 2005-2008
	2005	2008	
Montana	\$ 201,122	\$ 237,360	18.0%
North Dakota	\$ 136,514	\$ 177,358	29.9%
South Dakota	\$ 181,358	\$ 221,558	22.2%
Wyoming	\$ 467,039	\$ 604,779	29.5%
NRMR	\$ 194,763	\$ 252,310	29.5%
U.S. Median	\$ 1,190,378	\$ 1,337,447	12.4%
NRMR as % of U.S. Median	16.4%	18.9%	

(1) Source: FHWA - Highway Statistics

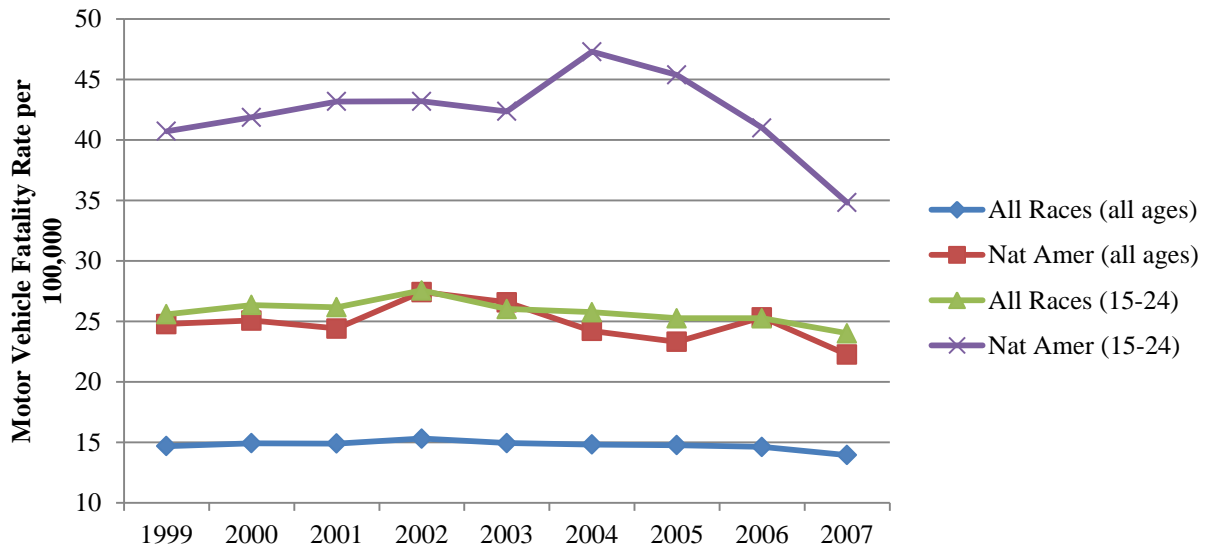
With the release of the 2010 Census numbers, the NRMR still has a higher Native American/Alaska Native population than the United States overall – with the Native American/Alaska Native population accounting for 6.1% of the NRMR population, compared to 0.9% for the United States overall (Figure 4) (CDC WISQARS 2011). This is important because this group is at extremely high risk for motor vehicle fatalities. In 2007, the rate of motor vehicle fatalities for this population was nearly twice the national average for all races - 22.25 vs. 13.94 per 100,000 population, respectively (Figure 5). When the high-risk age group of 15-24 is examined, the motor vehicle fatality rate for the Native American/Alaska Native population was 34.82 per 100,000 as opposed to 24.01 per 100,000 nationwide. From 2003-2007, the four states with the highest motor vehicle-related death rate among American Indian/Alaska Natives aged 1-44 years were Wyoming – with 82 deaths per 100,000 population, South Dakota – with 77 per 100,000 population, and Montana and North Dakota – with 66 per 100,000 population (CDC 2010).

Figure 4. Native Americans as Percent of Total Population: 2000-2010



Source: U.S. Census Bureau

Figure 5. Native American/Alaska Native Traffic Deaths



Source: Centers for Disease Controls - WISQARS database

Travel within the NRMR remains quite rural, with nearly 72% of travel occurring on rural roads, compared to 32.9% of travel occurring on rural roads nationally (Table 4). The only other states with travel as rural as the NRMR are Maine and Vermont. As previously stated, the rural nature of the NRMR seems to be a contributing factor in the increased fatal crash rate as compared to urban areas. This rural environment provided the context for focus on traffic safety progress in the NRMR since 2007. The next section includes a synopsis of safety priorities, interventions and outcomes.

Table 4. Vehicle Miles Traveled by Rurality: 2006-2009

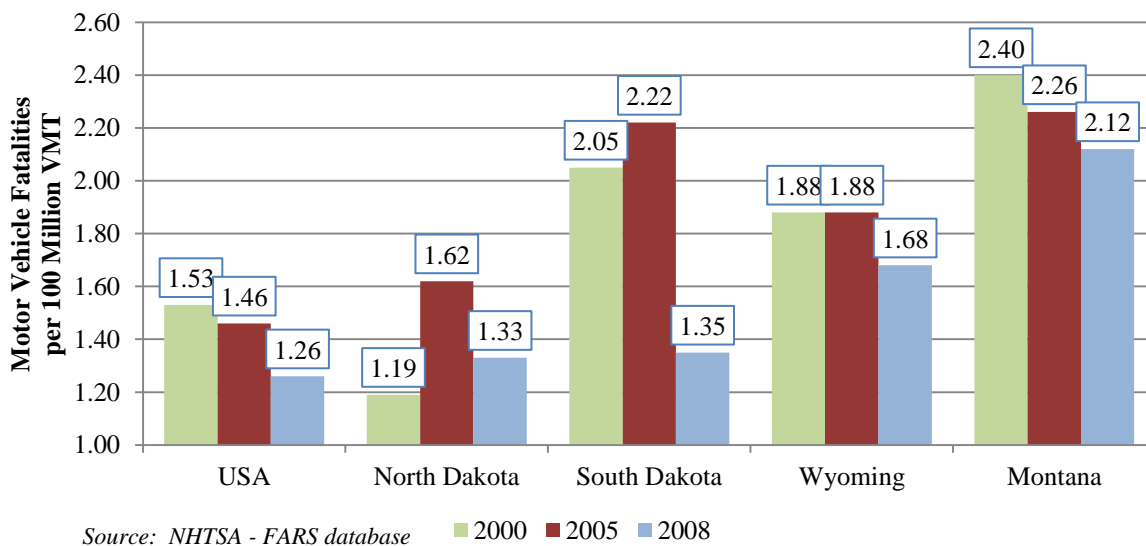
Geography	2006		2009		Percentage Change: 06-09
	Rural	Urban	Rural	Urban	
Montana	76.7%	23.3%	75.7%	24.3%	-1.0%
North Dakota	70.7%	29.3%	72.4%	27.6%	1.7%
South Dakota	73.4%	26.6%	66.1%	33.9%	-7.3%
Wyoming	71.2%	28.8%	72.1%	27.9%	0.9%
NRMR	73.3%	26.7%	71.7%	28.3%	-1.6%
U.S.	34.4%	65.6%	32.9%	67.1%	-1.5%

Source: FHWA - Highway Statistics

STRATEGIC HIGHWAY SAFETY PLANS

The NRMR and the United States made progress in traffic safety with regard to motor vehicle fatality trends (Figure 6). All NRMR states have seen declines in motor vehicle fatalities per 100 million VMT since 2005. South Dakota shows the greatest improvement. Although improvements have been seen, the fatality rates in NRMR states continue to be higher than the national average. This section will focus on traffic safety in the NRMR states – specifically changes made to their Strategic Highway Safety Plans, and trends associated with specific traffic safety variables.

Figure 6. Motor Vehicle Fatalities per 100 Million VMT



First developed in 1998, the Strategic Highway Safety Plan (SHSP) was designed as a Federal requirement of SAFETEA-LU (Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users) which required states to integrate systematic safety planning into their programs and decision-making processes (2011b). SHSPs are a major part of the Highway Safety Improvement Program (HSIP).

Highway Safety Improvement Program

Created in 2005 as a requirement of SAFETEA-LU, the purpose of the Highway Safety Improvement Program is to achieve a significant reduction in traffic fatalities and serious injuries on public roads through infrastructure-related highway safety improvement projects (FHWA 2011a). For a project to be eligible for funding under the HSIP, it must be described in the SHSP and correct/improve a hazardous road location or feature, or address a highway safety problem (FHWA 2011a). The following projects would be examples of those eligible for HSIP funding:

1. Conducting a model traffic enforcement activity at a railway-highway grade crossing;
2. Implementing safety-conscious planning;
3. Improving the collection and analysis of crash data;

4. Enhancing workzone safety through planning, integrated interoperable emergency communications equipment, operational activities, or traffic enforcement activities (including police assistance);
5. Adding or retrofitting structures or other measures to eliminate or reduce accidents involving vehicles and wildlife;
6. Making construction and operational improvements on high-risk rural roads;
7. Installing improvements for safety of the disabled;
8. Installing and maintaining signs at pedestrian-bicycle crossings and in school zones.

Ultimately, HSIP projects are chosen through a data-driven decision-making process to identify and prioritize projects with the greatest potential for reducing deaths and serious injuries on all public roadways (FHWA 2011a).

The HSIP also addresses safety problems and opportunities on High Risk Rural Roads (HRRR). HRRR are defined as any roadway functionally classified as a rural major or minor collector or a rural local road where the accident rate for injuries and fatalities is greater than the statewide average for these functional classes of roadway or that are expected to have increases in traffic volumes which are likely to create a crash rate for injuries and fatalities that will exceed the state average for these road functional classes (FHWA 2011a). States are required to describe at least 5% of its locations which have the most severe highway safety needs, in addition to listing potential solutions, estimated costs of the solutions, and any barriers to the implementation of the solutions other than cost. Appendix B outlines the HRRR listed in each of the NRMR 2010 “5 Percent Reports” (FHWA 2011a). In FY2009, the NRMR states each had less than \$5 million in HRRRP funds available for obligation. However, of the four NRMR states, Montana was the only state to obligate 75% to 100% of its HRRRP funds, while North Dakota, South Dakota, and Wyoming each obligated less than 25% (Chandler and Anderson 2010). The HRRR set-aside for each state is calculated using total lane miles for Federal-Aid Highways, total vehicle miles traveled (VMT) on lanes on the Federal-Aid Highways, and number of fatalities on the Federal-Aid system.

While the HSIP encompasses SHSPs, in addition to other federal requirements, SHSPs are the roadmaps that delineate the traffic safety problems and opportunities within a state, which is the reason they are the focus of this analysis.

State Highway Safety Plans

The national template for SHSPs identifies 23 traffic safety emphases in six areas: drivers, special users, vehicles, highways, EMS, and management (Table 5). Potential exists for significant reduction in injury and death if each of the emphasis areas is addressed.

Table 5. Strategic Highway Safety Plan Emphases

<u>Drivers</u>	<u>Highways</u>
Young	Trees
Unlicensed/suspended/revoked drivers	Run off the road
Older	Horizontal Curves
Aggressive	Utility poles
Impaired	Unsignalized intersections
Distracted/Fatigued	Head-on collisions
Seat Belt Use	Head-on crashes on freeways
Speed	Work zones
<u>Special Users</u>	<u>EMS</u>
Pedestrians	Rural emergency medical services
Bicyclists	
<u>Vehicles</u>	<u>Management</u>
Motorcycles	Data
Heavy Trucks	Integrated Safety Management Process

In the development of SHSPs, states had certain requirements as set out by SAFETEA-LU. State departments of transportation needed to follow these guidelines in developing their plans:

1. Consult with a variety of stakeholders during the development process
2. Analyze and makes effective use of crash data
3. Address the 4 Es (engineering, education, enforcement, emergency services)
4. Consider the safety needs of all public roads
5. Describe projects or strategies designed to reduce or eliminate safety hazards

While all states used performance measures in some manner in their annual highway safety plans, there was little consensus between states in regards to the number or type of performance measures used until 2008. For example, no single measure was used by all 50 states and only two measures were used by a majority of states (seat belt use and fatalities/vehicle mile traveled (VMT)) (NHTSA 2008). Because of this, in 2008 an expert panel developed performance measures to create some uniformity among the states in the highway safety planning process and were agreed upon by the National Highway Traffic Safety Administration (NHTSA) and the Governors Highway Safety Association (GHSA).

The performance measures were divided into three areas: (1) core outcome measures; (2) core behavior measures; and (3) activity measures.

Core Outcome Measures:

- C-1) Number of traffic fatalities (FARS) States are encouraged to report 3-year or 5-year moving averages as appropriate (when annual counts are sufficiently small that random fluctuations may obscure trends). This comment applies to all fatality measures.
- C-2) Number of serious injuries in traffic crashes (state crash data files)
- C-3) Fatalities/VMT (FARS, FHWA) States should set a goal for total fatalities/VMT; states should report both rural and urban fatalities/VMT as well as total fatalities/VMT.
- C-4) Number of unrestrained passenger vehicle occupant fatalities, all seat positions (FARS).
- C-5) Number of fatalities in crashes involving a driver or motorcycle operator with a BAC of 0.08 and above (FARS).
- C-6) Number of speeding-related fatalities (FARS).
- C-7) Number of motorcyclist fatalities (FARS).
- C-8) Number of unhelmeted motorcyclist fatalities (FARS).
- C-9) Number of drivers age 20 or younger involved in fatal crashes (FARS).
- C-10) Number of pedestrian fatalities (FARS).

Core Behavior Measure:

- B-1) Observed seat belt use for passenger vehicles, front seat outboard occupants (survey)

Activity Measures:

- A-1) Number of seat belt citations issued during grant-funded enforcement activities (grant activity reporting)
- A-2) Number of impaired driving arrests made during grant-funded enforcement activities (grant activity reporting)
- A-3) Number of speeding citations issued during grant-funded enforcement activities (grant activity reporting)

States were required to include the performance measures starting in their 2010 Highway Safety Plans and Annual Reports. States were also given the option of including additional measures for other priority highway safety areas they may want to include in their plans.

NRMR State Plans

Montana In the previous report, the document reviewed for Montana was the 2006 Comprehensive Highway Safety Plan (CHSP). The CHSP was an existing roadways safety partnership platform that was to be changed into the Strategic Highway Safety Plan. The 2006 Montana plan described the process of identifying safety needs and study areas.

Montana has not updated its CHSP since 2006, although they do have a document entitled “Montana Comprehensive Highway Safety Plan: Annual Element 2010” which appears to be a portion of the annual update of their Highway Safety Plan. The Annual Elements reports only provide descriptions of programs and countermeasures being implemented by the state through the CHSP. The actual data is outlined in the Problem Identification Paper (PIP). The PIP is developed to assist in summarizing and prioritizing traffic safety issues to aid in the development of the state’s Highway Safety Plan goals and objectives. This information is then incorporated into their CHSP. Due to a lack of a current SHSP, it is reasonable to utilize Montana’s current CHSP Annual Element and PIP as a source for SHSP behavior components, and will be used as proxies for the SHSP.

Montana’s 2010 annual plan includes all 14 recommended performance measures identified by NHTSA, in addition to the following:

Additional Montana Metrics

1. Annual urban/rural fatality rate (per 100 million VMT)
2. Annual statewide outboard, front seat occupant safety belt utilization for all roads
3. Average percent of unrestrained occupant fatalities
4. Average alcohol-impaired (BAC 0.08+) fatality rate (per 100 million VMT)
5. Average number of alcohol- and drug-related fatalities (driver BAC 0.01+) as a percent of all traffic fatalities
6. Average Native American traffic fatalities/fatalities as a percent of all traffic fatalities
7. Total/average annual single vehicle run-off-the road crashes
8. Average young driver crash/fatal crash rate (per 1,000 licenses)
9. Average crashes/fatalities/incapacitating injuries in high crash locations
10. Total annual crashes/average fatal crashes involving trucks
11. Average urban fatal crashes
12. Average motorcycle fatal crashes
13. Average older driver crash/fatal crash rate (per 1,000 licensed drivers)
14. Average older driver crashes as a percent of all Montana crashes
15. Average older driver fatal crashes as a percent of all Montana fatal crashes
16. Average percent of speeding-related fatal crashes

North Dakota The North Dakota Strategic Highway Safety Plan (SHSP) for 2006 was reviewed for the 2007 study (NDDOT 2006). The document focused on the selection process for studies that would support the accomplishment of the goals identified in the plan. The report included data and justification for the 10 goal areas and multiple strategies. Most of the report was allocated to discussing the goals and describing each supporting study.

North Dakota recently updated their SHSP for 2010 which was very comparable to the state’s 2006 SHSP (NDDOT 2010). North Dakota’s 2010 plan includes the following performance measures:

Included in NHTSA’s Recommended Performance Measures:

1. Percentage of alcohol impaired driving fatalities, not the number of alcohol-impaired fatalities
2. Statewide seat belt usage percentage
3. Number of crashes involving under age 20 drivers
4. Number of fatal and injury crashes with a contributing factor of speeding

5. Number of fatal crashes per 100 million VMT

Additional North Dakota Metrics:

1. Number of lane departure fatal crashes and injury crashes
2. Number of intersection fatal crashes and injury crashes
3. Number of crashes involving age 65+ drivers
4. Number of fatal and injury crashes with a contributing factor of following too closely

Compared to the minimum recommended performance measures identified by NHTSA, North Dakota's annual plan is lacking the following metrics:

1. Traffic fatalities (3-year or 5-year moving average)
2. Serious injuries in traffic crashes
3. Unrestrained passenger vehicle occupant fatalities
4. Motorcyclist fatalities
5. Unhelmeted motorcyclist fatalities
6. Seat belt citations issued during grant-funded enforcement activities
7. Impaired driving arrests made during grant-funded enforcement activities
8. Speeding citations issued during grant-funded enforcement activities

South Dakota At the time this original research was being conducted, South Dakota did not have a current SHSP. In its place South Dakota's Highway Safety Plan was assessed (SDDOT 2006). South Dakota's plan was similar to North Dakota's in that much of the report was set aside to describe the specified goal areas and the multiple supporting strategies.

In 2007, South Dakota updated its SHSP, which included the traffic safety emphasis areas upon which it wanted to focus. In 2008, NHTSA released their performance measures requirements, and subsequent HSPs from South Dakota, although they have included traffic safety priority areas, have moved more toward in-depth performance goal descriptions and trends and project descriptions for those priority areas.

South Dakota's 2010 HSP includes all 14 recommended performance measures identified by NHTSA. Again, due to a lack of a current SHSP, it is acceptable to use the South Dakota HSP as a proxy and source of SHSP behavior elements.

Wyoming In 2006, Wyoming had a current SHSP in place (WDOT 2007). The document provided directions for work to be completed, but did not specify projects. It described each of Wyoming's 19 goals in addition to strategies, supporting activities and responsible partners. Wyoming's 2006 goals were divided into three distinct groups: safety emphasis areas, continuing safety areas, and special safety areas.

Wyoming is in the process of updating its SHSP, as is the case with South Dakota and Montana. This report will look at Wyoming's 2010 annual HSP as a comparison to its 2006 SHSP. Also similar to Montana, Wyoming publishes annually a document entitled "Wyoming Highway Safety Problem Identification" providing an analysis of traffic safety program areas.

Wyoming's 2010 annual plan includes all 14 recommended performance measures identified by NHTSA in addition to the following:

Additional Wyoming Metrics:

1. Annual fatality rate/VMT
2. Average rural fatalities/VMT
3. Average urban fatalities/VMT
4. Average annual fatalities and serious injuries

Comparison of AASHTO Goals and Strategies

AASHTO Goals/Strategies The earlier NRMR report looked at safety plans from the region. At the time, the AASHTO framework was used to assess states' plans. It considered priorities and commonalities among states in their safety planning. AASHTO-suggested goals and strategies were also relatively new in 2006. Table 6 was developed in the 2007 report to evaluate each state's adherence to the AASHTO goals and strategies and to compare compliance among the states. This table has been updated to reflect the most recent state safety plans. The table compares each state's current highway safety plans to the AASHTO goals and strategies, to their own 2006 safety plans, and to the other NRMR states.

Many similarities exist between the 2006 NRMR SHSPs and HSPs and their most current plans. The most telling is the continued focus on the following traffic safety issues: aggressive driving/speeding, impaired driving, seat belt use, motorcycle safety, and pedestrian safety. These areas remain the root cause for many of the motor vehicle fatalities occurring in the United States. Another topic that persists in the NRMR plans is graduated licensing for young drivers. Within their HSPs, all NRMR states speak to the issue of young drivers. However, while Montana, North Dakota, and Wyoming all specifically include GDL in their current HSPs, South Dakota's plan only describes the problem of drivers aged 20 or younger, but leaves out GDL-related terminology.

Overall, while the AASHTO goals and strategies in the HSPs for Montana and North Dakota have not changed considerably since 2006, the South Dakota and Wyoming plans have been noticeably pared down. While included in the HSPs for both states in 2006, the following topics are absent from the South Dakota and Wyoming current plans: overall driver licensure and competency, older driver proficiency sustainability, keeping drivers alert, truck safety, and school zone safety. Although these states are not likely to dismiss these issues altogether, they may be refining their HSPs to bring stronger focus to priority issues.

All NRMR SHSPs/HSPs lack a focus on safety enhancements in vehicles. This is reasonable as states have little influence in vehicle design and purchase decisions

Note that while each of the state's HSPs were examined for the presence of the AASHTO goals and strategies, each plan is subject to interpretation. Even if certain goals and strategies are not explicitly listed in each of the plans, it is possible they are implicitly present due to inclusion in certain traffic safety programs for each respective state.

Table 6. AASHTO Goals and Strategies by NRMR State

AASHTO Goals and Strategies	Montana CHSP (2006)/ HSP (2010)		North Dakota SHSP		South Dakota HSP		Wyoming SHSP (2006)/ HSP (2010)	
	2006	2010	2006	2010	2006	2010	2006	2010
Drivers								
Graduated Licensing for Young Drivers	Effective 2006	√	Support GDL	Effective 2011	Evaluate GDL Program	No GDL	Effective 2005	√
Ensuring Drivers are Fully Licensed and Competent		√		√	√			
Sustaining Proficiency in Older Drivers	√	√	√	√	√			
Curbing Aggressive Driving and Speeding	√	√	√	√	√	√	√	√
Reducing Impaired Driving	√	√	√	√	√	√	√	√
Keeping Drivers Alert	√	√	√	√	√			
Increase Driver Safety Awareness	√	√	√	√	√			√
Increase Seatbelt Usage and Improving Airbag Awareness	√	√	√	√	√	√	√	√
Highways	2006	2010	2006	2010	2006	2010	2006	2010
Reducing Vehicle-Train Crashes (Railroad Crossing)		√		√			√	
Keeping Vehicles on the Roadway	√	√	√	√			√	
Minimizing the Consequences of Leaving the Road	Road Safety Audits	√	Roadway Safety Program	√			√	
Improving the Design and Operation of Highway Intersections	Road Safety Audits	√	√	√	Traffic Signal Management	√	√	

Table 6. Continued

AASHTO Goals and Strategies	Montana CHSP (2006)/ HSP (2010)		North Dakota SHSP		South Dakota HSP		Wyoming SHSP (2006)/ HSP (2010)	
	2006	2010	2006	2010	2006	2010	2006	2010
Highways (Continued)								
Reducing Head-on and Across Median Crashes	High Crash Corridor/ Locations	High Crash Corridor/ Locations		√			Narrow Medians	
Designing Safer Work Zones				√	ITS to Identify Dangers		√	√
Special Users/Nonmotorized	2006	2010	2006	2010	2006	2010	2006	2010
Making Walking and Street Crossing Safer	√	√	√	√	√	√	√	√
Ensuring Safer Bicycle Travel	√	√	√	√	√	√	√	√
Vehicles	2006	2010	2006	2010	2006	2010	2006	2010
Improving Motorcycle Safety and Increasing Motorcycle	√	√	√	√	√	√	√	√
Making Truck Travel Safer	√	√	√	√	√		√	
Increasing Safety Enhancements in Vehicles								
Emergency Medical Services	2006	2010	2006	2010	2006	2010	2006	2010
Enhancing Emergency Medical Capabilities to Increase Survivability	√	√	√		√	√	√	

Table 6. Continued

AASHTO Goals and Strategies	Montana CHSP (2006)/ HSP (2010)		North Dakota SHSP		South Dakota HSP		Wyoming SHSP (2006)/ HSP (2010)	
	2006	2010	2006	2010	2006	2010	2006	2010
Management								
Improving Information and Decision Support Systems	√	√	√		√	√	√	√
Creating More Effective Processes and Safety Management Systems	√		√		√	√	√	√
Other Areas Specified	2006	2010	2006	2010	2006	2010	2006	2010
Police Traffic Services			√		√		√	√
Roadway Hazard Elimination	Urban Area Crashes	Urban Area Crashes	√		√		Visibility Improvement	√
Native Americans	√	√			√			
School Zone Safety					√		√	
High Risk Rural Roads							√	
Access Control							√	
Animal/Vehicle Collisions	√	√	√	√			√	
Avalanches/Rock Fall							√	
Reducing Weather Related Crashes			√	√			√	√

Emphasis Areas While the preceding section linked AASHTO goals and strategies within NRMR state SHSPs and HSPs, it did not specify areas of highest priority for each of the states. The previous report ranked the top four traffic safety emphasis areas for each of the NRMR states. However, due to changes in HSP and SHSP formatting since the previous report, it is not feasible to rank the priority areas for the 2010 documents. It is possible to compare and contrast the emphasis areas within the SHSPs and HSPs among the states in order to ascertain changes in traffic safety priorities between 2006 and 2010.

Table 7 outlines the traffic safety emphasis areas for each of the NRMR states for 2006 and 2010. What is strikingly common among all four NRMR states is the focus on impaired driving and occupant protection in both 2006 and 2010. This is a common theme among non-NRMR states as well, with 48 states listing occupant protection as a behavioral priority area in their SHSPs as of 2007 and 46 identifying impaired driving as a priority area (NHTSA 2008) (Table 8). Also, while only two of the four NRMR states listed speeding/aggressive driving as an emphasis area in 2006, all four have it listed in their 2010 SHSPs or HSPs, compared to 55% of the states nationwide listing speeding as a priority area and 67% listing aggressive driving as a priority area. Another area of importance to NRMR states is young drivers. Only two of the four states listed this as a priority in their 2006 SHSP or HSP, and three listed it in 2010. More than three-fourths of states nationwide listed young drivers as an emphasis area in their HSP.

Two areas where the NRMR states are not in agreement with non-NRMR states are bicycle and pedestrian safety. None of the NRMR states listed either of these areas as a priority in their 2006 SHSPs or HSPs, and only one listed it as a priority in 2010. However, two-thirds of states nationwide listed pedestrian safety as a priority and more than half listed bicycle safety as a priority. A reason for this could be the climate and rural nature of the NRMR states where weather and roads are conducive to bicycle riding and hiking/walking for only limited parts of the year. As a result, bicycle and pedestrian safety are not priorities in the NRMR compared to other year-round traffic safety concerns.

Overall, NRMR traffic safety emphases have not changed considerably since 2006. Impaired driving and occupant protection are still high priorities, while speeding and aggressive driving in addition to young drivers moved up in importance for a few of the states. As could be expected, considering the rurality of the states, NRMR states focus more on crashes occurring rural areas rather than urban locations.

As was previously discussed, each of the states' emphasis areas are identified via a study of the state's traffic safety data in addition to stakeholder consensus in the SHSP governing committees. Montana and Wyoming both publish annual Problem Identification Papers which assist in pinpointing emphasis areas.

Table 7. NRMR Emphasis Areas: 2006 and 2010

Emphasis Areas:	Montana		North Dakota		South Dakota		Wyoming	
	2006	2010	2006	2010	2006	2010	2006	2010
<i>Alcohol</i>	X	X	X	X	X	X	X	X
<i>Occupant Protection</i>	X	X	X	X	X	X	X	X
<i>Speed Control/Aggressive Driving</i>		X	X	X		X	X	X
<i>Young Drivers</i>	X	X	X	X		X		
<i>Motorcycle Crashes</i>	X	X			X	X		X
<i>Single Vehicle Run-Off-Road Crashes/ Lane Departure</i>	X	X	X	X			X	
<i>Emergency Medical Services</i>	X	X	X	X	X			
<i>Older Drivers</i>	X	X	X	X				
<i>Police Traffic Services/Enforcement</i>		X			X			X
<i>Traffic Records Management</i>	X	X						X
<i>High Crash Corridors/Locations</i>	X	X						
<i>Intersection Safety</i>			X	X				
<i>Native Americans</i>	X	X						
<i>Truck Crashes</i>	X	X						
<i>Urban Area Crashes</i>	X	X						
<i>Pedestrian/Bicycle Safety</i>						X		
<i>Safe Communities</i>					X			
<i>Planning and Administration</i>		X						

Table 8. State Priority Areas

Behavioral Priority Area:	# of States	States/ D.C.
Occupant Protection	48	94.1%
Impaired Driving	46	90.2%
Young Drivers	40	78.4%
Aggressive Drivers	35	68.6%
Pedestrian Safety	34	66.7%
Motorcycle Safety	30	58.8%
Speeding	28	54.9%
Bicycle Safety	27	52.9%
Older Drivers	24	47.1%
Distracted Drivers	21	41.2%

Source: NHTSA 2008

CHANGES IN TRAFFIC SAFETY LAWS/POLICIES SINCE 2006

As the previous section confirmed, NRMR states have made notable changes to the goals set out in their Statewide Safety Plans since 2006. This section focuses on the changes in the traffic safety laws and policies made in each of the states to assist in achieving the goals set out in those plans.

The Advocates for Highway and Auto Safety (AHAS), an alliance of consumer, health and safety groups and insurance companies, annually releases “The Roadmap to State Highway Safety Laws.” AHAS ranks states according to certain traffic safety it deems states have in place to save lives. Information obtained from the annual reports published by this organization is not intended to be a comprehensive analysis of safety laws in the NRMR states. However, these reports give a valuable overview of trends seen in specific traffic safety laws in the NRMR states and nationwide. See Appendix A for the definitions of the laws specified in Table 11 and outlined in the AHAS 2007 and 2011 Roadmap reports.

The Roadmap reports specific traffic laws in the areas of: adult occupant protection, child passenger safety, teen driving (GDL), impaired driving, and most recently distracted driving (Table 11). The laws tracked are not uniform across 2006 and 2010 because AHAS occasionally changes the laws it tracks, including but not limited to adding ignition interlock and text messaging laws and removing certain impaired driving laws (i.e. high BAC and repeat offender laws).

The following will summarize Roadmap findings in addition to supplementing information concerning relevant laws, policies, and programs in NRMR states not covered by the Roadmap reports.

Adult Occupant Protection

Adult occupant protection laws have not changed in the NRMR states since 2006. None of the four NRMR states had a primary enforcement seat belt law or an all-rider motorcycle helmet law in 2006, and there were no changes in the status of those laws in 2010 (Table 10). No changes were made to NRMR state base fines for violating state seat belt laws, nor in seat belt law coverage, with North Dakota, South Dakota, and Wyoming having laws covering only front seat usage (Table 9). All NRMR states only require motorcycle helmet use for riders younger than 18.

Table 9. Adult Seat Belt Laws, Coverage and Fines

	2006 (1)			2010 (2)		
	Seat Belt Law	Seats Covered	Base Fine	Seat Belt Law	Seats Covered	Base Fine
<i>Montana</i>	Secondary	All	\$20	Secondary	All	\$20
<i>North Dakota</i>	Secondary	Front	\$20	Secondary	Front	\$20
<i>South Dakota</i>	Secondary	Front	\$20	Secondary	Front	\$20
<i>Wyoming</i>	Secondary	Front	\$25	Secondary	Front	\$25

(1) Source: RITA: "State Transportation Statistics: 2007" -

http://www.bts.gov/publications/state_transportation_statistics/state_transportation_statistics_2007/

(2) Source: NHTSA: "Key Provisions of Occupant Restraint Laws" - [http://www-](http://www-fars.nhtsa.dot.gov/States/StatesLaws.aspx)

[fars.nhtsa.dot.gov/States/StatesLaws.aspx](http://www-fars.nhtsa.dot.gov/States/StatesLaws.aspx)

Table 10. AHAS Rating of NRMR States Based on Specified Traffic Safety Laws: 2006 and 2010

	2006				2010			
	MT	ND	SD	WY	MT	ND	SD	WY
ADULT OCCUPANT PROTECTION								
All-rider motorcycle helmet law	no	no	no	no	no	no	no	no
Primary Enforcement seat belt law	no	no	no	no	no	no	no	no
CHILD PASSENGER SAFETY								
Booster seat law	partial	partial	no	yes	no(2)	partial	no	yes
TEEN DRIVING (GDL)								
Minimum age 16 for learner's permit	na	na	na	na	no	no	no	no
6-month holding period	yes	yes	partial	partial	yes	yes	no(3)	no(3)
30-50 hours supervised driving	yes	no	no	yes	yes	no	no	yes
Nighttime restriction	partial	no	yes	partial	partial	no	yes	partial
Passenger restriction	yes	no	no	yes	yes	no	no	yes
Cell phone restriction	no	no	no	no	no	no	no	partial(4)
Age 18 unrestricted license	na	na	na	na	no	no	no	no
IMPAIRED DRIVING								
Ignition interlocks for all offenders	na	na	na	na	partial	no	no	partial
Child endangerment	yes	yes	no	no	yes	yes	no	yes
Mandatory BAC test	yes	yes	yes	partial(1)	yes	yes	yes	partial(1)
Open container	yes	yes	yes	no	yes	yes	yes	no
High BAC	yes	yes	yes	no	na	na	na	na
Repeat offender law	yes	yes	no	no	na	na	na	na
Sobriety checkpoint law	yes	yes	yes	no	na	na	na	na
DISTRACTED DRIVING								
All Driver text messaging restriction	na	na	na	na	no	no	no	yes
Overall rating (out of 15)	11	8.5	6.5	5	7	4.5	3	7
Number of states rated 0-5	1	Including WY			3	Including ND and SD		
Number of states rated 6-10	30	Including ND, SD			33	Including MT and WY		
Number of states rated 11-15	20	Including MT			15			

(1) Only for survived, not killed

(2) Changed from partial to no booster seat law due to the change in the enforcement portion of the definition: no primary enforcement of the law

(3) Changed from partial to no 6-month holding period due to the change in the driver education portion of the definition - both states have an exemption for a 6 month holding period if the driver goes through a driver education course

(4) Cell phone restriction, but does not include a ban on text messaging

Child Passenger Safety

Montana and South Dakota each made changes to their child restraint requirements between 2006 and 2010 (Table 11). Montana strengthened its requirements to include older and larger children, while South Dakota made changes to its age requirement – adding one year onto the child restraint requirement minimum age, in addition to increasing the base fine for violating this law from \$20 to \$25. Wyoming actually weakened its child restraint law by removing the weight requirement. Among the NRM states, Montana has the largest base fine for violating child restraint laws, while North Dakota and South Dakota have the smallest fine – at \$25 each.

Table 11. Child Passenger Safety Laws and Fines

	2006 (1)		2010 (2)	
	Child Restraint Requirement	Base Fine	Child Restraint Requirement	Base Fine
<i>Montana</i>	5 years old or younger and less than 50 pounds	\$ 100	Less than 6 years old and less than 60 pounds	\$ 100
<i>North Dakota</i>	6 years old and younger and less than 57 inches tall or less than 80 pounds	\$ 25	6 years and younger and less than 57 inches tall or less than 80 pounds	\$ 25
<i>South Dakota</i>	4 years old and younger and less than 40 pounds	\$ 20	Less than 5 years old and less than 40 pounds	\$ 25
<i>Wyoming</i>	8 years old and younger and less than 80 pounds in rear seat if available	\$ 50	8 years old and younger in rear seat if available	\$ 50

(1) Source: NHTSA: "Key Provisions of Occupant Restraint Laws through July 1, 2006" - http://www.nhtsa.gov/people/injury/occupant_restraints_chart-4-3-06.pdf

(2) Source: NHTSA: "Key Provisions of Occupant Restraint Laws" - <http://www-fars.nhtsa.dot.gov/States/StatesLaws.aspx>

AHAS tracks booster seat laws specifically. The booster seat law which AHAS follows has not changed in the NRM states since 2006, although the way the AHAS defines the law has changed. After 2006 AHAS changed the definition of the booster seat law they were tracking to exclude those states which have a secondary booster seat law. In 2006, North Dakota, Montana, and Wyoming all had booster seat laws in place while South Dakota did not (Table 11). However, Montana and North Dakota had only partial laws. The laws in Montana and North Dakota did not extend to children up to age eight. In addition, Montana had a secondary booster seat law. In 2010, the laws have not changed for MT, ND or WY, and SD still has no law on the books regarding booster seats.

Teen Driving (GDL)

Graduated drivers licensing (GDL) is a complex area in traffic safety. There are many restrictions that can be placed on teen drivers as part of GDL laws; however, most states limit the number of restrictions they have on teen drivers and the magnitude of those restrictions. Currently, AHAS is tracking the following items: (1) 6-month holding period, (2) 30-50 hours supervised driving, (3) nighttime restriction, (4) passenger restriction, (5) cell phone restriction, (6) minimum age of age 16 for a learner's

permit, and (7) age 18 unrestricted license. Numbers 6 and 7 were added after 2006. After 2006 AHAS changed the definition of the 6-month holding period to exclude those states with exemptions for teens who have taken a driver education course.

The only change made to teen driving laws between 2006 and 2010 is the cell phone restriction for teens added by Wyoming (Table 11). North Dakota recently enacted changes to its GDL which will become effective January 2012, which include an extended permit phase, night driving limitations, and cell phone restrictions (LaDoucer 2011). None of the NRMR states require a teen to be age 16 to obtain a learner's permit, and they do not require a teen to be 18 years of age before obtaining an unrestricted license. All NRMR states have a form of a 6-month holding period for learner's permits prior to obtaining a license. However, South Dakota and Wyoming have exclusions for teens who have taken a driver education course. Montana and Wyoming require a minimum of 30 hours of supervised driving. South Dakota has a full nighttime restriction on teens, meaning that they cannot drive between 10 p.m. and 5 a.m., Montana and Wyoming both have partial nighttime restrictions, meaning that they do not abide by the entire 10 p.m. to 5 a.m. restriction. Montana and Wyoming also are the only two NRMR states which have a passenger restriction in place. Wyoming is the only NRMR state with a cell phone restriction for teens.

Impaired Driving

AHAS currently tracks the following impaired driving laws: (1) ignition interlocks for all offenders (which was added after 2006), (2) child endangerment, (3) mandatory BAC test, and (4) open container. After 2006 AHAS stopped tracking high BAC laws, repeat offender laws, and sobriety checkpoint laws.

In regards to impaired driving, the laws that were in place in 2006 for the NRMR states did not change through 2010, with the exception of the child endangerment law Wyoming added in 2007. Montana and Wyoming both have partial ignition interlock laws, meaning they require ignition interlocks only for repeat offenders. The ignition interlock law is not implemented in North Dakota at this time. South Dakota does not have any type of ignition interlock law. The only NRMR state without a child endangerment law is South Dakota. All four NRMR states have some sort of mandatory BAC test, although Wyoming only requires it for surviving drivers, not post-mortem for drivers who were killed in a crash. Also, Wyoming is the only NRMR state without an open container law.

Distracted Driving

Following 2006, AHAS started tracking texting laws. Wyoming is the only NRMR state to pass a law prohibiting text messaging between 2006 and 2010 (Table 10, 12). However, North Dakota recently became the 31st state to enact a texting while driving ban (GHSA 2011c).

Table 12. Cell Phone and Texting Laws

	2006		2010 (1)	
	Handheld Ban	All Text Messaging Ban	Handheld Ban	All Text Messaging Ban
Montana	No	No	No	No
North Dakota	No	No	No	No
South Dakota	No	No	No	No
Wyoming	No	No	No	Yes (Primary)

(1) Source: GHSA: "Cell Phone and Texting Laws" - http://www.ghsa.org/html/stateinfo/laws/cellphone_laws.html

TRAFFIC SAFETY IN THE NRMR

Although improvements have been made in some areas in regards to traffic safety in the NRMR, the region continues to lag behind the rest of the country. This section will detail several traffic safety variables and will include comparisons between states within the NRMR and with the United States overall. Comparing traffic safety variables from the time period prior to the 2007 report will give some insight into whether changes made to traffic laws and interventions following SHSP processes in the NRMR states have been effective.

Fatalities and Fatal Crashes

Overall, the NRMR saw a 6.7% decline in fatalities since 2005 and a 5.7% decline in fatal crashes (Table 13). However, fatalities and fatal crashes in the United States overall declined at a greater rate, with a 9.9% decline in fatalities since 2005 and an 8.8% decline in fatal crashes.

Table 13. Fatalities and Fatal Crashes

Geography	2002-2005		2006-2009		% Change	
	Fatalities	Fatal Crashes	Fatalities	Fatal Crashes	Fatalities	Fatal Crashes
NRMR	2,877	2,520	2,684	2,376	-6.7%	-5.7%
U.S.	172,235	154,664	155,198	141,052	-9.9%	-8.8%

Source: NHTSA - FARS database

In 2009, the NRMR had a fatality rate per 100,000 population that was nearly twice the rate of the U.S. overall (21.0 vs. 11.0) (Table 14). The difference between the NRMR and the United States fatality rates per 100,000 population is statistically significant ($\chi^2=265.02$, $df=1$, $p<0.0001$). In addition, the NRMR had a statistically significant decline in fatalities per 100,000 from 2006 (26.4/100,000 population) to 2009 (21.0/100,000 population) ($\chi^2=17.55$, $df=1$, $p<0.0001$). The United States overall also had a significant decline in fatalities per 100,000 population (14.3 in 2006 to 11.0 in 2009) ($\chi^2=1297.11$, $df=1$, $p<0.0001$).

The decreases in fatal crashes in both the NRMR and nationwide coincided with the downturn in the U.S. economy. It is difficult to gauge how much of an effect the U.S. recession had on the decline in motor vehicle fatalities or the extent to which changes in laws, programming, and enforcement contributed to those declines. However, economic activity, specifically recessions, have historically been correlated, at least partially, to declines in motor vehicle fatalities (Thoresen et al. 1992; Joksch 1984; Scuffham 2003).

Table 14. Fatalities per 100,000 Population

Geography	2006	2009	% Change
MT	27.9	22.7	-18.7%
ND	17.4	21.6	24.2%
SD	24.2	16.1	-33.4%
WY	38.0	24.6	-35.2%
NRMR	26.4	21.0	-20.3%
U.S.	14.3	11.0	-23.0%

Source: NHTSA - FARS database

The following sections will detail changes in fatal crash characteristics for the NRMR and the United States overall.

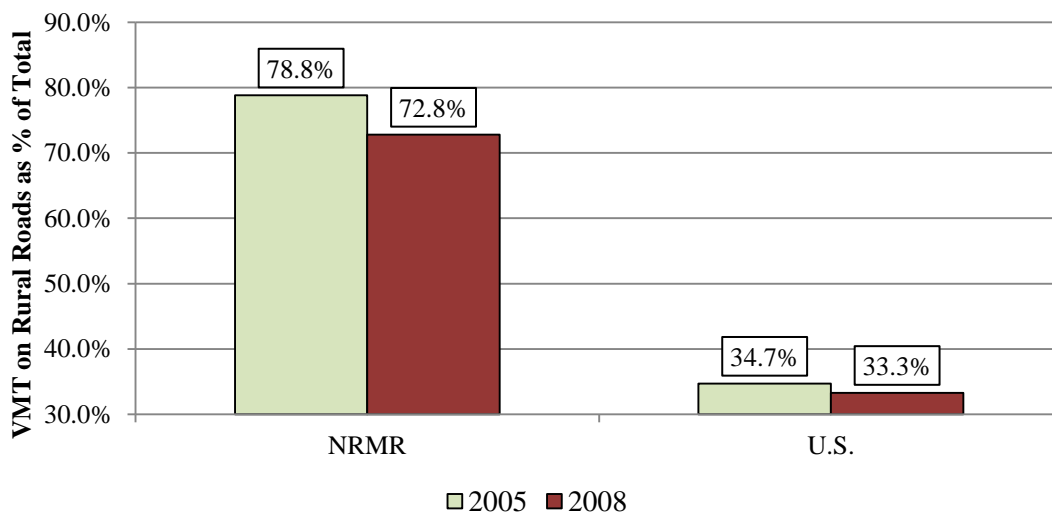
Environmental Factors in Fatal Crashes

Fatal motor vehicle crashes can be the result of occupant issues (such as driver age/gender, occupant protection, or alcohol use), or they can be the result of variables beyond the control of vehicle occupants, such as road characteristics, weather conditions, or lighting issues.

Road Characteristics

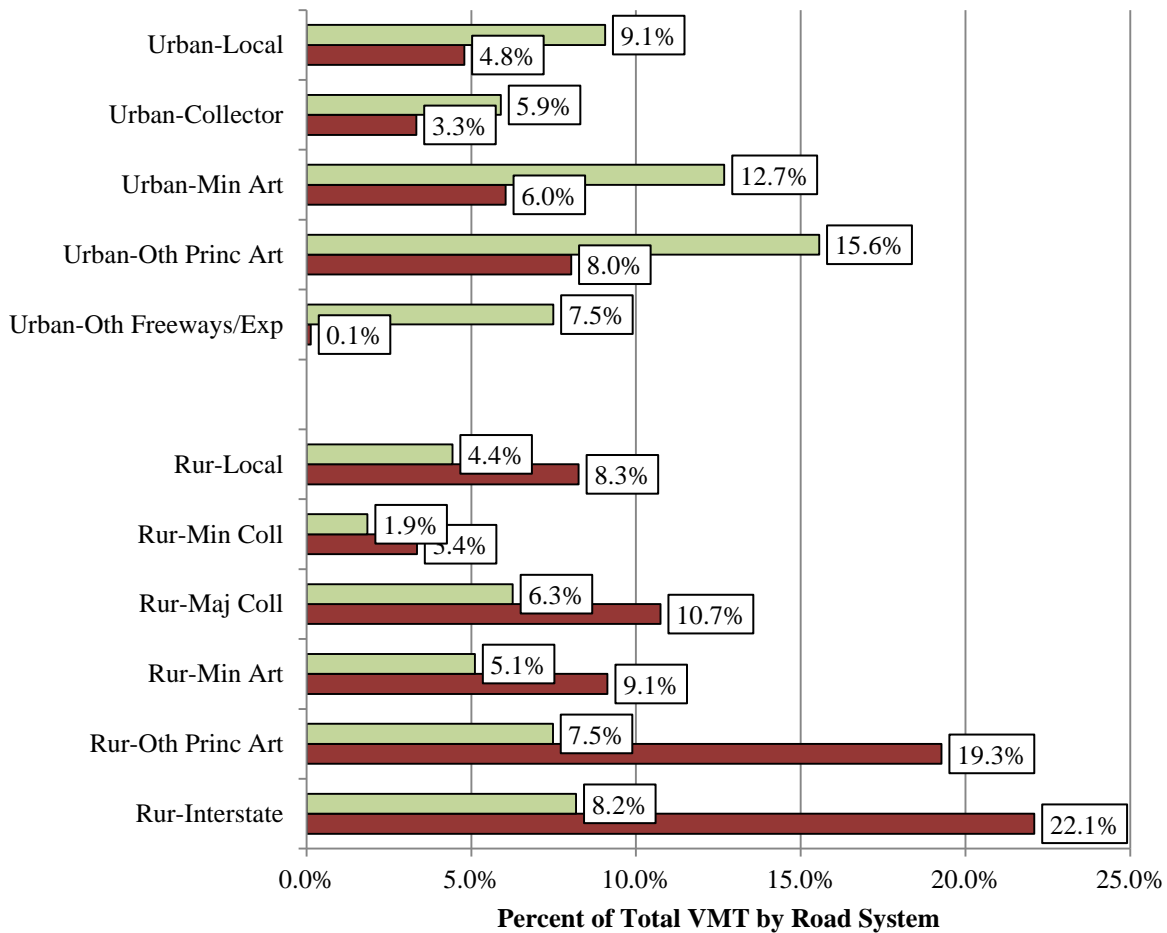
Traffic in the NRMR yielded 37,065 million VMT in 2008 – a 2.5% increase from 2005 (Federal Highway Administration 2009). As compared to 2005, rural VMT in the NRMR accounted for slightly fewer miles in 2008 than in 2005. However, rural VMT still account for nearly three-fourths of total VMT (Figure 7). Percent of VMT on rural roads nationally is less than half of that seen in the NRMR (33.3% vs. 72.8%). Within the NRMR rural roadways, rural interstates account for the largest share of total VMT at 22.1%, followed by rural principal arterials at 19.3% (Figure 8).

Figure 7. VMT on Rural Roads as Percent of Total: 2005-2008



Source: FHWA, Highway Statistics

Figure 8. VMT by Functional Road System: 2008

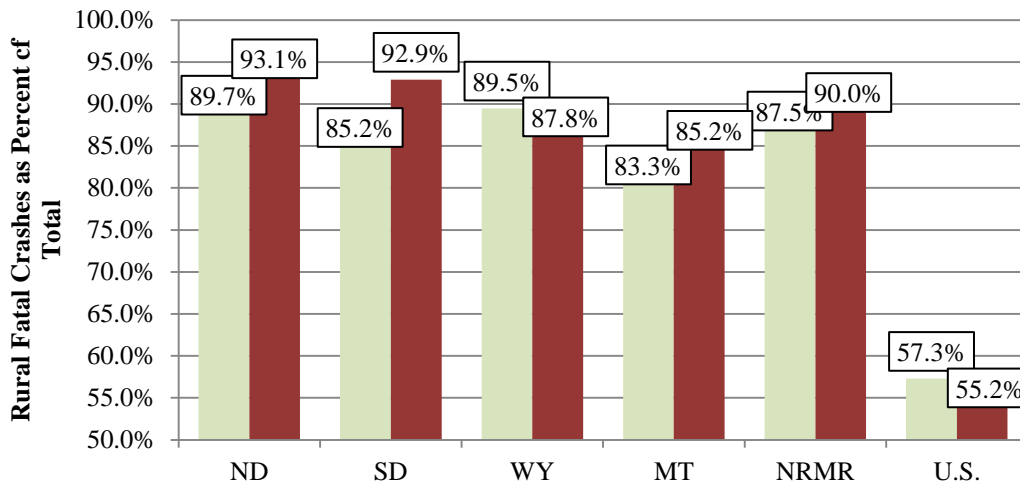


Source: FHWA, Highway Statistics

■ U.S. ■ NRMR

With a higher proportion of VMT being reported on rural roadways in the NRMR than in the United States as a whole, it is not surprising that the vast majority of fatal crashes occur on rural roads in this region. In the NRMR, 90% of fatal crashes occurred in a rural location from 2006-2009, as compared to 55.2% nationally (Figure 9). Also, the NRMR saw a slight increase in the percent of fatal crashes occurring in rural areas since 2005 (87.5% in 2002-2005 to 90.0% in 2006-2009), which was not a statistically significant change ($\chi^2=0.44$, $df=1$, $p=0.5071$). Nationally there was a statistically significant decline in the percent of fatal crashes occurring in rural areas (57.3% in 2002-2005 to 55.2% in 2006-2009 - $\chi^2=37.68$, $df=1$, $p<0.0001$).

Figure 9. Rural Fatal Crashes as Percent of Total



Source: NHTSA – FARS database ■ 2002-2005 ■ 2006-2009

Overall, the NRMR saw a 3% decline in crashes occurring in rural areas from 2002-2005 to 2006-2009, while the United States saw a decline that was four times greater during the same time period- a 12.2% decline (Table 15).

Table 15. Rural Fatal Crashes

Geography	Rural Fatal Crashes		
	2002-2005	2006-2009	% Change
Montana	484	478	-1.2%
North Dakota	811	822	1.4%
South Dakota	323	380	17.6%
Wyoming	587	459	-21.8%
NRMR	2,205	2,139	-3.0%
U.S.	88,595	77,808	-12.2%

Source: NHTSA - FARS database

Weather and Lighting

While a majority of fatal crashes tend to occur when weather conditions are deemed to be “normal” (Table 16), weather does play a role in some crashes, affecting drivers’ vehicle control and visibility.

Fatal crashes occurring during snow/sleet are three times more likely to occur in the NRMR than in the United States overall (6.0% vs. 1.9%). Fatal crashes which occur during rain events are half as likely to occur in the NRMR as compared to the U.S. overall (3.2% vs. 7.1%). These statistics seem reasonable considering the long, harsh winters for which the states in the NRMR are known, and with many states outside the NRMR being known for receiving above average amounts of rain (i.e. Florida, Washington, Oregon). There were marginal differences in the percent of total fatal crashes occurring during rain and snow/sleet for both the NRMR and nationally from the 2002-2005 time period to 2006-2009.

Table 16. Percent of Total Fatal Crashes by Weather Condition

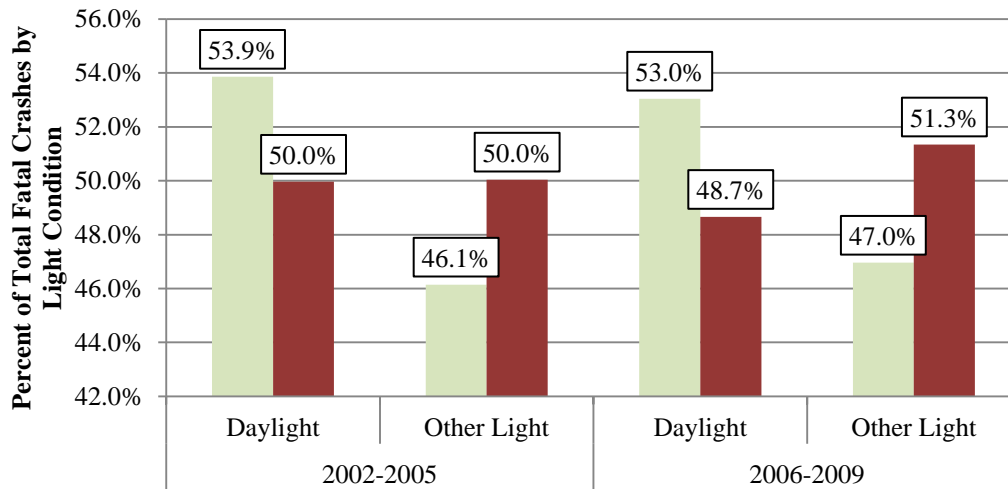
Weather Condition	2002-2005		2006-2009	
	NRMR	U.S.	NRMR	U.S.
<i>Normal</i>	87.7%	87.6%	88.0%	88.8%
<i>Rain</i>	2.9%	7.8%	3.2%	7.1%
<i>Snow/sleet</i>	5.8%	2.0%	6.0%	1.9%
<i>Other</i>	2.6%	1.9%	1.9%	1.4%
<i>Unknown</i>	1.0%	0.6%	1.0%	0.7%
Total	100.0%	100.0%	100.0%	100.0%

Source: NHTSA - FARS database

Fatal crashes in the NRMR are more likely to occur in daylight than the United States overall (53.0% vs. 48.7%), a difference which is statistically significant ($\chi^2=53.92$, $df=1$, $p=0.015$) (Figure 10). The United States saw a statistically significant decrease in the percent of fatal crashes occurring during daylight hours from the 2002-2005 period to 2006-2009 (50.0% to 48.7%) ($\chi^2=16.93$, $df=1$, $p<0.0001$). The NRMR saw a slight decline in fatal crashes occurring during the same period (53.9% vs. 53.0%), but it was not significant.

Figure 10. Percent of Total Fatal Crashes by Light Condition

Note: "Other Light" includes dark, but lighted, dark, dawn or dusk



Source: NHTSA - FARS database ■ NRMR ■ U.S.

Overall, the NRMR saw a 6.9% decline in fatal crashes occurring during daylight hours from 2002-2005 to 2006-2009 and a 3.8% decline in fatal crashes occurring during other light conditions during the same period. Nationwide there was an 11.2% decline in fatal crashes occurring during daylight and a 6.4% decline in fatal crashes occurring during other light conditions (Table 17).

Table 17. Fatal Crashes by Light Condition

Geography	2002-2005			2006-2009			% Change		
	Daylight	Other Light	Total	Daylight	Other Light	Total	Daylight	Other Light	Total
Montana	453	445	898	448	430	878	-1.1%	-3.4%	-2.2%
North Dakota	216	163	379	204	203	407	-5.6%	24.5%	7.4%
South Dakota	344	304	648	288	234	522	-16.3%	-23.0%	-19.4%
Wyoming	335	243	578	315	244	559	-6.0%	0.4%	-3.3%
NRMR	1,348	1,155	2,503	1,255	1,111	2,366	-6.9%	-3.8%	-5.5%
U.S.	76,918	77,041	153,959	68,302	72,076	140,378	-11.2%	-6.4%	-8.8%

Source: NHTSA - FARS database

Vehicle Type

Vehicle type data is also useful in studying fatal crashes. Table 18 shows the distribution of vehicle types involved in fatal crashes from 2002-2005 and 2006-2009. Light trucks are involved in a disproportionately large number of fatal crashes. Because light trucks are taller, heavier, and more solid than cars, they pose an increased risk of danger to occupants of cars, as well as to pedestrians, pedal cyclists, and motorcyclists (White 2004). In addition, occupants of trucks themselves are less likely to use restraints, most likely due to the increased feeling of invulnerability due to the size of the vehicle (NHTSA 2009).

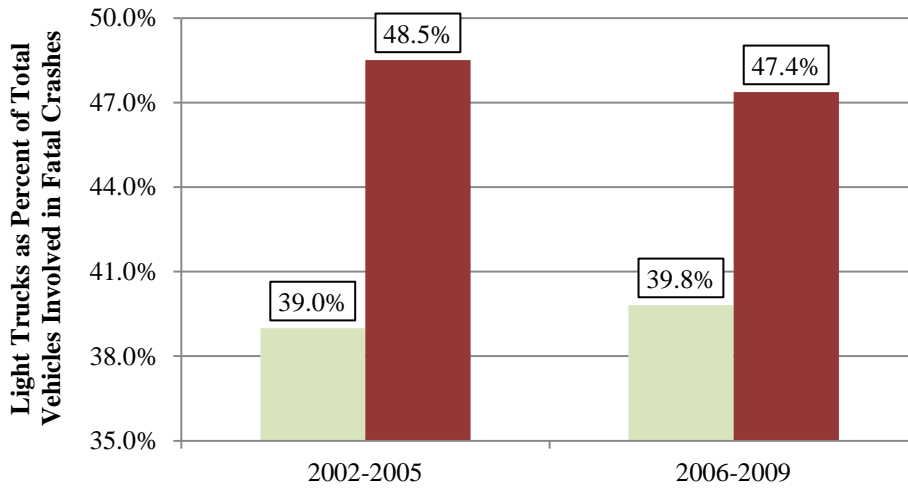
Table 18. Vehicle Types Involved in Fatal Crashes

	Vehicles Involved in Fatal Crashes				
	Passenger Cars	Light Trucks	Large Trucks	Motorcycles	Total
2002-2005					
NRMR	1,130	1,625	324	271	3,350
U.S.	104,787	89,417	19,161	15,970	229,335
2006-2009					
NRMR	993	1,486	348	310	3,137
U.S.	85,940	81,302	16,703	20,273	204,218
% Change from 2002-2005 to 2006-2009					
NRMR	-12.1%	-8.6%	7.4%	14.4%	-6.4%
U.S.	-18.0%	-9.1%	-12.8%	26.9%	-11.0%

Source: NHTSA - FARS database

In the time period 2006-2009, light trucks were significantly more likely to be involved in fatal crashes in the NRMR than in the United States overall (47.4% vs. 39.8%) ($\chi^2=29.85$, $df=1$, $p<0.0001$) (Figure 11). The NRMR saw a slight decrease in the proportion of trucks involved in fatal crashes from 2002-2005 to 2006-2009 (48.5% to 47.4%), while the United States saw a slight increase during the same time period (39.0% to 39.8%).

Figure 11. Light Trucks as Percent of Total Vehicles Involved in Fatal Crashes

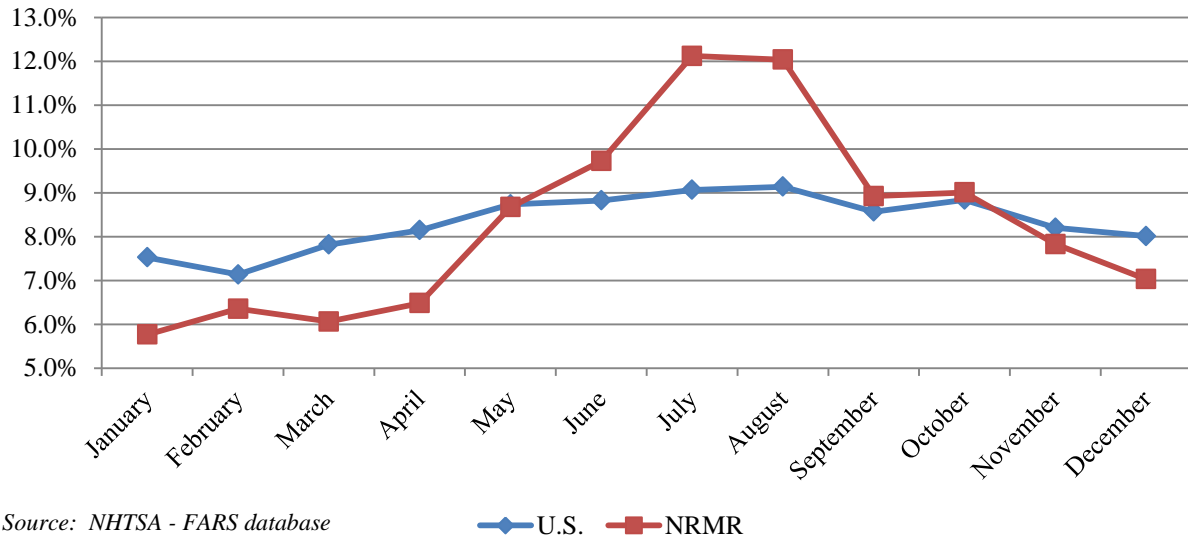


Source: NHTSA - FARS database ■ U.S. ■ NRMR

Fatal Crashes by Time of Year

Fatal crashes in the NRMR are more likely to occur in warmer months (June-August) than they are nationwide. Fatal crashes nationally are more likely to occur in colder months (November-April) than the NRMR states (Figure 12). The difference seen between the NRMR states and nationwide in fatal crashes occurring in colder months (November-April) is statistically significant ($\chi^2=18.95$, $df=1$, $p<0.0001$). NRMR states may see fewer fatal crashes during colder months than the United States overall because NRMR drivers may be more adept at driving on snow-covered roads than drivers from other parts of the nation, which might not see the extent of snow (depth, frequency, and longevity) that the NRMR states see in an average winter. In addition, NRMR states may see the spike in fatal crashes during the warmer months due to any number of reasons, including overconfidence in driving when the road conditions are dry or the increase in traffic during summer months.

Figure 12. Fatal Crash Distribution by Month: 2006-2009

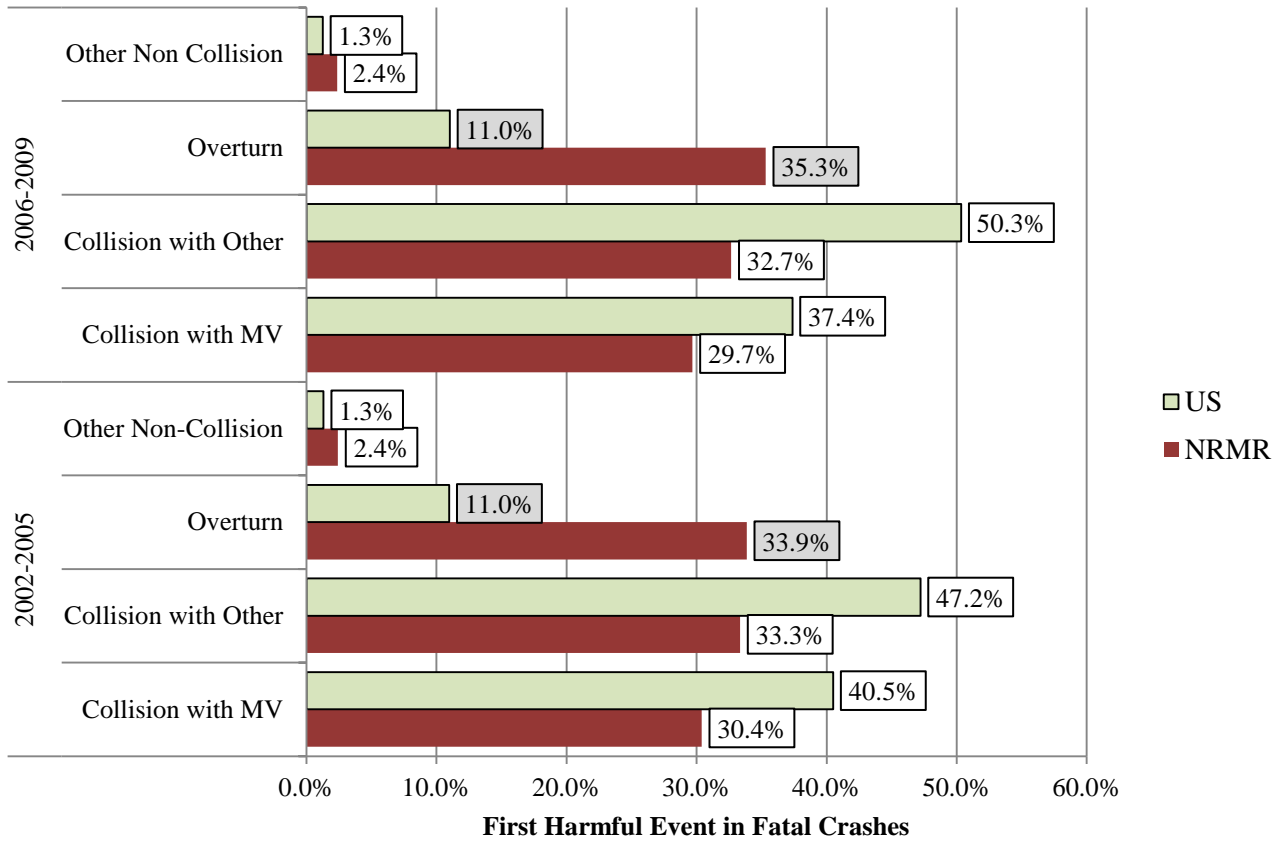


Rollover Events

Single vehicle run-off-the-road crashes are an area of concern for the NRMR states as they are more likely to lead to rollover events which result in a fatality. More than one-third of fatal crashes (35.3%) in the NRMR from 2006-2009 had vehicle rollover as the first harmful event as compared to only 11% for the national median (Figure 13). Between 2002-2005 and 2006-2009 there was a slight increase in the percent of fatal crashes which had rollovers as the first harmful event in the NRMR (33.9% to 35.3%). The U.S. average did not change during the same time period.

The higher incidence rates in the NRMR may be due to rural road characteristics, but may also be attributed to driver experience and decisions (Vachal and MacGowan 2007).

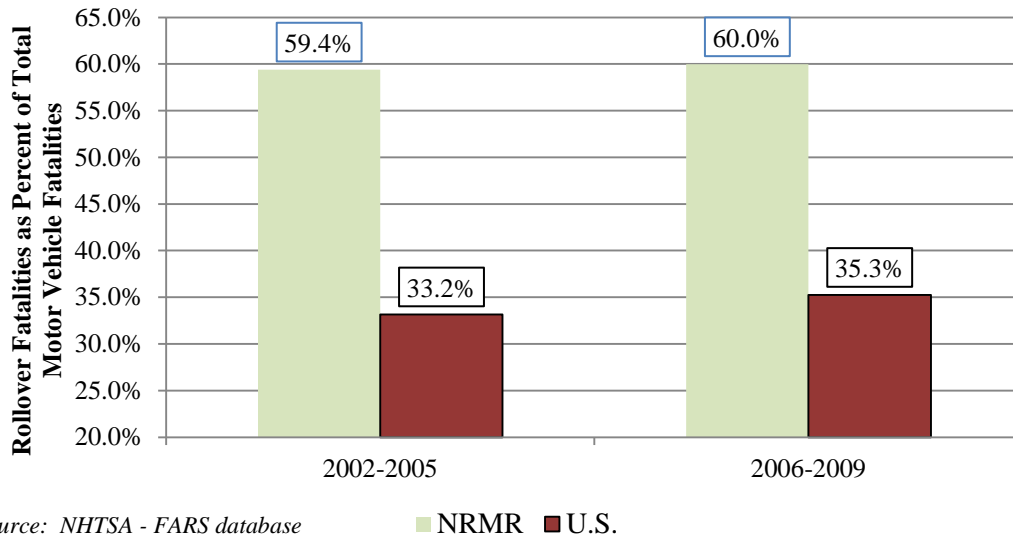
Figure 13. First Harmful Event in Fatal Crashes



Source: NHTSA - FARS database

In the NRMR, from 2006-2009 60% of the fatalities in the NRMR were the result of a rollover event, as compared to slightly more than 35% nationally (Figure 14). The NRMR saw a slight, statistically insignificant, increase in the percent of fatalities that resulted from a rollover from 2002-2005 to 2006-2009 (59.4% to 60.0%) ($\chi^2=0.03$, $df=1$, $p=0.8625$), while nationwide there was a statistically significant increase in the percent of total fatalities that resulted from a rollover (33.2% to 35.3%) ($\chi^2=56.08$, $df=1$, $p<0.0001$).

Figure 14. Rollover Fatalities as Percent of Total Motor Vehicle Fatalities



Overall, the NRMR saw a 9.6% decline in rollover fatalities from 2002-2005 to 2006-2009, while there was a 10.2% decline nationally (Table 19). North Dakota was the only NRMR state that had an increase in rollover fatalities – 24.9% from 2002-2005 to 2006-2009. South Dakota had the largest decline in rollover fatalities, with a 19.2% reduction, followed by Montana with an 18.0% decline, and Wyoming with a 3.9% decrease in rollover fatalities.

Table 19. Rollover Fatalities

Geography	Rollover Fatalities		
	2002-2005	2006-2009	% Change
Montana	540	443	-18.0%
North Dakota	169	211	24.9%
South Dakota	333	269	-19.2%
Wyoming	337	324	-3.9%
NRMR	1,379	1,247	-9.6%
U.S.	42,631	38,292	-10.2%

Source: NHTSA - FARS database

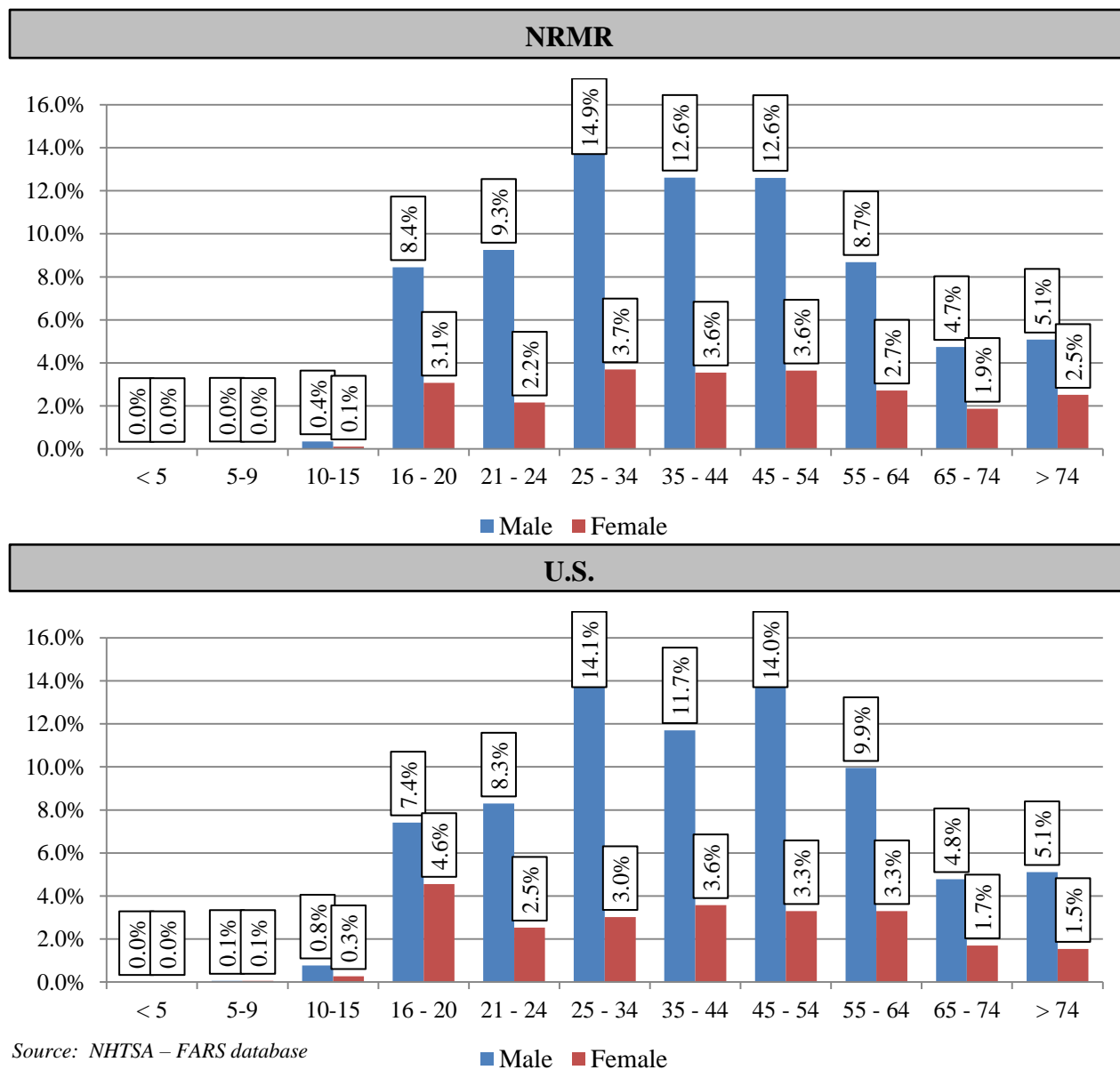
Driver Demographics in Fatal Crashes

As vehicle occupants are in control of the vehicle and tend to be responsible for the decision-making leading up to and during the crash, vehicle occupant characteristics, such as age, gender, and origin, provide a greater understanding of the causes of fatal crashes and potential for effective interventions..

Driver Age and Gender

Age distribution of drivers involved in fatal crashes for both the NRMR and nationally is comparable, with most of the fatal crashes between 2006 and 2009 involving male drivers between the ages of 21 and 54 (Figure 15). The predominance of male drivers involved in fatal crashes is evident for both the NRMR and the United States overall, with many researchers attributing this to the increased risk-taking behaviors of males (Turner and McClure 2003; Ivers et al. 2009). Examining the at-risk driving populations, the proportion of male drivers age 24 or younger involved in fatal crashes is slightly higher in the NRMR than in the U.S. population as a whole, while the proportion of female drivers for this age group is slightly lower in the NRMR than nationally. Also, older drivers (aged 65 or older) represent a slightly higher proportion of the drivers involved in fatal crashes in the NRMR than in the United States overall.

Figure 15. Driver Involvement in Fatal Crashes by Age and Gender: 2006-2009

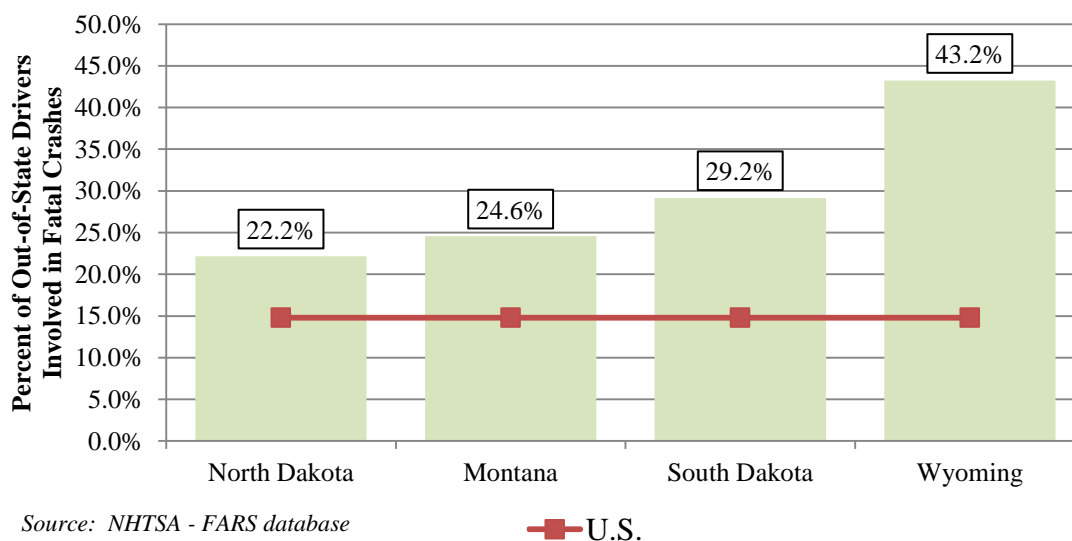


Source: NHTSA – FARS database

Driver Origin

The percent of out-of-state drivers involved in fatal crashes in the NRMR is twice that of the national average (14.8% vs. 29.9%), with North Dakota having the region's lowest percent of out-of-state drivers involved in fatal crashes at 22.2% and Wyoming have the highest percent at 43.2% (Figure 16). Out-of-state drivers may be at an increased risk of being involved in a crash because they are unfamiliar with regional road geography (i.e. curve location), and lack driving skills for navigating unfamiliar roads in adverse weather conditions (i.e. rain, snow).

Figure 16. Percent of Out-of-State Drivers Involved in Fatal Crashes: 2005-2009



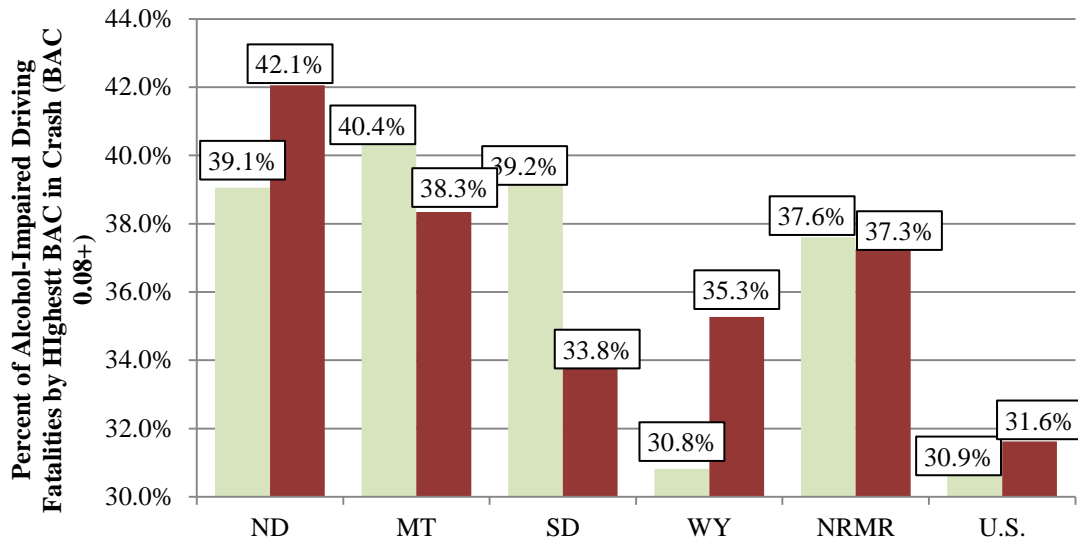
Behavioral Issues in Fatal Crashes

In traffic safety research, there exists the belief that changes in driver behavior will result in the largest reduction in harm as related to motor vehicle crashes (Evans 1996). Reducing behaviors such as driving while intoxicated, speeding, and lack of occupant protection provide the largest opportunities for reducing harm because they are factors in many of the motor vehicle fatalities in the United States. This section will analyze these behaviors in the NRMR states as compared to the United States.

Impaired Driving

Drivers in fatal crashes in the NRMR are more likely to have been impaired in the crashes than drivers in crashes nationally (37.3% vs. 31.6%) (Figure 17). North Dakota has the largest percent of alcohol-impaired driving fatalities among the NRMR states, with 42.1% of fatalities involving alcohol-impaired driving during 2006-2009, followed by Montana (38.2%), Wyoming (35.3%), and South Dakota (33.8%). NRMR saw a small decline in the percent of alcohol-impaired driving fatalities between 2002-2005 and 2006-2009. However, this decline was not statistically significant ($\chi^2=0.02$, $df=1$, $p=0.8875$). Nationwide there was a significant increase in the percent of alcohol-impaired driving fatalities from 2002-2005 to 2006-2009 ($\chi^2=9.98$, $df=1$, $p=0.0016$).

Figure 17. Percent of Alcohol-Impaired Driving Fatalities by Highest BAC in Crash (BAC 0.08+)

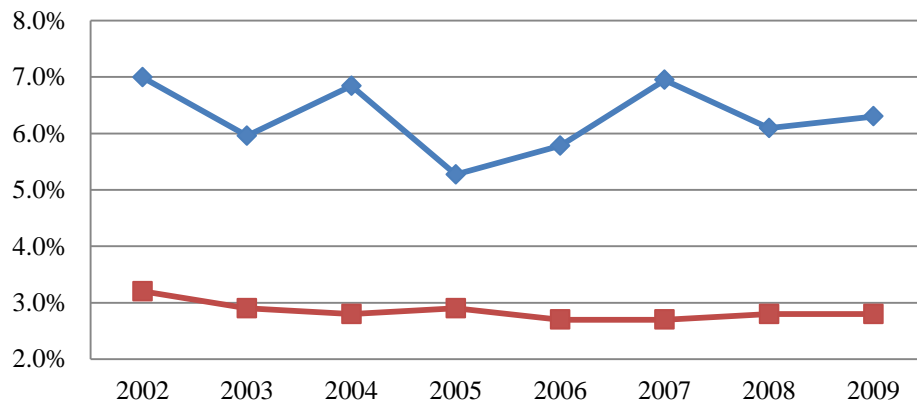


Source: NHTSA - FARS database

■ 2002-2005 ■ 2006-2009

Drivers involved in fatal crashes in the NRMR are more than twice as likely as drivers nationwide to have had a previous DWI conviction (6.3% vs. 2.8%) (Figure 18). Also, while this trend has been steadily declining in the United States overall, the trend in the percent of drivers involved in fatal crashes with previous DWI convictions remains erratic in the NRMR.

Figure 18. Drivers Involved in Fatal Crashes with Previous DWI Convictions



Source: NHTSA - FARS database

◆ NRMR ■ U.S.

Looking at overall numbers, between 2002-2005 and 2006-2009 the NRMR saw a decline in alcohol-impaired fatalities comparable to the United States overall (7.6% decline vs. 7.8% decline) (Table 20). When the individual states are examined, South Dakota saw the largest decline at nearly 34%, followed by Montana at 6.9%. North Dakota and Wyoming both saw an increase in traffic fatalities where the driver's BAC was a minimum of 0.08 (18.1% and 8.2% respectively).

Table 20. Traffic Fatalities by Highest Driver BAC in the Crash (0.08+)

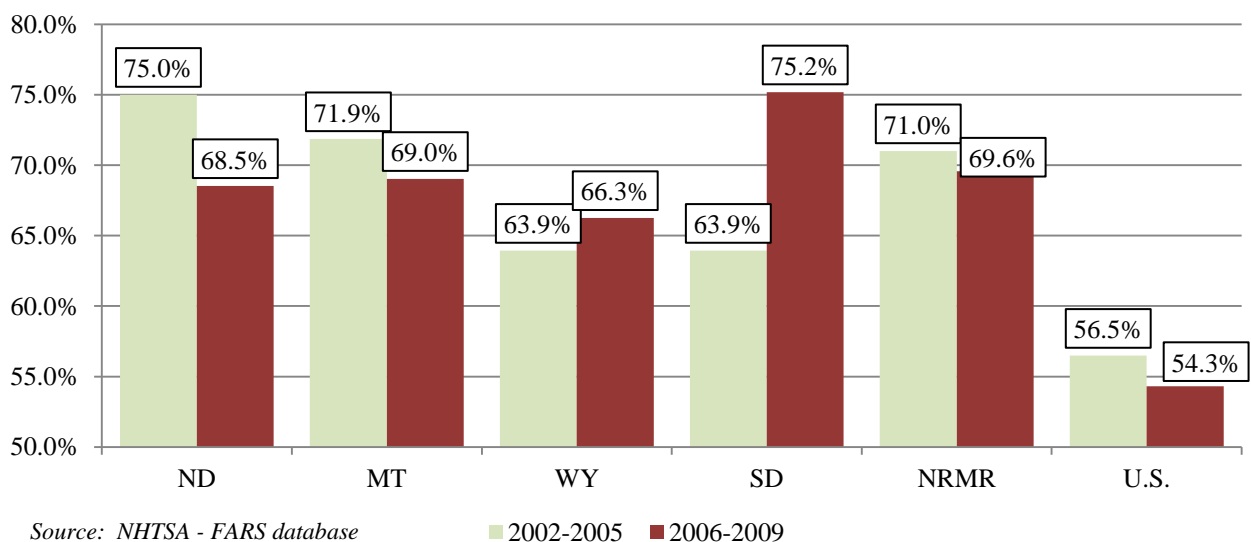
Geography	2002-2005		2006-2009		% Change	
	Fatalities		Fatalities			
	Total	0.08+	TOTAL	0.08+	TOTAL	0.08+
Montana	1,011	408	991	380	-2.0%	-6.9%
North Dakota	425	166	466	196	9.6%	18.1%
South Dakota	766	300	589	199	-23.1%	-33.7%
Wyoming	675	208	638	225	-5.5%	8.2%
NRMR	2,877	1,082	2,684	1,000	-6.7%	-7.6%
U.S.	172,235	53,249	155,198	49,082	-9.9%	-7.8%

Source: NHTSA - FARS database

Occupant Protection

Of the fatalities in the NRMR from 2002-2009, more than two-thirds were unrestrained, as compared to nationally where slightly more than half of fatalities were unrestrained (69.6% vs. 54.3%) (Figure 19). This difference is statistically significant ($\chi^2=49.3$, $df=1$, $p<0.0001$). The NRMR saw a slight decline in the percent of unrestrained fatalities from 2002-2005 to 2006-2009. However, this change was not statistically significant ($\chi^2=0.16$, $df=1$, $p=0.6892$). Nationwide, there was a statistically significant decline during this same time period – from 56.5% to 54.3% ($\chi^2=26.65$, $df=1$, $p<0.0001$).

Figure 19. Percent of Unrestrained Fatalities



Between 2002-2005 and 2006-2009 the NRMR had a decline in unrestrained fatalities less than the decline seen in nationwide - 11.4% vs. 18.9% (Table 21). When the individual states are examined, South Dakota saw the largest decline at nearly 22%, followed by Montana with a decline of more than 13%, and Wyoming with a 3.9% decline. North Dakota had no change in the number of unrestrained fatalities.

Table 21. Unrestrained Fatalities

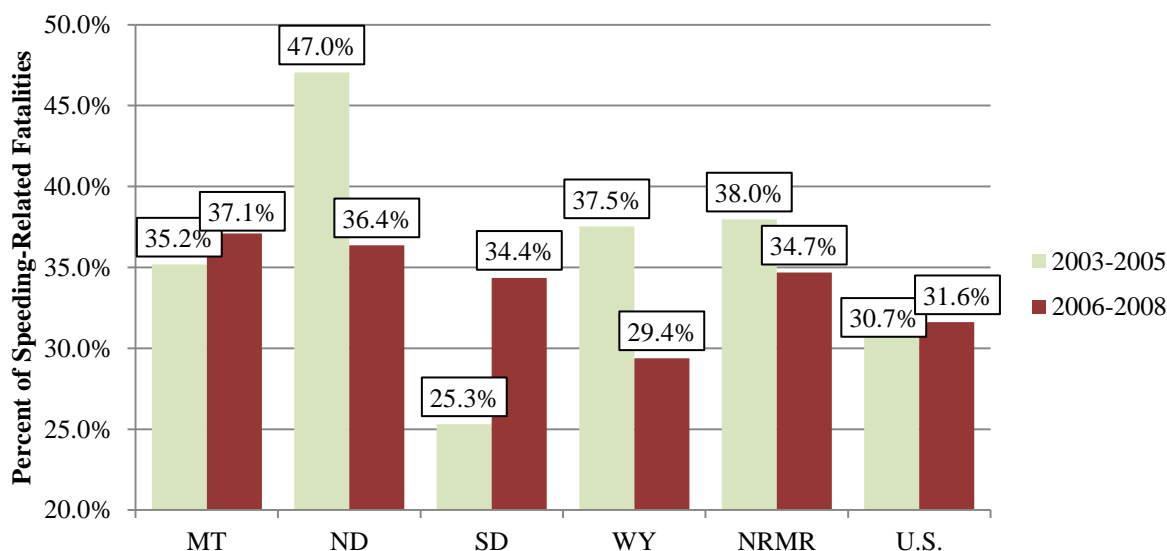
Geography	Fatalities				% Change	
	2002-2005		2006-2009		TOTAL	Unrestrained
	TOTAL	Unrestrained	TOTAL	Unrestrained		
Montana	810	582	733	506	-9.5%	-13.1%
North Dakota	328	246	359	246	9.5%	0.0%
South Dakota	555	411	427	321	-23.1%	-21.9%
Wyoming	524	335	486	322	-7.3%	-3.9%
NRMR	2,217	1,574	2,005	1,395	-9.6%	-11.4%
U.S.	119,054	67,240	100,381	54,518	-15.7%	-18.9%

Source: NHTSA 2008b

Speeding

Fatalities in the NRMR are slightly more likely to be speeding-related than fatalities nationally (34.7% vs. 31.6%). However this difference is not statistically significant ($\chi^2=0.63$, $df=1$, $p=0.4274$) (Figure 20). The NRMR saw a decline in the percent of speeding-related fatalities from 2002-2005 to 2006-2009 (38.0% to 34.7%), which was not statistically significant ($\chi^2=0.84$, $df=1$, $p=0.3594$). In contrast, the United States saw a significant increase in the percent of speeding-related fatalities during the same time period (30.7% to 31.6%) ($\chi^2=61.4$, $df=1$, $p<0.0001$).

Figure 20. Percent of Speeding-Related Fatalities



Source: NHTSA - FARS database

The NRMR saw a 12.8% decline in speeding-related fatalities from 2003-2005 to 2006-2008 as compared to the nation overall which saw a nearly 4% increase over the same time period (Table 22). When the individual states are examined, North Dakota had the largest decline in speeding-related fatalities with a 39.1% decline, followed by Wyoming with a 10% decline, and South Dakota with an 8.3% decline. Montana had a 34.9% increase in speeding-related fatalities.

Table 22. Speeding-Related Fatalities

Geography	Fatalities				% Change	
	2003-2005		2006-2008			
	Total	Speed	Total	Speed	Total	Speed
Montana	328	83	326	112	-0.6%	34.9%
North Dakota	586	220	456	134	-22.2%	-39.1%
South Dakota	580	204	504	187	-13.1%	-8.3%
Wyoming	661	311	770	280	16.5%	-10.0%
NRMR	2,155	273	2,056	238	-4.6%	-12.8%
U.S.	129,230	12,752	121,028	13,228	-6.3%	3.7%

Source: NHTSA - FARS database

CONCLUSION

The states included in the Northern Rocky Mountain Region of the United States (Montana, North Dakota, South Dakota, and Wyoming) are differentiated from the rest of the country by shared socio-economic and traffic characteristics, such as low-density population, energy and agriculture industries, tourist travel and extensive rural roads systems.

Traffic fatalities in NRMR states have declined in recent years, with a 6.7% decline in overall fatalities, a 3% decline in rural fatal crashes, an 8.6% decline in fatal crashes involving light trucks, a 9.6% decline in rollover fatalities, a 7.6% decline in alcohol-impaired fatalities, an 11.4% decline in unrestrained fatalities, and a 12.8% decline in speeding-related fatalities.

Was the decline in fatalities the result of changes in NRMR state traffic safety policy? NRMR states do share many similar traffic safety emphases – including occupant protection, impaired driving, aggressive driving, pedestrian safety and motorcycle safety. However, with relatively little change in traffic safety policy occurring in NRMR states, the likelihood that these declines resulted from changes in state law is low. NRMR states continue to have secondary seat belt laws, with only Montana’s law covering all seating positions, and fines ranging from \$20 to \$25. Child occupant protection laws have not changed in NRMR states since 2006, nor have impaired driving laws. Changes that have been implemented (i.e. texting laws in Wyoming and North Dakota, strengthening of teen driver laws in North Dakota), either haven’t been in existence long enough to have affected fatality rates in those states, or are so new that they haven’t been enacted yet.

If not because of traffic safety policy, was the decline in fatalities the result of some other catalyst? Numerous reasons could explain the declines in traffic fatalities in the NRMR and across the nation. These include changes in traffic safety culture, economic tensions, increased enforcement, improved vehicle safety, and local traffic safety programming. Future research into this area is needed to provide a foundation upon which to develop education and enforcement initiatives.

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APPENDIX A: Roadmap Report Definitions

AHAS Definitions of Traffic Safety Laws: 2007 and 2011 Roadmap Reports

Note: Assume definitions apply to both 2007 and 2011 reports unless otherwise noted.

Based on government and private research, crash data and states' experience, Advocates has determined the following traffic safety laws to be priorities in reducing motor vehicle deaths and injuries. States were given full credit for having a particular law only if their legislation meets the optimal provisions as described below. Half credit was given to states with booster seat and teen driving laws that have some version of the criteria, but fall short of optimal.

ADULT OCCUPANT PROTECTION

Primary Enforcement Seat Belt Law – Allows law enforcement officers to stop and ticket someone when they see a violation of the seat belt law. No other violation need occur first to take action.

All-Rider Motorcycle Helmet Law – Requires all motorcycle riders, regardless of age, to wear a U.S. Department of Transportation (U.S. DOT) certified helmet or face a fine.

CHILD PASSENGER SAFETY

Booster Seat Law (2007) – Requires children between the ages of four and eight to be placed in a child restraint system (booster seat) that is certified to meet U.S. DOT safety standard. States were given only half credit if their booster seat law does not cover up to age 8.

Booster Seat Law (2011) - Requires, at a minimum, that children ages four through seven be placed in a child restraint system (booster seat) that is certified to meet U.S. DOT safety standards. States are given half credit for booster seat laws that do not cover children through age seven.

TEEN DRIVING

Graduated Driver Licensing (GDL) systems allow teenagers to learn to drive under lower risk conditions and consist of a learner's stage, an intermediate stage and an unrestricted driving stage. The learner's stage requires a teenage driver to complete a minimum amount of adult supervised driving before application for a full license. The intermediate stage restricts teens from driving in high-risk situations for a specified period of time after receiving a full license.

Learner's Stage: Minimum Age 16 for Learner's Permit (2011) - A beginning teen driver is prohibited from obtaining a learner's permit until the age of 16. States have not been given credit if the law allows for a beginning driver to obtain a learner's permit before the age of 16.

Learner's Stage: Six Month Holding Period Provision – A beginning teen driver must be supervised by an adult licensed driver at all times. If the learner remains citation-free for six months, he or she may progress to the intermediate stage. States have not been given credit if there is a reduction in the holding period for drivers who take a drivers' education course.

Learner's Stage: 30-50 Hours of Supervised Driving Provision – A beginning teen driver must receive at least 30-50 hours of behind-the-wheel training with an adult licensed driver. States have not been given credit if there is a reduction in the required hours of supervised driving for drivers who take a drivers' education course.

Intermediate Stage: Nighttime Driving Restriction Provision – Unsupervised driving should be prohibited from at least 10 p.m. to 5 a.m. Half credit is awarded for nighttime restrictions that do not fully meet Advocates’ optimal criteria.

Intermediate Stage: Nighttime Driving Restriction Provision (2011) - Unsupervised driving should be prohibited from at least 10 p.m. to 5 a.m. Half credit is awarded for nighttime restrictions that do not fully meet this criterion.

Intermediate Stage: Passenger Restriction Provision – This provision limits the number of teenage passengers who ride with a teen driving without adult supervision. The optimal limit is no more than one non-familial teenage passenger. Half credit is awarded for passenger restrictions that do not fully meet Advocates’ optimal criteria.

Cell Phone Restriction – This restriction prohibits all use of cellular devices (both handheld and handsfree) by beginning teen drivers, except in the case of emergency. States are only given credit if the provision lasts for the entire duration of the GDL program (both learner’s and intermediate stages).

Age 18 for Unrestricted License (2011) - A teen driver is prohibited from obtaining an unrestricted license until the age of 18, and one or both of the nighttime and passenger restrictions must last until age 18. States have not been given credit if teen drivers can obtain an unrestricted license before the age of 18.

IMPAIRED DRIVING

Ignition Interlock Devices (IID) (2011) - This law mandates the installation of ignition interlock devices on the vehicles of convicted drunk driving offenders. Advocates has given full credit for laws that require the use of ignition interlock devices for all offenders, and half-credit for laws that require the use of ignition interlock devices only for repeat offenders. Several states (CO, IL and OR) have also been given credit for highly having laws that provide strong incentives for all offenders to use ignition interlock devices.

Child Endangerment- (2007) This law creates a separate offense or enhances an existing penalty for an impaired driving offender who endangers a minor.

Child Endangerment – (2011) This law creates a separate offense or enhances an existing penalty for an impaired driving offender who endangers a minor. No credit is given if this law applies only to drivers who are under 21 years of age.

High-BAC– This law creates a separate, more severe offense or enhances the existing penalties for impaired drivers that are found to have a Blood Alcohol Concentration (BAC) well over the maximum legal BAC level. An optimal statute is one that adds additional penalties for drivers above a .15 percent BAC.

Mandatory BAC Testing for Drivers Killed in Fatal Crashes (2007) – These statutes require any driver killed in a car crash to have his or her BAC tested.

Mandatory BAC Testing for Drivers who Survive Fatal Crashes (2007) – These statutes require any driver who is involved in a crash that causes serious injury or death to have his or her BAC tested.

Mandatory Blood Alcohol Concentration (BAC) Testing for Killed and Surviving Drivers (2011) – These separate statutes require the BAC testing of a vehicle involved in a fatal crash regardless of

whether the driver survived the crash or was killed in the crash. Full credit is given for laws that require both. Half credit is given if a state requires testing in one case, but not both.

Open Container– This law prohibits open containers of alcohol in the passenger area of a motor vehicle. To comply with federal requirements in TEA-21 (Transportation Equity Act for the 21st Century), the law must: prohibit both possession and consumption of any open alcoholic beverage container; apply to the entire passenger area of any motor vehicle; apply to all vehicle occupants except for passengers of buses, taxi cabs, limousines or persons in the living quarters of motor homes; apply to vehicles on the shoulder of public highways; and require primary enforcement of the law. State laws are counted in this report only if they are in compliance with the federal law.

Repeat Offender (2007) – This law applies to impaired drivers with previous impaired driving convictions.

The state law must comply with federal requirements in TEA-21 which requires: a minimum one-year license suspension; mandatory motor vehicle impoundment or installation of an ignition interlock system; mandatory alcohol assessment; and the establishment of an increasing mandatory minimum sentence for repeat offenders depending on subsequent offenses. State laws are counted in this report only if they are in compliance with the federal law.

Sobriety Checkpoints (2007) – This statute gives law enforcement officials authority to set up checkpoints for evaluation and signs of alcohol or drug impairment in drivers. Under this statute, law enforcement officials have the authority to set up checkpoints to evaluate drivers for signs of alcohol or drug impairment. Advocates defines a sobriety checkpoint program as one authorized by law and implemented by the state.

DISTRACTED DRIVING (2011)

All-Driver Text Messaging Restriction - This law prohibits all drivers from entering, reading or otherwise retrieving data from any handheld or electronic data communication device, except in the case of an emergency.

**APPENDIX B: NRMR High Risk Rural Roads as Outlined in
Each States' "5 Percent Report"**

Montana HRRRs

No.	Departmental Route	Signed Route	Reference Points		Length (mi)	Total # Crashes	Fatality Crashes	Fatalities	Incapacitating Crashes	Incapacitating Injuries	Total # of Fat. And Incap. Injuries	# of Fat and Incap. Injuries per Mile	Crash Rate	Severity Rate
			From	To										
1	I-15	I-15	114.2	128.0	11.8	208	2	2	23	28	30	2.54	1.13	2.43*
2	I-15	I-15	139.5	164.8	24.7	261	1	1	10	18	19	0.77	2.09	3.43
3	I-15	I-15	234.4	248.2	13.8	208	2	2	8	8	10	0.72	2.15	3.38
4	I-90	I-90	16.5	48.9	31.8	658	14	14	51	71	85	2.67	1.69	3.43
5	I-90	I-90	89.3	116.4	27.6	501	12	13	51	78	89	3.22	0.66	1.50*
6	I-90	I-90	126.9	144.5	17.6	233	7	7	28	31	38	2.16	0.81	2.02
7	I-90	I-90	206.1	219.2	12.3	213	8	8	18	28	36	2.93	0.88	1.94
8	I-90	I-90	227.5	246.3	19.0	548	8	8	32	36	44	2.32	2.01	3.66*
9	I-90	I-90	296.9	314.8	17.5	559	9	9	24	36	45	2.57	0.95	1.71*
10	I-90	I-90	396.0	405.8	9.8	163	4	4	16	24	28	2.86	1.18	2.51
11	I-90	I-90	426.9	445.5	18.6	433	3	3	37	52	55	2.96	0.68	1.37*
No.	Departmental Route	Signed Route	Reference Points		Length (mi)	Total # Crashes	Fatality Crashes	Fatalities	Incapacitating Crashes	Incapacitating Injuries	Total # of Fat. And Incap. Injuries	# of Fat and Incap. Injuries per Mile	Crash Rate	Severity Rate
			From	To										
1	N - 1	U.S. 2	38.3	49.4	11.1	77	0	0	12	13	13	1.17	2.24	6.25
2	N - 1	U.S. 2	95.4	119.6	24.2	357	12	13	60	77	90	3.72	1.82	5.39
3	N - 1	U.S. 2	136.8	149.2	11.9	248	7	9	38	52	61	5.13	1.77	4.89*
4	N - 1	U.S. 2	197.7	207.5	9.6	63	2	2	7	9	11	1.15	2.32	6.10
5	N - 4	U.S. 310	35.0	54.3	19.3	222	6	8	41	59	67	3.47	1.08	3.20*
6	N - 5	US93/MT200	0.0	23.2	22.9	408	12	13	48	81	94	4.10	1.21	3.10*
7	N - 5	US - 93 N	44.8	57.5	12.5	263	7	10	25	34	44	3.51	1.04	2.61*
8	N - 5	US - 93 N	89.2	109.6	20.4	380	11	11	48	74	85	4.17	1.25	3.26*
10	N - 7	US - 93 S	13.8	29.9	19.4	129	2	2	17	20	22	1.13	2.90	6.64
11	N - 7	US - 93 S	49.5	90.8	41.4	1274	14	14	107	159	173	4.18	1.28	2.66*
12	N - 24	MT 200	55.6	65.5	9.9	77	2	2	4	8	10	1.01	2.94	5.91
13	N - 24	MT 200	71.4	81.3	9.9	110	1	1	7	9	10	1.01	3.12	6.02
14	N - 50	US 191	74.3	86.2	11.9	390	4	4	30	37	41	3.45	1.42	2.78*
16	N - 93	US 12	22.5	32.5	10.5	72	4	4	10	13	17	1.62	2.62	7.13

Montana HRRRs Continued

No.	Departmental Route	Signed Route	Reference Points		Length (mi)	Total # Crashes	Fatality Crashes	Fatalities	Incapacitating Crashes	Incapacitating Injuries	Total # of Fat. And Incap. Injuries	# of Fat and Incap. Injuries per Mile	Crash Rate	Severity Rate
			From	To										
1	P-1	US 2	121.7	133.9	12.4	937	10	11	85	125	136	10.97	2.30	5.29*
2	P-6	MT 200	9.3	18.0	8.7	35	3	5	10	14	19	2.18	1.46	6.09
3	P-29	MT 2	63.8	81.6	17.5	103	2	2	9	11	13	0.74	3.46	7.79
4	P-36	MT 200	0.0	13.0	13.0	75	3	3	8	10	13	1.00	2.97	8.41
5	P-50	US 191	82.0	86.2	4.2	186	2	2	18	19	21	5.00	1.21	2.58
6	P-52	MT 35	20.5	31.3	10.8	122	3	3	17	19	22	2.04	1.59	4.53
7	P-52	MT 35	39.0	49.1	9.9	166	1	2	21	31	33	3.33	1.16	3.07
8	P-60	US 89	42.4	54.0	11.6	49	1	1	7	8	9	0.78	4.12	10.51
9	P-78	MT 78	26.4	34.8	8.4	65	1	1	11	14	15	1.79	2.73	7.70*
10	P-83	MT 83	8.8	18.4	9.6	77	2	2	13	15	17	1.77	2.32	6.52
No.	Departmental Route	Signed Route	Reference Points		Length (mi)	Total # Crashes	Fatality Crashes	Fatalities	Incapacitating Crashes	Incapacitating Injuries	Total # of Fat. And Incap. Injuries	# of Fat and Incap. Injuries per Mile	Crash Rate	Severity Rate
			From	To										
1	S-203	S-203	1.0	11.9	10.9	224	4	4	25	33	37	3.39	2.15	5.07*
2	S-206	S-206	4.8	8.6	3.8	61	1	1	12	17	18	4.74	2.02	6.22
3	S-209	S-209	0.3	5.1	4.3	50	2	3	9	11	14	3.26	2.49	7.82
4	S-269	S-269	0.4	19.2	18.7	386	5	5	36	46	51	2.73	2.36	5.10*
5	S-280	S-280	1.1	9.3	8.2	102	3	3	16	28	31	3.78	3.23	8.79
6	S-424	S-424	1.9	5.6	3.7	42	4	4	9	11	15	4.05	2.47	8.65
7	S-430	S-430	1.2	7.4	6.2	137	1	2	12	19	21	3.39	3.89	9.14*
8	S - 532	S - 532	11.7	17.8	6.1	61	1	1	14	26	27	4.43	2.29	7.44
9	S - 548	S - 548	0.2	6.4	6.2	191	2	8	18	29	37	5.97	2.13	5.11

North Dakota HRRRs

Location	Comments	Potential Remedies	Estimated Costs	Implementation Impediments
Rural Interstate Highways				
I-94, RP 237.322 to 240.065, Cleveland Sep to E Cleveland Interchange	Predominant crash type was ran off roadway (5) and overturn/rollover (3). 83%(10) occurred on hills or curves. 75% (9) occurred during ice/snow conditions, 5 between November 2008 and January 2009. Total Crashes increased in 2007 to 6 from 2 in 2006 and then decreased to 2 in 2009.	Conduct a Road Safety Review.	None	None
I-29, RP 174.9 to 183.014, S of Jct. 17 N to near Herrick Interchange	Predominant crash type was ran off roadway (16) with 68% of crashes occurring during ice/snow conditions with 7 occurring at RP 179 where SB vehicles lost control on the bridge and went off the curve. The contributing factor was speed/ too fast for conditions. Total crashes have leveled off from 14 in 2007 to 7 in both 2008 & 2009.	Conduct a Road Safety Review.	None	None
I-94, RP 66.6757 to 71.15, Near E Dickinson from MP 66.68 to MP 70.1	Predominant crash type was ran off roadway (14) with (5) being overturn/rollovers. 76% of crashes occurred on hills or curves. There was a spike in WB crashes on hill/curve at RP 69.7, roadway curve under the separation). 48% of crashes occurred during ice/snow conditions, 10 from November of 2008 to February of 2009. Crashes are slightly decreasing: 10 in 2007, 8 in 2008, and 7 in 2009.	Upcoming project to regrade and address the concerns for Horizontal and Vertical curves in November 2011.	None	None
Rural Interregional Highways				
US 83, RP 181.837 to 183.296, 0.9 Mi. S Jct 23 to 0.5 Mi. N Jct 23	Predominant crash types were ran off roadway or overturn/rollover and angle crashes. 5 crashes (2 fatalities, 1 injury and 2 PDO) occurred at the intersection of US 83 and ND 23 and ranks number 1 on the 5 yr. Rural Intersection HCL listing. Excluding these crashes, 7 occurred during ice/snow conditions. Crashes at this location remain steady: 2007 = 5, 2008 = 4, and 2009 = 4.	In the fall of 2009, intersection rumble strips were installed for E/W traffic between the US 83 NB and SB roadways. The intersection was studied and tentatively scheduled in the 2010 HSIP Program of Projects. The project includes signing, pavement and pavement markings, rumble strips, and offset right turn lane for SB to WB traffic.	\$25,000	None
US 2, RP 11.26 to 14.919 Trenton corner East to Jct. US 85	8 total crashes occurred: 2007=4, 2008=3, 2009=1. 4 crashes occurred at the US 2 & W Jct ND 1804 intersection: 2007=2, 2008=1, 2009=1. No other trends were identified.	Intersection lighting is currently being installed at the US 2 & W Jct 85 intersection.	None	None
US 2, RP 89.051 to 91.428. 4-Lanes at Stanley Williston	There are 13 total crashes that occurred. Of these 13 crashes, 12 occurred at the US 2 & W ND 8, as discussed further in the Rural Intersections 2011 5% summary.	Intersection has been studied for potential remedies and a solution is pending.	None	None
Rural State Corridors				
ND 23, RP 35.588 to 43.0, Reservation Boundary E approx 8 Mi. Williston	Of the 14 Total crashes, 5 crashes involved alcohol: 2 (including the fatal) were Head On crashes where a vehicle was travelling WB (the wrong way) in the EB lane. 2 crashes occurred at the ND 22 & ND 23 intersection where drivers failed to yield at the STOP sign during dark conditions. 7 crashes occurred between midnight and 6am: 3 involved DUI.	Upcoming non-HSIP funded grading project for 2011. A non-HSIP funded surfacing project is scheduled for 2012.	None	None
ND 23, RP 49.929 to 56.405, New Town E to W Jct ND 8 Williston	Of the 25 Total crashes, 6 involved DUI drivers (including 2 or the 3 fatal crashes). 4 crashes involved vehicles on ND 23 that were stopping/slowing to make a turn and were Rear-Ended. From RP 49.9 to 50.5 there were 10 crashes, with 8 occurring at intersections of driveways - however, no specific intersection stood out.	In 2009 centerline and edgeline rumble strips installed through the entire segment. Speed limit was reduced to 45 mph in 2009.	None	None
Rural District Corridor				
ND 1804 RP 299.109 to 304.982, Nesson Jct W to Epping Road Williston	From RP 304.0 to 304.5 there were 8 of the 12 crashes (7 coded as curves): dark=6, light=2, EB=6, WB=2, ice=4, dry=4, alcohol=3. No other crash trends were identified.	Scheduled for a sealing project in 2009, and another sealing project in 2012.	None	None
ND 200 RP 255.433 to 268.577, 1.3 Mi E Hurdsfield E to Jct 52 Devils Lake	Out of 11 Total crashes, 5 occurred during ice/snow conditions. 3 crashes occurred at the US 52 & ND 200 intersection, and all 3 involved vehicles that attempted to turn onto NB US 52 but hit the stop sign for SB traffic. No other crash trends were identified.	Has 2 sealing projects scheduled, one in 2010 and another in 2014.	None	None
ND 58 RP 6.542 to 9.8, 6.5 Mi N Jct 200 N to Ject ND 1804 Williston	Predominant crash was Curve crashes, 2 near RP 8.3 (including the fatal crash). No other trends were identified.	None at this time.	None	None

North Dakota HRRRs Continued

Rural District Collector				
ND 1804 RP 82.973 to 88.31 S Jct 83 W & N to 5.3 Mi Bismarck	Predominant crashes were: at US 83 & S Jct ND 1804 intersection (14), as discussed further in the Rural Intersections 2011 5% summary. 5 crashes occurred at the ND 1804 & 15th St. NW intersection (all involving WB traffic, 2 involving vehicles attempting to make U-Turns to go back EB, no other patterns). 5 crashes occurred during wet conditions. No other crash trends were identified.	In 2009, advance flashing beacon revisions and ND 1804 speed limit revisions were made at US 83 & S Jct ND 1804 intersection.	\$8,000	None
Rural Intersections				
US 2 & ND 8 (Stanley) US 2 RP 90.644 ND 8 RP 155.962	Predominant crash type was Right Angle (11). The majority of the Right Angle crashes (8) occurred during Clear/Dry conditions. Total crashes have remained fairly constant: 2007=3, 2008=5, 2009=5. Speed limit has been reduced to 45 mph in May 2009.	Intersection has been studied for potential remedies and a solution is pending.	None	None
Urban Locations				
Bismarck Divide Ave & Schafer St./I-94 South Ramps	Predominant crash types were Rear-End (43) and Left Turn (11). The conditions of Rear-End crashes were: dry=28, ice/snow=8, wet=7; 4-8pm = 13, Noon-1:30 = 10, 7:30-9am = 1. The conditions of Left Turn crashes included: 4 involving WB to SB left-turning vehicles and 4 SB to EB left-turning vehicles. Total crashes have increased since 2007: 2007=17, 2008=26, 2009=25.	Side street turn lanes to be added with a project scheduled in 2012.	\$290,000	None
Bismarck State St. & Century Ave	Predominant crash types were Rear-End (42), with no predominant direction or time-of-day and 25 during dry conditions. Left Turn (16) with 10 involving WB to SB left-turning traffic (6 during ice/snow conditions). Total crashes have more than doubled since 2007: 2007=17, 2008=22, 2009=39.	Signal coordination optimization implemented fall 2009. Traffic Operations Study is nearing completion for State St. from Divide Ave to Calgary Ave.	None	None
Bismarck Main Ave & 7th St.	Predominant crash types were Sideswipe Same Direction (25), with the majority involving drivers turning left from an incorrect lane (23). Angle crashes involving SB and WB vehicles (12). SB Rear-End crashes (11). No time-of-day trends were identified. Total crashes jumped in 2009: 2007=13, 2008=16, 2009=26.	RSR conducted October 2008. In 2009 there was an Overlay project.	None	None

South Dakota HRRRs

CITY LOCATIONS:

City	Region	Location	Fatal	Injury	Total	Comments/Recommendations
Box Elder	Rapid City	Intersection of OLD HWY 230 W and WEST GATE RD	0	3	3	Failure to yield crashes at 2 way stop controlled intersection (3). RSI team will investigate.
Rapid City	Rapid City	Intersection of I190/W BLVD and OMAHA	0	4	4	Rear-end (1), Red light violation (2), Left turn failure to yield (1). Monitor location.
Rapid City	Rapid City	Intersection of E BLVD and NEW YORK ST E	0	3	3	Pedestrian/vehicle crash (2), Left turn failure to yield (1). Driver/pedestrian behavioral issues.
Rapid City	Rapid City	Intersection of US16B and US16	0	3	3	Angle crash due to red light violation (3). Driver behavioral issues.
Sioux Falls	Mitchell	Intersection of 10 TH ST E and ARROWHEAD PKWY E	0	4	4	Left turn failure to yield (1), Failure to stop at flashing red light (1), Failure to stop at flashing red light - DUI (1), Rear-end crash (1). Driver behavioral issues.
Sioux Falls	Mitchell	Intersection of 41 ST ST W and I90 RAMP	0	3	3	Rear-end driver fell asleep (1), Rear end - DUI (1), Traffic signal pole collision - DUI (1). Driver behavioral issues.
Sioux Falls	Mitchell	Intersection of 41 ST ST W and WESTERN AVE S	0	3	3	Angle crash due to red light violation (1), Left turn crash at driveway near intersection (1), Vehicle/pedestrian collision (1). Driver behavioral issues.

South Dakota HRRRs Continued

RURAL LOCATIONS:

Hwy	MRM	Region	Location/Description	Fatal	Injury	Total	Comments/Recommendations
US14A	48.79 – 51.58	Rapid City	Boulder Canyon	0	11	11	INJURY – Motorcycle failed to negotiate a curve (2), Vehicle failed to negotiate a curve (1), Vehicle failed to negotiate a curve and hit a vehicle head on – weather related (2), Vehicle failed to negotiate a curve – weather & speed related (3), Vehicle failed to negotiate a curve – DUI (1), Motorcycle failed to negotiate a curve and hit a motorcycle head on (1), Vehicle did an illegal u-turn and caused crash (1). RSI Team will investigate.
SD244	27.09 – 34.44	Rapid City	From Palmer Gulch Rd E to Jct US16A near Keystone	1	6	7	FATALITY – Motorcycle failed to negotiate curve and hit head-on into vehicle (1), INJURY – Improper u-turn caused motorcycle to tip (1), Vehicle crossed centerline and hit a vehicle head on - weather related (1), Motorcycle failed to stop for vehicle in front of them (1), Motorcycle failed to negotiate curve (1), Double motorcycle/animal collision (1), Vehicle failed to negotiate curve and hit head-on into vehicle – weather related (1). Five of the seven crashes involved motorcycles during the Sturgis Motorcycle Rally time period. Monitor location.
US16A	36.00 – 47.00	Rapid City	From Jct US16A/SD36 north to S Playhouse Rd	0	7	7	INJURY – Triple motorcycle crash – loss of control (1), Motorcycle failed to negotiate curve and hit head-on into another motorcycle – weather related (1), Motorcycle failed to negotiate curve and hit head-on into vehicle (2), A group of motorcycle pulled out in front of a motorcycle traveling around a corner (1), Motorcycle ran off road exiting a curve (1) Motorcycle failed to negotiate curve and hit head-on into another motorcycle (1). Six of the seven crashes involved motorcycles during the Sturgis Motorcycle Rally time period. Monitor location.
I90W	48.61- 51.77	Rapid City	Blackhawk to Summerset	0	6	6	INJURY – Vehicle run off road – weather related (2), Vehicle run off road – driver fell asleep (1), Vehicle rear end – weather related (1), Vehicle rear end – construction zone (1), Motorcycle ran into construction zone delineator (1). Monitor location.
SD34	37.12- 38.29	Rapid City	From E end of divided hwy east 0.9 miles	1	4	5	FATALITY – Vehicle failed to yield at 2 way stop controlled intersection (1), INJURY – Vehicle/pedestrian collision – Pedestrian ran out in front of vehicle (1), Failure to yield at 2 way stop controlled intersection (1), Vehicle left angle crash into motorcycle (1), Motorcycle failed to negotiate turn (1). Monitor location.
US385	94.00 – 95.00	Rapid City	From Victoria Lake Rd north to McCurdy Gulch Rd	0	5	5	INJURY – Motorcycle failed to negotiate curve (4), Vehicle failed to negotiate a curve – weather related (1). RSI team will investigate location.
US85	30.18 – 31.70	Rapid City	From north of Deadwood 1.1 miles to S Jct Polo Loop	1	4	5	FATALITY – Motorcycle passed several vehicles and then failed to negotiate curve (1), INJURY – Motorcycle lost control after swerving to miss a deer(1), Two run off road motorcycles due to another passing motorcycle (1), Motorcycle passed a vehicle and then failed to negotiate curve - speed (1), Vehicle failed to negotiate curve - DUI (1). Monitor location.
US85	31.70 – 33.00	Rapid City	From S Jct of Polo Loop north 1.1 miles to N Jct of Polo Loop	0	5	5	INJURY – Motorcycle failed to negotiate curve - speed (1), Motorcycle/deer collision (2), Motorcycle passed a motorcycle and then failed to negotiate curve - speed (1), Vehicle failed to negotiate curve and hit head-on into vehicle – weather related (1), Three of the five crashes involved motorcycles during the Sturgis Motorcycle Rally time period. Monitor location.
Vanooker Canyon Rd		Rapid City	From Bethelhem Rd north 2.5 miles to Galena Rd	0	5	5	INJURY – Motorcycle failed to negotiate curve (5). Four of the five crashes involved motorcycles during the Sturgis Motorcycle Rally time period. Monitor location.
SD44	26.90 – 31.00	Rapid City	From Jct 385 east 3.6 miles	1	3	4	FATALITY – Double fatal crash - motorcycle failed to negotiate curve (1), INJURY – Motorcycle failed to negotiate curve – weather related (1), Vehicle failed to negotiate curve and hit head-on into vehicle (1), Motorcycle run off road – swerved to miss object in roadway(1). Monitor location.
Nemo Rd		Rapid City	From Chipmunk Pl to Pine Drive west of Blackhawk	0	4	4	INJURY – Motorcycle failed to negotiate curve and hit head-on into another vehicle (1), Motorcycle failed to negotiate curve and hit head-on into another motorcycle (1) Motorcycle failed to negotiate curve (2). All crashes involved a motorcycle. RSI team will investigate location.
SD231	86.81 – 86.82	Rapid City	Ramp in Blackhawk	0	4	4	INJURY – Vehicle failure to yield crashes at 2 way stop controlled intersection (4). This location has been reconstructed. Monitor location.
SD87	59.40 – 63.00	Rapid City	From Jct US16A/SD36 north to S Playhouse Rd	0	4	4	INJURY – Motorcycle failed to negotiate curve (4). Three of the four crashes occurred at MRM 61.00 + 1.00. RSI team will investigate location.
US16E	58.50 – 62.00	Rapid City	From Sitting Bull Rd east to Neck Yoke Rd	0	4	4	INJURY – Rear end crash involving a left turning motorcycle and a vehicle (2), Vehicle failure to yield crash at 2 way stop controlled intersection (1), Vehicle improper left turn caused sideswipe crash (1). Monitor location.
US385	113.00 – 114.5	Rapid City	From Rockland Rd north to Nemo Rd	0	4	4	INJURY – Vehicle/deer collision (1), Vehicle ran off road – DUI and speed (1), Motorcycle failed to make a right turn (1), Motorcycle failed to stop for vehicle in front of them (1). Monitor location.
US385	117.00 – 118.00	Rapid City	From Galena Rd north to south of Giit Edge Rd	0	4	4	INJURY – Motorcycle/deer collision (1), Motorcycle failed to negotiate curve (2), Motorcycle failed to negotiate curve - speed (1). Three of the four crashes occurred at MRM 117.00 +75 to 117.00 + .82. RSI team will investigate location.

Wyoming HRRRs

LRS ROUTE	HIGHWAY NAME	FROM	TO	LENGTH	DISTRICT	FATAL & INC INJURY CRASHES	NON-INC INJURY & POSSIBLE INJURY CRASHES	PROPERTY DAMAGE ONLY AND UNK CRASHES	AVERAGE AADT 2005-2009
ML10B	US 26/89	117.34	117.84	0.50	3	2	2	8	4,638
ML1501B	WY 291	0.00	0.36	0.36	5	5	1	0	4,240
ML15B	US 287	0.00	1.85	1.90	5	4	53	142	10,220
ML180B	US 85/87 Bus/I 180/I 25 Bus	3.54	12.61	9.07	1	24	202	698	12,036
ML1923B	I-80 Svc. Rd.	0.00	0.46	0.46	3	3	1	0	1,035
ML20B	US 26/287/WY 789	104.16	108.34	4.17	5	5	17	84	8,838
ML21B	WY 220	106.03	117.21	11.19	2	36	239	733	13,653
ML221B	WY 221	0.00	1.84	1.84	1	4	18	37	5,429
ML254B	WY 254	0.00	0.79	0.79	2	2	5	21	6,091
ML254B	WY254	0.79	4.06	3.30	2	8	14	50	6,091
ML255B	WY 255	0.06	0.65	0.07	2	1	7	43	9,763
ML258B	WY 258	15.53	18.44	2.91	2	12	100	247	16,411
ML258B	WY 258	10.01	12.65	2.64	2	8	25	68	16,412
ML25B	I-25	182.06	194.34	12.30	2	43	159	437	6,551
ML25B	I-25	0.00	8.84	9.10	1	24	81	281	9,436
ML25B	I-25	80.10	111.40	31.19	2	63	122	291	2,990
ML319B	WY 319	114.28	212.41	0.87	2	2	0	1	827
ML34B	US 20/26/87/I 25 Bus	0.00	11.76	11.68	2	2	0	1	10,951
ML37B	US 14A/14	89.55	89.87	0.32	4	1	0	0	3,078
ML42B	WY 387	150.63	151.26	0.63	4	3	1	6	3,250
ML43B	US 14/16/WY 59	74.93	75.19	0.26	4	1	1	3	4,069
ML43B	US 14/16/WY 59/I 90 Bus	106.68	121.82	13.15	4	31	291	859	13,973
ML505B	US 20/26/87	186.75	187.25	0.51	2	1	7	14	61,926
ML53B	I 80 Bus / US 30 Bus	102.36	106.48	4.08	3	15	121	321	17,328
ML54B	US 30 / I 80 Bus/US 287 Bus/WY 789	212.02	215.42	3.40	1	9	31	107	8,000
ML56B	US 30 / WY 225	355.98	371.28	15.32	1	30	202	598	11,601
ML80B	I-80	92.65	100.27	7.63	3	28	101	351	10,817
ML80B	I-80	317.42	320.99	3.57	1	13	45	115	6,553
ML80B	I-80	100.27	107.81	7.52	3	26	73	273	8,202
ML80B	I-80	89.00	92.65	3.64	3	9	46	216	9,680
ML80B	I-80	2.23	6.68	4.54	3	11	29	139	6,878
ML80B	I-80	211.20	215.82	4.57	1	11	35	135	6,665
ML80B	I-80	309.91	317.42	7.51	1	16	55	173	6,193
ML85B	US 26/85	102.64	103.26	0.60	2	3	2	1	2,913
ML90B	I-90	123.74	130.35	6.60	4	20	40	164	3,994