

South Dakota 2013 Highway Safety Plan



SOUTH DAKOTA
DEPARTMENT
OF PUBLIC SAFETY

prevention ~ protection ~ enforcement

THE HIGHWAY SAFETY PLAN IS PROVIDED BY:

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MISSION STATEMENT

The Office of Highway Safety is committed to developing and implementing traffic safety programs designed to reduce the number of traffic crashes, injuries, and fatalities occurring on South Dakota roadways. The Office of Highway Safety supports local and state agencies as well as non-profit organizations to diminish the economic and human loss that results from traffic crashes.

BACKGROUND

The South Dakota Department of Public Safety provides oversight to the Governor's Office of Highway Safety (OHS). Initially established in 1967, the Governor's Office of Highway Safety as required by SDCL 32-13-1 administers the highway safety programs within this state and authorizes, directs, and coordinates existing and future activities of agencies of this state and its political subdivisions. This office does all things necessary for the administration of the program under the Federal Highway Safety Act of 1966 (Public Law 89-564), as amended and in effect on July 1, 1984.

<http://legis.state.sd.us/statutes/DisplayStatute.aspx?Type=Statute&Statute=32-13-1>

In support of the state statute, this office provides technical and financial assistance to state and local government agencies and community organizations to implement programs aimed at reducing the human and economic loss that results from traffic crashes.

The Office of Highway Safety strives to carry out its mission through a variety of means. Primary in this effort is public information and education as well as enforcement. OHS staff is committed to developing partnerships with agencies statewide. The list of partners includes state, local, and county law enforcement agencies, the Department of Transportation, the Department of Human Services, the Department of Social Services, the Attorney General, the Unified Judicial System, the South Dakota Chiefs of Police Association, the South Dakota Sheriff's Association, the Government Research Bureau at the University of South Dakota, businesses, educators, volunteers, and a host of other organizations. This network of diverse backgrounds is vital to the success of highway safety in South Dakota.

Each of these partners plays a role in the highway safety planning process. The Government Research Bureau at the University of South Dakota is responsible for both problem identification and program evaluation. Community partners, private entities, and state, local and tribal governments assist in project development by responding to grant solicitation notices with proposed projects for inclusion in the HSP.

Highway safety programming is focused on public outreach and education; high-visibility enforcement; utilization of new safety technology; collaboration with safety and business organizations; and cooperation with other state agencies and local governments. Program resources are directed to the following State of South Dakota highway safety priority areas: occupant protection, impaired driving, speeding (police traffic services), motorcycle safety, young driver education, and pedestrian-bicyclist safety.

EXECUTIVE SUMMARY

On behalf of the Governor of South Dakota and the Secretary of the Department of Public Safety, the South Dakota Office of Highway Safety is pleased to submit the 2013 Highway Safety Plan (HSP). This plan articulates the state's official prospectus for improving the safety of the state's highway users. The 2013 HSP integrates discussion of data trending, priority areas, performance measures and objectives, and specific projects to be undertaken by the Office of Highway Safety through the end of FY2013. Ultimately, the overarching goal of the highway safety plan is to explicitly outline the programmatic mechanisms that will be either maintained or newly implemented for the purpose of decreasing the human and economic consequences that result from motor vehicle crashes in the State of South Dakota.

STATEWIDE SYNOPSIS

Given that its 824,082 residents are distributed over 77,121 square miles of terrain, South Dakota remains in 2011 as it has for most of its formal existence as one of the nation's most sparsely populated states. Although the state's seemingly endless acres of prairie and farmland are coveted for their rustic charm and rolling vistas, the markedly rural character of South Dakota's landscape presents distinctive challenges to traffic crash prevention and management. Altogether, rural roads and highways comprise 96.4% of the 82,459 total roadway miles that criss-cross the state, and in 2011, rural travel accounted for 71.9% of all vehicle miles traveled. The difficulties associated with designing and administering effective highway safety programs across a rural geography amplify the need for well-focused, systematic planning efforts.

Further, it follows that the physical dispersion of South Dakota's drivers brings about a marked need for motor vehicle transportation. Not surprisingly then, South Dakota's driving population is a strikingly active one. A statewide survey conducted in July 2012 by the Government Research Bureau suggests that 80% of licensed South Dakota drivers operate a motor vehicle on a daily basis, while an additional 12% take to the roads at least once per week.¹ This high level of driving frequency further spurs the pressing need for effective traffic crash deterrence.

Through the lens of major traffic crash indicators, observers of highway safety outcomes witnessed a number of encouraging developments in 2011. Of the 17,359 traffic crashes reported through the South Dakota Accident Reporting System (SDARS) data system in 2011 (over 300 fewer crashes than the previous year), positive directionalities were observed across a wide range of outcomes measures:

- A total of 111 traffic crash fatalities were recorded in South Dakota in 2011, down from 140 in 2010. (This is despite a slight increase in projected statewide population and an increase in vehicle miles traveled of 1.48%).
- The overall fatality rate dropped from 1.58 in 2010 to 1.23 in 2011, this was driven largely by a decrease in the rural fatality rate (1.95 to 1.41). There was however, an increase in urban fatality rate (.64 to 0.79).

¹ This survey, which was conducted by telephone by Clark Research, sampled 750 of the state's licensed drivers ages 16 and over and state ID card holders under the age of sixteen. This survey will be referred to hereafter as the 2012 Highway Safety Behaviors Survey.

- Total injuries for 2011 saw an 8.9% decrease, however the number of serious injuries increased by 3.2%.
- The number of fatalities incurred by unrestrained passenger vehicle occupants decreased 2.9%, from 67 in 2010; however the number of all unrestrained passenger vehicle occupants involved in traffic crashes increased 16.8% from 2010 to 2011.
- The total number of fatalities arising from crashes involving at least one driver or motorcycle operator with a BAC reading of .08 or above was 3.2% lower in 2011 than in 2010. However, the number of the total number of such crashes rose by 7.8%.
- The number of motorcyclist fatalities (14) and unhelmeted motorcyclist fatalities (11) dropped from 2010 to 2011, 42.1% and 62.5% respectively.
- 14 drivers under the age of 21 were involved in a fatal traffic crash in 2011; this figure represents a 36.4% decrease from the previous year, and a 35.3% decline since 2007.
- Pedestrian fatalities dropped from 9 in 2010 to 7 in 2011. The number of annual pedestrian fatalities in South Dakota has fluctuated around an average of 7.1 fatalities per year since 2007.

These developments are particularly encouraging because they return us to the overall downward trend in crash outcomes we have seen in recent years. With the exception of 2010, the statewide fatality rate has fallen every year since the early 2000s, descending from 2.43 in 2003 to 1.24 in 2011.

These overwhelmingly positive outcomes are in spite of the fact that vehicle miles traveled in South Dakota continued to increase in 2011. The Federal Highway Administration asserts that Americans tallied approximately 35 billion more vehicle miles traveled in 2011 than in 2010, an increase of 1.2%.² Likewise, statewide VMT estimates for South Dakota increased by 119 million miles from 2010 to 2011, a change of roughly 1.5%. This increase alone ushers in the natural opportunity for a rise in traffic crashes in South Dakota, along with their consequent economic and human damages.

The positive outcomes also occurred in spite of a continued shifting of traffic use patterns that marked in-state travel in 2011. In 2010, rural VMT accounted for 71.7% of all vehicle miles traveled in South Dakota, a figure that rose to 71.9% in 2011. Innocuous as this may seem, data suggests that the crash conditions faced by motorists in rural traffic crashes are decidedly more perilous than their urban analogs. Rural fatality rates in South Dakota have historically been much higher than their urban counterparts. Additionally, injury-to-fatality ratios suggest that rural crashes are more likely than urban crashes to produce fatalities, all else being equal. In 2011, 24.8 injuries were recorded for each fatality in rural areas. By contrast, 154.8 injuries per fatality were recorded in urban areas. On urban roadways, 63.3% of pedestrian injury outcomes were classified as non-serious injuries, 5.1% as fatalities; to the contrary, only 52.6% of pedestrian injury outcomes in rural areas were non-serious injuries, while 15.8% were fatalities. In sum, the aforementioned shifting of South Dakota's already-lopsided VMT balance toward the side of rural travel further brings about circumstances amenable to unfavorable traffic crash outcomes and yet our outcomes continue to improve.

² Federal Highway Administration, *Historical Monthly VMT Report*. Available at <http://www.fhwa.dot.gov/policy/information/travel/tvt/history/>

It should be noted, however, that there were a couple of areas in which we did not see improvements in 2011:

- A total of 37 individuals were killed in 2011 as a result of traffic crashes involving at least one speeding driver, an increase of 12.1% from 2010. 83.8% of these fatalities occurred on rural roadways.
- The annual seat belt survey administered through OHS reported in 2011 that overall seat belt usage decreased slightly this year. The 2011 estimate of 73.4% represents a decline of 2.4 percentage points from the 2010 rate of 74.5%.

These accomplishments point to the overall effectiveness of the Office of Highway Safety in South Dakota. Through the design, delivery, coordination, and monitoring of effective prevention strategies and countermeasures, and by working in cooperation with an alliance of statewide partners, the Office of Highway Safety seeks to vigorously pursue its mission to minimize economic and human loss resulting from traffic crashes.

As will be seen, eight of the thirteen separate performance goals articulated in the 2012 HSP have been met to date.³ The Office of Highway Safety's performance expectations are informed by extensive analytical groundwork, and are rooted in the notion that planning efforts are best guided by the methodical consideration of all available quantitative and qualitative resources. Given that meticulous projection analyses suggest that new advances remain within reach in coming years, we enthusiastically seize the present opportunity to facilitate the enhancement of highway safety in the State of South Dakota.

³ It must be understood, however, that the performance goals established in the 2011 HSP were constructed with target date of December 31, 2012. In this light, the evaluation of 2012 performance goals offered by this report (which is based on CY2011 traffic crash data) should be seen as tentative.

HIGHWAY SAFETY PLAN OUTLINE

As required by 23 CFR 1200, the 2013 Highway Safety Plan includes four primary elements: performance plan, highway safety plan, certification and assurances, and program cost summary. The South Dakota plan blends discussion of the performance plan and highway safety plan for the purpose of presenting a more integrative, comprehensible proposal. The 2013 plan begins with a broad data presentation organized around the core outcome and core behavior measures required as mandatory reporting items by NHTSA. Interlaced into this section are the performance goals established by the Office of Highway Safety through collaboration with external partners, as described above. Second, the plan offers program descriptions for projects related to the priority areas arising from the 2013 planning process. Finally, the plan presents a comprehensive 2013 budget summary for activities associated with enhancing highway safety vis-à-vis the highlighted priority areas. The plan also follows with a series of addendums, including the 2013 OHS Public Education Communications Plan.

CORE OUTCOME AND BEHAVIOR MEASURES FOR 2011

Performance Measures in Brief

CORE OUTCOME MEASURES FOR 2011

- C1 – Number of traffic fatalities: **111**
- C2 – Number of serious injuries in traffic crashes: **760**
- C3 – Fatalities per vehicle mile traveled: **1.23**
- C4 – Number of unrestrained passenger vehicle occupant fatalities, all seat positions: **65**
- C5 – Number of fatalities in crashes involving a driver or motorcycle operator with a BAC of .08 or above: **30**
- C6 – Number of speeding-related fatalities: **37**
- C7 – Number of motorcyclist fatalities: **14**
- C8 – Number of unhelmeted motorcyclist fatalities: **11**
- C9 – Number of drivers age 20 or younger involved in fatal crashes: **14**
- C10 – Number of pedestrian fatalities: **7**

BEHAVIOR MEASURES FOR 2011

- B1 – Observed seat belt use for passenger vehicles, front seat outboard occupants: **73.4%**

ACTIVITY MEASURES FOR 2011

- A1 – Impaired Driving Citations: 8,744
- A2 – Occupant Protection Citations: 12,216
- A3 – Speed Citations: 33,963

2013 HIGHWAY SAFETY PERFORMANCE GOALS

- C1 – Decrease traffic fatalities 5.4 percent from the 2011 calendar base year figure of 111 to 106 by December 31, 2013.
- C2 – Decrease serious traffic injuries 05 percent from the 2011 calendar base year figure of 760 to 722 by December 31, 2013.
- C3 – (a) Decrease fatalities/VMT from the 2011 calendar base year rate of 1.23 to 1.17 by December 31, 2013.

(b) Decrease rural fatalities/VMT from the 2011 calendar base year rate of 1.41 to 1.32 by December 31, 2013.

(c) Decrease urban fatalities/VMT from the 2011 calendar base year rate of .79 to .64 by December 31, 2013.
- C4 – Decrease unrestrained passenger vehicle occupant fatalities in all seating positions 1 percent from the 2011 calendar base year figure of 65 to 64 by December 31, 2013.
- C5 – Decrease alcohol impaired driving fatalities 3.3 percent from the 2011 calendar base year figure of 30 to 29 by December 31, 2013.
- C6 – Decrease speeding-related fatalities 11 percent from the 2011 calendar base year figure of 37 to 34 by December 31, 2013.
- C7 – Decrease motorcyclist fatalities 7 percent from the 2011 calendar base year figure of 14 to 13 by December 31, 2013.
- C8 – Decrease unhelmeted motorcyclist fatalities 10 percent from the 2011 calendar base year figure of 11 to 10 by December 31, 2013.
- C9 – Decrease drivers age 20 or younger involved in fatal crashes 14 percent from the 2011 calendar base year figure of 14 to 12 by December 31, 2013.
- C10 – Reduce pedestrian fatalities 14 percent from the 2011 calendar base year figure of 7 to 6 by December 31, 2013.

2013 CORE BEHAVIOR GOALS

- B1 – Increase statewide observed seat belt use of front seat outboard occupants in passenger vehicles 1.5 percentage points from the 2011 calendar year base year average usage rate of 73.4 percent to 74.9 percent by December 31, 2013.

PERFORMANCE TRENDING AND GOALS
Core Outcome and Behavior Measures in Detail

C1: NUMBER OF FATALITIES FROM TRAFFIC CRASHES

2012 Performance Goal

Goal Statement: Decrease traffic fatalities 10 percent from the 2010 calendar base year figure of 140 to 126 by December 31, 2012.

Current Value: 111

Current Status: Met

2013 Performance Goal

- Decrease traffic fatalities 5.4 percent from the 2011 calendar base year figure of 111 to 106 by December 31, 2013.

Key Observations

- A total of 11 traffic crash fatalities were recorded in South Dakota in 2011, down 20.7% from the previous year.
- The vast majority (93.7%) of traffic crash fatalities in South Dakota in 2010 were motorists, as opposed to pedestrians.

Recent Data

Of the 17,359 motor vehicle traffic crashes reported in South Dakota in 2011, 101 (0.58% of total crashes) resulted in at least one fatality. In total, 111 traffic crash fatalities were recorded in South Dakota in 2011, down approximately 20.7% from 2010. Of these fatalities, 45 (40.5%) were sustained by residents of South Dakota⁴. The observed fatality counts for 2011 return us to a generally downward trend in traffic crash fatalities observed in South Dakota over the previous five-year period. Since 2006, fatalities on South Dakota roadways have decreased by 41.8%. In 2011, 63.1% of traffic crash fatalities were drivers of motor vehicles.

Table 1 presents basic fatality counts and annual percentage changes from 2007 to 2011. Figure 1 provides a visual representation of fatalities in South Dakota over the same period, as expressed through three-year averages.

⁴ In 2011, there was a notable number of individuals for which state of residency was not included (42). Of those for which state of residency was known, 65.2% were residents of South Dakota.

Table 1. Annual Traffic Crash Fatalities: 2007-2011

	Fatalities	% Change
2007	146	-23.6%
2008	121	-17.1%
2009	131	+8.3%
2010	140	+6.9%
2011	111	-20.7%

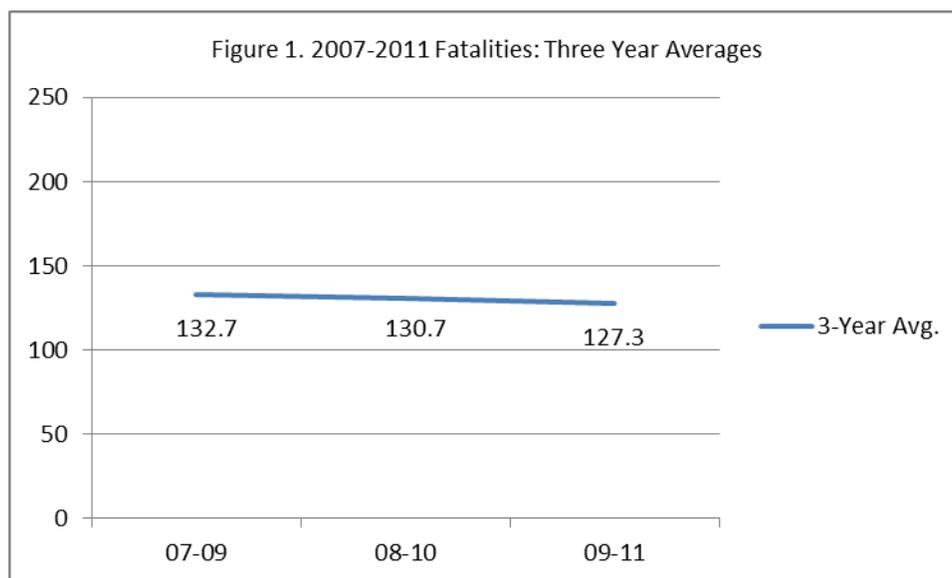


Figure 2 presents traffic crash fatalities by unit type for 2011. From this data, it can be seen that the vast majority of traffic crash fatalities in South Dakota are motorists, as opposed to pedestrians. With regard to the 111 traffic crash fatalities recorded in 2010, 103 (93.7%) were motor vehicle occupants. Of these, 43(38.7%) were either totally or partially ejected from their vehicles, and 57 (51.4%) died in vehicles in which airbags did not deploy. Of all motor vehicle occupant fatalities, 65.8% (73) were male. Front seat occupants composed 85.6% (95) of passenger vehicle occupant fatalities. Occupants aged 21-30 years accounted for 19.8% (22) of all occupant fatalities, the highest of any age group.⁵ Finally, 82% (91) of 2011 traffic crash fatalities occurred on rural roadways while the remaining 18% (20) occurred on urban roadways. Reporting on core measure C-3 will go further in elaborating on the overwhelmingly rural nature of South Dakota’s road system, and describing the implications of this condition on traffic crash outcomes.

⁵ Among 10 year age span groups.

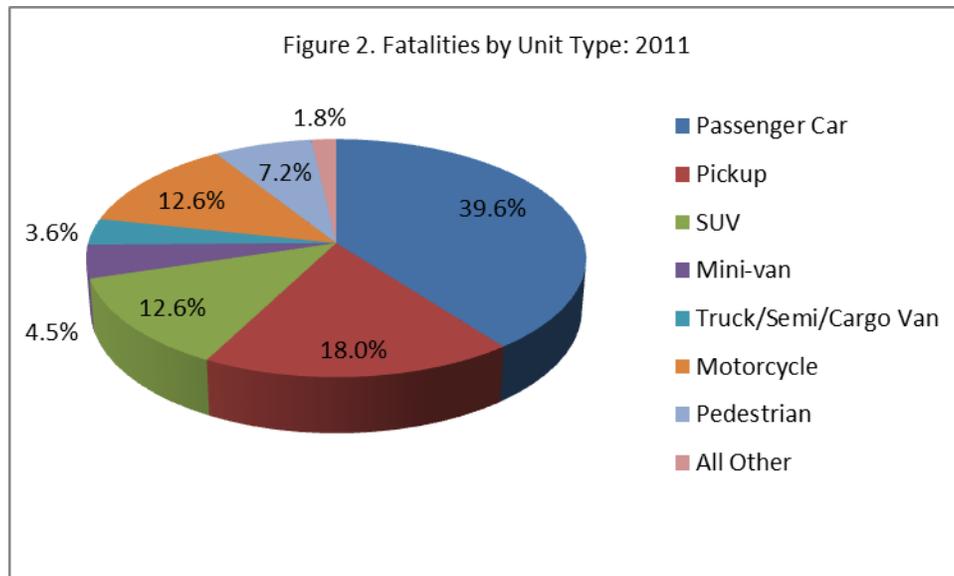


Table 2 displays calculated values for a modified per capita measure of traffic crash fatalities: total fatalities per 100,000 in-state population. This metric provides a relative indicator of fatality incidence, indexed to dynamic population counts. The figures presented in this table supply another means by which to examine trending features with respect to traffic crash fatalities in South Dakota. By this measure, the state has witnessed a 44.35% cumulative improvement in fatality outcomes over the 2006–2011 time period, even with the small spike in crash fatalities observed in 2009 and 2010. This five-year reduction is accounted for by the fact that the generally reduced number of fatalities in South Dakota since 2006 has been recorded contemporaneously with an overall increase in actual in-state population.

Table 2. Total Fatalities per 100,000 In-State Population: 2006-2011⁶

	Population Estimate	Total Fatalities	Per 100,000 Population	Annual % Change
2006	787,380	191	24.26	-
2007	795,689	146	18.35	-24.4%
2008	804,194	121	15.05	-18.0%
2009	812,383	131	16.13	+7.2%
2010	814,180	140	17.20	+6.6%
2011	824,082	111	13.5	-21.5%

⁶ That each of the major “per unit denominators” commonly used in traffic crash reporting (such as population counts, registered vehicle counts, and registered driver counts) are unavoidably misspecified is a well-worn topic. It is commonly acknowledged that no single per unit measure is both broadly and consistently inclusive of and only of those indexing units most relevant to the primary “numerator” measure. Indeed, population figures may be construed as a biased control factor due to the tendency for in-state fatality counts to include out-of-state motorists. However, in-state population is favored here due to its straightforward parsimony and its inter-state definitional reliability.

C2: NUMBER OF SERIOUS INJURIES FROM TRAFFIC CRASHES

2012 Performance Goal

Goal Statement: Decrease serious traffic injuries 10 percent from the 2010 calendar base year figure of 844 to 760 by December 31, 2012.

Current Value: 760

Current Status: Met

2013 Performance Goal

- Decrease serious traffic injuries 05 percent from the 2011 calendar base year figure of 760 to 722 by December 31, 2013.

Key Observations

- 5,480 non-fatal traffic crash injuries were sustained in 2011, 760 of which were serious or incapacitating.
- The number of serious injuries recorded in 2011 represents a 10% increase from the analogous 2010 total, and further is 13.9% lower than the baseline 2007 figure.

Recent Data

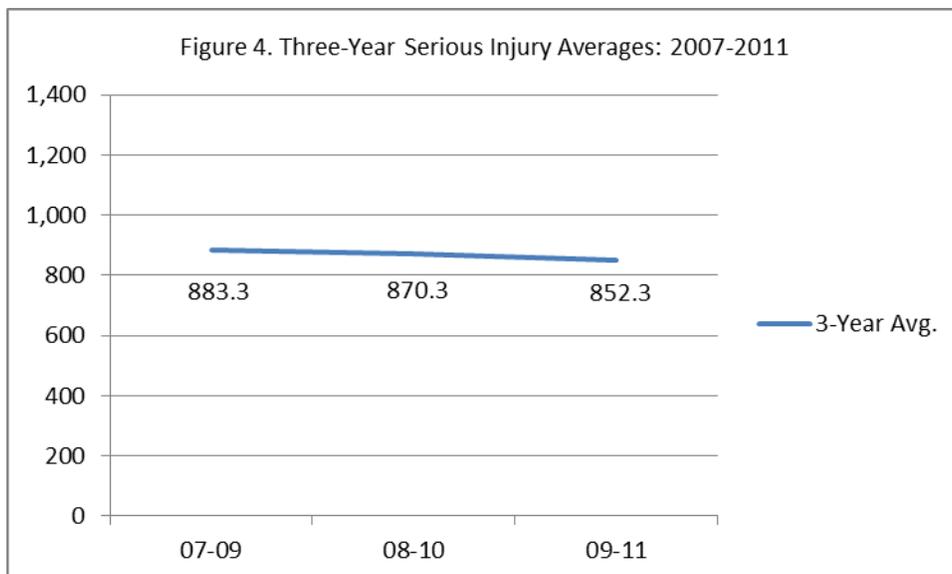
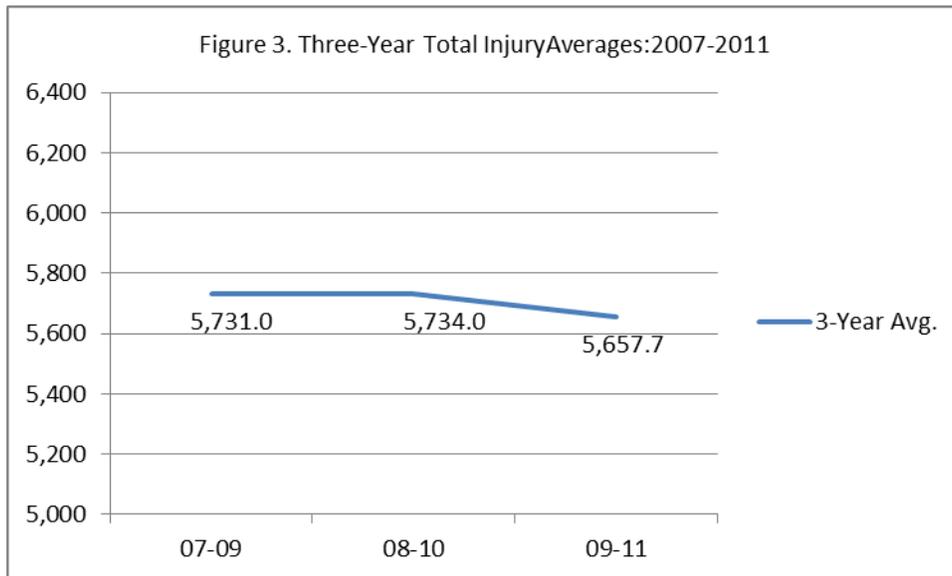
A grand total of 5,480⁷ injuries were sustained as a result of traffic crashes in 2011, 111 (2%) of which were ultimately fatal. Of non-fatal injuries, 760 (14.1%) were serious or incapacitating. The number of serious injuries recorded in 2011 (760) represents a 10% increase from the analogous 2010 figure (844), and further remains 13.9% lower than the baseline 2007 figure (883), a decline that corresponds to an average annual change of -2.85% over the five year period. Similarly, the number of total annual injuries from traffic crashes has declined 5.2% since 2007, a difference that is also quantifiable as an average annual change of -1.04%.

Table 3 displays frequency counts and average annual changes for all non-fatal injuries and serious injuries from 2007–2011. Figures 3 and 4 present three-year average trend lines for total non-fatal injuries (Figure 3) and serious injuries (Figure 4).

⁷ This figure includes 2683 “possible” injuries included in the South Dakota Crash Data.

Table 3. Annual Traffic Crash Non-Fatal Injuries, Total and Serious: 2007-2011

	Total Injuries	% Change	Serious Injuries	% Change
2007	5,782	-3.9%	883	-14.1%
2008	5,709	-1.3%	925	+4.8%
2009	5,702	-0.1%	842	-9.0%
2010	5,791	+1.6%	844	+0.2%
2011	5,480	-5.4%	760	+3.2%



2012 Performance Goal

Goal Statement (a): Decrease fatalities/VMT from the 2010 calendar base year rate of 1.58 to 1.35 by December 31, 2012.

Current Value: 1.23

Current Status: Met

Goal Statement (b): Decrease rural fatalities/VMT from the 2010 calendar base year rate of 1.95 to 1.76 by December 31, 2012.

Current Value: 1.41

Current Status: Met

Goal Statement (c): Decrease urban fatalities/VMT from the 2010 calendar base year rate of .64 to .58 by December 31, 2012.

Current Value: .79

Current Status: Not met

2013 Performance Goal

- (a) Decrease fatalities/VMT from the 2011 calendar base year rate of 1.23 to 1.17 by December 31, 2013.
- (b) Decrease rural fatalities/VMT from the 2011 calendar base year rate of 1.41 to 1.32 by December 31, 2013.
- (c) Decrease urban fatalities/VMT from the 2011 calendar base year rate of .79 to .64 by December 31, 2013.

Key Observations

- Because such a large proportion of South Dakota's roadways are located in rural areas, overall fatality rate figures are heavily influenced by traffic crashes occurring on rural roadways.
- The 2011 statewide fatality rate of 1.23 represents a 22.1% decrease from that of 2010 (1.58). This figure amounts to an overall improvement of 28.5% since 2007.
- Considered separately, the state's rural fatality rate of 1.41 represents a 27.7% decrease from 2010, while the urban rate of 0.79 is a 23.8% increase since last year. The urban fatality rate still reflects a marked improvement from the 2007 baseline data though.
- Injury-to-fatality ratios suggest that rural crashes remain more likely than urban crashes to produce fatalities, all else being equal.

Recent Data

South Dakota’s highway system is dominated by vastness. The state’s geographic expansiveness and sparse population combine to result in a marked reliance on travel by rural roadways. In 2011, South Dakota’s state and local governments maintained 82,449 miles of roadways, 96.4% of which (79,492) were designated by the state Department of Transportation as rural. In addition, 71.9% of all vehicle miles traveled in South Dakota occurred on rural highways and streets. Table 4 exhibits basic figures for miles of roadways and vehicle miles traveled (VMT) in South Dakota for 2011. Overall, the 8.99 million total VMT figure for 2011 represents an increase of 1.49% from the 8.8 million VMT figure for 2010.

Table 4. South Dakota Roadways and VMT: 2011

	Values	% of Total
Rural Miles	79492	96.4%
Urban Miles	2967	3.6%
Total Miles	82459	100%
Rural VMT	6,469,650,127	71.9%
Urban VMT	2,523,685,685	28.1%
Total VMT	8,993,335,812	100%

Because such a large proportion of South Dakota’s roadways are located in rural areas, overall fatality rate figures are heavily influenced by traffic crashes occurring on rural roadways. Table 5 provides fatality and injury rate figures for 2007–2011, segmented by location type.⁸ Until 2009, the total traffic crash fatality rate in South Dakota had declined steadily since 2006. This figure shows a return to a trend or steady declines in the statewide fatality rate in the past several years.

Sizable improvements from 2007 are also observed when rural and urban fatality rates are considered separately (32.5% and 10% reductions, respectively). Though intuitive, it is important to note explicitly that the fatality rate variation is not attributable solely to changes in the number of vehicle miles traveled.

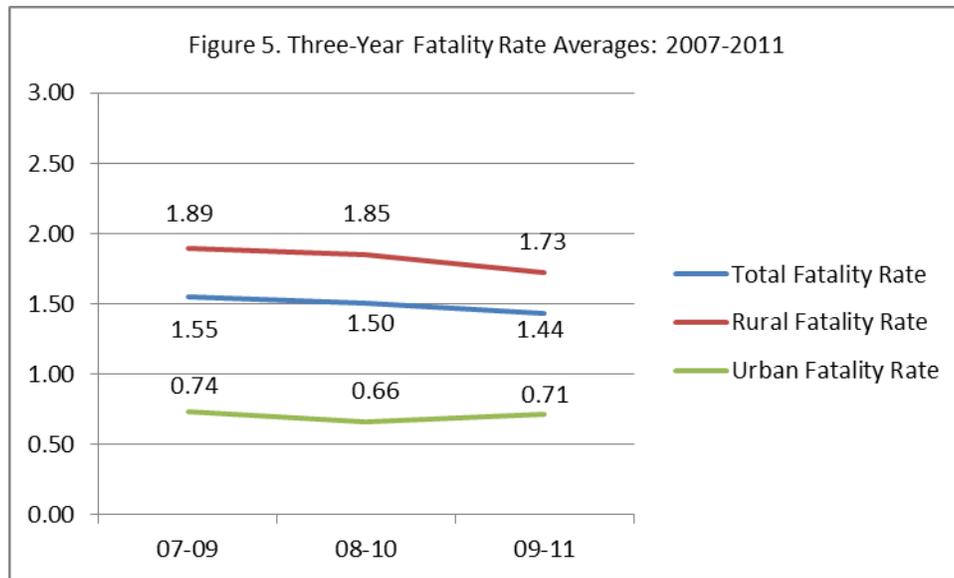
Table 5. Fatality and Injury Rates by Location: 2007-2011⁹

	Total Fatality Rate	Rural Fatality Rate	Urban Fatality Rate	Total Injury Rate	Rural Injury Rate	Urban Injury Rate
2007	1.72	2.09	0.87	68.17	43.50	125.79
2008	1.43	1.78	0.63	67.40	39.85	130.58
2009	1.50	1.82	0.72	65.25	38.37	131.46
2010	1.58	1.95	0.64	65.35	39.70	129.55
2011	1.23	1.41	0.79	59.52	34.88	122.71
% Change ('10 to '11)	-22.1%	-27.7%	23.8%	-8.9%	-12.1%	-5.3%

**

⁸ “Fatality rate” is defined here as the number of fatalities per 100 million vehicle miles traveled. Likewise, “injury rate” expresses the number of injuries (all severity levels, not including fatalities) per 100 million vehicle miles traveled.

⁹ (Rural + Urban fatalities/injuries may not add to total, because some accident reports include no rural/urban designation.)



Similarly, Table 5 demonstrates that figures for every category except urban fatalities decreased from 2010 to 2011. Yet a downward trend across three-year averages for total and rural fatality rates can also be seen to persist in the three year averages (see Figure 5). As expected, rural fatality rates are substantially higher than comparable urban fatality rates for each of the last five years. The reasons for this tendency are at least partially intuitive, including but not limited to the characteristically higher allowable rates of speed on rural roadways and the increased transit time required for emergency responders to arrive at crash sites. The relationship between rural and urban fatalities can also be observed through injury-to-fatality ratios. In 2011, 24.8 injuries were recorded for each fatality in rural areas. By contrast, 154.8 injuries per fatality were recorded in urban areas.¹⁰ Like the rural-urban disparities in basic fatality rates, the above injury-to-fatality ratios suggest that rural crashes are more likely than urban crashes to produce fatalities, all else being equal. This observation implies that states like South Dakota, whose distinctively rural composition produce unique geographic contexts, face unique challenges to effective traffic crash management.

2012 Performance Goal

Goal Statement: Decrease unrestrained passenger vehicle occupant fatalities in all seating positions 1 percent from the 2010 calendar base year figure of 67 to 66 by December 31, 2012.

Current Value: 65

Current Status: Met

2013 Performance Goal

- Decrease unrestrained passenger vehicle occupant fatalities in all seating positions 1 percent from the 2011 calendar base year figure of 65 to 64 by December 31, 2013.

Key Observations

- A total of 65 unrestrained passenger vehicle occupants were killed in traffic crashes in 2011, a decline of 3% from 2010.
- In 2011, 63.4% of unrestrained passenger vehicle occupants involved in a traffic crash sustained an injury, fatal or otherwise. By contrast, only 20.7% of restrained occupants suffered an injury or fatality.
- 72.3% of all unrestrained driver fatalities in 2010 were sustained by males.
- Of all passenger vehicle occupants involved in a traffic crash who were not ejected from the vehicle as a result of the crash, 91.8% wore a seatbelt and/or shoulder harness; of those who were completely ejected from the vehicle, none wore a seatbelt and/or shoulder harness.

Recent Data

In 2011, 27,848 passenger vehicle occupants were involved in traffic crashes, 2,121 of which were unrestrained.¹¹ Of these unrestrained occupants whose injury status was known, 65 (3.7%) were killed, 319 (18.4%) sustained a serious injury, and 577 (33.2%) received non-serious injury. Altogether then, 55.2% of these occupants suffered an injury, fatal or otherwise.¹² From 2007–2011, 57.7% of unrestrained passengers involved in a traffic crash were injured or killed, and 3.7% were killed. In 2011, only 0.12% of restrained passenger vehicle occupants involved in a traffic crash were killed. Table 6 presents crash outcome figures for all unrestrained passenger vehicle occupants in South Dakota from 2007–2011.

¹¹ Here, “unrestrained” passengers are those not wearing a seatbelt or shoulder harness, as well as a child occupant not properly secured in a child restraint system.

¹² By contrast, only 20.7% of restrained passenger vehicle occupants involved in a traffic crash sustained an injury or fatality.

Table 6. Injury Outcomes of Unrestrained Passenger Vehicle Occupants: 2007-2011¹³

	Fatalities	Serious Injuries	Other Injuries	No Injuries	Total
2007	74	279	783	839	1975
2008	61	302	782	773	1918
2009	79	262	756	757	1854
2010	67	248	709	792	1816
2011	65	319	577	776	1737
2011 (%)	3.7%	18.4%	33.2%	44.7%	100.0%
All Years (%)	3.7%	15.2%	38.8%	42.3%	100.0%

South Dakota Codified Law 32-37-1 requires passenger vehicle operators to secure all occupants under the age of five in a child restraint system. Given the practical implications of this statute, discussion of passenger vehicle restraint usage is made more productive by considering two separate age groups: ages less than five and ages five and over. From 2006–2011, 9 fatalities of passenger vehicle occupants under five years old were recorded; only two were killed having been secured properly into a child restraint device. Five of these fatalities involved children who were entirely unrestrained. In 2011, no children under the age of five were killed as passenger vehicle occupants. Of the nine children that suffered a serious injury, five were completely unrestrained and none were in an appropriate child restraint.

Of the 111 passenger vehicle occupants sustaining fatal injuries in 2011, all of them were age 5 or older. Of those sustaining fatal injuries, 65 (68.5%) were unrestrained. Approximately 55% (951) of all unrestrained occupants (age five and older) involved in a traffic crash sustained either a fatality or an injury. Among these unrestrained fatalities, 21-30 was the modal age group¹⁴ (seventeen fatalities). Occupants in the 21-30 age group represented 26.2% of all unrestrained fatalities. Males accounted for 72.3% (67) of all unrestrained fatalities, as well as 65.8% (210) of all unrestrained serious injuries.

In 2011, 38.7% (43) of all passenger vehicle occupants sustaining a fatal injury were either partially or totally ejected from the vehicle; of those suffering all other injuries, only 4.8% were ejected either partially or totally. Of passenger vehicle occupants who were partially or totally ejected from the vehicle during a crash, 74.3% suffered a serious injury or fatality. Finally, among those who were partially ejected, only 27% had been restrained properly. Of those who were totally ejected, none had been restrained properly. Table 7 presents 2011 data on ejection status by restraint usage for passenger vehicle occupants only (all ages).

¹³ This table does not include individuals for whom injury data was unknown or missing. The total unrestrained passenger vehicle occupants for 2011 was 2123.

¹⁴ Using census age ranges (20 and under, 21-30, 31-40, 41-50, 51-60, 61-70, 71 and above).

Table 7. Ejection Status by Restraint Usage: 2011

	Not Ejected	Totally Ejected	Partially Ejected	Total
None	7.3%	96.6%	72.0%	8.0%
Belt/harness	83.5%	0.0%	24.0%	82.9%
Other, Unreported, Unknown	8.9%	2.8%	4.0%	8.8%
Youth restraint used improperly	0.0%	0.7%	0.0%	0.0%
Youth restraint used properly	0.2%	0.0%	0.0%	0.2%
Grand Total	100.0%	100.0%	100.0%	100.0%

C5: NUMBER OF FATALITIES IN CRASHES INVOLVING A DRIVER OR MOTORCYCLE OPERATOR WITH BAC OF .08 OR ABOVE

2012 Performance Goal

Goal Statement: Decrease alcohol impaired driving fatalities 6.5 percent from the 2010 calendar base year figure of 31 to 29 by December 31, 2012.

Current Value: 30

Current Status: Not met

2013 Performance Goal

- Decrease alcohol impaired driving fatalities 3.3 percent from the 2011 calendar base year figure of 30 to 29 by December 31, 2013.

Key Observations

- The number of fatalities arising from crashes involving at least one driver or motorcycle operator with a BAC of .08 or above was 3.2% lower in 2011 than in 2010; however, the total number of crashes involving these drivers increased by 15.7%.
- In 2011, only 50% of fatalities in this traffic crash category were sustained by intoxicated drivers themselves, leaving 50% of fatalities to be incurred by non-intoxicated drivers.

Recent Data

In South Dakota, it is considered a criminal offense for any driver to operate a motor vehicle while maintaining a blood alcohol content (BAC) level of .08 or higher.¹⁵ Altogether, 17,359 traffic crashes were reported in 2011, 458 of which involved at least one driver with a BAC reading of .08 or above. In other words, 2.6% of all accidents involved at least one driver with a BAC of .08 or higher. This is a slight increase from the rate in 2010 (2.4%). With the exception of 2010, the number of traffic crashes involving intoxicated vehicle operators has slightly yet consistently ticked upward each year since 2007. Table 8 shows annual figures and percentage changes for crashes involving at least one driver or motorcycle operator with a BAC reading of .08 or higher, compared to figures for total crashes.¹⁶

¹⁵ Drivers with a BAC level of .08 or higher will occasionally be referred to in this report as "intoxicated drivers."

¹⁶ In this table, "BAC Crashes" refer to those accidents wherein at least one driver was found to have a BAC level of .08 or higher.

Table 8. BAC Accidents and Total Accidents: 2007-2011

	BAC Crashes	Total Crashes	% Total Crashes that were BAC Crashes	% Annual Change in BAC Crashes
2007	302	16,220	1.9%	+2.0%
2008	373	15,908	2.3%	+23.5%
2009	421	16,996	2.5%	+12.9%
2010	396	17,624	2.2%	-5.9%
2011	458	17,359	2.6%	+15.7%

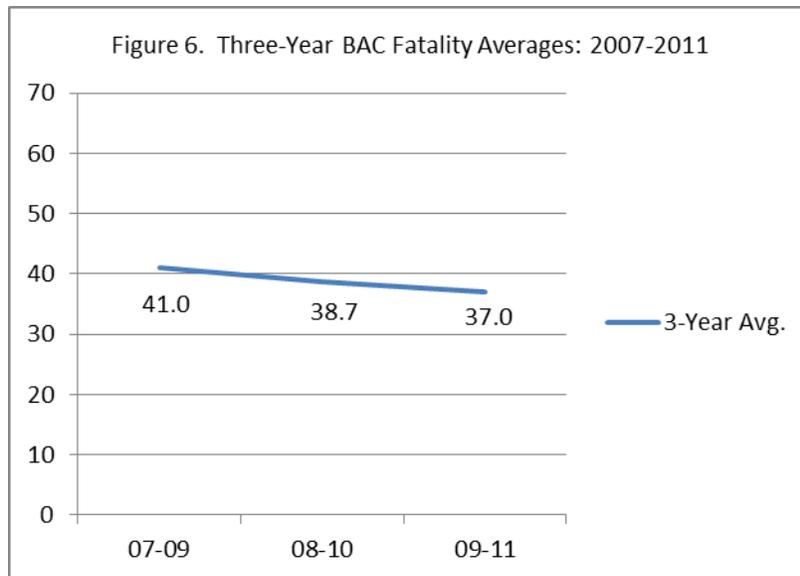
Table 9 presents frequency counts of fatalities and injuries resulting from traffic crashes involving at least one driver with a BAC reading of .08 or higher. From 2007–2011, 184 fatalities and 392 serious injuries were sustained in crashes involving at least one operator exceeding the legal BAC limit. In 2011 alone, 30 fatalities and 88 serious injuries were reported in analogous traffic crashes. The fatality figure represents a slight decrease from 2010 (3.2%) and a substantial (40%) decrease from the analogous figure of 50 recorded in 2009.

Table 9. Injury Outcomes for Individuals Involved in BAC Crashes: 2007-2011¹⁷

	Fatalities	Serious Injuries	Other Injuries	No Injury	Total
2007	38	68	152	225	483
2008	35	75	187	328	625
2009	50	81	207	361	699
2010	31	80	199	367	697
2011	30	88	211	401	730
2011(%)	4.1%	12.1%	28.9%	54.9%	100.0%
All Years (%)	6.4%	12.8%	30.8%	50%	100.0%

To partially allay the potentially misleading influence of small tabular values, Figure 6 displays three-year averages for fatalities reported from 2007–2011. Fatalities resulting from these traffic crashes accounted for 27% of all fatalities recorded in 2011, compared to a 2010 figure of 22.1%.

¹⁷ Among individuals for whom an injury status was reported (97.3% of all individuals involved in such crashes).



A total of 587 vehicle operators with a BAC level of .08 were involved in traffic crashes in 2011. 42.8% (251) of these drivers were under the age of 30, and 66.1% (388) were under the age of 40. During 2011, four pedestrian fatalities were reported in traffic crashes involving these drivers; no such fatalities were sustained by pedalcyclists. Altogether then, 86.6% of fatalities in crashes of this sort were incurred by motor vehicle occupants. By vehicle type, fatality counts were as follows (number of fatalities in parenthesis): passenger car (20), sport utility vehicle (3), light truck (3). Of fatality victims, 15 (50%) were themselves drivers with a BAC level of .08 or higher. Among fatalities in 2011 of drivers with a BAC of .08 or higher, 80% (12) carried an in-state driver's license; 80% (14) were male, 93.3% (14) failed to use appropriate safety restraint devices or other protective equipment, and 26.7% (4) were 25 years old or younger.

Findings from the 2012 Highway Safety Behaviors Survey lend shape to the views of South Dakotans with respect to intoxicated driving. 13.4% of surveyed drivers reported having driven a motor vehicle within two hours of consuming alcoholic beverages at least once over the last 60 days. Male respondents and those respondents between the ages of 31 and 40 were *least* likely to report no instances of intoxicated driving. 79.7% of participants viewed the chances of being arrested after drunken driving as being either very likely or somewhat likely, but again, this figure was slightly lower among males (77.1%). Among all respondents, a staggering 97.8% find it either strongly or somewhat important for police to enforce drunken driving laws. This final observation would appear to underscore clear public support for the continued development of improved drunken driving enforcement measures.

C6: NUMBER OF SPEEDING-RELATED FATALITIES

2012 Performance Goal

Goal Statement: Decrease speeding-related fatalities 11 percent from the 2010 calendar base year figure of 37 to 34 by December 31, 2012.

Current Value: 37

Current Status: Not met

2013 Performance Goal

- Decrease speeding-related fatalities 11 percent from the 2011 calendar base year figure of 37 to 34 by December 31, 2013.

Key Observations

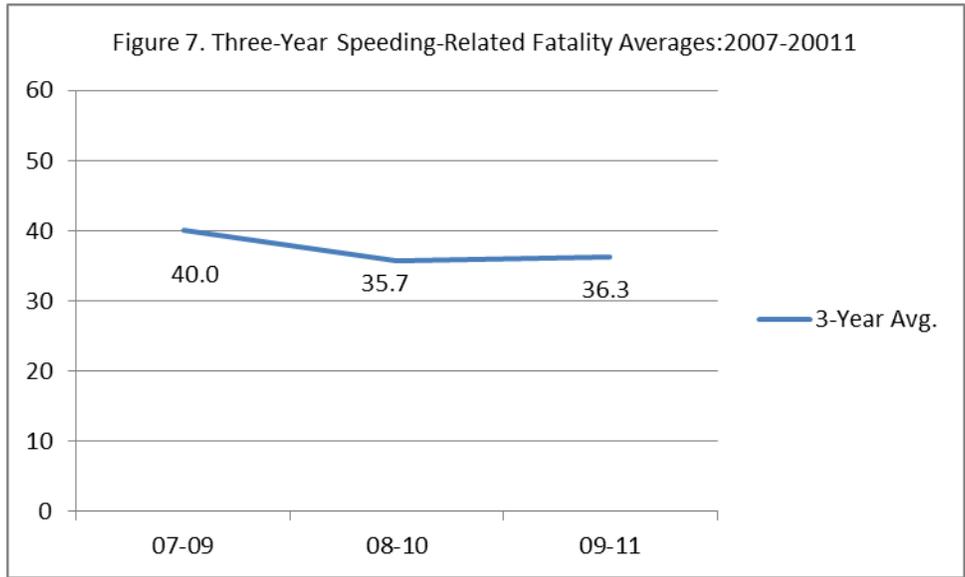
- A total of 37 individuals were killed in 2011 as a result of traffic crashes involving at least one speeding driver. This figure has not changed since 2010.
- 94.6% of speeding-related fatalities in 2011 were sustained by motor vehicle occupants; two pedestrians were killed in these traffic crashes.
- 83.8% of speeding-related fatalities occurred on rural roadways in 2011. Additionally, speeding-related fatalities per VMT were substantially higher in rural areas.

Recent Data

Lead-footed motor vehicle drivers pose an ongoing challenge to highway safety planners. Nearly 33% percent of South Dakota's traffic crash fatalities in 2011 were sustained in roadway incidents involving at least one speeding driver. Indeed, that many motorists knowingly and willfully elect to drive at rates higher than the posted limit would seem to challenge the use of the term "traffic *accident*." Existing data appears to suggest that South Dakotans send mixed signals with respect to the attitudes and behaviors that underlie this manner of driving. On one hand, the 2011 Highway Safety Behaviors Survey shows that South Dakotans generally support the idea of reigning in speeding drivers. 87.5% of respondents believe that speeding increases the risk of an accident, and 95.7% agree that the enforcement of speeding laws is important. Consequently, 76.5% rate the chances of being ticketed as a consequence of driving over the speed limit as either somewhat likely or very likely. At the same time, 56.7% of respondents report having driven more than five miles per hour over the speed limit at least once in the last year. Only 43.5% claim to never drive faster than 70 mph in 65 mph zones, and 26.7% report never driving faster than 35 mph in 30 mph zones. In total, survey findings imply that while South Dakotans hope that speeding on the state's roadways can be reduced, this view may not inform their own driving practices.

In 2011, 2,272 traffic crashes occurred that involved at least one speeding driver (amounting to 13.2% of all reported traffic crashes), a subset of all traffic crashes involving a total of 3,543 people. Of these individuals, 37 (1.04%) sustained fatal injuries, 165 (4.7%) suffered serious but non-fatal injuries, and 378 (10.7%) received non-serious injuries. Figure 7 smoothes the most recent five years of time series data by

displaying three-year averages for speeding-related fatalities during the 2007–2011 period.



94.6% of speeding-related fatalities in 2011 were sustained by motor vehicle occupants; two pedestrians were killed in these traffic crashes. Among those sustaining fatalities, the vehicle type occupancy was recorded as follows: 19 (51.4%) passenger car, 8 (21.6%) light truck, 2 (6.7%) motorcycle, 2 (6.7%) sport utility vehicle, 2 (6.7%) mini-van, and 2 (6.7%) other vehicles.

The difference in injury rates between road surface types would again seem to imply a broader difference in crash outcomes between rural and urban roadways. In 2011 83.7% of speeding-related fatalities were recorded on rural roadways with only six fatalities occurring in urban areas; seven speeding-related fatalities were recorded on interstate highways (rural or urban). Table 10 places data for speeding-related fatalities in the context of vehicle miles traveled, and further segments these figures by rural-urban crash location. Similar to the rates displayed in section C3, rural fatalities/VMT are considerably higher than their urban counterparts for all years under consideration. However, it can be seen that speeding-related urban fatalities per VMT declined slightly in 2011 while speeding related rural fatalities increases slightly.

Table 10. Speeding-Related Fatalities per VMT: 2007-2011

	Total Fatalities/VMT	Rural Fatalities/VMT	Urban Fatalities/VMT
2007	0.54	0.69	0.20
2008	0.41	0.49	0.23
2009	0.45	0.50	0.32
2010	0.37	0.41	0.28
2011	0.41	0.47	0.23

C7: NUMBER OF MOTORCYCLIST FATALITIES

2012 Performance Goal

Goal Statement: Decrease motorcyclist fatalities 15 percent from the 2010 calendar base year figure of 27 to 23 by December 31, 2012.

Current Value: 14

Current Status: Met

2013 Performance Goal

- Decrease motorcyclist fatalities 7 percent from the 2011 calendar base year figure of 14 to 13 by December 31, 2013.

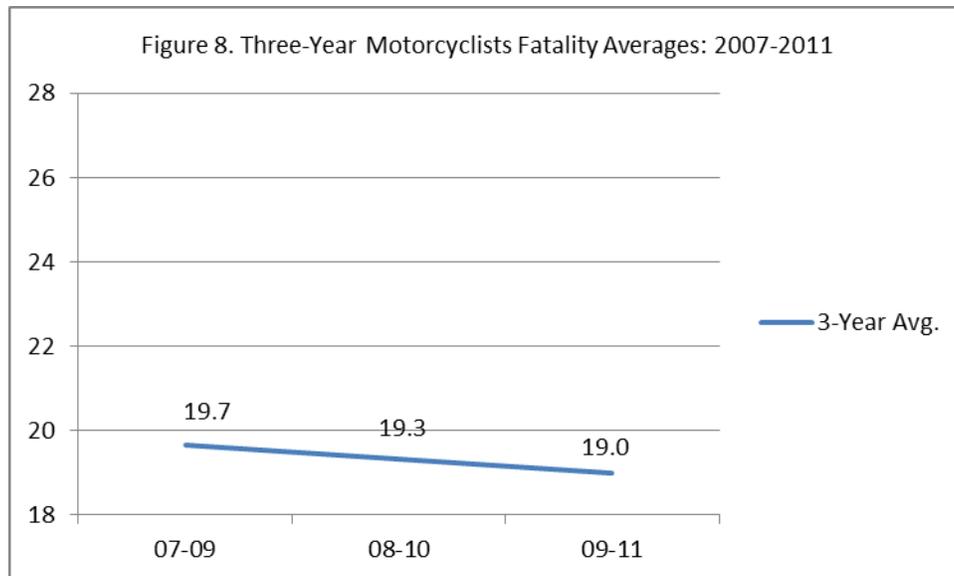
Key Observations

- Motorcycles were involved in only 1.7% of traffic crashes in 2011, but these accidents accounted for 12.6% of all fatalities.
- 93% of all injuries and fatalities sustained in traffic crashes involving motorcycles in 2011 were suffered by motorcycle occupants.
- The number of motorcycle fatalities per 1000 registered motorcycles for 2011 (.201) is substantially less than the 2010 rate (.411).
- 12 of the 14 motorcyclist fatalities recorded in 2011 were incurred by males.

Recent Data

In 2011, 493 traffic crashes involving motorcycles were reported, amounting to approximately 1.7% of all traffic crashes.¹⁸ Of the 751 individuals involved in these traffic crashes, 569 (72%) were motorcycle occupants. A total of 524 people received non-fatal injuries as a result of these crashes, and 14 people were killed. The above fatality count of 14, all of whom were motorcyclists, reflects 12.6% of all fatalities reported in 2011. To summarize then, motorcycles were involved in only 1.7% of traffic crashes in 2010, but these accidents accounted for 12.6% of all fatalities. Further, accidents involving motorcycles in 2011 tended to injure or kill only the motorcyclists themselves. Figure 8 displays three-year averages for motorcycle fatalities (motorcycle occupants only) for 2007-2011.

¹⁸ In sections C7 and C8, references to “motorcycles” and “motorcycle operators/occupants” also include mopeds and moped operators/occupants. For simplicity, the term “motorcycle” is used alone.



The average age of motorcyclists suffering fatal injuries was 43.6 years.¹⁹ Of the 14 motorcyclist fatalities in 2011, 12 (85.7%) were age 40 or older; this is slightly greater than the analogous 2010 figure of 81.5%. 12 (85.7.4%) of the motorcyclist fatalities recorded in 2011 were incurred by males, all of whom were operators; altogether, two motorcycle passengers were killed. Seven of the 14 fatalities occurred during the three-week time span including the week prior to, the week of, and the week after the 2011 Sturgis Motorcycle Rally. 11 of the fatalities occurred on concrete or asphalt roadways and 12 motorcyclists were killed on rural roadways, with the remaining two fatalities occurring on urban roadways. None of the motorcyclists suffering fatal injuries were drivers with a blood alcohol content reading of .08 or above. A total of 11 injuries, were produced by traffic crashes involving intoxicated motorcyclists. Since South Dakota does not track motorcycle vehicle miles traveled, fatality per VMT rates cannot be computed. Table 11 displays figures for an alternative rate measure: motorcycle fatalities per 1000 registered motorcycles. While this metric is problematic for a number of reasons, it nonetheless supplies a relative indicator of motorcycle fatality rates.²⁰ From this table it can be seen that motorcycle fatalities, as a proportion of motorcycle registrations, declined substantially, (over 51%) from 2010.

²⁰ Several caveats are in order with regard to the use of a fatalities-per-registered-vehicle metric. This particular measure is tenuous not only because a considerable proportion of motorcycle traffic in South Dakota stems from inter-state travel, but also because some fatalities are sustained by out-of-state motorcyclists. In fact, only 2 of the 14 motorcyclists suffering a fatality in 2010 carried a South Dakota driver's license.

Table 11. Motorcycle Fatalities per Registered Motorcycle: 2007-2011²¹

	Registered Motorcycles	Motorcyclist Fatalities	Fatalities per 1000 Registered Motorcycles
2007	58,529	28	0.478
2008	58,508	28	0.256
2009	62,735	16	0.255
2010	65,686	27	0.411
2011	69,660	14	0.201

²¹ http://www.state.sd.us/drr2/motorvehicle/title/Title_Registration_stats/intern%20motor-v%20history/statetotal.htm

C8: NUMBER OF UNHELMETED MOTORCYCLIST FATALITIES

2012 Performance Goal

Goal Statement: Decrease unhelmeted motorcyclist fatalities 10 percent from the 2010 calendar base year figure of 19 to 17 by December 31, 2012.

Current Value: 11

Current Status: Met

2013 Performance Goal

- Decrease unhelmeted motorcyclist fatalities 10 percent from the 2011 calendar base year figure of 11 to 10 by December 31, 2013.

Key Observations

- Of the 14 motorcyclist fatalities in 2011, 11 (78.5%) were sustained by unhelmeted occupants.
- 7 of the 11 unhelmeted motorcyclist fatalities recorded in 2011 were sustained by out-of-state motorcyclists.
- Males accounted for 9 of the 11 unhelmeted motorcyclist fatalities recorded in 2011.

Recent Data

Motorcycle occupants accounted for 569 (3.6%) of the 17,624 people involved in motor vehicle traffic crashes in 2011; 62.7% (357) of these riders were not wearing a helmet at the time the crash took place. This unhelmeted occupant percentage is comparable to the 2010 percentage (67.4%). That unhelmeted riders make up such a large percentage of motorcyclists involved in traffic crashes, should perhaps come as no surprise, given that the *2009 South Dakota Statewide Seatbelt and Motorcycle Helmet Use Survey* found that helmets are used by only 35.6% of motorcyclists on South Dakota's roadways. This relatively low rate of helmet use clearly does not sit well with South Dakotans at large. The 2012 Highway Safety Behaviors Survey suggests that 74% of the state's licensed motor vehicle drivers feel that the state should mandate the use of helmets by motorcycle occupants.

Table 12 presents comparative crash outcomes data for helmeted and unhelmeted motorcyclists from 2007-2011. This table shows that the figure for helmeted motorcyclist fatalities (8) was at a five-year high in 2010. It is also shown that, for 2011, as well as for the entire 2007-2011 period, helmeted riders sustain fatal injuries with slightly lower relative frequency than do unhelmeted riders. It should be noted however that n-values in these categories may be too small to justify the formation of practical inferences based on these figures alone.

Table 12. Injury Outcomes for Unhelmeted and Helmeted Motorcycle Occupants: 2007-2011

Unhelmeted Motorcycle Occupants					
	Fatalities	Serious Injuries	Other Injuries	No Injury	Total
2007	21	122	241	58	442
2008	11	119	207	43	380
2009	14	102	214	44	374
2010	19	118	239	62	438
2011	11	108	181	52	352
2011 (%)	3.1%	30.7%	51.4%	14.8%	100.0%
All Years (%)	3.8%	28.7%	54.5%	13.0%	100.0%

Helmeted Motorcycle Occupants					
	Fatalities	Serious Injuries	Other Injuries	No Injury	Total
2007	7	58	92	18	175
2008	4	59	116	19	198
2009	2	56	116	26	200
2010	8	59	124	21	212
2011	3	50	106	26	185
2011 (%)	1.6%	27.0%	57.3%	14.1%	100.0%
All Years (%)	2.5%	29.1%	57.1%	11.3%	100.0%

The 11 unhelmeted fatalities in 2010 only included four (36.3%) bikers carrying a South Dakota driver's license. As before, this figure is suggestive of a sizable proportion of out-of-state motorcycle traffic on South Dakota's roadways. The 40 and older age group constituted 91% (10) of all unhelmeted motorcyclist fatalities. 81.8% (9) of fatalities were sustained by males, and 18.2% (2) of unhelmeted motorcyclists who died were reported by law enforcement personnel to have been drinking.²² Table 13 gives annual figures for unhelmeted motorcyclist fatalities per registered motorcycle from 2007-2011. While the number of registered motorcycles in South Dakota increased by 6% from 2010 (65,686) to 2011 (69,660), the number of unhelmeted motorcycle fatalities decreased 44.8%. Again, interpretive caution is warranted due to low n-values.

Table 13. Unhelmeted Motorcycle Fatalities per Registered Motorcycle: 2006-2010

	Fatalities per 1,000 Registered Motorcycles
2007	0.36
2008	0.19
2009	0.22
2010	0.29
2011	0.16

2012 Performance Goal

Goal Statement: Decrease drivers age 20 or younger involved in fatal crashes 23 percent from the 2010 calendar base year figure of 22 to 17 by December 31, 2012.

Current Value: 14

Current Status: Met

2013 Performance Goal

- Decrease drivers age 20 or younger involved in fatal crashes 14 percent from the 2011 calendar base year figure of 14 to 12 by December 31, 2013.

Key Observations

- 14 drivers under the age of 21 were involved in a fatal traffic crash in 2011; this figure represents a 36.4% decline since 2010.
- The number of total crashes involving at least one driver under the age of 21 and the number of fatal crashes involving these drivers were both substantially lower in 2011 than in 2010.

Recent Data

Both popular opinion and self-reported attitude data give justification to the prevailing impression of young motorists as a dangerous driving population. According to the 2012 Highway Safety Behaviors Survey 23.1% of drivers ages 30 and under admit to driving more than 35 mph in 30 mph zones "all of the time: or "most of the time," a proportion higher than that found in any other age group. 5.9% of young motorists report never wearing a seatbelt while driving, 30.4% believe seatbelts are as likely to cause harm as to prevent it, and 30.4% assert an ability to drive safely even after consuming multiple alcoholic drinks. Reflecting some level of awareness of these tendencies, 55.8% of all respondents to the 2012 survey suggested that the state should increase the minimum driving age from 14 to 16, ostensibly to reduce the total number of young drivers on South Dakota's roadways.

Table 14 provides yearly counts and annual change figures of drivers under 21 involved in traffic crashes resulting in at least one fatality. As can be seen from the table, the number of drivers under 21 involved in fatal crashes declined by 36.4% since last year.

Table 14. Drivers Under 21 Involved in Fatal Crashes: 2007-2011

	Drivers Under 21	Annual % Change
2007	24	-29.4%
2008	22	-8.3%
2009	20	-9.1%
2010	22	+10.0%
2011	14	-36.4%
		Total Change = -35.3%

Table 15 presents additional data describing the proportional involvement of young drivers in traffic crashes in South Dakota. This table suggests that the relative level of involvement of drivers under 21 in both total crashes and fatal crashes continues to be relatively stable. Although a marginally lesser proportion of *total* crashes in 2011 included a young driver than did crashes in 2010, the proportional involvement of such drivers in *fatal* crashes has dropped by a larger absolute magnitude.

Table 15. Traffic Crashes Involving Drivers Under Age 21: 2007-2011

	Total Crashes	Total Crashes Involving Driver Under 21	% of Total Crashes Involving Driver Under 21	Total Fatal Crashes	Fatal Crashes Involving a Driver Under 21	% of Fatal Crashes Involving a Driver Under 22
2007	16,220	4,225	26.0%	130	23	17.7%
2008	15,908	4,052	25.5%	109	21	19.3%
2009	16,996	4,206	24.7%	112	19	17.0%
2010	17,624	4,210	23.9%	124	22	17.7%
2011	17,359	3,992	23.0%	101	13	12.9%

Table 16 presents fatality rates, expressed as fractions of total in-state population counts, for years 2007-2011. This table indicates that 18 fatalities resulted in 2011 from traffic crashes involving a driver under 21 years old. Additionally, the 2011 fatality rate of 2.18 fatalities per 100,000 in population is the lowest of the five year period.

Table 16. Fatalities per 100,000 In-State Population from Crashes Involving a Driver Under 21: 2007-2011

	Population Estimate	Fatalities from Crashes Involving a Driver Under 21	Per 100,000 Population
2007	795,689	27	3.39
2008	804,194	23	2.86
2009	812,383	22	2.71
2010	814,180	23	2.82
2011	824,082	18	2.18

Of the 16 drivers under age 21 involved in fatal traffic crashes in 2011, 7 of them (43.7%) were killed. 12 (75%) were from South Dakota. 12 of the 16 (75%) were male, and 5 (31.3%) recorded a positive blood alcohol content reading.²³ 15 of the 16 drivers (93.8 %) were operating a passenger vehicle, while one was driving a motorcycle. Among all passenger vehicle occupants age 20 or younger involved in traffic crashes in 2011, 15 were killed (and 162 were seriously injured.) 9 of the passenger vehicle occupants age 20 or younger who were killed in 2010 were unrestrained.

²³ In the case of these drivers, a positive blood alcohol content reading is defined as a recorded BAC level of .02 or above.

C10: NUMBER OF PEDESTRIAN FATALITIES

2012 Performance Goal

Goal Statement: Reduce pedestrian fatalities 33 percent from the 2010 calendar base year figure of 9 to 6 by December 31, 2012.

Current Value: 7

Current Status: *Not met*

2013 Performance Goal

- Reduce pedestrian fatalities 14 percent from the 2011 calendar base year figure of 7 to 6 by December 31, 2013.

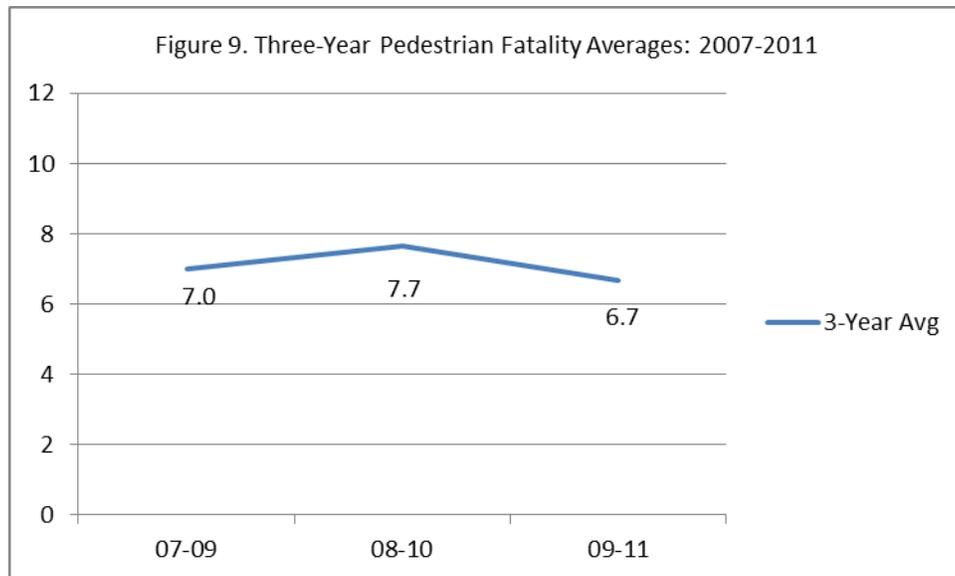
Key Observations

- Since 2007, the number of annual pedestrian fatalities in South Dakota has fluctuated around an average of 7.4 fatalities per year; 7 were reported in 2011, down from 9 the previous year.
- As has been the case since 2008, pedestrian injury outcomes were more dire in rural areas. While 15.8% of rural traffic crashes involving a pedestrian resulted in a pedestrian fatality, 5.1% of analogous urban crashes resulted in a pedestrian death (even though urban areas produced considerably more pedestrian-involved traffic crashes).

Recent Data

Urban streets and roadways constituted only 3.6% of all road miles in South Dakota in 2011. Given the distinctly rural character of the state's motor vehicle infrastructure, it may be argued that opportunities for precarious pedestrian-motor vehicle interaction are relatively less plentiful in South Dakota than in more urbanized states. Indeed, pedestrian fatalities are highly uncommon in South Dakota. Only 44 pedestrian fatalities were recorded in the state from 2006 through 2011. This includes 7 such fatalities in 2011, a decrease from the previous year and slightly lower than the five year average. Since 2006, the number of annual pedestrian fatalities has fluctuated around an average of 7.4 fatalities per year; a five-year low of 4 fatalities was recorded in 2009.

Figure 9 presents trend data for pedestrian fatalities from 2007–2011, as expressed by three-year averages.



Although the picayune numeric values presented in the following discussion should discourage against generalization, detailed figures will nonetheless be reported. In 2011, 115 traffic crashes occurred that involved at least one pedestrian. These crashes resulted in 7 fatalities, 31 serious injuries, and 60 other injuries. No traffic crashes produced multiple pedestrian fatalities. Only one of the seven fatalities occurred during the March to August period; two were in September, one was in October, two were in November, and one was in December. The average age of pedestrians suffering a fatality was 33.5. The youngest pedestrian killed was 5, the oldest was 57. Three of those killed were reported to have used alcohol immediately prior to the crash incident; all seven were residents of South Dakota.

In the context of pedestrian involvement in traffic crashes, a key disparity can be observed in crash outcomes between urban and rural settings, a distinction that is likely attributable to systematic rate-of-travel differences and subsequent crash intensity. In 2011, three of the seven pedestrians were killed in rural areas, while four were killed on urban roadways. By contrast, 82.4% (75 of 91) of non-fatal injuries were sustained in urban areas. On urban roadways, 63.3% of pedestrian injury outcomes were classified as non-serious injuries, 5.1% as fatalities; to the contrary, only 52.6% of pedestrian outcomes in rural areas were non-serious injuries, while 15.8% were fatalities. While the differences are not as striking as the data from 2009 or 2010, these figures still suggest that urban roadways produce a far greater proportion of pedestrian injuries than do rural areas, but the risk of sustaining an actual fatality (as opposed to a non-fatal injury) are much higher for pedestrians in rural areas. This is likely due to the higher maximum allowable speed limits in rural versus urban areas.

Tables 17 and 18 provide tabular summaries of data regarding pedestrian fatalities and injuries by location type.

Table 17. Pedestrian Fatalities and Injuries by Location: 2011.

	Rural Roadways	Urban Roadways	Total
Fatalities (%)	42.8%	57.1%	100.0%
Fatalities (n)	3	4	7
Non-fatal Injuries (%)	17.6%	82.4%	100.0%
Non-fatal Injuries (n)	16	75	91

**** (Rural + Urban fatalities/injuries may not add to total, because some accident reports include no rural/urban designation**

Table 18. Pedestrian Injury Outcomes by Location: 2011

	Fatalities	Serious Injuries	Other Injuries	Total
Rural (%)	15.8%	31.6%	52.6%	100.0%
Rural (n)	3	6	10	19
Urban (%)	5.1%	31.6%	63.3%	100.0%
Urban (n)	4	25	50	79

**** (Rural + Urban fatalities/injuries may not add to total, because some accident reports include no rural/urban designation**

Finally, Table 19 displays pedestrian fatality counts indexed to statewide population figures. Although no linear pattern is apparent for this measure, it can be seen that over the five most recent years, roughly 1-2 pedestrians per 100,000 in-state population have been killed in motor vehicle crashes each year. The 2011 figure of 0.85 shows a decrease from the 2010 figure of 1.11 and is still slightly less than the five year average of 0.91. In general, these rates are comparable to South Dakota's similarly-populated neighbor states.²⁴

Table 19. Pedestrian Fatalities per 100,000 In-State Population: 2007- 2011

	Population Estimate	Pedestrian Fatalities	Per 100,000 Population
2007	795,689	7	0.88
2008	804,194	10	1.24
2009	812,383	4	0.49
2010	814,180	9	1.11
2011	824,082	7	0.85

²⁴ 2011 pedestrian fatality data from these states was not available at time of printing. 2010 pedestrian deaths per 100,000 in-state population were calculated as follows: North Dakota 1.04, Montana .81, and Wyoming .53. Source: FARS, US Census Bureau.

2012 Performance Goal

Goal Statement: Increase statewide observed seat belt use of front seat outboard occupants in passenger vehicles 1.5 percentage points from the 2010 calendar year base year average usage rate of 74.5 percent to 75.25 percent by December 31, 2012.

Current Value: 73.4

Current Status: Not met

2013 Performance Goal

- Increase statewide observed seat belt use of front seat outboard occupants in passenger vehicles 1.5 percentage points from the 2011 calendar year base year average usage rate of 73.4 percent to 74.9 percent by December 31, 2013.

Key Observations

- The 2011 estimate for statewide estimated safety restraint usage on all road types was 73.4%, a slight, but statistically significant decrease from 2010 (74.5%).

Recent Data

As revealed by the 2013 Highway Safety Behaviors Survey, motorists in South Dakota appear not only to hold a generally favorable view of seatbelts, but also to use them with considerable frequency. Results from this questionnaire show that 71.6% of motorists reported wearing seatbelts "all of the time" while driving, with another 15.2% reporting seatbelt use "most of the time." 91.7% of respondents agree that they would want to be wearing a seatbelt in the event of an accident, and 69.3% disagree that seatbelts are as likely to harm vehicle occupants as to help them. Public awareness of the state's statutory parameters is also reasonably strong. Across all respondents, 89.2% reported knowing that South Dakota has a law requiring seatbelt use, although participants tended to be unsure of the law's finer points.²⁵ 61.5% of respondents recalled seeing a public message encouraging seatbelt use in the previous 30 days; the analogous figure among drivers ages 30 and under was 79.7%. Finally, a majority (55.6%) of survey participants estimated that the failure to wear a seatbelt is either somewhat likely or very likely to result in receiving a ticket from law enforcement authorities. Taken as a whole, these findings seem to portend diligent use of seatbelts by in-state motorists.

In June of 2011, the state of South Dakota conducted a statewide observational survey following methodological guidelines spelled out in NHTSA's Uniform Criteria for State Observational Surveys of Seat Belt Use. The underlying purpose of this annual survey is to observe safety restraint use of all drivers, right front passengers, and children under the age of five, traveling on rural and urban highways and interstates. Also, starting in 2009, the analytic focus of South Dakota's annual survey was expanded to include an

²⁵ In all, 40.9% believed that the state's seatbelt law defines the failure to wear a seatbelt as a primary offense, while 40.4% stated (rightly) that it is a secondary offense; 18.7% were uncertain.

examination of helmet use by motorcycle occupants on state roadways. The *2011 South Dakota Statewide Seatbelt and Motorcycle Helmet Use Survey Final Report*, which was prepared for and funded by the South Dakota Office of Highway Safety, serves as the primary source document for all information presented in this section.

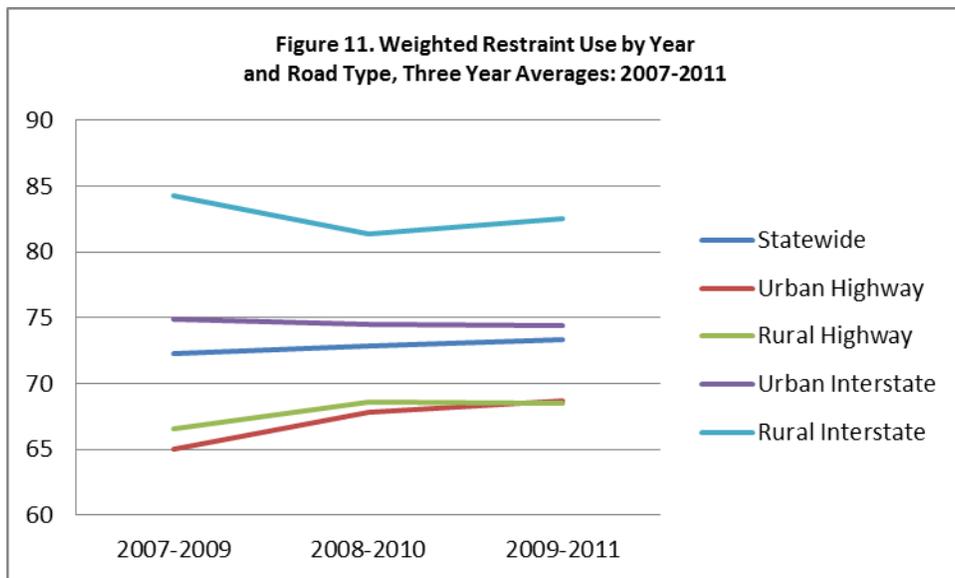
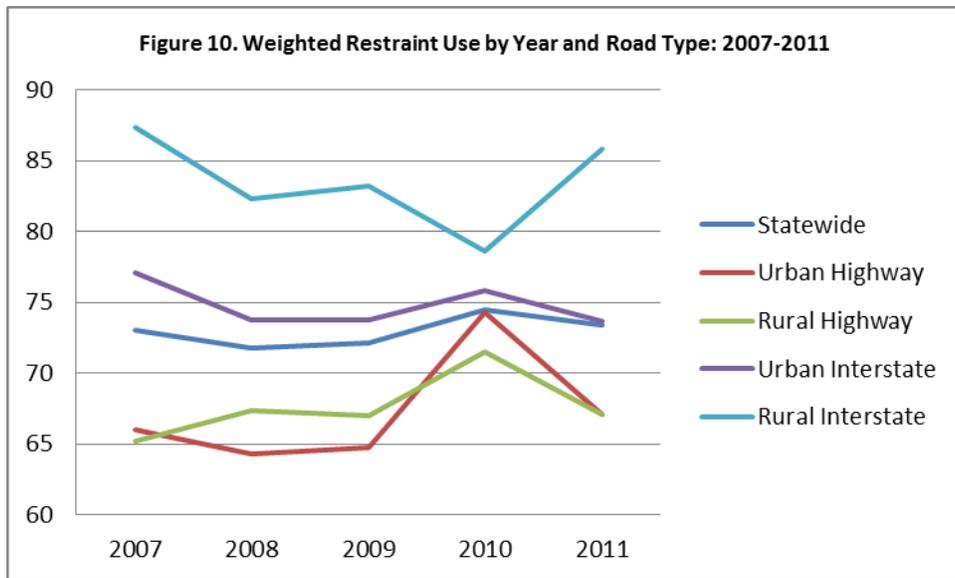
A multi-stage cluster approach was used in order to mitigate the state’s uneven population distribution. The sampling pool was thus reduced to thirteen of the state’s largest counties, which together account for roughly 85% of the total population. Also, by permission from the NHTSA regional survey design advisor, the number of sampled road segments per county was lowered to seventeen or fewer, due to limited VMT estimates in South Dakota.

From the thirteen counties selected from the sampling pool, a total of 9,846 automobile occupants and 2,261 motorcycle occupants were observed. After weighing the four road type averages to account for VMT, the 2011 statewide estimated safety restraint use on all road types was 73.4%. This represents a statistically significant decrease of 1.1 percentage points from the 2010 statewide weighted estimate of 74.5%. However, it should be noted that the 2010 estimate of 74.5% was the highest rate ever achieved in South Dakota Surveys and the 2011 figure is still higher than the analogous figure for 2009. This observed overall rate of seatbelt use also corresponds with reasonable closeness to the self-reported rates reflected in the 2012 Highway Safety Behaviors Survey. Table 20 and Figure 10 exhibit the weighted restraint use for each road type from 2007 through 2011.

Table 20. Weighted Restraint Use by Year and Road Type: 2007-2011

	Statewide	Urban Highway	Rural Highway	Urban Interstate	Rural Interstate
2007	73.0	66.0	65.2	77.1	87.4
2008	71.8	64.3	67.4	73.8	82.3
2009	72.1	64.8	67.0	73.8	83.2
2010	74.5	74.3	71.5	75.8	78.6
2011	73.4	67.1	67.1	73.7	85.8
% Change ('09 to '10)	-1.1%	-7.2%	-4.4%	-2.1%	+7.2%

Safety restraint use on three of the four road types decreased from 2010 estimates, while the figure for the rural interstates increased substantially. Figure 11 exhibits the three-year moving averages from 2007 to 2011, statewide, and for each road type. It should be noted that the subtle directional disagreement among recent years between Figures 10 and 11 is due to simple arithmetic properties associated with three-year moving average calculations.



South Dakota’s safety restraint usage can be examined by vehicle type and age group. As seen in Table 21, of vehicles observed (27.5%) were in the pickup category. Of these, only 57.6% of motorists were wearing some form of safety restraint. This is a slight increase from the 2010 figure of 56.7%, the year pickups became a separate observational category. However, seat belt usage for pickup occupants remains substantially lower than that of other vehicle types. The group including vans, minivans, and station wagons showed the highest restraint use, at 79.5%.

Table 21. Unweighted Restraint Use by Vehicle Type, 2011

	Seatbelt	Child Restraint	None	Total
Cars	2,644 71.4%	30 0.8%	1031 27.8%	3,705 100.0%
Vans	1,086 79.5%	18 1.3%	279 20.2%	1,383 100.0%
SUVs	1,489 72.1%	15 0.7%	554 26.9%	2,058 100.0%
Pickups	1,558 57.6%	7 0.3%	1,141 42.2%	2,706 100.0%
Total	6,777 68.8%	70 0.7%	3,005 30.5%	9,852 100.0%

Table 22 displays a breakout of unweighted restraint usage by age group. Children judged to be ages 0-4 were observed to use appropriate safety restraints at a rate of 82.4%, up slightly from the 2010 rate of 82.0%. Of children judged to be ages 5-13, 68.4% used seatbelt but none were observed using a child restraint. Of children judged to be age 14-17, 72.1% used a seatbelt, a slight increase from the 2010 rate of 68.7%. Finally, seatbelt usage for those 18 and over demonstrated a slight decrease from 2010 (69.8%) to 2011 (69.1%).

Table 22. Unweighted Restraint Use by Age Group, 2011

	Seatbelt	Child Restraint	None	Total
0-4 years	7 8.2%	70 82.4%	8 9.4%	85 100.0%
5-13 years	65 68.4%	0 0.0%	30 31.6%	95 100.0%
14-17 years	604 72.1%	0 0.0%	234 27.9%	838 100.0%
18 years and over	6,092 69.1%	0 0.0%	2,729 30.9%	8,831 100.0%
Total	6,768 68.8%	70 0.7%	3,001 30.5%	9,839 100.0%

Helmet use by motorcycle occupants was gauged for the first time in 2009. Following the same general analytic strategy employed for measuring safety restraint use among automobile passengers, survey workers also made observational estimates of helmet use by motorcycle drivers and passengers. Altogether, the 2011 overall unweighted estimate for helmet use by motorcycle occupants is 50.8%, a slight but statistically significant decrease from the 2010 figure of 53.4%. Drivers were found to use helmets at a rate of only 40.3%, as opposed to a rate of 50.7% among passengers. Low rates of helmet use further appear to be associated with increased age and in-state (versus out-of-state) license status. Examined by road type, helmet use was found to be highest on rural interstates (65.9%), followed by rural highways (45.6%), urban highways (41.5%), and urban interstates (37.9%).

OTHER ONGOING PERFORMANCE MEASURE REPORTING EFFORTS

Continuing with the 2013 Annual Report, and in strict compliance with requirements stipulated by the National Highway Traffic Safety Administration, the S.D. Office of Highway Safety will report on core activity measures A1, A2, and A3, as defined in the Traffic Safety Performance Measures for States and Federal Agencies manual. These performance measures are based respectively on the number of seatbelt citations issued, number of impaired driving arrests made, and number of speeding citations issued through grant-funded enforcement activities. Additionally, these core activity measures will supplement ongoing reporting of core outcome and core behavior measures.

2013 HIGHWAY SAFETY PLAN BUDGET SUMMARY

GTS/ PROJECT #	PROJECT NAME	402 Funds	408 Funds	410 Funds	2010 Funds	164 Funds
A. OCCUPANT PROTECTION						
OP-26-02	Seat Belt Survey	\$ 40,665				
B. ALCOHOL/IMPAIRED DRIVING						
164AL-20-01/02	Parents Matter-Prairie View					\$ 159,000
164AL-20-03	Traffic Safety Resource Pros					\$ 145,000
164AL-20-04	SDSU Safe Ride					\$ 58,201
164AL-20-05	USD Safe Ride					\$ 24,948
164AL-20-06	SDSMT Safe Ride					\$ 44,845
164AL-20-07	Minnehaha Co DUI Prosecutor					\$ 79,265
164AL-20-08	Pennington Co DUI Prosecutor					\$ 88,163
K8-20-09	Stop DUI-5th Circuit			\$ 140,354		
K8-20-10	Stop DUI-6th Circuit			\$ 102,157		
K8-21-02	SDHP Crash Reduction			\$ 201,525		
K8-21-05	Traffic Enforcement Training			\$ 14,600		
K8-21-08	SDHP DRE School			\$ 75,143		
K8-21-09	Sioux Falls PD			\$ 444,480		
164AL-24-02	DSS Prevention Program					\$ 106,000
164AL-26-01	Mountain Plains Evaluation					\$ 154,890
K8FR-27-02	Law Enforce Camera Purchase			\$ 88,750		
K8FR-27-03	Law Enforce PBT Purchase			\$ 41,800		
K8HV-27-06	Alcohol Impaired Enforcement			\$ 195,710		
K8FR-27-09	Law Enforcement - Other			\$ 8,370		
C. SPEED						
SE-27-01	Speed Enforcement Equipment	\$ 287,107				
D. POLICE TRAFFIC SERVICES						
PT-21-01	SDHP Crash Reduction Project	\$ 270,371				
PT-21-04	Traffic Enforcement Training	\$ 29,200				
PT-21-06	Law Enforcement Liaisons	\$ 70,000				
PT-21-09	Sioux Falls PD	\$ 23,744				
PT-27-01	Speed Equipment Purchase	\$ 287,110				
PT-27-05	LE Speed Enforcement	\$ 245,125				
PT-27-06	Law Enforcement - Other	\$ 19,028				

E. MEDIA						
SA/PM-28-01/02	Media Campaigns	\$ 200,000				
K8HV-28-03	Media Campaigns			\$ 200,000		
SA-28-04	Public Information Officer	\$ 75,000				
K8HV-28-05	SD Broadcasters			\$ 200,000		
SA-28-06	SD Broadcasters	\$ 150,000				
F. SAFE COMMUNITIES						
SA-24-01	Volunteers of America	\$ 109,787		\$ 50,000		
SA-24-05	Community Outreach	\$ 85,000				
K8-29-01	Youth Simulator Project			\$ 67,324		
G. MOTORCYCLE SAFETY						
K6-25-01	Motorcycle Safety				\$ 100,000	
H. PEDESTRIAN & BICYCLES						
SA-24-04	SDEMSC Bike Safety	\$ 35,000				
PS-21-08	Rapid City Pedestrian Campaign	\$ 40,000				
I. OTHER						
EM-23-01	EMS Training	\$ 249,463				
SA-24-03	USD Business Research	\$ 50,000				
RS-30-01	Roadway Safety Committee	\$ 5,000				
SA-30-02	Teen Driving Task Force	\$ 5,200				
PA-31-01	P&A	\$ 100,000				
164HE-32-01	DOT Hazard Elimination					\$ 5,000,000
J. DATA AND TECHNOLOGY						
K9-26-03	TraCS/Web TraCS		\$ 250,000			
K9-26-04	NEMSIS		\$ 25,800			
K9-26-05	Driver Licensing		\$ 250,000			
K9-26-06	CAD/RMS System		\$ 30,000			
	TOTALS	\$ 2,376,800	\$ 555,800	\$ 1,830,213	\$ 100,000	\$ 5,860,312

