2008 South Dakota

Statewide Seatbelt Survey

Final Report

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2008 SOUTH DAKOTA STATEWIDE SEATBELT SURVEY

SUMMARY

A statewide observational survey of seatbelt use on South Dakota (SD) roads was conducted in June of 2008. Seatbelt use and other demographic data were recorded from motorists traveling along a selected sample of South Dakota roadways, which included rural and urban highways and interstates in 13 South Dakota counties. Data were recorded from all drivers, right front passengers of any age, and additional children under age 5 in the front or back seat. A total of 9,796 motorists were observed.

Weighted Statewide Estimates

A statewide estimate of 71.8% restraint use was observed for drivers and right front passengers, weighted for road type and vehicle miles traveled at observation sites. This number was statistically significantly lower than the weighted statewide estimate of 73.0% obtained in 2007. However, the 2008 statewide rate of 71.8% was statistically higher than the 2006 statewide estimate of 71.3%.

The 2008 weighted statewide estimates for seatbelt showed decreases from the previous year for three road types: 64.3% for urban highways (compared to 66% for 2007), 73.8% for urban interstates (compared to 77.1% in 2007), and 82.3% for rural interstates (compared to 87.4% in 2007). However, a positive finding was that seatbelt use increased 2.2% points for rural highways (67.4% in 2008 from 65.2% in 2007).

Unweighted Estimates

<u>Seatbelt Use Rate for Total Number of Occupants</u>

Results showed that for direct or unweighted observations, 70.5% of all observed occupants were wearing a seatbelt or child restraint. This unweighted percentage is higher than the unweighted rate of 67.7% observed in 2007. However, the weighted rate comparisons showing a slight decrease in rates from the past year take precedence over the unweighted observations showing a slight increase.

<u>Seatbelt Use Rates by County</u>

The seatbelt use rates for counties by descending population size were: Minnehaha - 80.3%; Pennington - 70.0%, Brown - 58.5%, Lawrence - 62.8%, Davison - 65.4%, Beadle - 76.8%, Hughes - 57.6%, Union - 96.6%, Charles Mix - 48.0%, Grant - 82.8%, Fall River - 64.1%, Tripp - 66.4%, and Kingsbury - 76.5%.

Minnehaha county, with the state's largest city of Sioux Falls, increased its seatbelt use rate to 80.3% from a rate of 77.1% in 2007. Beadle county had a substantial increase of 12% points (76.8% in 2008 from 65% in 2007). Seatbelt rates in Charles Mix county appeared to increase by 12% (48% in 2008 from 36% in 2007.) However, the 2007 Charles Mix rate was suspect due to a delayed survey. Tripp County showed a 10% increase (66% in 2008 from 56% in 2007). Hughes, Kingsbury, and Grant counties all increased their 2008 rates by 5% or 6% points from the previous year.

Union county, with proximity to Sioux City, Iowa, maintained the statewide high with a rate of 96.6%. However, this rate was slightly lower than the 2007 rate of 97.6%. The rate in Pennington county, with the large population center of Rapid City, dropped slightly to 70.0% from 71.5% observed in 2007. Rates in Lawrence and Brown counties also dropped a few percentage points from 2007. Fall River county's rate dropped 5% points (64.1% in 2008 vs. 69% in 2007.) The seatbelt use rate for Davison County dropped by 11% points (65.4% in 2008 from 76.1% in 2007.)

Seatbelt Use Rates by Age Group

The 2008 unweighted restraint use rates for young riders remained considerably higher than the adult usage rates. Of a sample of 159 children who appeared to be under age 5, 80.5% were restrained in either a child safety seat or a seatbelt. This rate is slightly lower than the observed rate of 82.7% in 2007.

However, one of the most positive findings of the survey is that seatbelt use by older children and teens reached new highs this year. Restraint usage rate for the 92 children judged to be 5-13 years of age increased substantially to 73.9% from the rate of 59.3% observed in 2007. The rate for 705 teens judged to be 14-17 years old also increased substantially to 67.8% from 55.5% in 2007. Of adults judged to be 18 years and older, 70.5% were using a safety restraint, representing a slight increase from the 2007 rate of 68.5%.

Seatbelt Use Rates by Driver/Passenger, Vehicle Type, In-Out of State License

Similar to previous years, more right front seat passengers (73.1%) than drivers (69.1%) were wearing restraints. Occupants of vans and station wagons had the highest use rates (82.8%), followed by those in SUVs (75.7%) and cars (73.3%). Pickup truck occupants had the lowest usage rate of 55.3%. Also similar to previous years, it was found that a higher percentage of occupants of out-of-state vehicles (79.3%) wore restraints than did occupants of vehicles with South Dakota license plates (68.9%).

Introduction

Despite tremendous strides in automobile safety, motor vehicle crashes remain a persistent cause of injury and death. In 2003, crashes were ranked as the leading cause of death for every age from 3 years through 33 (as cited in Nambisan & Vasudevan, 2007.) According to the National Highway Traffic Safety Administration (NHTSA), using a seatbelt or child restraint is the single most effective thing Americans can do to reduce risk. It is estimated that wearing a seatbelt can increase the chance of surviving a potentially fatal crash by 45% to 73%, depending upon the type of vehicle and the position of the occupant (Blincoe, et al., 2002). As cited in Nambisan and Vasudevan, 2007, the NHTSA estimated that economic losses and lost productivity related to fatalities and serious injuries of unbelted occupants in crashes from 1975 to 2002 amounted to $913 billion.

Nationwide, seatbelt use rates have climbed from about 17% in 1983 to 75% in 2002 (Houston & Richardson, 2005). Rates reached a record high in of 82% in 2005 and then dipped slightly to 81% in 2006 (NOPUS, 2006). In 2007, the nationwide usage estimate for front seat passengers was 82%, representing a slight increase from the rate of 81% observed the previous year (Ye & Pickrell, 2008). Despite the overall upward trends in seatbelt use, there remains significant variation among the states. For example, in 2002, Washington state had a rate above 90%, while Massachusetts' rate was only 51% (Houston & Richardson, 2005). In 2007, statewide seatbelt usage rates ranged from 63.8% to 97.6%, with 12 states having usage rates over 90% (NHTSA, 2008).

Many factors influence the use of seatbelts in any given area. Seatbelt use varies by state population size, with rural states tending to have lower rates than urban (NHTSA, 2005b). Seatbelt use rates vary by the type of vehicles driven in a region, with lower seatbelt use associated with the use of pickups and trucks (NHTSA, 2004a). One of the strongest determinants of seatbelt use is the presence of a state seatbelt law. Houston and Richardson (2005) found that states with a primary law in which occupants can be cited directly for failure to wear seatbelts had seatbelt rates 9% higher than states with secondary laws in which an occupant can only be cited if he/she has been stopped for another cause.

Seatbelt use in the state of South Dakota is the subject of this report. According to NHTSA (2006), drivers and passengers in a rural state like South Dakota are at a higher risk of being involved in a fatal motor vehicle crash. However, like many other rural states, South Dakota has historically had lower seatbelt use rates than urban states. In the 1990's, for example, seatbelt use rates by South Dakota vehicle occupants were in the 40% to low 50% range (Struckman-Johnson, et al., 1998). Besides being a rural state, South Dakota also has a large proportion of residents who drive pickups and trucks, vehicle types associated with lower seatbelt use rates.

However, South Dakota is also a state with seatbelt laws, a factor known to increase seatbelt use. Since 1984, South Dakota has mandated that child passengers under age 5 or weighing less than 40 pounds must be in a safety restraint. In January,1995, South Dakota mandated restraint usage by front seat motor vehicle occupants (DOT, 2002). On July 1, 2001, the State mandated primary enforcement of seatbelt use for all passengers under the age of 18 years. This year on July 1, the mandated penalty associated with a seatbelt violation increased from $20 to $25.

Thus, South Dakota remains a state where many contrasting factors influence trends of seatbelt use. These trends have been monitored since the fall of 1998 when through a national initiative by NHTSA, the South Dakota Office of Highway Safety commissioned associates of the Human Factors Laboratory (HFL) at the University of South Dakota to conduct a statewide probability-based survey of seatbelt use. The survey was repeated in the fall of 2000 and 2001, and annually each summer from 2002 to the present summer of 2008. This report presents the methods, procedures and results of the 2008 Statewide South Dakota Seatbelt Survey.

Methods

The methods used in this study were designed according to federal guidelines established by NHTSA and were originally implemented in the1998 South Dakota Statewide Seatbelt Survey. The methods and procedures described below are in compliance with the “Uniform Criteria for State Observational Surveys of Seat Belt Use”, published in the Federal Register on September 1, 1998 (63 F.R. 463389). The design was modified in the 2000 survey in an effort to increase the observations for children under the age of 5 years.

Survey Design: Stage 1

This study utilized the geographic sampling techniques and road segment sites established in the 1998 survey. The first step was to select geographic areas for sampling of traffic. South Dakota is a state with less than 800,000 citizens residing in 66 counties. The population is not evenly distributed throughout the state, as 50% of the citizens live in eight counties with urban centers. Many of the remaining 58 counties have low populations residing in largely rural areas.

Because it is difficult to sample traffic in all areas of a state with a low population, a “multi-stage cluster approach” was utilized. In this plan recommended by NHTSA guidelines, sampling can be restricted to the counties that account for 85% of the state’s population. Therefore, the sampling pool was comprised of the 33 largest counties in South Dakota that account for 85% of South Dakota’s population. Table 1 shows the eligible counties in ascending order according to population size.

Table 1: Largest South Dakota Counties Accounting for 85% of the State Population

	County	Population	% of State	Cumulative %
1-33				14.44%
34	Dewey	5668	0.77%	15.21%
35	McCook	5686	0.77%	15.98%
36	Kingsbury	5830	0.79%	16.77%
37	Day	6421	0.87%	17.64%
38	Moody	6538	0.89%	18.53%
39	Tripp	6883	0.93%	19.46%
40	Custer	6966	0.94%	20.40%
41	Fall River	7123	0.97%	21.37%
42	Bon Homme	7677	1.04%	22.41%
43	Spink	7700	1.04%	23.45%
44	Grant	8048	1.09%	24.54%
45	Hutchinson	8102	1.10%	25.64%
46	Turner	8633	1.17%	26.81%
47	Butte	8926	1.21%	28.02%
48	Todd	9296	1.26%	29.28%
49	Charles Mix	9493	1.29%	30.57%
50	Roberts	9973	1.35%	31.92%
51	Lake	10,647	1.44%	33.36%
52	Union	11,959	1.62%	34.98%
53	Shannon	12,010	1.63%	36.61%
54	Clay	15,370	2.08%	38.69%
55	Hughes	15,404	2.09%	40.78%
56	Beadle	17,976	2.44%	43.22%
57	Davison	18,807	2.55%	45.77%
58	Lincoln	20,152	2.73%	48.50%
59	Yankton	21,013	2.85%	51.35%
60	Meade	21,999	2.98%	54.33%
61	Lawrence	22,131	3.00%	57.33%
62	Codington	25,452	3.45%	60.78%
63	Brookings	26,186	3.55%	64.33%
64	Brown	35,701	4.84%	69.17%
65	Pennington	87,190	11.81%	80.98%
66	Minnehaha	140,518	19.04%	100.00%
	TOTAL	737,973		

Table 2: Selected Counties and Their Populations

	County	Population
1.	Minnehaha	140,518
2.	Pennington	87,190
3.	Brown	35,701
4.	Lawrence	22,131
5.	Davison	18,807
6.	Beadle	17,976
7.	Hughes	15,404
8.	Union	11,959
9.	Charles Mix	9493
10.	Grant	8048
11.	Fall River	7123
12.	Tripp	6883
13.	Kingsbury	5830

According to NHTSA guidelines, a sample of 13 counties could be drawn for a state with at least 85% of the population residing in 30 – 39 counties. The two largest counties in the state were selected and the remaining 11 counties were randomly drawn. Although Hutchinson County was initially drawn for the sample, it was learned that the county would be undergoing a local seatbelt survey in the fall of 1998. Therefore, Tripp County was substituted. Table 2 lists the counties that were selected and their corresponding populations.

Survey Design: Stage 2

The second stage of the study was to select the sample of road segments to be surveyed within the thirteen counties. According to NHTSA guidelines, road segments must be drawn from roads that have an adequate level of traffic based upon Vehicle Miles Traveled (VMT) estimates. Initially, it was estimated that there were an average number of 50 road segments available for sampling in the South Dakota counties. According to the NHTSA guidelines, 19 road segments can be sampled from a base of 50 road segments per county.

However, assessment of 1998 VMT estimates for South Dakota roadways revealed that only an average number of 27 road segments were available for sampling in the 13 counties. (Relative to other states, South Dakota has a limited number of roadways for which VMT estimates are recorded.) Therefore, permission was received from the NHTSA regional survey design advisor to sample 17 or fewer road segments per county.

In order to select the road segments, maps of roadways and VMT estimates per roadway segments for the 13 counties were obtained from the South Dakota Department of Transportation, Division of Planning and Engineering. Roadways were divided into four classifications:

Urban Interstate
Urban Highway -- principal and minor highways within designated urban areas (5,000 + population)
Rural Interstate
Rural Highway -- principal and minor highways outside of urban areas.

Following recommendations from the NHTSA regional survey design advisor, road segments for urban interstate and urban highways were measured in one mile units, whereas road segments for rural interstate and rural highways were measured in ten mile units. VMT estimates were calculated for each road segment chosen. Road segments with unacceptably low VMT estimates were excluded. Once all of the roadways in a county were divided into eligible segments, a random numbers program was used to select 17 segments for sampling.

The random selection procedure was restricted by the roadway classification of a segment so that the number of segments chosen would be proportionate to the total VMT traveled on a roadway type for that county. For example, in Minnehaha County, the proportions of total vehicle miles traveled by roadway type were:

23% for Urban Interstate
43% for Urban Highways
25% for Rural Interstate
10% for Rural Highways.

Therefore, the drawing of selected road segments was restricted to:

4 Urban Interstate sites (about 23% of 17 sites)
7 Urban Highway sites (about 43% of 17 sites)
4 Rural Interstate sites (about 25% of 17 sites)
2 Rural Highway sites (about 10% of 17 sites).

The procedure described above was applied individually to the 13 counties for final selection of the 17 road segments. Five counties (Brown, Davison, Grant, Kingsbury, and Tripp) had only 13 to16 road segments chosen because of a limited number of roadways with VMT data available.

The last step in the road segment selection process was to designate a seatbelt observation site within each of the 205 selected road segments. Whenever possible, the observation site was placed at an intersection in which vehicles slowed or stopped for a traffic signal or sign. This allowed for accurate and safe viewing of seatbelt use by the Observers. See Appendix A for a list of the observation sites by mile marker and probability of selection in counties by the four roadway types.

Sampling Time Periods

Six 90-minute blocks of daylight time were scheduled for seatbelt observations. One observation time period was 40 minutes. Including travel time, six sites could be observed in a single day. A county could therefore be surveyed in a four-day period. To minimize travel time and distance required to conduct the survey, some sample sites were grouped into geographic clusters. A day of the week to begin data collection was assigned to a cluster. Within a cluster, each road segment was randomly assigned to the available time slots. The time blocks were:

1) 7:30AM - 9:00AM
2) 9:00AM - 10:30AM
3) 10:30AM - 12 noon
4) 12 noon - 1:30PM
5) 1:30PM - 3:00 PM
6) 3:00PM - 4:30PM

Sample time periods were scheduled for two week days and for Saturday and Sunday.

Sample Size

Based on previous observational surveys in South Dakota, it was estimated that approximately 10,000 vehicle observations would be collected from the 205 sites. This sample size allows one to be 95% confident that the numbers reported would be within 1% of the actual values -- an acceptable margin of error according to NHTSA guidelines.

Data Collection

The original 1998 data collection form was designed for recording seatbelt use (yes or no) by front seat drivers and right-side passengers of each vehicle observed in the survey. For the 2000 survey, the data collection form was modified to measure seat belt and child restraint use of all child passengers between 0-4 years of age, front or back seat. This change was implemented in all subsequent surveys.

The form allowed collection of other information of interest to the South Dakota Office of Highway Safety, including estimated age of drivers and passengers, in- or out-of-state vehicle license plate, and type of vehicle such as car, van or SUV. In 2007, the form was modified to provide a separate category for pickup trucks. Demographic data were also collected for each vehicle observation period including county, site number, time of day, date, observer initials, and roadway type. A copy of this modified form is on the last page of the Observer Manual in Appendix B.

Observers, Observation Procedures, and Observer Training

One or two Observers are typically assigned to a county. In the 1998 through 2004 surveys, Observers were primarily members of a retired senior citizens group with a background in driver education. Since the 2005 survey, Emergency Medical Technicians (EMT's) were contracted by the SD Office of Highway Safety to be Observers. A majority of the 2008 EMT Observers had participated in the 2005, 2006, and 2007 surveys and were expert observers.

Observers received: 1) a descriptive list and maps of the site locations in their respective counties; 2) a four-day schedule during the first week of June for completing one observation period at each site in their county; 3) an instruction manual explaining how to conduct roadside observations; and 4) coding sheets for recording data. Observers were instructed to read the manual and engage in a practice period with local traffic. The EMT observer supervisor participated in a training conference call with researcher Cindy Struckman-Johnson arranged by the Office of Highway Safety. Cindy Struckman-Johnson arranged additional training calls with four new Observers.

Observers were instructed to follow their observation schedules as closely as possible. In the event that Observers could not complete a scheduled site due to weather or other problems, they were instructed to use alternative times presented on their observation schedule. Upon arrival at a site, Observers were asked to find a safe viewing place. They were to station themselves so that they could view traffic traveling in a pre-designated direction on the pre-designated roadway.

Observers were instructed to monitor every vehicle if the traffic flow was regular or light, and every other vehicle if the traffic flow was heavy. Observers monitored traffic for 40 minutes of the 90-minute observation period, and used the remaining minutes to travel to the next observation point. The data collection procedures are explained in detail in the "Observer Manual – 2008 South Dakota Seatbelt Survey" in Appendix B.

Review of Data

Data were screened using methods similar to previous years. Two graduate students in the Human Factors program at USD reviewed over 9,700 lines of raw data for unreadable writing, obvious errors, and logical inconsistencies in the coding (e.g., two drivers in a vehicle with the same ID number; a driver with an infant age). When possible, the coding was corrected. If questions remained about the validity of the coding, the observation was discarded. Once data were encoded, investigator Dave Struckman-Johnson formatted the data and ran initial computer analyses to check for data accuracy. Investigator Carryl Baldwin used additional computer analyses to detect logical errors in coding before conducting final data analyses.

Results

A total of 9,796 observations from the 13 selected counties were included in the analyses for this 2008 survey. The sample size varied by a small number of observations in individual analyses due to missing data. Of the total motorists observed, 6,908 or 70.5% were wearing shoulder safety restraints or were placed in a child restraint, while 2,888 or 29.5% were not wearing safety restraints. This 2008 unweighted seatbelt use rate was higher than the unweighted rates observed in the 2007 and 2006 surveys, which were 67.7% both years. Previous years exhibited lower rates of 64% in 2005 and 65.1% in 2004. Note that these percentages do not accurately reflect seatbelt use across South Dakota as the numbers have not been adjusted or "weighted" for road type and vehicle miles traveled (VMT) at the observation sites in the 13 counties.

Estimate of Statewide Seatbelt Use

NHTSA guidelines require that a statewide seatbelt use be estimated by adjusting seatbelt use rates observed at every individual county site for road type and VMT. Essentially, the adjusting process gives more weight to seatbelt use rates observed on roads that are more heavily traveled. The statewide estimate of seatbelt use was obtained by finding the percentage of seatbelt use for each of the 205 sites, and then computing a weighted mean for each road type for each county. Then, a weighted average for each road type across counties was found where the weights were the VMT for that county on that road type and the sampling weight for the county based on the probability of its selection to be included in the survey.

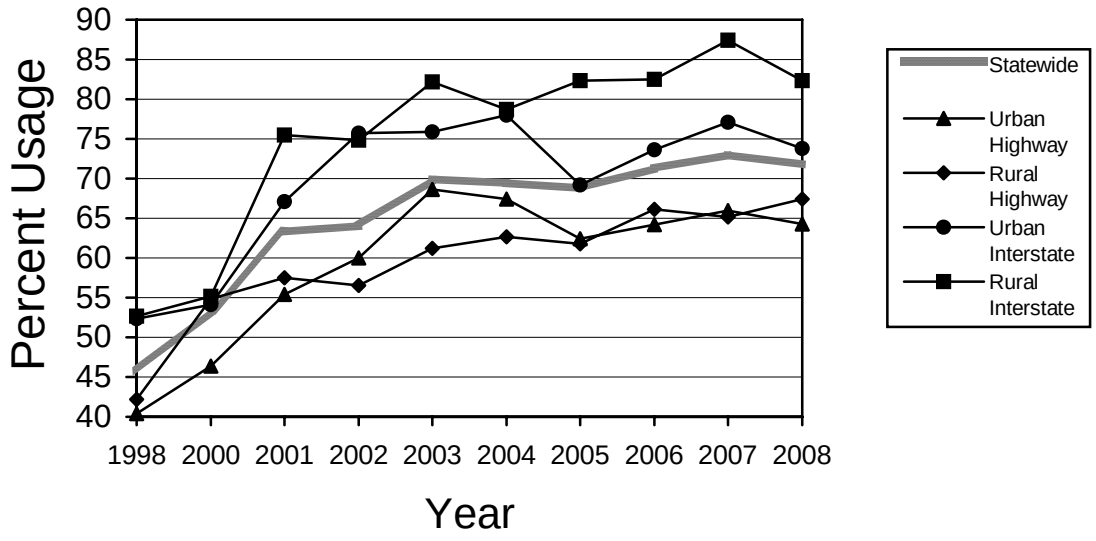
Finally, the estimates for the four road type averages were weighted by the VMT for each road type for the entire state. **The resulting estimate for seatbelt use on all South Dakota roads was 71.8% with a standard error of 0.533**. Thus, it can be said that there is a 95% probability that the true rate of seatbelt use for South Dakota roads ranges between 70.8% and 72.9%. The formulas and weights for calculating the statewide estimate and standard deviation are in Appendix C.

The 2008 statewide estimate was approximately 1.2 percentage points lower than the 2007 rate. This difference is statistically significant, $t(60) = -11.78$, $p < .001$. Thus, the statewide estimate for seatbelt use in South Dakota in 2008 showed a slight decrease, ending an upward trend established by the 2006 and 2007 surveys. This outcome is shown in Table 3 and Figure 1.

Table 3: Weighted Restraint Use by Year and Road Type

Road Type	Year									
	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008
Statewide	45.7	53.4	63.3	64.0	69.9	69.4	68.8	71.3	73.0	71.8
Urban Highway	40.4	46.4	55.4	60.0	68.6	67.4	62.4	64.2	66.0	64.3
Rural Highway	42.2	54.8	57.5	56.5	61.2	62.7	61.8	66.1	65.2	67.4
Urban Interstate	52.4	54.1	75.7	75.7	75.9	78.0	69.6	73.6	77.1	73.8
Rural Interstate	52.7	55.2	74.8	74.8	82.2	78.7	82.4	82.5	87.4	82.3

Figure 1: Weighted Restraint Use by Year and Roadtype



Estimate of Statewide Seatbelt Use by Road Type

The 2008 weighted statewide estimates for seatbelt use by road type were 64.3% for urban highways, 67.4% for rural highways, 73.8% for urban interstates, and 82.3% for rural interstates. Compared to 2007 rates (see Table 3), seatbelt use decreased on urban highways by 1.7%, increased 2.2% on rural highways, decreased 3.3% on urban interstates, and decreased 5.1% on rural interstates. Given the confidence bounds on these rates, these changes can be considered statistically significant.

Seatbelt Restraint Use by County

The unweighted seatbelt use rates for the 13 South Dakota counties are in Table 4. A summary of seatbelt use rates for the 13 counties over ten survey periods is in Table 5. The data show an upward trend in nearly all counties from 1998 through 2003 and 2004. Since 2005, rates among most of the counties are showing moderate fluctuations Seven counties showed an increase from the prior year: Minnehaha by 3%, Hughes by 5%, Grant by 6%, Kingsbury by 6%,Tripp by 10%, Beadle by 12%, and Charles Mix by 12%. The 2008 increase in Charles Mix County may be inflated due to an unusually low rate observed in 2007.

Six counties showed decreases in rates from the prior year: Union by 1%, Pennington by 2%, Lawrence by 2%, Brown by 3%, Fall River by 5%, and Davison by 11%. The Pennington County survey had two missing two sites, which may have affected the county observation rate.

The counties with the highest rates were Union County with 97%, Grant with 83%, Minnehaha with 80%, Beadle with 77%, Kingsbury with 76%, and Pennington with 70%. Counties with midlevel rates were Davison with 65%, Fall River with 64%, and Lawrence with 63%. In the lowest tier were Brown with 59%, Hughes with 58%, and Charles Mix with 48%.

Error! **Table 4: Unweighted Restraint Use by County**

County	Restraint Used		Total
	Yes	No	
Minnehaha	1168 80.3%	287 19.7%	1455
Pennington	547 70.0%	234 30.0%	781
Brown	334 58.5%	237 41.5%	571
Lawrence	862 62.8%	510 37.2%	1372
Davison	593 65.4%	314 34.6%	907
Beadle	549 76.8%	166 23.2%	715
Hughes	512 57.6%	377 42.4%	889
Union	775 96.6%	27 3.4%	802
Charles Mix	254 48%	275 52.0%	529
Grant	327 82.8%	68 17.2%	395
Fall River	230 64.1%	129 35.9%	359
Tripp	156 66.4%	79 33.6%	235
Kingsbury	601 76.5%	185 23.5%	786
Total	6908	2888	9796
% of Total	70.5%	29.5%	

Table 5: Unweighted Percent Restraint Use by County by Year

County	Year									
	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008
Minnehaha	54	57	69	69	80	82	73	73	77	80
Pennington	38	43	51	63	67	70	70	77	72	70
Brown	37	60	64	56	65	62	58	61	62	59
Lawrence	39	73	62	54	73	68	69	65	65	63
Davison	55	52	67	76	60	70	69	76	76	65
Beadle	41	56	57	63	55	63	68	67	65	77
Hughes	41	36	54	62	76	77	55	54	53	58
Union	49	61	71	71	77	79	76	87	98	97
Charles Mix	17	24	28	41	48	50	48	59	36	48
Grant	41	46	53	66	45	53	55	78	77	83
Fall River	47	52	58	62	60	63	60	72	69	64
Tripp	52	30	39	47	37	33	50	66	56	66
Kingsbury	43	38	44	46	49	43	55	57	70	76

Age of Motorist

Observers estimated the age of drivers and passengers to the best of their ability. In approximately 14 or .1% instances, the Observer was unable to determine age. These instances were excluded from the age by restraint use analyses. As in all previous surveys since 1998, Observers always recorded data for the driver and a right front passenger, irrespective of age. In subsequent survey years (2000 – 2008), data were also recorded for additional passengers between 0-4 years of age in the front seat (e.g., on the right front passenger's lap or in the middle of the seat) and in the back seat. This new protocol was adopted in order to increase the sample size of child passengers aged 0–4 years for better estimates of child restraint use.

Child restraint use was defined as a passenger restrained by a child safety seat or carrier. If children under the age of 5 years were observed riding anywhere in the vehicle in a child safety seat, they were given a code of "yes—child restraint in use". If children under five years of age were observed wearing a shoulder restraint but were not seated in a child safety seat, they received a code of "yes—seatbelt in use". Children under five years who were not in a carrier or a seatbelt were coded as "no – restraint not in use." Note however, that according to South Dakota law, all children under the age of 5 years should be restrained in an approved child safety restraint unless they weigh more than 40 pounds. Table 6 illustrates the total number of observations and restraint use by each age group including the use of child restraints.

Table 6: Unweighted Restraint Use by Age

Age	Restraint Use			
	Belt	Child Restraint	None	Total
0 - 4 years	21 13.2%	107 67.3%	31 19.5%	159
5 -13 years	67 72.8%	1 1.1%	24 26.1%	92
14 - 17 years	478 67.8%		227 32.2%	705
18 & over	6232 70.5%		2602 29.5%	8834
Total	6798 69.4%	108 1.1%	2884 29.5%	9790

The total number of children between 0-4 years of age observed in the 2008 survey was 159. Of these, 128 or 80.5% were observed in some type of safety restraint. In accordance with South Dakota law, 107 or 67.3% were buckled in a child safety seat, while another 21 (13.2%) were wearing a shoulder restraint, but were not seated in a child safety seat. This rate is down slightly from last year's rate of 82.7% for this age group. However, the percentage of children restrained in a child safety seat was higher in the 2008 survey than the rate of 60.7% observed in the 2007 survey. As shown in Table 7, the percentage of children under age 5 in any kind of safety restraint has steadily risen every year since the 2000 survey, with the exception of the 2007 survey which exhibited a moderate decline.

A total of 92 children in the age group 5-13 were observed in the 2008 survey. Of these, 68 or 73.9% were wearing some type of safety restraint, with all but one of these children wearing a seatbelt and the remaining in a child safety seat. As shown in Table 7, restraint use for children 5-13 has fluctuated between 51% and 69% over the survey years 2000 to 2007, with the 2008 rate of nearly 74% representing the highest rate for this age group to date.

A total of 705 motorists were estimated to be in the teen-age category of 14 - 17 years. Of the teens observed in the 2008 survey, 478, or 67.8% were wearing a seatbelt. This rate represents a substantial increase from the 55.5% use rate for this age group in the 2007 survey. Seatbelt usage rates for this age group are low nationwide. However, as shown in Table 7, rates in South Dakota for this age group have increased in the last several survey years.

As in previous years, the majority of observed motorists (a total of 8,834) were estimated to be in the age group of 18 years and older. Of these, 6,232 (70.5%) were wearing a restraint. The adult restraint usage rate in 2007 was 68.5% and, as shown in Table 7, these seatbelt use rates have steadily increased over the survey years.

Table 7: Unweighted Percent Restraint Use by Age Group

Age	Year								
	2000	2001	2002	2003	2004	2005	2006	2007	2008
0 – 4	58	78	67	70	72	77	88	83	81
5 – 13	51	64	53	63	56	57	69	59	74
14 –17	41	46	48	41	45	48	56	56	68
18+	53	56	62	64	66	65	68	68	71

Drivers versus Passengers

According to national guidelines, data were recorded for all drivers and right front seat passengers. For the South Dakota Office of Highway purposes, data were also recorded for additional children under the age of 5 years sitting in the middle front seat, on laps of right front passengers, and in the back seat. Unweighted data for restraint use by occupant position in the vehicle are presented in Table 8. Restraint use was somewhat higher for passengers than for drivers. Of the 6,858 drivers observed, 69.1% were wearing a safety restraint. This rate is higher than the rate of 66.6% observed in the 2007 survey. Of the 2,799 right front seat passengers observed, 2,046 or 73.1% were wearing shoulder restraints, with one additional right front passenger in a child safety seat. The right front passenger rate in the 2008 survey was higher than the rate of 69.8% observed in the 2007 survey.

According to federal and state guidelines, children 0-4 years of age should be placed in a child safety restraint in the back seat, where possible. As indicated in Table 8, 121 of 130 or 93.1% of children in this age group were riding in the back seat. Only 107 of these 121 were restrained in the mandated child safety seat. The remaining 14 children (10.8% of the total) were observed to be in a seatbelt only.

Data were recorded for 9 additional child front seat passengers who were sitting in the middle of the front seat or on laps of right front passengers. As in previous years, restraint usage for these child passengers was extremely low. In the 2008 survey, only 1 (11.1%) of these nine children was wearing a seatbelt.

The remaining eight children in this front seat passenger condition were unrestrained. In the 2007 survey, none of these 13 children in this passenger position were wearing any type of safety restraint, nor were they in a child safety seat. In the 2006 survey, 33.3% of 15 additional front seat passenger children were in a child safety restraint. Although the number of observations is low, these data indicate that young children riding as extra passengers in the front seat are a high risk population.

Table 8: Unweighted Restraint Use for Drivers versus Passengers.

Occupant Type	Restraint Use			Total
	Seatbelt	Child Restraint	None	
Drivers	4740 69.1%		2118 30.9%	6858
Right–Front Passengers	2045 73.1%	1	753 26.9%	2799
Additional Child Front Passenger	1 11.1%		8 88.9%	9
Child Passenger Back Seat	14 10.8%	107 82.3%	9 6.9%	130
Total	6800 69.4%	108 1.1%	2888 29.5%	9796

Vehicle Type

Only non-commercial vehicles were observed. In 2006 surveys and all previous years, vehicles had been categorized into three classifications: 1) cars; 2) vans, mini-vans, pickups and station wagons; and 3) Sport Utility Vehicles (SUVs). Starting with the 2007 survey, pickup trucks were coded in a separate category. This change was to allow tracking patterns of seatbelt use by drivers and passengers in pickups, a popular vehicle in this rural state of South Dakota.

Table 9 presents a summary of data regarding for restraint use by vehicle type. Combining both seatbelt and child safety seats, restraint usage was highest (82.8%) in the vehicle category consisting of vans and minvans and station wagons. The next highest usage rate (75.7%) was observed for SUVs. Usage rates in passenger cars was 73.3%. By far the lowest usage rate of all categories was observed for pickup trucks -- 55.3% (similar to the 2007 rate of 54.9%)

Table 9: Unweighted Restraint Use by Vehicle Type

Vehicle Type	Restraint Use			Total
	Yes	Child Restraint	None	
Cars	3132 72.3%	42 1.0%	1158 26.7%	4332
Vans	1048 80.4%	31 2.4%	225 17.3%	1304
SUVs	1285 73.9%	31 1.8%	422 24.3%	1738
Pickups	1332 55.1%	4 .2%	1082 44.7%	2418
Total	6797 69.4%	108 1.1%	2887 29.5%	9792

In-State versus Out-of-State Vehicles

Observers recorded whether or not the vehicles included in the observation had in or out-of-state license plates. Consistent with previous years, the majority of observations were of vehicles with in-state license plates (83.5% or 8,146 out of 9,758). As illustrated in Table 10, vehicles with out-of-state license plates had higher rates of restraint use (79.3%) for seatbelts and child safety restraints combined than did motorists traveling in vehicles with in-state license plates (68.9%). However, this 2008 in-state usage rate is higher than both the rate of 64.9% observed in the 2007 survey and the rate of 65.2% observed in the 2006 survey. Together, these rates indicate a steadily increasing rate of seatbelt usage among South Dakota motorists.

Table 10: Unweighted Restraint Use Observed for In- and Out-of-State License Plates

License Plates	Restraint Use			Total
	Yes	Child Restraint	None	
In-State	5515 67.7%	96 1.2%	2535 31.1%	8146
Out-of-State	1267 78.6%	11 .7%	334 20.7%	1612
Total	6782 69.5%	107 1.1.%	2869 29.4%	9758

Discussion

Results of the current survey established that the weighted statewide estimate of restraint use for South Dakota in year 2008 was 71.8%. This estimated rate was statistically lower than the rate of 73.0% observed in the 2007 survey. However, the 2008 estimated rate was still significantly higher than the statewide estimate of 71.3% recorded in the 2006 survey.

The slight dip in the statewide rate should not yet be viewed as a trend of declining seatbelt use in South Dakota. The state currently has historically high seatbelt usage in comparison to years past. The drop of a percentage point observed in 2008 most likely is a fluctuation. South Dakota seatbelt use may have reached a plateau or a leveling off of rates that has been observed in other parts of the country starting in 2005 (NOPUS, 2006). The true nature of the trend will be revealed in future surveys.

The statewide estimate of seatbelt use did produce one positive finding: the weighted estimate of seatbelt use on rural highways has reached an historic high of 67.4%. This estimated rate is 2.2% points higher than the rate recorded for 2007. This result indicates that more drivers and passengers on the most isolated and rural roads of South Dakota are now wearing seatbelts. As most fatal accidents occur on rural highways and roads (NHTSA, 2006), this improvement in seatbelt use may translate into saved lives.

The 2008 survey results for individual counties can best be described as fluctuating. Seven counties increased their rates from 2007, whereas six counties showed declines in seatbelt usage. Most fluctuations, however, were slight to moderate. An overall positive finding is that the rates of many counties are hovering close to record highs, such as Union county's rate of 97% and Minnehaha county's rate of 80%. This year, historically high rates were reached or reaffirmed by four counties: Grant (83%), Beadle (77%), Kingsbury (76%), and Tripp (66%).

A major purpose of the South Dakota seatbelt survey is to track the progress of restraint use for children and teens. According to the Centers for Disease Control and Prevention (2001), children under 12 who are involved in vehicle crashes account for more than 1,600 fatalities and 200,000 emergency room visits each year. It has been well established that use of child restraints is the best practice for protecting child occupants weighing less than 40 pounds (Winston & Durbin,1999). Therefore, survey procedures were adapted in 2000 to increase the number of children observed in vehicle front and back seats. Although the survey sample sizes for young and older children tend to be relatively small, the results still provide valuable data on trends of restraint use for young riders.

This year, the survey found that 81% of 159 children judged to be under five years of age were appropriately restrained by a child restraint device or a seatbelt. Although this rate is lower than the 2007 rate of 83% and the 2006 rate of 88%, it nonetheless indicates that a high percentage of young child occupants

are protected. In addition, 67.3% of young children were in a child restraint device, an increase from last year's rate of 60.7%. This is a positive trend as research has found that being in a forward-facing-child restraint system offers more protection from car crash injuries than does a seatbelt (Arbogast et al., 2004.) Another positive finding was that 130 of the 159 (82%) young children observed were in the back seat. Rear-seating of young children has been found to be safer than front-seat seating (Greenberg-Seth et al., 2004.) Further, of the 130 young children in the back seat, 93% were in some kind of a restraint.

Seatbelt use observations for older age groups revealed some unexpectedly encouraging findings. The rate of seatbelt use by 92 children appearing to be 5 to 12 years of age was 74% this year. This is the highest level of seatbelt use ever reported for this age group in the survey's history. More surprisingly, the rate for 705 children judged to be teenagers (age 14 – 17) reached a historic high of 68%. This rate contrasts with rates in the 40% and 50% range measured in survey years 2000 – 2005. It appears that a confluence of unknown events (e.g., parental modeling, guidance, education, seatbelt laws) has brought about a major improvement in the protection of older children and teens traveling South Dakota roads.

One discouraging finding was that seatbelt use among occupants of pickups was only 55% -- nearly 20% - 25% lower than for other vehicle types. The "pickup truck" factor may be a major reason why South Dakota's seatbelt rate is lower than the rates of many other states. Nearly a quarter of the vehicles observed in the 2008 survey were pickups or trucks (2,318/9,792 or 24%). Research has found that pickup truck drivers, particularly males, are resistant to seatbelt use for reasons related to independence, comfort, and skepticism of the protective value of seatbelts ((NHTSA, 2004a). Strategies for changing attitudes and behaviors about seatbelts are clearly needed for South Dakota pickup drivers.

Each year that the South Dakota Seatbelt survey takes place, external factors are at work on the survey results. Despite our attempts to use the same survey procedures every year, there are variations that may slightly affect the outcome. This year we had four new observers who lacked experience in conducting the survey. Ongoing construction prevented some surveying of a few sites and a terrific rainstorm flooded out many observations on the first survey day. We depend upon the sampling strategy and the large number of vehicles surveyed to compensate for these variations.

In 2008, an unexpected external factor of gas prices may have affected the survey results. This year less than 10,000 vehicles were observed instead of the usual 11,000 to 12,000. Perhaps the high price of gas led to reduced travel on South Dakota roads. It remains unknown if a factor that reduces travel also affects seatbelt use. Depending how gas prices go, the 2009 South Dakota seatbelt survey may provide further assessment of the "gas price" effect. Finally, the 2009 survey will be interesting in that it may show the effects of the new

penalty for seatbelt violations that went into effect in July 1, 2008. Houston and Richardson, 2005, found that increasing a seatbelt fine from $25 to $50 increased seatbelt use. The 2009 seatbelt survey results will help determine if a $5 increase in a penalty can affect compliance rates in South Dakota.

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Appendix A

List of Observation Sites by Roadway Type

Urban Interstate

County	Road	Mile	Site #	Probability of Selection for County
Minnehaha	29N	77	2	.31
Minnehaha	29N	98	3	.31
Minnehaha	229	3	4	.31
Minnehaha	229	5	5	.31
Minnehaha	229	7	6	.31
Pennington	90E	56	11	.18
Pennington	90E	60	12	.18
Lawrence	90	13	2	1.00
Davison	90	330	8	1.00
Davison	90	333	10	1.00
Union	29S	.98	1	1.00

Rural Interstate

Minnehaha	90	379	13	.19
Minnehaha	90	390	14	.19
Minnehaha	90	412	15	.19
Pennington	90E	66	13	.31
Pennington	90E	90	14	.31
Pennington	90E	98	15	.31
Pennington	90W	55	16	.31
Pennington	90W	62	17	.31
Lawrence	90	12	1	1.00
Lawrence	90E	15	3	1.00
Lawrence	90E	27	4	1.00
Lawrence	90W	12	5	1.00
Lawrence	90W	15	6	1.00
Lawrence	90W	24	7	1.00
Davison	90	319	6	1.00
Davison	90	325	7	1.00
Davison	90	332	9	1.00
Union	29N	1	2	1.00
Union	29N	18	3	1.00
Union	29N	27	4	1.00
Union	29S	42	5	1.00
Grant	29	201	16	1.00

Urban Highway

Minnehaha	115	84	7	.70
Minnehaha	115	87	8	.70
Minnehaha	115	88	9	.70
Minnehaha	11	79	10	.70
Minnehaha	42	363	11	.70
Minnehaha	42	367	12	.70
Minnehaha	38	365	17	.70
Pennington	16	69	2	.18
Pennington	16B	68	3	.18
Pennington	16B	70	4	.18
Pennington	79	80	6	.18
Pennington	44	40	7	.18
Pennington	44	49	8	.18
Brown	12	289	4	1.00
Brown	12	290	5	1.00
Brown	12	292	6	1.00
Brown	12E	289	8	1.00
Brown	281	193	9	1.00
Brown	281N	197	14	1.00
Lawrence	14A	9	14	.13
Lawrence	14A	10	15	.13
Davison	37	74	3	.60
Davison	37	76	4	.60
Davison	38	300	12	.60
Beadle	37	125	13	1.00
Beadle	37	127	14	1.00
Beadle	37	128	15	1.00
Hughes	14E	230	3	1.00
Hughes	14W	232	5	1.00
Hughes	14	229	6	1.00
Hughes	14	230	7	1.00
Hughes	14B	95	11	1.00
Hughes	14B	96	12	1.00
Hughes	34	209	13	1.00
Hughes	34	210	14	1.00

Rural Highway

Minnehaha	19	64	1	.07
Minnehaha	38	349	16	.07
Pennington	16	45	1	.10
Pennington	16A	59	5	.10
Pennington	44	87	9	.10
Pennington	44	107	10	.10

Lawrence	385	122	8	.66
Lawrence	85	28	9	.66
Lawrence	14A	29	10	.66
Lawrence	14A	35	11	.66
Lawrence	14A	37	12	.66
Lawrence	14A	41	13	.66
Lawrence	14A	41	16	.66
Lawrence	14A	50	17.	.66
Brown	10	279	1	.55
Brown	10	282	2	.55
Brown	10	297	3	.55
Brown	12	309	7	.55
Brown	281	214	10	.55
Brown	281	214	11	.55
Brown	281S	185	12	.55
Brown	281N	185	13	.55
Brown	37	207	15	.55
Brown	37	208	16	.55
Brown	37	208	17	.55
Hughes	83	138	1	.69
Hughes	1804	256	2	.69
Hughes	14	139	4	.69
Hughes	14	246	8	.69
Hughes	14	251	9	.69
Hughes	14	263	10	.69
Hughes	34	212	15	.69
Hughes	34	232	16	.69
Hughes	34	245	17	.69
Davison	37	62	1	.83
Davison	37	72	2	.83
Davison	37	76	5	.83
Davison	42	302	11	.83
Davison	38	302	13	.83
Beadle	14	333	1	.83
Beadle	14	354	2	.83
Beadle	14	354	3	.83
Beadle	14	363	4	.83
Beadle	14	316	5	.83
Beadle	14	326	6	.83
Beadle	14	326	7	.83
Beadle	14	331	8	.83
Beadle	28	269	9	.83
Beadle	28	283	10	.83
Beadle	28	298	11	.83
Beadle	281	117	12	.83
Beadle	37	133	16	.83
Beadle	37	145	17	.83

Union	46	365	6	.88
Union	46	366	7	.88
Union	46	380	8	.88
Union	46	371	9	.88
Union	11	9	10	.88
Union	11	23	11	.88
Union	11	35	12	.88
Union	11	35	13	.88
Union	50	423	14	.88
Charles Mix	50	337	1	.88
Charles Mix	50	329	2	.88
Charles Mix	50	314	3	.88
Charles Mix	50S	299	4	.88
Charles Mix	50N	299	5	.88
Charles Mix	50	273	6	.88
Charles Mix	1804	90	7	.88
Charles Mix	1804	120	8	.88
Charles Mix	44	298	9	.88
Charles Mix	44	305	10	.88
Charles Mix	44	306	11	.88
Charles Mix	45	27	12	.88
Charles Mix	46	277	13	.88
Charles Mix	46	288	14	.88
Charles Mix	46	290	15	.88
Grant	20	439	1	1.00
Grant	20	439	2	1.00
Grant	20	446	3	1.00
Grant	158	439	4	1.00
Grant	12	377	5	1.00
Grant	12	388	6	1.00
Grant	12	390	7	1.00
Grant	12	390	8	1.00
Grant	12	399	9	1.00
Grant	123	172	10	1.00
Grant	15	160	11	1.00
Grant	15	167	12	1.00
Grant	15	174	13	1.00
Grant	15	174	14	1.00
Grant	15	175	15	1.00
Fall River	18	62	1	.65
Fall River	18	11	2	.65
Fall River	18	12	3	.65
Fall River	18	24	4	.65
Fall River	471	7	5	.65
Fall River	471	21	6	.65
Fall River	471	27	7	.65
Fall River	89	29	8	.65

Fall River	71	1	9	.65
Fall River	71	2	10	.65
Fall River	71	7	11	.65
Fall River	71	27	12	.65
Fall River	71	35	13	.65
Fall River	385	39	14	.65
Fall River	79	26	15	.65
Fall River	385	12	16	.65
Fall River	385	13	17	.65
Tripp	53	26	1	1.00
Tripp	183S	5	2	1.00
Tripp	183S	19	3	1.00
Tripp	183N	43	4	1.00
Tripp	183N	61	5	1.00
Tripp	49	18	6	1.00
Tripp	49	27	7	1.00
Tripp	49	42	8	1.00
Tripp	18	242	9	1.00
Tripp	18	252	10	1.00
Tripp	18	252	11	1.00
Tripp	18	273	12	1.00
Tripp	44	237	13	1.00
Tripp	44	270	14	1.00
Kingsbury	25	114	1	1.00
Kingsbury	25	120	2	1.00
Kingsbury	81	116	3	1.00
Kingsbury	81	119	4	1.00
Kingsbury	81	125	5	1.00
Kingsbury	14	363	6	1.00
Kingsbury	14	365	7	1.00
Kingsbury	14	378	8	1.00
Kingsbury	14	378	9	1.00
Kingsbury	14	383	10	1.00
Kingsbury	14	387	11	1.00
Kingsbury	14	390	12	1.00
Kingsbury	14	400	13	1.00
Kingsbury	25	113	14	1.00

Appendix B

Observer Manual – 2008 South Dakota Seatbelt Survey

Place holder for manual

Appendix C

Computatation of Mean Seat Belt Use for South Dakota

The computation of the mean seatbelt use for in South Dakota was a three-stage process. Stage 1 consisted of computing mean seat belt use for each road type in each county. For purposes of this calculation, only drivers and right front seat passengers were considered to retain compatibility to prior year values and Federal reporting requirements. In this computation, the vehicle miles traveled value (VMT) for a particular site was computed by averaging the VMT values for each of the sub-segments in the road segment the selected site represented. These VMT values were then used to compute a weighted average for all sites for a particular road type in a particular county. This weighted mean seatbelt use rate for a particular road type in a particular county is designated $\hat{P}_{ij}$ where i denotes road type (from 1 to 4) and j denotes county (from 1 to 13).

The second stage of the computation consisted of computing weighted means for each road type across counties based on the vehicle miles traveled (VMT) on that road type in each county and on the sampling weight for the county based on probability of selection for surveying for that county. The mean seatbelt use for a road type is

$$\hat{P}_i = \frac{\sum_{j=1}^{13} W_{.j} V_{ij} \hat{P}_{ij}}{\sum_{j=1}^{13} W_{.j} V_{ij}}$$

Where $\hat{P}_i$ = the seat belt use estimate for road type i

$W_{.j}$ is the county weight for county j (1 for Minnehaha and Pennington, 31/11 for the remaining 11 counties)

V_{ij} is the VMT for road type i in county j

$\hat{P}_{ij}$ is the seatbelt use rate estimated for road type i and county j in stage 1.

The final stage of the estimate consisted of computing the weighted average of the across county road type estimates for a statewide estimate. Weights were based on the proportion of the state's VMT on each road type.

The formula for computing the statewide estimate is

$$\hat{P} = \frac{\sum_{i=1}^{4} V_i \hat{P}_i}{\sum_{i=1}^{4} V_i}$$

Where $\hat{P}$ = the statewide seat belt use estimate

V_i is the proportion of VMT for road type i in the state

$\hat{P}_i$ is the rate estimated for road type i in the state stage 2.

In the 2008 South Dakota Survey, the following values were obtained

Urban Highway:	$w_1 = 0.18324$	$\hat{P}_1 = 64.30$
Rural Highway:	$w_2 = 0.44819$	$\hat{P}_2 = 67.36$
Urban interstate:	$w_3 = 0.05521$	$\hat{P}_3 = 73.80$
Rural interstate:	$w_4 = 0.31336$	$\hat{P}_4 = 82.29$

Thus, statewide seat belt use is estimated as 71.84% for 2008.

Computation of Variance and Confidence Bounds for Mean Seat Belt Use for South Dakota

Computational formula for the variance of $\hat{P}$, using the terms as defined in the computation of the weighted use estimate above, is

$$Var(\hat{P}) = \frac{\sum_{i=1}^{4} \sum_{j=1}^{13} (W'_{ij})^2 * (\hat{P}_{ij} - \hat{P})^2}{n^* - 1}$$

where n* = the number of county-road type groups

The W'_{ij} in the formula are weights applied to the deviations based on the formula below

$$W'_{ij} = \frac{W_{.j} * V_{ij}}{\sum_{i=1}^{4} \sum_{j=1}^{13} W_{.j} W_{ij}}$$

where the W's and V in the formula are as define previously in discussion of the second stage of the analysis.

Using these formulas, the variance of $\hat{P}$ is 0.2845. The sampling error is then 0.5333%.

Now, the 95% confidence bounds can be computed as the:

(statewide mean) +/- (1.96)(0.5333).

Thus, the 95% confidence bounds on our mean estimate are:

71.84% +/- (1.96)(0.5333) or p(70.8% < Statewide Use < 72.9) = .95

In non-statistical terms, there is a 95% chance that the true statewide seatbelt use rate in South Dakota is between 70.8 and 72.9 with our best estimate being that it is 71.8%